PROCEEDING OF THE FIFTEENTH MEETING OF COMBINED AGRICULTURAL RESEARCH COUNCIL OF SAUs AND KAMDHENU UNIVERSITY OF GUJARAT : 2018-19

ORGANIZED BY

ANAND AGRICULTURAL UNIVERSITY
ANAND

(APRIL 29 TO MAY 1, 2019)

DIRECTORATE OF RESEARCH
ANAND AGRICULTURAL UNIVERSITY
ANAND-388110

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ANAND - 388 110

JUNE, 2019

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XV Meeting of Combined AGRESCO of SAUs and Kamdhenu University of Gujarat

Date: April 29 to May 1, 2019 **Organizer: Anand Agricultural University**

Programme at a glance

Date: 29.04.2019		
Inaugural Session	**09:00 to 11:20 hrs**	**(Place: Auditorium, BACA, AAU)**
High Tea	**11:20 to 11:30**	**(Place: Outside Auditorium)**
Parallel Technical Sessions	**11:30 to 19:00 hrs**	**(Respective Places)**
Date: 30.04.2019		
Parallel Technical Sessions	**09:00 to 19:30 hrs**	**(Respective Places)**
Date: 01.05.2019		
Plenary Session	**09:00 to 13:00 hrs**	**(Place: Auditorium, BACA, AAU)**

Venue for Breakfast, lunch and dinner: International Hostel, AAU, Anand

Breakfast	**08:00 to 08:45 hrs**
Lunch	**13:00 to 14:00 hrs**
Dinner	**20:00 to 21:00 hrs**

INAUGURAL SESSION

Date: 29.04.2019 **Time: 09:00 to 11:20 hrs**

Venue: Auditorium, BACA, Anand Agricultural University, Anand

Rapporteurs: Dr. V. P. Ramani, ADR, AAU
Dr. P. Mohnot, ADR, JAU
Dr. K. A. Patel, ADR, NAU
Dr. P. P. Chaudhari, Asso. Res. Sci., SDAU

09.00 to 09:05	***Saraswati Vandana***		
09.05 to 09:10	**Lighting the lamp**	:	All Dignitaries
09.10 to 09:15	**Launching of AAU *Prerna Geet* & release of Audio CD**	:	All Dignitaries
09:15 to 09:20	**Welcome Address**	:	Dr. K. B. Kathiria, DR, AAU, Anand
09:20 to 09:25	**Floral Welcome**		
09:25 to 10:30	**Address by Dignitaries**	:	GoG Officers Dr. N. H. Kelawala, Hon. VC, KU Prof (Dr.) Ashok A. Patel, Hon. VC, SDAU Dr. C. J. Dangaria, Hon. VC, NAU Dr. A. R. Pathak, Hon. VC, JAU Dr. N. C. Patel, Hon. VC, AAU
10:30 to 10:35	**Release of Publication**	:	All Dignitaries
10:35 to 10:50	**Address by Chief Guest**	:	Shri Sanjay Prasad (IAS) Additional Chief Secretary (Agri.), GoG
10:50 to 11:10	**Lecture on Patent Filing in India**	:	Dr. Akarsh Parihar, Asso. Res. Sci. & Head, Dept. of Agri. Biotechnology
11:10 to 11:15	**Felicitation of Chief Guest**		
11:15 to 11:20	**Vote of Thanks**	:	Dr. M. K. Jhala, ADR, AAU
High Tea: 11:20 to 11:30			

Parallel Technical Sessions of XV Combined AGRESCO Sub-committees

Particulars	AGRESCO Sub-Committee		
	1. Crop Improvement	2. Crop Production / Natural Resource Management	3. Plant Protection/ Crop Protection
Technical Session-I Presentation of Recommendations, 11.30 a.m. to Onwards, 29.04.2019			
Chairman	Dr. A. R. Pathak, VC, JAU	Dr. C. J. Dangaria, VC, NAU	Dr. P. V. Patel, DEE, JAU
Co-Chairmen	Dr. K. B. Kathiria, DR, AAU Dr. K. L. Dobaria, JAU	Dr. M. V. Patel, Dean, AAU Dr. B. K. Sagaraka, Dean, JAU	Dr. V. V. Rajani, ADR, JAU Dr. P. K. Borad, AAU
Rapporteurs	Dr. R. M. Chauhan, SDAU Dr. R. R. Acharya, AAU Dr. V. P. Patel, NAU	Dr. B. D. Patel, AAU Dr. J. M. Patel, NAU Dr. B. T. Patel, SDAU	Dr. P. G. Shah, AAU Dr. M. F. Acharya, JAU Dr. D. A. Dodia, SDAU
Statistician	Dr. D. J. Parmar, AAU	Dr. P. R. Vaishnav, AAU	Dr. A. D. Kalola, AAU
Presentation	Conveners of the SDAU, NAU, JAU and AAU	Conveners of the SDAU, NAU, JAU and AAU	Conveners of the SDAU, NAU, JAU and AAU
Technical Session-II Presentation of New Technical Programmes, 09.00 a.m. Onwards, 30.04.2019			
Chairman	Dr. A. R. Pathak, VC, JAU	Dr. C. J. Dangaria, VC, NAU	Dr. K. G. Patel, Principal, NAU
Co-Chairmen	Dr. K. B. Kathiria, DR, AAU Dr. K. L. Dobaria, JAU	Dr. M. V. Patel, Dean, AAU Dr. B. K. Sagaraka, JAU	Dr. V. V. Rajani, ADR, JAU Dr. P. K. Borad, AAU
Rapporteurs	Dr. R. M. Chauhan, SDAU Dr. R. R. Acharya, AAU Dr. V. P. Patel, NAU	Dr. K. D. Mevada, AAU Dr. D. M. Patel, SDAU Dr. R. M. Pankhaniya, NAU	Dr. L. V. Ghetiya, NAU Dr. S. I. Patel, SDAU Dr. D. B. Sisodiya, AAU
Statistician	Dr. D. J. Parmar, AAU	Dr. P. R. Vaishnav, AAU	Dr. A. D. Kalola, AAU
Presentation	Conveners of the SDAU, NAU, JAU and AAU	Conveners of the SDAU, NAU, JAU and AAU	Conveners of the SDAU, NAU, JAU and AAU
Venue	**Yagyavalkya Hall, University Bhavan**	**P. G. Seminar Hall, B. A. College of Agriculture**	**Conference Hall, Dept. of Agril. Microbiology**

Parallel Technical Sessions of XV Combined AGRESCO Sub-committees

Particulars	AGRESCO Sub-Committee		
	4. Horticulture & Agro Forestry	**5. Agriculture Engineering and AIT**	**6. Dairy & Food Tech./ Dairy Science and FPT & Bio Energy**
Technical Session-I Presentation of Recommendations 11.30 a.m. to Onwards, 29.04.2019			
Chairman	Dr. V. P. Chovatia, DR, JAU	Dr. N. C. Patel, VC, AAU	Dr. J. B. Prajapati, Dean, AAU
Co-Chairmen	Dr. B. N. Patel, Principal, NAU Dr. H. C. Patel, Principal, AAU	Dr. N. K. Gontia, Dean, JAU Dr. D. R. Kathiriya, Dean, AAU	Dr. R. F. Sutar, Dean, AAU
Rapporteurs	Dr. M. J. Patel, AAU Dr. Piyush Varma, SDAU Dr. K. D. Patel, JAU	Dr. Y. R. Ghodasara, AAU Dr. H. D. Rank, JAU Er. B. M. Solia, NAU	Dr. A. Jana, AAU Dr. A. K. Sharma, AAU Dr. B. G. Patel, SDAU
Statistician	Dr. G. N. Motka, AAU	Dr. N. J. Rankja, JAU	Dr. V. B. Darji, AAU
Presentation	Conveners of the SDAU, NAU, JAU and AAU	Conveners of the SDAU, NAU, JAU and AAU	Conveners of the SDAU, NAU, JAU, AAU and KU
Technical Session-II Presentation of New Technical Programmes, 09.00 a.m. Onwards, 30.04.2019			
Chairman	Dr. V. P. Chovatia, DR, JAU	Dr. N. C. Patel, VC, AAU	Dr. J. B. Prajapati, Dean, AAU
Co-Chairmen	Dr. A. U. Amin, Principal, SDAU Dr. B. N. Patel, Principal, NAU	Dr. N. K. Gontia, Dean, JAU Dr. D. R. Kathiria, Dean, AAU	Dr. D. C. Joshi, Emeritus Scientist & Retd. Dean, AAU
Rapporteurs	Dr. D. K. Varu, JAU Dr. B. N. Satodia, AAU Dr. Devraj, NAU	Dr. M. L. Gaur, AAU Dr. R. S. Parmar, AAU Dr. N. K. Dhamsaniya, JAU	Dr. R. V. Prasad, AAU Dr. B. M. Mehta, AAU Dr. Tanmay Hazra, KU
Statistician	Dr. G. N. Motka, AAU	Dr. S. M. Upadhyay, JAU	Dr. V. B. Darji, AAU
Presentation	Conveners of the SDAU, NAU, JAU and AAU	Conveners of the SDAU, NAU, JAU and AAU	Conveners of the SDAU, NAU, JAU, AAU and KU
Venue	**Conference Hall, Horticulture College**	**VC Conference Hall, University Bhavan**	**Conference Hall, FPT & BE College**

Parallel Technical Sessions of XV Combined AGRESCO Sub-committees

Particulars	AGRESCO Sub-Committee		
	7. Social Science	8. Basic Science & Humanities (Plant Physiology, Bio-chemistry & Biotechnology)	9. Animal Health, Animal Production and Animal Science & Fisheries Science
Technical Session-I Presentation of Recommendations 11.30 a.m. to Onwards, 29.04.2019			
Chairman	Prof. (Dr.) Ashok Patel, VC, SDAU	Dr. S. R. Vyas, Dean, SDAU	Dr. N. H. Kelawala, VC, KU
Co-Chairmen	Dr. Arun Patel, DEE, AAU Dr. K. A. Khunt, JAU	Dr. B. A. Golakia, JAU Dr. Y. M. Shukla, AAU	Dr. S. R. Chaudhary, DR, NAU Dr. A. M. Thaker, Dean, AAU
Rapporteurs	Dr. C. P. Desai, AAU Dr. R. D. Pandya, NAU Dr. J. J. Mistry, SDAU	Dr. H. P. Gajera, JAU Dr. G. B. Patil, AAU Dr. J. J. Dhruve, AAU	Dr. K. N. Wadhwani, AAU Dr. H. H. Panchasara, SDAU Dr. A. R. Ahalawat, JAU
Statistician	Dr. A. N. Khokhar, AAU	Dr. Prity Kumari, AAU	Dr. H. R. Pandya, NAU
Presentation	Conveners of the SDAU, NAU, JAU and AAU	Conveners of the SDAU, NAU, JAU and AAU	Conveners of the SDAU, NAU, JAU, AAU and KU
Technical Session-II Presentation of New Technical Programmes, 09.00 a.m. Onwards, 30.04.2019			
Chairman	Prof. (Dr.) Ashok Patel, VC, SDAU	Dr. S. R. Vyas, Dean, SDAU	Dr. D. B. Patil, DR, KU
Co-Chairmen	Dr. G. R. Patel, DEE, NAU Dr. Y. C. Zala, AAU	Dr. B. A. Golakia, JAU Dr. Y. M. Shukla, AAU	Dr. P. H. Vataliya, DEE, KU Dr. P. H. Tank, Dean, JAU
Rapporteurs	Dr. Sunil R. Patel, AAU Dr. M. G. Dhandhalya, JAU Dr. V. M. Thumar, NAU	Dr. S. B. Gondaliya, SDAU Dr. Akarsh Parihar, AAU Dr. Trupti Vyas, NAU	Dr. D. N. Rank, AAU Dr. K. S. Murthy, JAU Dr. H. G. Solanki, NAU
Statistician	Dr. A. N. Khokhar, AAU	Dr. Prity Kumari, AAU	Dr. H. R. Pandya, NAU
Presentation	Conveners of the SDAU, NAU, JAU and AAU	Conveners of the SDAU, NAU, JAU and AAU	Conveners of the SDAU, NAU, JAU, AAU and KU
Venue	**Training Hall, EEI**	**Conference Hall, Dept. of Agril. Biotechnology**	**Seminar Hall, Veterinary College**

:: PLENARY SESSION ::

Date: 01.05.2019	**Time: 09:00 to 13:00 hrs.**	**Venue : Auditorium, BACA, AAU**
Welcome Address	:	Dr. K. B. Kathiria, DR, AAU
Floral Welcome	:	All Dignitaries
Chairman	:	Dr. N. C. Patel, Hon'ble VC, AAU
Co-Chairmen	:	Dr. A. R. Pathak, Hon'ble VC, JAU Dr. C. J. Dangaria, Hon'ble VC, NAU Prof (Dr.) Ashok Patel, Hon'ble VC, SDAU Dr. N. H. Kelawala, Hon'ble VC, KU
Rapporteurs	:	Dr. V. P. Ramani, ADR, AAU Dr. P. Mohnot, ADR, JAU Dr. K. A. Patel, ADR, NAU Dr. P. P. Chaudhari, Asso. Res. Sci., SDAU

Proceeding Presentation Schedule:

1.	Crop Improvement	Dr. H. L. Dhaduk, AAU
2.	Crop Production / NRM	Dr. J. D. Thanki, NAU
3.	Plant Protection	Dr. L. F. Akbari, JAU
4.	Horticulture & Agro Forestry	Dr. D. R. Bhanderi, NAU
5.	Dairy & Food Technology / Dairy Science, FPT & Bio Energy	Dr. A. K. Makwana, AAU
6.	Agriculture Engineering and AIT	Dr. R. Swarnakar, AAU
7.	Social Science	Dr. V. T. Patel, SDAU
8.	Basic Science & Humanities, (Plant Physiology, Bio Chemistry and Biotechnology)	Dr. B. A. Golakia, JAU
9.	Animal Health, Animal Production & Animal Science, Fisheries	Dr. R. M. Patel, SDAU
Vote of Thanks		Dr. V. P. Ramani, ADR, AAU

Proceeding of 15th Combined AGRESCO meeting of SAUs and Kamdhenu University held at Anand Agricultural University (AAU), Anand during April 29 to May 1, 2019

INAUGURAL SESSION

Venue: BACA Auditorium **Date: 29.04.2019**
Time: 09:00 to 11:20

The 15th Combined Meeting of Agricultural Research Council (AGRESCO-2019) of SAUs and KU was held at Anand Agricultural University, Anand during April 29 to May 1, 2019. The inaugural session was held at Auditorium, B. A. College of Agriculture, AAU, Anand. The session was presided over by Dr. N. C. Patel, Hon. Vice Chancellor of AAU, Anand. Shri Sanjay Prasad (IAS), Additional Chief Secretary, Department of Agriculture, Co-operation and Farmers Welfare, Govt. of Gujarat was the Chief Guest. Hon. Vice Chancellors of JAU, NAU, SDAU and KU namely Dr. A. R. Pathak, Dr. C. J. Dangaria, Prof (Dr.) Ashok A. Patel and Dr. N. H. Kelawala were present as Guests of Honour. Director of Agriculture, Horticulture and Animal Husbandry, Govt. of Gujarat, Shri B. M. Modi, Dr. P. M. Vaghasiya and Dr. A. J. Kachhiapatel also graced the occasion. Dr. K. B. Kathiria, Director of Research, AAU, Anand welcomed the dignitaries, invited guests, conveners of various sub-committees and scientists. In his welcome speech, he highlighted the research activities carried out by different scientists under various AGRESCO sub-committees. The meeting was inaugurated by lighting the lamp by Shri Sanjay Prasad (IAS) and other dignitaries. Dr. N. C. Patel, Hon. Vice Chancellor of AAU, Anand, welcomed the Chief Guest Shri Sanjay Prasad (IAS) by offering the flowers. The other dignitaries on the dais were also welcomed by offering the flowers. The launching of AAU *Prerna Geet* as well as release of Audio CD and books of the same accomplished by the dignitaries on the dais.

Shri B. M. Modi, Director of Agriculture, GoG, in his speech, emphasized to work on low cost technology. Further, he expressed that water saving technology will help in water and fertilizer savings through increasing their use efficiency. Dr. P. M. Vaghasiya, Director of Horticulture stressed that recommendations made by the Universities should reach to the farmers as early as possible and they should be user friendly. It is also desirable to sell seeds from KVK of the universities. There is a need to stress on onion, potato and tomato value addition /

processing. The work on vegetable grafting was also emphasized. Dr. A. J. Kachhiapatel, Director of Animal Husbandry, appreciated good co-operation and support of Veterinary Colleges to Department of Animal Husbandry. He also mentioned that all five universities are doing good research work. He stressed on quality feed and fodder production for better animal health and to increase economic returns of cattle keepers. He also narrated the success of measures undertaken for camel milk production.

Dr. N. H. Kelawala, Hon. Vice Chancellor, KU, Gandhinagar emphasized to work out the adoption rate of recommendations made by SAUs and KU. He indicated that, there is a need to strengthen work on fisheries, fresh water and aqua culture sector.

Prof (Dr.) Ashok A. Patel, Hon. Vice Chancellor, SDAU, S. K. Nagar narrated research achievements of SDAU during last year. He expressed his concern for the depleting man power including the scientists and faculty in SAUs and requested for the remedial measures.

Dr. C. J. Dangaria, Hon. Vice Chancellor, NAU, Navsari emphasized on basic research and management of natural resources particularly soil and water. He also stressed on requirement of applied research and to address marketing strategies. He informed that the KVK, at Vyara has been recognized as the best KVK in West zone.

Dr. A. R. Pathak, Hon. Vice Chancellor, JAU, Junagadh congratulated AAU for launching *Prerna Geet* and for securing good NIRF ranking. He informed the house that JAU has released bio-fortified variety of pearl millet. Further, he emphasized that minimum requirements should be fulfilled in newly established colleges. He urged the house for focusing on five letters in a sequence PQRST - i.e. research outcome should have Profitability, Quality, Remunerative, Sustainable with good Trading. Agricultural research sustainability is important as green revolution was found to be effective with good results upto 1990, but then after problems of soil degradation etc. have been observed. He noted that Intergovernmental Panel on Climate Change (IPCC) declared that during 2040, the temperature will increase upto 2 $^{\circ}$C. In this context, we have to start work on effect of temperature on plant / animal, reduction in Fertilizer Use Efficiency (FUE) etc. Site specific recommendations and Site Specific Nutrient Management (SSNM), Nano fertilizers will help to increase the FUE. He also opined that speed breeding is the demand of the day.

Dr. N. C. Patel, Hon. Vice Chancellor of AAU, Anand endorsed the views of all the Vice Chancellors and Government Officers expressed for betterment of agriculture in Gujarat. He emphasized on reducing cost of cultivation, and expressed that sustainable technologies will help to increase the efficiency of all inputs. He also appreciated support of all the line departments and Govt. of Gujarat.

Publications prepared in vernacular language in the form of CDs/book/booklet/pamphlet for farmers/students/government officers/policy makers were released by dignitaries.

This was followed by felicitation of the Chief Guest, Shri Sanjay Prasad (IAS), Additional Chief Secretary and all four Vice Chancellors of SAUs Dr. N. C. Patel, Hon. Vice Chancellor of AAU, Anand; Dr. A. R. Pathak, Hon. Vice Chancellor, JAU, Junagadh; Prof (Dr.) Ashok A. Patel, Hon. Vice Chancellor, SDAU, S. K. Nagar and Dr. C. J. Dangaria, Hon. Vice Chancellor, NAU, Navsari, who will be retiring from their respective present services before the next Combined AGRESCO meeting. The house took the opportunity to honor them for their whole hearted services for the agricultural research by offering shawls and mementos.

In his address, Shri Sanjay Prasad (IAS), Additional Chief Secretary, GoG informed that for sustainable yield we have to consider climate change scenario in package of practices for different crops of the respective agro-climatic zones. He also emphasized application of remote sensing in agriculture. He expressed that Gujarat is doing well with respect to soil fertility testing and advisory to the farmers under soil health card programme but further more precise information is necessary for doubling the income of farmers. Government is doing yield estimation, crop cutting experiment estimation etc with the help of BISAG. He expressed the hope that whatever outcome is generated during these three days deliberation in the form of recommendations will be implemented by the farmers. Line departments of the state and SAUs should take necessary steps for more and more implementation of the developed technologies.

Dr. M. K. Jhala, Associate Director of Research (Animal Science), AAU, Anand proposed Vote of Thanks at the end of inaugural session.

15.1. CROP IMPROVEMENT

Chairman : Dr. A. R. Pathak, Hon'ble Vice Chancellor, JAU, Junagadh
Co-Chairman : Dr. K. B. Kathiria, Director of Research, AAU, Anand
: Dr. K. L. Dobariya, Research Scientist (Groundnut), JAU, Junagadh
Rapporteurs : Dr. R. M. Chauhan, Research Scientist (Seed), SDAU, SKNagar
: Dr. R. R. Acharya, Research Scientist (Vegetable), AAU, Anand
: Dr. V. P. Patel, Assoc. Research Scientist (GPB), RRRS, NAU, Vyara

Presentation of recommendations and technical programmes by Conveners of SAUs

Name		Designation & University
1	Dr. S. D. Solanki	Assoc. Res. Sci., Dept. of Seed Technology, SDAU, SKNagar
2	Dr. P. B. Patel	Assoc. Res. Scientist, Main Rice Research Station, NAU, Navsari
3	Dr. K. L. Dobariya	Research Scientist (Groundnut), Main Oilseed Research Station, JAU, Junagadh
4	Dr. H. L. Dhaduk	Assoc. Research Scientist & Head, Medicinal and Aromatic Plants Research Station, AAU, Anand

Summary

Name of University	No. of Recommendations				New Technical Programmes	
	Farming Community		Scientific Community			
	Proposed	Approved	Proposed	Approved	Proposed	Approved
SDAU, SKNagar	10	07	00	00	04	03
NAU, Navsari	11	09	00	00	00	00
JAU, Junagadh	07+01	06+01	00	00	06	06
AAU, Anand	08	07	00	00	04	04
Total	**36+01**	**29+01**	**00**	**00**	**14**	**13**

(I) RECOMMENDATION/ RELEASE PROPOSAL OF VARIETIES/ HYBRIDS FOR FARMING COMMUNITY

SARDARKRUSHINAGAR DANTIWADA AGRICULTURAL UNIVERSITY, SKNagar

15.1.1.1	**WHEAT VARIETY: Bread wheat variety GW 499**
	The bread wheat growing farmers of Gujarat state are recommended for cultivation of GW 499 in late sown irrigated condition as it exhibits 46.02 q/ha average grain yield with a tune of 12.05, 7.52 and 13.34 per cent higher grain yield than check varieties GW 173, GW 11 and LOK 1, respectively. Moreover, it is good quality bread wheat genotype with excellent chapatti quality along with high protein content (13.9%) and Test weight (78.2 kg/hl). It has high level of essential micronutrient zinc (50.99 ppm). It possess high degree of resistance against black and brown rust.
	ગુજરાત રાજ્યના પિયત ઘઉંની મોડી વાવણી કરતાં ખેડૂતો માટે ઘઉંની ટુકડી જાત ગુજરાત ઘઉં ૪૯૯ વાવેતર કરવા ભલામણ કરવામાં આવે છે. આ જાતના દાણાનું સરેરાશ ઉત્પાદન ૪૬.૦૨ કિવ./હે છે. જે અંકુશ જાતો ગુજરાત ઘઉં ૧૭૩, ગુજરાત ઘઉં ૧૧ અને લોક ૧ કરતાં અનુક્રમે ૧૨.૦૫, ૭.૫૨ અને ૧૩.૩૪ ટકા વધારે દાણાનું ઉત્પાદન આપે છે. આ જાત ગુણવત્તાયુક્ત છે જેમાં જસતનું પ્રમાણ (૫૦.૯૯ પીપીએમ) અને પ્રોટીન (૧૩.૯ ટકા) છે. જે અંકુશ જાતોની સરખામણીએ વધારે છે. તદ્ઉપરાંત આ જાત કાળા અને બદામી ગેરુ સામે રોગપ્રતિકારક શક્તિ ધરાવે છે.

<table>
<tr><td></td><td>Release proposal was accepted by the house with following suggestions.
1. Recast the point 5(a)-pedigree details, 7(a)-recommendation reference and 15-information of DNA fingerprinting.
2. Data of Sanosara LSVT 2018-19 and Junagadh LSVT 2017-18 should be considered in Table-1 to calculate the mean.
3. Yield data of AICRP centers should be mentioned in Table-3.
4. Add rust data of IVT-IBSC in Table-7.
5. Give popular name to the variety.
6. In overall mean data trial number should be mentioned.
7. Calculate the respected mean against check and verify the frequency of non-significant group.
[Action: Research Scientist, Wheat Research Station, SDAU, Vijapur]</td></tr>
<tr><td>15.1.1.2</td><td>WHEAT VARIETY: Durum wheat variety GW 1339</td></tr>
<tr><td></td><td>The farmers of Gujarat state growing durum wheat are recommended for cultivation of durum wheat variety GW 1339 under timely sown irrigated condition as it exhibits 50.1 q/ha average grain yield with a tune of 10.50, 16.63 and 13.07 per cent higher than check varieties GDW 1255, HI 8498 and HI 8737, respectively. It is good quality durum wheat genotype with early maturity and bold grains. It has good level of beta carotene content (5.50 ppm), berry incidence was not observed. The protein content in the grain is comparable with check varieties. It possesses high degree of resistance against black and brown rust.</td></tr>
<tr><td></td><td>ગુજરાત રાજ્યના પિયત કાઠિયા ઘઉંની સમયસરની વાવણી કરતાં ખેડૂતો માટે ઘઉંની કાઠિયા જાત ગુજરાત ઘઉં ૧૩૩૯ નુ વાવેતર કરવા ભલામણ કરવામાં આવે છે. આ જાતના દાણાનું સરેરાશ ઉત્પાદન ૫૦.૧ કિવ./હે મળેલ છે. જે અંકુશ જાતો જીડીડબલ્યુ ૧૨૫૫, એચઆઇ ૮૪૯૮ અને એચઆઇ ૮૭૩૭ કરતાં અનુક્રમે ૧૦.૫૦, ૧૬.૬૩ અને ૧૩.૦૭ ટકા વધારે દાણાનું ઉત્પાદન આપે છે. સૂચિત જાતમાં બિટા કેરોટિન નુ પ્રમાણ (૫.૫૦ પીપીએમ) છે. વધુમાં આ જાત પોટીયાપણા રહિત છે. આ જાત કાળા અને બદામી ગેરુ સામે રોગપ્રતિકારક શક્તિ ધરાવે છે.</td></tr>
<tr><td></td><td>Release proposal was accepted by the house with following suggestions.
1. Check the frequency of non-significant group, testing symbol and weighted mean.
2. Recast the point 5(a)-pedigree details, 7(a)-recommendation reference and 15-information of DNA fingerprinting.
3. Give important morphological features in point 9(b).
4. Add observations related to pests.
5. CD% should be corrected in Table-3.
6. Add rust data of AICRP in Table-7.
7. Give popular name to the variety.
[Action: Research Scientist, Wheat Research Station, SDAU, Vijapur]</td></tr>
<tr><td>15.1.1.3</td><td>COTTON HYBRID: Gossypium hirsutum L. hybrid GTHH 217</td></tr>
<tr><td></td><td>Farmers of Gujarat state growing cotton irrigated as well as rainfed condition are advised to grow cotton hybrid G.Cot.Hy-20 (GTHH 217). Under irrigated condition this hybrid produced 2790 kg/ha seed cotton yield which was 25.4, 23.3, 41.8, 54.6 and 32.5 per cent higher as compared to G.Cot.Hy-12, G.Cot.Hy-14, GD.Cot.Hy-1, G.Cot.Hy-10 and Ankur 651, respectively. Under rainfed condition this hybrid gave 2616 kg/ha seed cotton yield which was 19.6, 13.1 and 41.0 per cent higher as compared to G.Cot.Hy-12, G.Cot.Hy-8 and Ankur 651.</td></tr>
</table>

ગુજરાતમાં પિયત અને બિન પિયત પરિસ્થિતિમાં કપાસઉગાડતા ખેડુતોને કપાસ ની સંકર જાત ગુ. કપાસ સંકર-૨૦ (જીટીએચએચ ૨૧૭) વાવવાની ભલામણ છે. આ જાત પિયત પરિસ્થિતિમાં ૨૭૯૦ કી.ગ્રા./હે કપાસનુ ઉતપાદન આપે છે જે અંકુશિત જાતો ગુ. કપાસ સંકર – ૧૨, ગુ. કપાસ સંકર- ૧૪, ગુ.હા. કપાસ સંકર-૧, ગુ. કપાસ સંકર- ૧૦ અને અંકુર ૬૫૧ કરતા અનુક્રમે ૨૫.૪, ૨૩.૩, ૪૧.૮, ૫૪.૬ અને ૩૨.૫ ટકા વધુ ઉત્પાદન આપે છે. બિન પિયત પરિસ્થિતિમાં આ જાત ૨૬૧૬ કી.ગ્રા./હે ઉતપાદન આપે છે જે અંકુશિત જાતો ગુ. કપાસ સંકર – ૧૨, ગુ. કપાસ સંકર- ૮, અને અંકુર ૬૫૧ કરતા અનુક્રમે ૧૯.૬, ૧૩.૧, અને ૪૧.૦ ટકા વધુ ઉત્પાદન આપે છે.

The variety is accepted with following suggestions.

1. The hybrid was pre released. Add GOT distinguished characters of hybrid and parents.
2. Recast the point 7(a)-recommendation reference and correct Table- 1.

[Action:** Associate Research Scientist, Cotton Research Station, Talod**]

15.1.1.4 GUAR VARIETY: Gujarat Guar 3 (GG 3)

The proposed variety Gujarat Guar 3 (GG 3) is recommended for Gujarat state. It exhibited 1219 kg/ha grain yield which is 15.33 and 31.94 per cent higher than the checks GG 1 and GG 2, respectively. It is an early maturing, having high test weight, attractive grey color and high gum content (29.36 %). It is resistant to bacterial leaf blight disease.

ગુજરાત રાજ્યમાં ગુવારનું વાવેતર કરતા ખેડૂતો માટે ગુજરાત ગુવાર ૩ જાત ની ભલામણ કરવામાં આવે છે. આ જાતના દાણાનું ઉત્પાદન ૧૨૧૯ કિગ્રા/હે. મળેલ છે, જે નિયંત્રિત જાતો ગુજરાત ગુવાર ૧ અને ગુજરાત ગુવાર ૨ કરતાં અનુક્રમે ૧૫.૩૩ અને ૩૧.૯૪ ટકા વધારે ઉત્પાદન આપે છે. આ જાત વહેલી પાકતી તેમજ દાણો મોટો, આકર્ષક રાખોડી રંગનો અને વધારે ગુંદર (૨૯.૩૬ %) ધરાવે છે. આ જાત પાનમાં થતા બેક્ટેરીયલ બ્લાઈટ રોગ સામે પ્રતિકારક શક્તિ ધરાવે છે.

The house suggested to evaluate the variety for one more year.

[Action:** Research Scientist, Pulses Research Station, S.K.Nagar**]

15.1.1.5 COWPEA VARIETY: Gujarat Cowpea 7 (GC 7)

The proposed variety Gujarat cowpea 7 (GC 7) is recommended for Gujarat state in *kharif* and summer season. It recorded 1072 kg/ha grain yield which was 24.51, 14.39, 14.26 and 5.36 per cent higher than the checks *viz.*, GC 3, GC 4, GC 5 and GC 6, respectively. It is an early maturing, having medium seed size and attractive lustrous light brown seed color. It is resistant against YMV; root rot and cercospora leaf spot diseases. It showed lower infestation of whitefly.

ગુજરાત રાજ્યમાં ચોળીનું વાવેતર કરતા ખેડૂતો માટે ગુજરાત ચોળી ૭ જાત ચોમાસુ અને ઉનાળુ ઋતુમાં વાવેતર માટે ભલામણ કરવામાં આવે છે. આ જાતના દાણાનું ઉત્પાદન ૧૦૭૨ કિગ્રા/હે. મળેલ છે, જે નિયંત્રિત જાતો ગુજરાત ચોળી ૩, ગુજરાત ચોળી ૪, ગુજરાત ચોળી ૫, અને ગુજરાત ચોળી ૬ કરતા અનુક્રમે ૨૪.૫૧, ૧૪.૩૯, ૧૪.૨૬, અને ૫.૩૬ ટકા વધારે ઉત્પાદન આપે છે. આ જાત વહેલી પાકતી તેમજ દાણો મધ્યમ કદનો, આકર્ષક ચળકતો અને આછો તપખીરીયો રંગ ધરાવે છે. આ જાત પાનમાં થતા ટપકાં, પીળાપંચરગીયા અને મૂળના કહોવારાના રોગ સામે પ્રતિકારક શક્તિ ધરાવે છે અને સફેદ માખીનો ઓછો ઉપદ્રવ જોવા મળેલ છે.

The house suggested to pre release the variety with following suggestions.

1. Generate one more year data for YMV and root rot.
2. Separate summer and *kharif* yield data.
3. Add DNA fingerprinting data.

	4. Recast the proposal as per format. ***[Action:** Research Scientist, Pulses Research Station, S.K.Nagar]*
15.1.1.6	**GUAVA VARIETY : L 49**
	The proposal of this variety was not accepted. ***[Action:** Associate Research Scientist, Fruit Research Station, Dehgam]*
15.1.1.7	**MAIZE HYBRID: Gujarat Dantiwada Yellow Maize Hybrid (GDYMH-1)**
	The hybrid GDYMH-1 (Gujarat Dantiwada Yellow Maize Hybrid-1) is recommended for North Gujarat Agro-climatic zone for *Kharif* cultivation. This hybrid exhibited average yield of 5417 kg/ha in *kharif* season. It yielded 24.60 and 36.60 per cent significantly higher yield than checks GAYMH-1 and GM 2, respectively. Variety has high test weight (395 g). This hybrid shows resistant against Maydis Leaf Blight (MLB) and stem borer under field condition. The quality point of view, this hybrid contains 66.79% starch, 10.07% protein as well as 0.72% tryptophan and 3.51% lysine in the protein which is higher than both the checks.
	ઉત્તર ગુજરાત ખેત-આબોહવાકીય વિસ્તારમા ચોમાસુ રૂતુમા વાવેતર કરવા માટે સંકર જાત ગુજરાત દાંતીવાડા પીળી સંકર મકાઇની ભલામણ કરવામા આવે છે. આ સંકર જાત ચોમાસુ રૂતુમા વહેલી પાકતી, પીળા રંગના મોટા દાણા વાળી તથા ૩૯૫ ગ્રામ (૧૦૦૦ દાણા)નુ વજન ધરાવતી સરેરાશ ૫૪૧૭ કિ.ગ્રા./હે. ઉત્પાદન આપે છે. જે અંકુશ જાત ગુજરાત આણંદ પીળી સંકર મકાઇ ૧ અને ગુજરાત મકાઇ ૨ કરતા અનુક્રમે ૨૪.૬૦ અને ૩૬.૬૦ ટકા વધારે ઉત્પાદન આપે છે. આ સંકર જાત પાનનો સૂકારો અને ગાભમારાની ઇયળ સામે પ્રતિકારક શક્તિ ધરાવે છે. ગુણવત્તાની દ્રષ્ટિએ આ સંકર જાતમાં ૬૬.૭૯ ટકા સ્ટાર્ચ, ૧૦.૦૭ ટકા પ્રોટિન ધરાવે છે, તેમજ પ્રોટિનમાં ૦.૭૨ ટકા ટ્રીપ્ટોફન અને ૩.૫૧ ટકા લાયસીન અંકુશ જાતો કરતા પ્રમાણમાં વધારે છે.
	Release proposal was accepted by the house with following suggestions. 1. Write introduction and salient features. 2. Recast the title of Table-2. 3. Recast the point 7(a)-recommendation reference and 15-information of DNA fingerprinting. ***[Action:** Assistant Research Scientist, Maize Research Station, Bhiloda]*
15.1.1.8	**GRAIN AMARANTH VARIETY: Grain Amaranth 6 (GA 6)**
	The Proposed variety SKNA 401 (18.21 q/ha) has superior for grain yield over local check GA 3 (16.42 q/ha) and national check GA 2 (15.93 q/ha) at state level 10.86 and 14.26 per cent, respectively. It has light green colour attractive inflorescences and foliage, early maturity and medium plant height with thick stem that prevent lodging. Grain of proposed variety is light creamy white in colour, higher in test weight (bold seed) with high protein content (11.52 %). Any disease and insect pest damage were not observed under field condition during evaluation. Therefore, the variety SKNA 401(GA 6) is proposed for recommendation for cultivation in Amaranth growing area of Gujarat.
	ગુજરાત રાજ્યના રાજગરો વાવતા ખેડૂતોને ભરાવદાર લીલાશ પડતા ડૂંડાવાળી વેહલી પાકતી, ઢળી પડવા સામે પ્રતિકારકતા ધરાવતી, મોટા ચમકદાર દાણાવાળી વધુ પ્રોટીન ધરાવતી તેમજ ગુજરાત રાજગરો – ૩ તથા ગુજરાત રાજગરો – ૨ જાત કરતા અનુંક્રમે ૧૦.૮૬ અને ૧૪.૨૬ ટકા વધારે ઉત્પાદન આપતી ગુજરાત રાજગરો – ૬ (૧૮૨૧ કી.ગ્રા./હે) જાતની વાવેતર માટે ભલામણ કરવામાં આવે છે.
	Release proposal was accepted by the house with following suggestions. 1. Recast the Table- 1 by deleting high CV% data of Ladol and S.K.Nagar locations.

	2. Remove Table- 2 a, b, c and d as well as Table-7. 3. Recast the point number 7 (b), 9 (b) and 14. ***[Action :** Associate Research Scientist, Centre for Crop Improvement, S.K.Nagar**]***
15.1.1.9	**POTATO VARIETY : Kufari Khayati (J/93-86)**
	In 75 days harvest, the endorsed variety Kufri Khyati recorded (44.22 t./h.) 18.74 per cent and 9.10 per cent higher total tuber yield and 19.48 per cent and 13.78 per cent marketable tuber yield over the years against popular varieties Kufri Badshah and Kufri Pukhraj, respectively. The potato growers of North Gujarat are recommended to grow variety Kufri Khyati. It is early bulking and has advantage of harvest at 75 days to fetch a premium rate.
	ઉત્તર ગુજરાતમાં બટાટા ઉગાડતા ખેડૂતોને કુફરી ખ્યાતિ જાતનું વાવેતર કરવા ભલામણ કરવામાં આવે છે. કુફરી ખ્યાતિ વહેલી પાકતી જાત હોવાથી બજાર ભાવ પ્રમાણે ૭૫ દિવસના પાકની કાપણી કરી બજારમાં વહેલી ઉપલબ્ધ કરી સારો ભાવ મેળવી શકાય છે.
	Release proposal for endorsement was accepted by the house with following suggestions. 1. Write trial name in Table-1. ***[Action:** Associate Research Scientist, Potato Research Station, Deesa**]***
15.1.1.10	**CUMIN VARIETY: Gujarat Cumin 5 (GC-5)**
	Proposed variety JC-95-103 (GC-5) is early maturing (92 days), which was two week early than GC-4 (108 days), high yielding with an average seed yield of 686 kg/ha, which was 3.19 per cent higher than GC-4 at state level and 3.55 per cent volatile oil content.
	ગુજરાત રાજ્યના જીરૂ ઉગાડતા ખેડૂતોને વહેલી પાકતી, સૂકારા સામે મધ્યમ રોગ પ્રતિકારક અને વધુ ઉત્પાદન (૬૮૬ કી.ગ્રા./હે.) આપતી ગુજરાત જીરૂ-૫ ની વાવેતર માટે ભલામણ કરવામા આવે છે.
	Release proposal was accepted by the house with following suggestions. 1. Data needs to be presented in proper format. 2. In recommendation text, yield data should be mentioned. 3. Recast Table-1. ***[Action:** Research Scientist, Seed Spices Research Station, Jagudan**]***

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15.1.1.11	**SOYBEAN VARIETY: Phule Agrani (KDS-344)**
	The soybean variety Phule Agrani recorded 2504 kg/ha average grain yield in South Gujarat region where it exhibited 15.52, 20.96, 26.40 and 32.13 per cent grain yield superiority over the local checks NRC-37, GS-3, GS-2 and national check JS-335, respectively. The proposed variety is non shattering type with moderately resistant reaction against rust and yellow vein mosaic disease and also moderately resistant to defoliator and pod borer compared to other checks. It contains 18.6 per cent oil content and 41 per cent seed protein content having medium seed size and yellow seed colour. Soybean variety Phule Agrani is recommended for endorsement for cultivation in South Gujarat for *kharif* season.
	દક્ષિણ ગુજરાતમાં સોયાબીનની નવી જાત ફુલે અગ્રણીનું સરેરાશ ઉત્પાદન ૨૫૦૪ કિલો/હેકટર છે. જે સ્થાનિક જાતો એન.આર.સી.-૩૭,ગુજરાત સોયાબીન-૩ અને ગુજરાત સોયાબીન-૨ તેમજ રાષ્ટ્રીય કક્ષાની જાત જે.એસ-૩૩૫ કરતા અનુક્રમે ૧૫.૫૨, ૨૦.૯૬,૨૬.૪૦ અને ૩૨.૧૩ ટકા વધુ ઉત્પાદન આપે છે. સીંગ ન ફાટવાના ગુણધર્મ ધરાવતી સોયાબીનની નવી જાત ગેરુ તથા પીળા પંચરંગીયા રોગ સામે અને પાનખાનારી ઈયળ તેમજ શીંગ વેધક ઈયળ સામે

	મધ્યમ પ્રતિકારક શકિત ધરાવે છે. આ જાત ૧૮.૬ ટકા તેલ અને ૪૧ ટકા પ્રોટીન ધરાવે છે તેમજ આ જાતના દાણા મધ્યમ કદના અને પીળાશ પડતો રંગ ધરાવે છે. સોયાબીનની નવી જાત ફુલે અગ્રણી દક્ષિણ ગુજરાતમાં ખરીફ વાવેતર માટે ભલામણ કરવામાં આવે છે.
	Release proposal was accepted by the house with following suggestions. 1. In Table-1, yield and mean data needs to be checked. ***[Action:** Associate Research Scientist, NRS, NAU, Vanarasi]*
15.1.1.12	**COTTON VARIETY: GISV-272 (G.Cot.34)**
	The *hirsutum* cotton variety GISV-272 recorded 2622 kg/ha average seed cotton yield in Gujarat where it exhibited seed cotton yield advantage of 64.6, 92.0 and 67.1 per cent over check varieties G.Cot.10, G.Cot.16 and Suraj, respectively with narrow spacing at 60 x 15 cm under irrigated condition. The lint yield in GISV-272 was 1003 kg/ha which was 51.5, 137.7 and 102.2 per cent higher than G.Cot.10, G.Cot.16 and Suraj, respectively. It has 36.2 per cent ginning outturn. GISV 272 showed resistant reaction against Alternaria leaf spot and moderately resistant reaction against bacterial leaf blight while no infection of wilt. The sucking pests, open boll and locule damage in GISV 272 was below ETL. This variety is medium late in maturity. Thus, *hirsutum* cotton variety GISV-272 is recommended for endorsement in Gujarat for high density planting as G.Cot.34.
	ગુજરાત રાજયનાં પિયત વિસ્તારમાં હિરસુટમ કપાસની જાત જી.આઈ.એસ.વી.-૨૭૨નું સાંકડાગાળે ૬૦×૧૫ સેમી. નાં અંતરે વાવેતર કરવાથી કપાસનું સરેરાશ ઉત્પાદન ૨૬૨૨ કિ.ગ્રા./હેકટર આપે છે. જે પ્રચલિત જાતો જેવી કે જી.કોટ.૧૦, જી.કોટ.૧૬ અને સુરજ કરતાં અનુક્રમે ૬૪.૬, ૯૨.૦ અને ૬૭.૧ ટકા વધુ ઉત્પાદન આપે છે. જી.આઈ.એસ.વી.-૨૭૨નું રૂ નું ઉત્પાદન ૧૦૦૩ કિ.ગ્રા./હેકટર મળેલ છે. જે પ્રચલિત જાતો જી.કોટ.૧૦, જી.કોટ.૧૬ અને સુરજ કરતાં અનુક્રમે ૫૧.૫, ૧૩૭.૭ અને ૧૦૨.૨ ટકા વધુ છે. આ જાતની રૂ ની ટકાવારી ૩૬.૨ % છે. આ જાત પાનના ટપકાંના રોગ સામે પ્રતિકારક તેમજ પાનના સુકારાના રોગ સામે મધ્યમ રોગપ્રતિકારક જયારે મૂળનાં સુકારાનાં રોગનાં લક્ષાણો જણાયેલ નથી. જી.આઈ.એસ.વી.-૨૭૨માં ચુસિયા જીવાતો,ખુલ્લા જીંડવા અને કાલાનું નુકશાન આથિક ક્ષમ્ય માત્રા કરતાં ઓછું આવે છે. આ જાત મધ્યમ મોડી પાકતી જાત છે. જેથી ગુજરાતમાં હિરસુટમ કપાસની જાત જી.આઈ.એસ.વી.- ૨૭૨ને ઘનિષ્ઠ પાક પધ્ધતિમાં વાવેતર કરવા "જી.કોટ.૩૪" તરીકે એન્ડોર્સમેન્ટ માટે ભલામણ કરવામાં આવે છે.
	Release proposal was accepted by the house with following suggestions. 1. Add information related to high density planting in point 9 (g). ***[Action:** Research Scientist, MCRS, NAU, Surat]*
15.1.1.13	**SUGARCANE VARIETY: CoN 13072 (GNS-11)**
	Early maturing erect sugarcane genotype CoN 13072 recorded 133.28 t/ha average cane yield in South Gujarat, where it exhibited overall 12.19, 25.47 and 17.93 per cent cane yield superiority over the checks CoN 05071, CoC 671 and CoN 09072, respectively. This clone possess higher sugar yield showed moderately resistant reaction against major diseases like wilt and red rot while resistant against whip smut. The proposed clone showed less susceptible reaction to major insects and it is a good ratooner. Sugarcane clone CoN 13072 is recommended for sugarcane growing areas of South Gujarat as GNS-11.
	વહેલી પાકતી અને ઢળી ન પડે તેવી સીધી શેરડીની જાત કો.એન. ૧૩૦૭૨ જે દક્ષિણ ગુજરાતમાં ૧૩૩.૨૮ ટન/હેકટર જેટલું સરેરાશ ઉત્પાદન નોંધાયેલ છે જે કો.એન. ૦૫૦૭૧, કોસી. ૬૭૧ તથા કો.એન. ૦૯૦૭૨ કરતાં અનુક્રમે ૧૨.૧૯, ૨૫.૪૭ અને ૧૭.૯૩ ટકા વધુ સાંઠાનું ઉત્પાદન આપે છે.આ જાત વેપારી ખાંડનું પણ ઉત્પાદન વધુ આપે છે. શેરડીની જાત સુકારો અને રાતડો સામે મધ્યમ પ્રતિકારક તથા ચાબુક આંજિયા સામે પ્રતિકારક છે તથા મહત્વની જીવાતો સામે ઓછી ગ્રાહય છે અને તેની લામ પાકની ક્ષામતા સારી છે. શેરડીની આ નવી જાત કો.એન.

	૧૩૦૭૨ દક્ષિણ ગુજરાત માટે જી.એન.એસ. -૧૧ તરીકે વાવેતર માટે ભલામણ કરવામાં આવે છે.
	Release proposal was accepted by the house with following suggestions. 1. Recast Table-1 and add weighted mean data. 2. Put all ancillary observations in one common table. 3. Delete data of Sameer wadi location from Table-2. 4. Need clarification on missing yield data of 2014-15 & 2015-16. 5. Add pest& disease data of the year 2017-18 & 2018-19 in Table-13 and 14. ***[Action:** Research Scientist, MSRS, NAU, Navsari**]***
15.1.1.14	**PIGEON PEA VARIETY: NPEK-15-14 (GT-105)**
	The average yield of pigeon pea variety NPEK-15-14 (GT-105) is 1829 kg/ha. It exhibited overall yield advantage of 14.8, 13.6, 27.5 and 17.8 per cent over the checks GT-101, GT-103, UPAS-120 and P-992, respectively. The variety GT-105 matures within 140-150 days (Early group) with spreading in nature, having yellow flower colour, straight green pod, 3-5 seeds per pod and cream seed colour. It has high yield potential and resistance against SMD. The pigeon pea variety GT-105 is recommended for *kharif* season in Gujarat.
	તુવેરની જાત એન.પી.ઈ.કે.૧૫-૧૪ (જી.ટી.-૧૦૫) નું સરેરાશ ઉત્પાદન ૧૮૨૯ કિ.ગ્રા. પ્રતિ હેકટર છે, જે અન્ય પ્રચલિત જાતો જી.ટી.૧૦૧, જી.ટી.૧૦૩, ઉપાસ-૧૨૦ અને પી.૯૯૨ કરતાં અનુક્રમે ૧૪.૮, ૧૩.૬, ૨૭.૫ અને ૧૭.૮ ટકા વધારે છે. આ જાત ૧૪૦-૧૫૦ દિવસમાં પાકતી હોય, વહેલી પાકતી જાતોના વર્ગમાં સમાવેશ થાય છે. આ જાત મધ્યમ ઘેરાવો ધરાવતી, પીળા રંગના ફૂલવાળી, લીલી શીંગો ધરાવતી અને પ્રતિ શીંગ ૩-૫ સફેદ રંગના દાણા ધરાવે છે. આ જાતની ઉત્પાદકતા વધારે છે. તેમજ વંધ્યત્વ રોગ સામે પ્રતિકારકતા ધરાવે છે. તુવેરની જાત જી.ટી.-૧૦૫ ને સમગ્ર ગુજરાત રાજયમાં ચોમાસું ઋતુમાં વાવેતર માટે ભલામણ કરવામાં આવે છે.
	Release proposal was accepted by the house with following suggestions. 1. Correct CD% and CV% data of Dahod location in Table-**3.** 2. Recast point 9 (g) i.e. condition of sowing. 3. Add ancillary observations of GT 103 in Table 9 (a). 4. Merge Table- 5, 6 and 7. 5. Add wilt disease data of check variety in S.K.Nagar location in Table-10 (d). 6. Add data of wilt disease. ***[Action:** Associate Research Scientist, PRS, NAU, Navsari**]***
15.1.1.15	**URDBEAN VARIETY: NUK-15-09 (GU-3)**
	The average yield of urdbean variety NUK-15-09 (GU-3) is 934 kg/ha. It exhibited overall yield advantage of 11.1 and 15.9 per cent over the check varieties GU-1 and T-9, respectively. It matures within 95-100 days (medium group), having indeterminate growth habit with medium seed size and shiny black seed colour. It has high yield potential and resistance against YMV disease. The variety GU-3 is recommended for *kharif* as well as summer seasons of South and Middle Gujarat.
	અડદની જાત એન.યુ.કે.-૧૫-૦૯ (જી.યુ.-૩) નું સરેરાશ ઉત્પાદન ૯૩૪ કિ.ગ્રા. પ્રતિ હેકટર છે, જે અન્ય પ્રચલિત જાતો જી.યુ.-૧ અને ટી.૯ કરતાં અનુક્રમે ૧૧.૧ અને ૧૫.૯ ટકા વધારે છે. આ જાત ૯૫-૧૦૦ દિવસમાં પાકી જાય છે. તે અનિયંત્રિત વૃધ્ધિ ધરાવતી અને મધ્યમ કદનાં ચળકતા કાળા રંગના દાણા ધરાવે છે. આ જાતની ઉત્પાદકતા વધારે છે તેમજ પીળા પંચરંગીયા રોગ સામે પ્રતિકારક શક્તિ ધરાવે છે. અડદની જાત જી.યુ.-૩ ને ચોમાસું અને ઉનાળુ ઋતુમાં વાવેતર માટે દક્ષિણ અને મધ્ય ગુજરાતમાં ભલામણ કરવામાં આવે છે.
	Release proposal was accepted by the house for south Gujarat with following suggestions. 1. Exclude data from mean with high CV% in Table- 1. 2. Correct point 9 (c).

	3. Recast the title of Table-12 (a) and (b). 4. Provide add dal recovery data. ***[Action:** Associate Research Scientist, PRS, NAU, Navsari]*
15.1.1.16	**SESBANIA VARIETY: NSB-9 (GD-1)**
	The green manure sesbania genotype NSB-9 recorded 41.06 t/ha mean green biomass yield in Gujarat, where it exhibited overall 19.95 and 19.68 per cent green biomass yield superiority with faster decomposition over the checks CSD-137 and CSD-123, respectively. It has higher initial vigour, fresh weight of plant, more number of leaves per plant, higher leaflets per leaf, which make it more productive for green manuring. It also possesses longer root length coupled with more number of root nodules with higher fresh weight of root nodules, which helps to fix higher atmospheric nitrogen in a unit area. Genotype has its capacity to incorporate higher organic C, available N, available P_2O_5 as well as K_2O in soil with low C:N ratio compared to check varieties. It is moderately resistant to damping off. Sesbania variety NSB-9 is recommended for green manuring in Gujarat as GD-1.
	ગુજરાતની પરિસ્થિતિમાં ઇક્કડની લીલા પડવાશ માટેની જાત એન.એસ.બી.-૯નું સરેરાશ ઉત્પાદન ૪૧.૦૬ ટન/હે. આવે છે. આ જાત એકંદરે સી.એસ.ડી.-૧૩૭ અને સી.એસ.ડી.-૧૨૩ કરતાં ૧૯.૯૫ અને ૧૯.૬૮ ટકા જેટલો વધારે લીલો પડવાશ આપે છે. આ જાતમાં વધારે પ્રારંભિક વૃધ્ધિ તેમજ વધુ પાનની સંખ્યા, પર્ણિકાઓ પ્રતિ પાનની સંખ્યા અને લીલા છોડનું વજન ધરાવતી હોવાથી લીલા પડવાશનુ વધારે ઉત્પાદન આપે છે. આ જાતના લાંબા મૂળ, વધુ મૂળગંડિકાઓ અને વધારે મૂળગંડિકાઓનુ વજન ધરાવતી હોવાથી વાતાવરણમાંથી પ્રતિ એકમ ક્ષેત્રફળ જમીનમાં વધુ નાઇટ્રોજન પ્રસ્થાપિત કરે છે. આ જાત જમીનમાં વધુ સેંન્દ્રીય કાર્બન, ઉપલબ્ધ નાઇટ્રોજન, ઉપલબ્ધ ફોસ્ફરસ તેમજ ઉપલબ્ધ પોટાશ ઉમેરે છે તથા અન્ય જાતો કરતાં ઓછો કાર્બન : નાઇટ્રોજનનો ગુણોતર ધરાવતી હોવાથી ખુબ જ ઝડપથી વિઘટન પામે છે, જેથી લીલા પડવાશ માટે ખુબ જ અનુકૂળ છે. આ જાત શરૂઆતના કોહવારા સામે મધ્યમ રોગ પ્રતિકારકશક્તિ ધરાવે છે. ઇક્કડની જાત એન. એસ. બી.-૯ને ગુજરાતમાં લીલા પડવાશ માટે જી.ડી.-૧ તરીકે ભલામણ કરવામાં આવે છે.
	Release proposal was accepted by the house with following suggestions. 1. Correct the point 5 (a), (b), 9 (b)- add distinguished traits and remove point 9(g-i) and give information of DNA fingerprinting in point 15. 2. Add days to 50% flowering data. 3. Verify the initial status of soil data in Table- 5. ***[Action:** Professor, Dept. of GPB, NMCA, Navsari]*
15.1.1.17	**MANGO GINGER VARIETY: NVMG-3 (GNMG-1)**
	The variety of mango ginger NVMG-3 recorded 10.74 t/ha mean green rhizome yield in South Gujarat condition, where it exhibited overall 34.98 % green rhizome yield superiority over check chikhli local. The other associated rhizome yield contributing characters with the genotype is having more number of tillers per plant, numbers of mother as well as finger rhizomes, higher rhizome length and width. The strong mango like aroma, presence of curcumin content, higher total oil content, high dry rhizome weight and powder recovery % are the value added traits. NVMG-3 is resistant to rhizome rot and moderately resistant against leaf blight. Mango ginger variety NVMG-3 is recommended for mango ginger growing areas of South Gujarat as GNMG-1.
	દક્ષિણ ગુજરાતની પરિસ્થિતિમાં આંબા હળદરની જાત એન.વી.એમ.જી.-૩માં લીલા ગાંઠીયાનુ સરેરાશ ઉત્પાદન ૧૦.૭૪ ટન/હેકટર આવે છે. આ જાત એકંદરે સ્થાનિક જાત ચીખલી

	લોકલ કરતાં ૩૪.૯૮ ટકા જેટલુ વધારે લીલા ગાંઠીયાનુ ઉત્પાદન આપે છે. આ જાત વધુ કુંટની સંખ્યા, માતૃ અને અંગુલી ગાંઠોની સંખ્યા, ગાંઠોની લંબાઇ અને પહોળાઇ ધરાવતી હોવાથી વધુ ઉત્પાદન આપે છે. કેરી જેવી તીવ્ર સુગંધ અને કરકુમીન, કુલ તેલની ટકાવારી તેમજ વધુ સુકા ગાંઠીયાનુ વજન અને પાવડરનું પ્રમાણ આ જાતના મૂલ્યવર્ધક ગુણો છે. આ જાત ગાંઠના સડા સામે પ્રતિકારક અને પાનના સુકારા સામે મધ્યમ રોગપ્રતિકારક શક્તિ ધરાવે છે. આંબા હળદરની જાત એન.વી.એમ.જી.-૩ને દક્ષિણ ગુજરાતમાં આંબા હળદરની ખેતી કરતા વિસ્તારમાં જી.એન. એમ.જી.-૧ તરીકે ભલામણ કરવામાં આવે છે.
	The house suggested to evaluate the variety for one more year. ***[Action:** Professor, Dept. of GPB, NMCA, Navsari**]***
15.1.1.18	**RICE VARIETY: NVSR-2233 (GR-16)**
	Early maturing upland rice variety NVSR-2233 recorded 2983 kg/ha mean grain yield in Gujarat. It exhibited overall 10.6 and 29.0 per cent grain yield superiority over the checks Purna and GR-5, respectively. Long bold variety NVSR-2233 possesses good grain quality, intermediate amylose and high head rice recovery. The proposed variety showed moderately resistant reaction against leaf blast. The proposed variety showed moderately resistant against insect pest like stem borer and sheath mite. The rice variety NVSR-2233 is recommended for upland rice growing areas of Gujarat as GR-16.
	વહેલી પાકતી ઓરાણ ડાંગરની જાત એન.વી.એસ.આર.-૨૨૩૩નું ગુજરાતમાં સરેરાશ ઉત્પાદન ૨૯૮૩ કિલો/હેક્ટર છે જે પુર્ણા અને જી.આર.-૫ કરતા અનુક્રમે ૧૦.૬અને ૨૯.૦ ટકા વધુ છે. દાણાની સારી ગુણવત્તા ધરાવતી લાંબા જાડા દાણાવાળી જાત એન.વી.એસ.આર.-૨૨૩૩ મધ્યમ એમાઇલોઝ અને આખા ચોખાના ટકા વધુ ધરાવે છે. ડાંગરની નવી જાત પાનનો કરમોડી સામે મધ્યમ પ્રતિકારક શક્તિ ધરાવે છે. ડાંગરની નવી જાત ગાભમારાની ઇયળ અને પર્ણતલની કથીરી સામે મધ્યમ પ્રતિકારક શક્તિ ધરાવે છે. ડાંગરની નવી જાત એન.વી.એસ.આર.-૨૨૩૩ને ગુજરાતના ઓરણ ડાંગર વિસ્તાર માટે જી.આર.-૧૬ તરીકે ભલામણ કરવામાં આવે છે.
	Release proposal was accepted by the house with following suggestions: 1. Give range for ancillary observations in Table-5. 2. Give lodging data. 3. Add kg/ha in title of Table-1. ***[Action:** Associate Research Scientist, RRRS, NAU, Vyara**]***
15.1.1.19	**RICE VARIETY: NVSR-2117 (GR-17)**
	The average yield of early maturing rice variety NVSR-2117 is 5566 kg/ha in Gujarat. It exhibited overall 15.4, 9.8 and 2.2per cent grain yield superiority over the checks Jaya, Gurjari and GNR-3, respectively in addition to earliness by 8 days over GNR-3. Long bold grain rice culture NVSR-2117 possesses good grain quality, intermediate amylose and high head rice recovery. The proposed variety is moderately resistant against bacterial leaf blight, leaf blast, grain discoloration and sheath rot. The proposed variety showed moderately resistant reaction against WBPH and leaf folder. Rice variety NVSR-2117 is recommended for transplanted rice growing areas of Gujarat as GR-17.
	વહેલી પાકતી ડાંગરની જાત એન.વી.એસ.આર.-૨૧૧૭નું ગુજરાતમાં સરેરાશ ઉત્પાદન ૫૫૬૬ કિલો/હેકટર છે જે જયા, ગુર્જરી અને જી.એન.આર.-૩ કરતા અનુક્રમે ૧૫.૪, ૯.૮ અને ૨.૨ ટકા વધુ ઉત્પાદન આપે છે તેમજ જી.એન.આર.-૩ કરતા ૮ દિવસ વહેલી પાકે છે. દાણાની સારી

	ગુણવત્તા ધરાવતી લાંબા જાડા દાણાવાળી જાત એન.વી.એસ.આર.-૨૧૧૭ મધ્યમ એમાઇલોઝ અને આખા ચોખાનું પ્રમાણ વધુ ધરાવતી જાત છે. ડાંગરની નવી જાત પાનનો સુકારો, કરમોડી, ભુખરા દાણાના રોગ અને પર્ણછેદના કોહવારા સામે મધ્યમ પ્રતિકારક શક્તિ ધરાવે છે. ડાંગરની નવી જાત સફેદ પીઠવાળા ચુસીયા અને પાન વાળનારી ઇયળ સામે મધ્યમ પ્રતિકારક શક્તિ ધરાવે છે. ડાંગરની નવી જાત એન.વી.એસ.આર.-૨૧૧૭ ને ગુજરાતના રોપાણ ડાંગર વિસ્તાર માટે જી.આર.-૧૭ તરીકે ભલામણ કરવામાં આવે છે.
	Release proposal was accepted by the house. ***[Action:** Associate Research Scientist, RRRS, NAU, Vyara]*
15.1.1.20	**BRINJAL VARIETY: NBL-50 (GNRB-2)**
	The proposal of this variety was not accepted by the house. ***[Action:** Professor, Dept. of Vegetable Sci., ACHF, Navsari]*
15.1.1.21	**GREATER YAM VARIETY: NGy-7 (GGY-1)**
	Greater yam variety NGy-7 had recorded 18.48 t/ha average tuber yield which was 28.24 per cent higher than national check Da-199 (Sree Karthika). The purple flesh tuber of this clone is rich in total soluble sugar, crude fibre, anthocyanin, phosphorus, potassium, ferrous, zinc and copper content and low in anti-nutritional factor Diosgenin compared to national check Da-199 (Sree Karthika). The proposed genotype showed moderately resistant to Anthracnose disease. The variety NGy-7 is recommended for cultivation in Gujarat as "GGY-1 (Gujarat Greater Yam-1)".
	રતાળુની જાત એન.જી.વાય.-૭ ના કંદનું સરેરાશ ઉત્પાદન ૧૮.૪૮ ટન/હેક્ટર નોંધાયેલ છે, જે રાષ્ટ્રીય જાત ડી.એ.-૧૯૯ (શ્રી કાર્થિકા) કરતાં ૨૮.૨૪ ટકા વધારે છે. રતાળુની જાંબલી ગર્ભ ધરાવતી આ જાતમાં ટોટલ સોલ્યુબલ સુગર, ક્રૂડ ફાઈબર, એન્થોસાયનીન, ફોસ્ફરસ, પોટેશિયમ, ફેરસ, ઝિંક તથા કોપરનું પ્રમાણ રાષ્ટ્રીય જાત કરતાં વધારે છે તેમજ પોષણ અવરોધક ઘટક ડાયોસજેનીનનું પ્રમાણ રાષ્ટ્રીય જાત કરતાં ઓછું છે.આ જાત કાલવણ રોગ સામે મધ્યમ રોગ પ્રતિકારક શક્તિ ધરાવે છે. રતાળુની જાત એન.જી.વાય.-૭ ને દક્ષિણ ગુજરાત રાજયમાં વાવેતર માટે "જી.જી.વાય.-૧ (ગુજરાત ગ્રેટર યામ-૧)" તરીકે ભલામણ કરવામાં આવે છે.
	Release proposal was accepted by the house with following suggestions: 1. Add quality parameter on dry weight basis in Table-2. ***[Action:** Professor, Dept. of Vegetable Sci, ACHF, Navsari]*

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15.1.1.22	**GROUNDNUT VARIETY: Gujarat Groundnut 41 (GG 41)**
	The farmers of Gujarat state growing groundnut during *kharif* season are advised to grow virginia runner groundnut variety Gujarat Groundnut 41 (GG 41). This variety has recorded mean pod yield of 2722 kg/ha, which was 15.74 and 16.10 per cent higher over the check varieties, GG 11 (2352 kg/ha) and GJG 17 (2344 kg/ha), respectively. This variety has also recorded high shelling and oil per cent over the check varieties. GG 41 was found comparable to the check varieties against tikka and rust diseases. The incidence of stem rot and collar rot diseases was very low in GG 41. The damage due to thrips and leaf defoliators was also lower in GG 41 than the check varieties.
	ગુજરાત રાજ્યમાં ચોમાસું ઋતુમાં મગફળી ઉગાડતા ખેડૂતોને વેલડી પ્રકારની મગફળીની જાત ગુજરાત મગફળી ૪૧ (જીજી૪૧) નું વાવેતર કરવા માટે ભલામણ કરવામાં આવે છે. આ જાતના ડોડવાનું સરેરાશ ઉત્પાદન ૨૭૨૨ કિ.ગ્રા./ હેક્ટર મળેલ છે, જે અંકુશ જાત જીજી ૧૧ (૨૩૫૨

	કિ.ગ્રા./હે) અને જીજેજી ૧૭ (૨૩૪૪ કિ.ગ્રા./હે) કરતા અનુક્રમે ૧૫.૭૪ અને ૧૬.૧૦ટકા વધારે માલુમ પડેલ છે. અંકુશ જાતોની સરખામણીએ આ જાત દાણાની અને તેલની ટકાવારી વધારે ધરાવે છે. આ જાતમાં પાનના ટપકા અને ગેરૂના રોગનું પ્રમાણ અંકુશ જાતો જેટલું જોવા મળેલ છે જ્યારે થડના સુકારા અને ઉગસુકના રોગનું પ્રમાણ જીજી ૪૧ માં ઘણું ઓછું જોવા મળેલ છે. આ જાતમાં થ્રીપ્સ અને પાન ખાનારી ઈયળથી થતું નુકસાન અંકુશ જાતો કરતા ઓછું જોવા મળેલ છે.
	Release proposal was accepted by the house. [**Action:** *Res. Scientist (Groundnut), Main Oilseeds Res. Station, JAU, Junagadh*]
15.1.1.23	**PEARL MILLET HYBRID: Gujarat Hybrid Bajara 1129 (GHB 1129)**
	The pearl millet growing farmers of Gujarat state are recommended to grow the biofortified pearl millet hybrid GHB 1129 during *kharif* season as medium maturing hybrid. This hybrid has given 2957 kg/ha grain and 6210 kg/ha dry fodder yield which is 8.0 and 12.9 per cent, respectively higher over presently recommended medium maturing check hybrid GHB 744 and 3012 kg/ha grain and 6350 kg/ha dry fodder yield which is 6.9 and 11.7 per cent, respectively higher over latest medium maturing check hybrid GHB 905. This proposed biofortified hybrid is also recommended to grow during summer season, in which it has given 5303 kg/ha grain 9179 kg/ha dry fodder yield which is 15.7 and 7.3 per cent higher over check hybrid GHB 558, respectively and at par yield and 6.2 per cent higher dry fodder yield than check hybrid GHB 732. The proposed hybrid has also given higher grain and dry fodder yield over private sector check hybrid. Further, this hybrid is tolerant to major pearl millet diseases, pest and lodging. Moreover, this hybrid is having higher micro nutrient minerals Fe (more than 70 ppm) and Zn (more than 40 ppm) in its grain over it's all the yield checks which is additional benefit to the farming and consumer community of pearl millet for their nutritional security.
	ગુજરાત રાજ્યમાં બાજરાનું વાવેતર કરતાં ખેડુતોને ખરીફ ૠતુમાં મધ્યમ અવધિમાં પાકતી સંકર જાત જીએચબી ૧૧૨૯નુ વાવેતર કરવાની ભલામણ કરવામાં આવે છે. આ જાત દાણાનું ૨૯૫૭ કિગ્રા / હેક્ટર અને સુકા ચારાનું ૬૨૧૦ કિ.ગ્રા / હેકટરે ઉત્પાદન આપે છે. જે વર્તમાનમાં ભલામણ કરેલ મધ્યમ અવધિમાં પાકતી નિયંત્રિત સંકર જાત જીએચબી ૭૪૪ કરતાં અનુક્રમે ૮.૦ અને ૧૨.૯ ટકા વધારે છે તેમજ મધ્યમ અવધિમાં પાકતી નિયંત્રિત સંકર જાત જીએચબી ૯૦૫ કરતાં દાણાનું ૬.૯ અને સુકા ચારાનું ૧૧.૭ ટકા વધારે ઉત્પાદન આપે છે. જીએચબી ૧૧૨૯ ને ઉનાળુ ૠતુમાં પણ વાવેતર કરવાની ભલામણ કરવામાં આવે છે. જે નિયંત્રિત જાત જીએચબી ૫૫૮ કરતાં ૧૫.૭ અને ૭.3 ટકા અનુક્રમે દાણા અને સુકા ચારાનું વધારે ઉત્પાદન આપે છે અને નિયંત્રિત જાત જીએચબી ૭૩૨ જેટલુ જ દાણાનું અને ૬.૨ ટકા સુકા ચારાનું વધારે ઉત્પાદન આપે છે. જીએચબી ૧૧૨૯એ તેની ચકાસણી દરમ્યાન પણ ખાનગી કંપનીની નિયંત્રિત સંકર જાત કરતા વધુ ઉત્પાદન આપેલ છે. વધુમાં, આ સંકર જાત બાજરાના રોગો, જીવાત તેમજ ઢળી પડવા સામે પ્રતિકારક શકિત ધરાવે છે. તદ્ઉપરાંત તેના દાણા સુક્ષ્મ ખનીજ લોહ (૭૦ પીપીએમ થી વધારે) અને જસત તત્વ (૪૦ પીપીએમ થી વધારે) તમામ નિયંત્રણ જાતો કરતાં વધારે ધરાવે છે. જે બાજરાના વાવેતર કરતા ખેડૂત અને ઉપભોક્તા સમુદાય માટે તેમની પોષણ સુરક્ષા માટે વધારાનો ફાયદો આપે છે.
	Release proposal was accepted by the house with following suggestions: 1. Remove Table of ergot data. 2. Give Zn and Fe content of parental lines. 3. Give quality characters along with check. 4. Give mean and range in Table- 10 (a) and (b). 5. Include the name of A.O. of Dhari. 6. Recast Table- 3 (a). 7. Verify point 10 (a).

	8. Add DUS characteristics of the popular check. ***[Action:** Res. Scientist (Pearl Millet)**,** Main Pearl Millet Research Station, JAU, Jamnagar]*
15.1.1.24	**PEARL MILLET HYBRID: Gujarat Hybrid Bajara 1225 (GHB 1225)**
	The *kharif* pearl millet growing farmers of Gujarat state are recommended to grow the GHB 1225 as late group dual purpose biofortified hybrid. It has given 3023 kg/ha grain and 7306 kg/ha dry fodder yield which is 22.98 and 10.74 per cent higher grain and 21.1 and 17.4 per cent higher dry fodder yield over presently recommended medium late group hybrids GHB 558 and GHB 732, respectively. The proposed hybrid has also given higher grain and dry fodder yield over private sector check hybrid. Further, the proposed hybrid is resistant to major pearl millet diseases and pest and this hybrid is having higher micronutrients minerals Fe (more than 70 ppm) and Zn (more than 40 ppm) content in its grain which is additional benefit to the farming and consumer community of pearl millet for their nutritional security.
	ગુજરાત રાજયમાં ખરીફ બાજરાનું વાવેતર કરતાં ખેડુતોને જીએચબી ૧૨૨૫ ને મોડી અવધિમાં પાકતી દ્વિ-હેતુ (દાણા અને સુકાચારા) માટેની બાયો-ફોર્ટિફાઇડ સંકર જાત તરીકે વાવેતર કરવાની ભલામણ કરવામાં આવે છે. આ જાત દાણાનું ૩૦૨૩ કિગ્રા / હેક્ટર અને સુકાચારાનું ૭૩૦૬ કિ.ગ્રા / હેકટરે ઉત્પાદન આપે છે. જે વર્તમાનમાં ભલામણ કરેલ મોડી અવધિમાં પાકતી જીએચબી ૫૫૮ અને જીએચબી ૭૩૨ કરતાં અનુક્રમે દાણાનું ૨૨.૯૮ તથા ૧૦.૭૪ ટકા અને સુકાચારાનું ૨૧.૧ તથા ૧૭.૪ ટકા વધુ ઉત્પાદન આપે છે. જીએચબી ૧૨૨૫ એ તેની ચકાસણી દરમ્યાન ખાનગી કંપનીની નિયંત્રિત સંકર જાત કરતા પણ વધુ ઉત્પાદન આપેલ છે. વધુમાં, આ સંકર જાત બાજરાના રોગો તેમજ જીવાત સામે પ્રતિકારક શકિત ધરાવે છે. તદ્દુપરાંત આ બાયોફોર્ટિફાઇડ સંકર જાત છે તેના દાણા વધારે પ્રમાણમાં સુક્ષ્મ ખનીજ લોહ (૭0 પીપીએમ થીવધારે) અને જસત તત્વ (૪0 પીપીએમથી વધારે) ધરાવે છે જે બાજરાના વાવેતર કરતા ખેડ્રૂત અને ઉપભોક્તા સમુદાય માટે તેમની પોષણ સુરક્ષા માટે વધારાનો ફ઼ાયદો આપે છે.
	Release proposal was accepted by the house with following suggestions: 1. Remove Table of ergot data. 2. Give Zn and Fe content of parental lines. 3. Give quality characters along with check. 4. Give mean and range in Table-10 (a) and (b). 5. Include the name of A.O. of Dhari. 6. Recast Table- 3 (a). 7. Verify point 10 (a). 8. Add DUS character of popular hybrid check. ***[Action:** Res. Scientist (Pearl Millet)**,** Main Pearl Millet Research Station, JAU, Jamnagar**]***
15.1.1.25	**SESAME VARIETY: Gujarat Til 7 (G Til 7)**
	The proposal of this variety was not accepted by the house. ***[Action:** Research Scientist (Cotton), Agricultural Research Station, JAU, Amreli**]***
15.1.1.26	**COTTON VARIETY: Gujarat Cotton 38 (G. Cot 38)**
	The farmers of Gujarat state growing Non Bt cotton (*Gossypium hirsutum* L.) under irrigated conditions are advised to grow variety Gujarat Cotton - 38 (G.Cot-38). This variety has recorded a seed cotton yield of 2315 kg/ha, which is 28.1, 19.7, 9.0 and 18.9 per cent higher than the check varieties, G.Cot-18, G.Cot-20, GN.Cot-22 and CNHO-12 as a zonal check, respectively. The lint yield in G.Cot-38 was 767 kg/ha, which is 27.5, 18.1, 6.0 and 11.4 per cent higher than check varieties G.Cot-18, G.Cot-20, GN.Cot-22 and CNHO-12, respectively. It has 33.1 per cent ginning outturn and 19.2 per cent oil. This variety is medium late in maturity.
	ગુજરાત રાજ્યના પિયત વિસ્તારમાં નોન બીટી કપાસ ઉગાડતા ખેડુતોને હીરસુતમ

	કપાસની જાત ગુજરાત કપાસ-૩૮ (જી.કોટ-૩૮) નું વાવેતર કરવા માટે ભલામણ કરવામાં આવે છે. આ જાતે કપાસનું ઉત્પાદન ૨૩૧૫ કિ.ગ્રા./હે. આપેલ છે, જે નિયંત્રિત જાતો જેવી કે જી. કોટ-૧૮, જી. કોટ-૨૦, જીએન. કોટ-૨૨, અને ઝોનલ નિયંત્રિત જાત સીએનએચઓ-૧૨ કરતા અનુક્રમે ૨૮.૧, ૧૯.૭, ૯.૦ અને ૧૮.૯ ટકા વધુ જોવા મળેલ છે. જી. કોટ-૩૮ નું રૂનું ઉત્પાદન ૭૬૭ કિ.ગ્રા./હે. મળેલ છે, જે નિયંત્રિત જાતો જેવી કે જી. કોટ-૧૮, જી. કોટ-૨૦, જીએન. કોટ-૨૨ અને સીએનએચઓ-૧૨ કરતા અનુક્રમે ૨૭.૫, ૧૮.૧, ૬.૦ અને ૧૧.૪ ટકા વધુ જોવા મળેલ છે. આ જાત ૩૩.૧ ટકા રૂ અને ૧૯.૨ ટકા તેલ ધરાવે છે. આ જાત મધ્યમ મોડી પાકતી જાત છે.
	Release proposal was accepted by the house with following suggestions: 1. Full spinning results should be incorporated. 2. Give unit in Table-5. ***[Action:*** *Research Scientist (Cotton), Cotton Research Station, JAU, Junagadh]*
15.1.1.27	**URDBEAN VARIETY: Gujarat Urd 2 (GU 2)**
	Farmers of Gujarat growing urd in *kharif* season are advised to cultivate Gujarat Urd-2 (GU 2) variety. This variety has produced (1079 kg/ha) 14.9 per cent higher seed yield over both the check varieties T-9 (939 kg/ha) and Gujarat Urd-1 (939 kg/ha). Seeds of this variety are of large size and greenish brown in colour. This variety is resistant to MYMV, leaf curl and powdery mildew diseases.
	ગુજરાત રાજ્યમાં ચોમાસુ અડદ ઉગાડતા ખેડુતોને ગુજરાત અડદ-૨ (જી.યુ. ૨) જાતનું વાવેતર કરવા ભલામણ કરવામા આવે છે. આ જાતે (૧૦૭૯ કિ/હે) નિયંત્રણ હેઠળની જાતો ટી-૯ (૯૩૯ કિ/હે) અને ગુજરાત અડદ-૧ (૯૩૯ કિ/હે.) કરતા ૧૪.૯ ટકા વધુ દાણાંનું ઉત્પાદન આપેલ છે. આ જાતના દાણાં મોટા કદના અને લીલાશ પડતા કાળા રંગના છે. આ જાત પચરંગીયા, પાનના કોકળવા અને ભુકી છારા રોગ સામે પ્રતિકારક શકિત ધરાવે છે.
	Release proposal was accepted by the house. ***[Action:*** *Research Scientist (Chickpea), Pulses Research Station, JAU, Junagadh]*
15.1.1.28	**RIDGE GOURD VARIETY:** Gujarat Ridge Gourd 2 (GRG 2)
	The farmers of Saurashtra and Middle Gujarat regions, growing ridge gourd during kharif season are advised to grow Gujarat Ridge Gourd-2 (GRG-2). This variety has recorded average fruit yield of 105.70 q/ha, which was 22.06 and 29.76 per cent higher over check varieties; Gujarat Anand Ridge Gourd-1 (86.60 q/ha) and Pusa Nasdar (81.46 q/ha), respectively. The fruits of this variety are long in size, green in colour with better in quality characters *viz.*, protein, sugars, TSS and chlorophyll-B contents as compared to check varieties.
	સૌરાષ્ટ્ર તથા મધ્ય ગુજરાત વિસ્તારમાં ચોમાસુ ઋતુમાં તુરીયાનો પાક ઉગાડતા ખેડૂતોને ગુજરાત તુરીયા-૨ (જીઆરજી-૨) નું વાવેતર કરવા માટે ભલામણ કરવામાં આવે છે. આ જાતના તુરીયાનું ઉત્પાદન૧૦૫.૭૦ કિવન્ટલ/હેકટર મળેલ છે, જે નિયંત્રિત જાત ગુજરાત આણંદ તુરીયા-૧ (૮૬.૬૦ કિવન્ટલ/હેકટર) તથા પુસા નસદાર (૮૧.૪૬ કિવન્ટલ/હેકટર) કરતા અનુક્રમે ૨૨.૦૬ તથા ૨૯.૭૬ ટકા વધારે માલુમ પડેલ છે. આ જાતના ફળો કદમાં લાંબા, લીલા રંગના તેમજ નિયંત્રિત જાતો કરતા ગુણવત્તા ના ઘટકો જેવાકે, પ્રોટીન,સકેરા, કુલ દ્રાવ્ય પદાર્થો તથા કલોરોફીલ-બી વધારે ધરાવે છે.
	Release proposal was accepted by the house with following suggestions: 1. Provide total chlorophyll data. ***[Action:*** *Res. Sci. (Onion & Garlic),Vegetable Research Station, JAU, Junagadh]*
15.1.1.29	**Effect of pre-treatment on seed emergence and seedling vigour of coriander**
	The farmers of South Saurashtra region growing coriander are advised that the bitted seeds of coriander with pre-treatment of GA_3@ 50 mg/ litre for 12 hrs or NaCl 2 g/ litre for 12 hrs or the bitted seeds tied in wet coarse cloth (*Pacchedi*) for 12 hrs gives early emergence with good germination percentage

	and seedling vigour.
	દક્ષિણ સૌરાષ્ટ્ર વિસ્તારમાં ધાણાનું વાવેતર કરતા ખેડુતોને સલાહ આપવામાં આવે છે કે ફાડા કરેલ ધાણાને વાવતા પહેલા જીબ્રેલીક એસીડના ૫૦ મીગ્રા/લીટરના દ્રાવણની ૧૨ કલાક અથવા મીઠા નાર ગ્રામ/લીટરના દ્રાવણની ૧૨ કલાક માવજત બાદ અથવા ફાડા કરેલ ધાણાને ભીની પછેડીમાં બાર કલાક સુધી બાંધી રાખ્યા બાદ વાવેતર કરવાથી ધાણાનો વહેલો ઉગાવો, સારૂ અંકુરણ તથા વધુ જૂસ્સો મળે છે.
	Recommendation was accepted by the house. ***[Action:** Professor & Head**,** Dept. of Genetics & Plant Breeding, JAU, Junagadh**]***

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15.1.1.30	**CASTOR HYBRID: Gujarat Castor Hybrid 10 (GCH 10: Charutar Gold)**
	The castor hybrid GCH 10 (Charutar Gold) gave 3894 kg/ha seed yield which is 9.05% higher over check GCH 7 (3571 kg/ha) under irrigated condition of Gujarat. This hybrid found resistant to wilt under sick plot and artificially inoculated soils under pot method. Days to maturity of primary raceme is quite earlier (99 days) as compared to check GCH 7 (111 days). This indicates early maturity of proposed hybrid as compared to check GCH 7. The 100 seed weight of this newly developed hybrid is 35.35 g as compared to 31.79 g of check GCH 7. The oil content of proposed hybrid is 50.03 *per cent* which is higher than check GCH 7 (49.38%). The proposed hybrid is recommended for release under irrigated condition in Gujarat.
	દિવેલાની સંકર જાત જીસીએચ ૧૦ (ચારૂત્તર ગોલ્ડ) ગુજરાતના પિયત વિસ્તારો હેઠળ ૩૮૯૪ કિ.ગ્રા./હે. દિવેલા બીજનું ઉત્પાદન આપે છે જે અંકુશ જાત જીસીએચ ૭ (૩૫૭૧કિ.ગ્રા./હે.) કરતાં ૯.૦૫% વધારે છે. આ સંકર જાત સુકારાના રોગ સામે પ્રતિકારક શક્તિ ધરાવે છે. આ સંકર જાતની પ્રથમ માળ ૯૯ દિવસમાં પાકે છે જ્યારે અંકુશ જાત જીસીએચ ૭ની પ્રથમ માળ ૧૧૧ દિવસમાં પાકે છે. જે દર્શાવે છે કે આ નવી સંકર જાત જીસીએચ ૭ કરતાં વહેલી પાકે છે. આ નવી જાતના ૧૦૦ દાણાનું વજન ૩૫.૩૫ ગ્રામ છે જ્યારે જીસીએચ ૭ જાતના દાણાનું વજન ૩૧.૭૯ ગ્રામ છે. આ નવી સંકર જાતમાં તેલના ટકાનું પ્રમાણ (૫૦.03%) અંકુશ જાત જીસીએચ ૭ (૪૯.૩૮%) કરતાં વધુ છે. આ નવી સંકર જાત ગુજરાતમાં પિયત હેઠળના વાવેતર વિસ્તારો માટે બહાર પાડવા ભલામણ કરવામાં આવે છે.
	Release proposal was accepted by the house with following suggestions. 1. Add year wise mean and per cent increase over checks in Table-1. 2. Give maintenance procedure of pistillate line. 3. Include name of all contributing scientists of other SAUs testing centers. ***[Action:** Associate Research Scientist, ARS, AAU, Sansoli **]***
15.1.1.31	**MAIZE HYBRID: GUJARAT ANAND POP CORN HYBRID 21 (GAPCH 21- MAHASHWETA)**
	The popcorn single cross hybrid GAPCH 21 (MAHASHWETA) is recommended for *rabi* cultivation in Middle Gujarat. This hybrid gave average 3669 kg/ha kernel yield and recorded 53.96 *per cent* higher yield than check Amber popcorn. This hybrid having high popping (92%) and popping volume (213 ml/cm^3). It is medium maturing, orange flint kernels and high test weight (190 g). This hybrid is resistant against *Curvularia* Leaf spot and *Puccinia* rust as well as moderately resistant against stem borer.

	મકાઈની પોપકોન માટેની સંકર જાત જીએપીસીએચ ૨૧(મહાશ્વેતા) મધ્ય ગુજરાત વિસ્તાર માટે ભલામણ કરવામાં આવે છે. આ સંકર જાત સરેરાશ ૩૬૬૯ કિ.ગ્રા/હે. દાણાનું ઉત્પાદન આપે છે, જે અંકુશ જાત અંબર પોપકોર્ન કરતા ૫૩.૯૬ ટકા વધારે છે. આ જાતમાં ધાણી ફૂટવાના ટકા ૯૨ છે તેમજ ફૂટેલ ધાણીનું કદ ૨૧૩ મીલી/ઘન સે.મી. છે. આ સંકર જાત મધ્યમ સમયમાં પાકતી, નારંગી રંગના દાણા ધરાવતી અને ૧૦૦૦ દાણાનું વજન ૧૯૦ ગ્રામ ધરાવે છે. આ જાત પાનના બદામી ટપકા અને ગેરૂરોગ સામે પ્રતિકારક શક્તિ ધરાવે છે તેમજ ગાભમારાની ઈયળ સામે મધ્યમ પ્રતિકારક શક્તિ ધરાવે છે.
	Release proposal was accepted by the house with following suggestions. 1. Match the DUS characteristics of point 10 and Table-4. 2. Write the distinguished traits of hybrid and parents for GOT. ***[Action:*** *Associate Research Scientist, MMRS, AAU, Godhra]*
15.1.1.32	**MAIZE HYBRID: GUJARAT ANAND SWEET CORN HYBRID 11 (GASCH 11: MADHURAM)**
	The sweet corn single cross hybrid GASCH 11 (Madhuram) is recommended for *rabi* cultivation in Middle Gujarat. This hybrid gave green cob yield of 13273 kg/ha which is 46.82 *per cent* higher than check Win Orange Sweet Corn. This hybrid revealed superiority in quality parameters *viz.*, total soluble solids (18.4 ^{0}Brix), total soluble sugar (7.58%) and protein (4.96%) over check Win Orange Sweet Corn. The hybrid is resistant against *Turcicum* leaf blight and stem borer.
	મકાઇની સ્વીટ કોર્ન હાઈબ્રીડ જીએએસસીએચ ૧૧ (મધુરમ)ને મધ્ય ગુજરાતમાં રવિ ઋતુ દરમ્યાન વાવેતર કરવા માટે ભલામણ કરવામાં આવે છે. આ જાત સરેરાશ ૧૩૨૭૩ કિ.ગ્રા./હે. લીલા ડોડાનું ઉત્પાદન આપે છે, જે અંકુશ જાત વીન ઓરેંજ સ્વીટ કોર્ન કરતા ૪૬.૮૨ ટકા વધારે છે. આ સંકર જાતમાં વીન ઓરેંજ સ્વીટ કોર્ન અંકુશ જાત કરતા કુલ દ્રાવ્ય ઘન પદાર્થો (૧૮.૪ ^{0}Brix), કુલ દ્રાવ્ય શર્કરા (૭.૫૮ ટકા) અને પ્રોટ્રીન (૪.૯૬ ટકા) નું પ્રમાણ વધારે છે. આ જાત સુકારા તેમજ ગાભમારાની ઈયળ સામે પ્રતિકારક શક્તિ ધરાવે છે.
	Release proposal was accepted by the house with following suggestions. 1. Match the DUS characteristics of point 10 and Table-4. 2. Write the distinguished traits of hybrid and parents for GOT. 3. Incorporate the pest and diseases recent data of check. ***[Action:*** *Associate Research Scientist, MMRS, AAU, Godhra]*
15.1.1.33	**BRINJAL VARIETY: GUJARAT ANAND BRINJAL 6 (GAB 6: ANAND DOLI)**
	This variety gave 634.90 q/ha fruit yield which is 44.70, 38.82, 17.72, 26.28, 40.74 and 40.20 *per cent* higher over the checks GOB 1, GBL 1, GJB 2, GJLB 4, Doli 5 and Punjab Sadabahar, respectively in Middle Gujarat condition. This variety has dark pink fruit skin colour with strong glossiness, club shaped fruit with medium size and cluster fruiting pattern. It has erect plant growth habit and dentate leaf margin. This genotype has less prevalence of little leaf disease reaction and lower or comparable number of jassids and whitefly as well as fruit borer damage as compared to the checks GJB 2, GJLB 4, Doli 5 and Punjab Sadabahar. The proposed variety contains higher dry matter (14.32%), total phenol (0.087%) and protein (0.82%) as compared to the check varieties GJB 2, GJLB 4, Doli 5 and Punjab Sadabahar. This variety is recommended to release in Middle Gujarat for *Kharif-Rabi* season under irrigated condition.
	આ જાત મધ્ય ગુજરાત પરીસ્થિતિમાં ૬૩૪.૯૦ ક્વિ../હે. રીંગણનું ઉત્પાદન આપે છે, જેઅંકુશ જાતો જીઓબી ૧, જીબીએલ ૧, જીજેબી ૨, જીજેએલબી ૪, ડોલી ૫ અને પંજાબ સદાબહાર કરતા અનુક્રમે ૪૪.૭, ૩૮.૮૨, ૧૭.૭૨, ૨૬.૨૮, ૪૦.૭૪ અને ૪૦.૨૦ ટકા વધારે છે. આ જાતના ફળ ઘેરા ગુલાબી રંગના, ચળકાટ ધરાવતા અને મધ્યમ કદના છે તથા ઝૂમખામાં લાગે

	છે. આ જાતમાં ગટ્ટીયા પાનનો રોગ તથા તડતડીયા, સફેદ માખી, ફળ અને ડૂંખ કોરી ખાનાર ઈયળનો ઉપદ્રવ અંકુશ જાતો કરતા સામાન્ય રીતે ઓછો જોવા મળેલ છે. આ જાતમાં શુષ્ક પદાર્થ (૧૪.૭૨ ટકા), કુલ ફિનોલ (૦.૦૮૭ટકા) અને પ્રોટીન (૦.૮૨ ટકા) નું પ્રમાણ અંકુશ જાતો કરતા વધારે જોવા મળેલ છે. આ જાત મધ્ય ગુજરાતમાં ખરીફ-રવી ઋતુમાં વાવેતર માટે ભલામણ કરવામાં આવે છે.
	Release proposal was accepted by the house with following suggestions. 1. Put the all over data of year and locations in Table- 1 instead of Table-2. 2. Add year wise mean and percent increase over checks in Table-1. 3. Merge Table- 5b, 5c and 5d of insect-pests data. ***[Action:** Research Scientist (Veg.), MVRS, AAU, Anand**]***
15.1.1.34	**POTATO VARIETY: KUFRI SADABAHAR (MS/93-1344)**
	The potato variety Kufri Sadabahar (MS/93-1344) is developed by ICAR-Central Potato Research Institute, Shimla by clonal selection from the cross MS/81-145-638 x PF/F-1545. The variety Kufri Sadabahar depicted superior performance for total tuber yield (312.78 q/ha) in 75 days harvesting at Anand for early bulking and manifested 13.20, 10.86 and 7.79 per cent higher tuber yield over Kufri Badshah, Kufri Lauvkar and Kufri Pukhraj, respectively. While, in case of 90 days harvest at Anand, this variety gave tuber yield of 354.54 q/ha which is 17.51, 14.27 and 10.08 *per cent* higher over the checks Kufri Badshah, Kufri Lauvkar and Kufri Pukhraj, respectively. It has comparatively higher average tuber weight against all the checks. The tuber has oblong shape, smooth and white skin, predominantly apical shallow eyes and white flesh with mealy texture. Kufri Sadabahar has less prevalence of early blight, late blight, leaf curl and white fly as compared to all the checks. Kufri Sadabahar is already notified, hence endorsed for cultivation and harvesting at 75 days (immature) or 90 days (fully mature) after sowing during *rabi* season in Middle Gujarat.
	બટાકાની આ જાત આઇસીએઆર સેન્ટ્રલ પોટેટો રીસર્ચ ઈન્સ્ટીટ્યુટ, શિમલા દ્વારા સંકરણ કરી ક્લોનલ પંસદગી પધ્ધતિ દ્વારા વિકસાવવામાં આવેલ છે. આણંદ કેન્દ્ર ખાતે ૭૫ દિવસની કાપણીમાં આ જાત (૩૧૨.૭૮ ક્વી/હે.) કુફરી બાદશાહ, કુફરી લોવકર અને કુફરી પુખરાજ કરતા અનુક્રમે ૧૩.૨૦, ૧૦.૮૬ અને ૭.૭૯ ટકા વધારે ઉત્પાદન આપે છે. જ્યારે ૯૦ દિવસની કાપણીમાં આ જાત (૩૫૪.૫૪ ક્વી/હે.) અનુક્રમે ૧૭.૫૧, ૧૪.૨૭ અને ૧૦.૦૮ ટકા વધારે ઉત્પાદન આપે છે. આ જાતના બટાકા લંબગોળ આકાર તેમજ સુવાળી અને સફેદ છાલ ધરાવે છે. આ જાતમાં આગોતરો તેમજ પાછોતરો સુકારો, કોકડવા અને સફેદ માખીનો ઉપદ્રવ અંકુશ જાતોની સરખામણીમાં ઓછો જોવા મળેલ છે. આ જાત મધ્ય ગુજરાતમાં રવી ઋતુમાં વાવેતર કર્યા બાદ ૭૫ દિવસે (કચીયારા) અથવા ૯૦ દિવસે (પરીપક્વ) કાપણી કરવા ભલામણ કરવામાં આવે છે. આ જાત અગાઉ નોટીફાઈડ થયેલ હોવાથી મધ્ય ગુજરાત માટે એન્ડોર્સ કરવામાં આવે છે.
	Endorsement proposal was accepted by the house for south Gujarat with following suggestions. 1. Include shelf life data. ***[Action:** Research Scientist (Veg.), MVRS, AAU, Anand**]***
15.1.1.35	**GARLIC VARIETY: GUJARAT GARLIC 7 (GG 7: ANAND KESARI)**
	The proposed garlic variety Gujarat Garlic 7 (GG 7: Anand Kesari), which is developed through clonal selection. It revealed bulb yield of 79.00 q/ha which is 16.00, 11.65, 15.13 and 14.00 *per cent* higher over the check varieties GG 4, GJG 5, GAG 6 and G 282, respectively in the Gujarat state. The variety

	has dark green leaves, strongly concave shape in cross section of leaf, medium density of leaves with erect foliage attitude, radial distribution of cloves, purple colour of dry external scales and purple scale colour of cloves. In quality attributes, the variety showed higher pyruvic acid (80.05 µmol/g), carotenoids (7.75 mg/100g), total soluble solids (21.82^{o}Brix), reducing sugar (2.23%) and total antioxidant acitivity (0.118%) as compared to check varieties. The variety also reported low incidence of thrips as compared to check varieties. The proposed garlic variety is recommended for *rabi* cultivation in the garlic growing areas of Gujarat.
	આ જાત રવિ ઋતુના વાવેતરમાં સરેરાશ કંદનું ઉત્પાદન ૭૯.૦૦ ક્વી./હે. આપે છે. જે અંકુશ જાતો જી.જી ૪, જી.જે.જી. ૫, જી.એ.જી. ૬ અને રાષ્ટ્રીય અંકુશ જાત જી ૨૮૨ કરતાં અનુક્રમે ૧૬.૦૦, ૧૧.૬૫, ૧૫.૧૩ અને ૧૪.૦૦ ટકા વધારે કંદનું ઉત્પાદન આપે છે. આ જાતના પાન ઘેરા લીલા રંગનાઅને કળીનો સુકો બાહ્ય ભાગ જાંબલી રંગ ધરાવે છે. આ જાત અંકુશ જાતોની સરખામણીમાં પાયરૂવીક એસિડ (૮૦.૦૫ મ્યુ. મોલ/ગ્રામ), કેરોટેનોઈડસ (૭.૭૫ મી.ગ્રા./૧૦૦ ગ્રામ), કુલ સોલ્યુબલ સોલીડસ (૨૧.૮૨^{o}Brix), રિડ્યુસિંગ સુગર (૨.૨૩ ટકા) અને કુલ એન્ટીઓક્સીડન્ટ એક્ટિવીટી (૦.૧૧૮ ટકા)નું પ્રમાણ વધારે ધરાવે છે. આ જાતમાં થ્રીપ્સનો ઉપદ્રવ અંકુશ જાતો કરતા ઓછો જોવા મળેલ છે. ગુજરાત લસણ ૭ જાતની ભલામણ સમગ્ર ગુજરાત માટે કરવામાં આવે છે.
	Release proposal was accepted by the house with following suggestions. 1. Modify point 5(a), (d), 7(b) and 12(a) as suggested. 2. Add shelf life and disease data. 3. Include name of all contributing scientists of other SAUs testing centers. ***[Action:** Research Scientist, HMRS, AAU, Dahod**]***
15.1.1.36	**COTTON VARIETY: GUJARAT ANAND DESI COTTON 3 (WAGAD GAURAV)**
	This variety gave higher seed cotton yield (2233 kg/ha) over check varieties G. Cot. 21, ADC 1 and GADC 2 by34.02, 15.01 and 27.54%, respectively. It has recorded 44.8 *per cent* ginning out turn, 22.7 mm upper half mean length, 5.1 micronaire value and 22.5 g/tex tenacity (HVI mode).This variety is recommended for release in desi cotton area of North West Agroclimatic Zone - V as well as Bhal and Coastal Agroclimatic Zone-VIII of Gujarat.
	આ જાતની કપાસની ઉત્પાદક્તા (૨૨૩૩ કિલો/હે.) અન્ય નિયંત્રણ હેઠળની જાતો જી.કોટ.૨૧, એડીસી ૧ અને જીએડીસીર કરતા અનુક્રમે ૩૪.૦૨, ૧૫.૦૧ અને ૨૭.૫૪ ટકા વધારે છે. વાગડ ગૌરવ જાતની રૂની ટકાવારી ૪૪.૮ ટકા, તારની લંબાઇ ૨૨.૭ મી.મી., માઈક્રોનીયર ૫.૧ એમ.વી. અને ટેનાસીટી ૨૨.૫ ગ્રામ/ટેક્ષ ધરાવે છે. ઉત્તર -પશ્ચિમ ખેત આબોહવાકીય વિભાગ-૫ અને ભાલ અને દરિયાકાંઠા ખેત આબોહવાકીય વિભાગ-૮ના બિનપિયત દેશી કપાસનું વાવેતર કરતા વિસ્તારો માટે ભલામણ કરવામાં આવે છે.
	Release proposal was accepted by the house with following suggestions. 1. Modify point 7 (b) and 8 as suggested. 2. Add year wise mean and percent increase over checks in Table-1. ***[Action:** Associate Research Scientist, RCRS, AAU, Viramgam**]***
15.1.1.37	**FORAGE SORGHUM VARIETY: GUJARAT ANAND FORAGE SORGHUM 13 (GAFS 13: GAUVARDHAN)**
	Release proposal was not accepted by the house. ***[Action:** Research Scientist, MFRS, AAU, Anand**]***

(II) RECOMMENDATION FOR SCIENTIFIC COMMUNITY - NIL

(III) NEW TECHNICAL PROGRAMMES

SARDARKRUSHINAGAR DANTIWADA AGRICULTURAL UNIVERSITY, SKNAGAR

Sr. No.	Title	Suggestion/s and Action
15.1.3.1	Identification of bread wheat genotypes for water scarcity conditions based on drought tolerance indices	**Approved with following suggestion/s:** 1. Change title as "Screening and identification of drought tolerant genotypes in bread wheat" ***[Action:*** *Research Scientist (Wheat), Wheat Research Station, SDAU, Vijapur]*
15.1.3.2	Induction of autopolyploid as a means of genetic improvement of diploid *Basil spp.*	**Not approved.** ***[Action:*** *Professor & Head, Department of Genetics & Plant Breeding, CPCA, S. K. Nagar]*
15.1.3.3	Effect of priming on seed germination of fennel and china aster.	**Approved with following suggestion/s:** 1. Out of 24 treatments, treatments T_1, T_2, T_4, T_6, T_9, T_{11} and T_{12} should only be kept. ***[Action:*** *Principal, College of Horticulture SDAU, Jagudan]*
15.1.3.4	Standardization of hybrid seed production technique in GCH-8	**Approved.** ***[Action:*** *Research Scientist, Seed Technology, SDAU, S. K. Nagar]*

NAVSARI AGRICULTURAL UNIVERSITY, NAVSARI: NIL

JUNAGADH AGRICULTURAL UNIVERSITY, JUNAGADH

Sr. No.	Title	Suggestion/s and Action
15.1.3.5	LSHT on essentially derived variety of pearl millet hybrid GHB 538	**Approved.** ***[Action:*** *Research Scientist (Pearl millet), Main Pearl Millet Res. Station, JAU, Jamnagar]*
15.1.3.6	Development of seed production technology for Quinoa (*Chenopodium quinoa* Willd) crop.	**Approved.** ***[Action:*** *Research Scientist (Pearl millet), Main Pearl Millet Res. Station, JAU, Jamnagar]*
15.1.3.7	Redefining isolation distance of IMSCS 2013 in cotton	**Approved.** ***[Action:*** *Research Scientist (Pearl millet), Main Pearl Millet Res. Station, JAU, Jamnagar]*
15.1.3.8	To validate the validity periods of certified seeds of castor & groundnut crops	**Approved.** ***[Action:*** *Research Scientist (Pearl millet), Main Pearl Millet Res. Station, JAU, Jamnagar]*
15.1.3.9	Assessment of best practices for storage of turmeric planting materials.	**Approved with following suggestion/s:** 1. Period of the observations shall be fixed. 2. Add variety "Salem" 3. Sowing, harvesting and storage period should be fixed. ***[Action:*** *Professor & Head, Department of Genetics and Plant Breeding, JAU, Junagadh]*
15.1.3.10	Synchronization of flowering in parental lines of proposed hybrids of pearl millet *viz*., GHB-1129 and GHB-1225	**Approved.** ***[Action:*** *Professor & Head, Department of Genetics and Plant Breeding, JAU, Junagadh]*

ANAND AGRICULTURAL UNIVERSITY, ANAND

Sr. No.	Title	Suggestion/s and Action
15.1.3.11	Identification of molecular markers associated with Yellow Mosaic Disease Resistance in black gram (*Vigna mungo* (L.) Hepper)	**Approved.** ***[Action:** Prof. & Head, Dept. of Genetics & Plant Breeding, BACA, AAU, Anand**]***
15.1.3.12	Screening and evaluation of diverse germplasm of okra for nematode resistance	**Approved with following suggestion/s:** 1. Add variety: GJO 3, GO 6 and GJOH 4 2. Average weight of 10 fruits should be considered in observation. ***[Action:** Research Scientist, Dept. of Agricultural Biotechnology, AAU, Anand**]***
15.1.3.13	Evaluation of turmeric genotypes for higher yield and quality	**Approved with following suggestion/s:** 1. Remove "higher" word from the title. 2. Name of the genotypes should be incorporated. 3. Include genotypes "Lakdong, Shobha, TCP-64 and GNT-2" ***[Action:** Associate Research Scientist, Medicinal and Aromatic Plants Research Station, AAU, Anand**]***
15.1.3.14	Evaluation of linseed (*Linum usitatissimum* L.) genotypes for yield and quality parameters	**Approved.** ***[Action:** Research Scientist, Hill Millets Research Station, AAU, Dahod**]***

General suggestions:

1. Popular name of proposed variety must be given.
2. Internationally accepted colour code should be used.
3. Hybrid parentage needs not to be disclosed before approval.
4. Signature of concerned breeder/unit head and Director of Research is must in the proposal.
5. SRF and Agril. Assistant name(s) should not be mentioned in proposal.
6. Include name of all sub-station scientists who has contributed in evaluation by verifying work distribution order of that centre.

15.2 CROP PRODUCTION AND NATURAL RESOURCE MANAGEMENT

Chairman: Dr. C. J. Dangariya, Hon'ble VC, NAU, Navsari
Co-chairmen: Dr. M. V. Patel and Dr. B. K. Sagaraka
Rapporteurs: Dr. B. D. Patel, Dr. J. M. Patel and Dr. B. T. Patel

SUMMARY

Universities	Recommendations				New Technical Programmes	
	Farming community		Scientific community			
	Proposed	Approved	Proposed	Approved	Proposed	Approved
SDAU	10	09	02	02	39	34
NAU	20	19	05	04	22	20
JAU	14	13	08	10	32	31
AAU	14	11	03	03	20	19
Total	58	52	18	19	113	104

15.2.1 FOR FARMING COMMUNITY

SARDARKRUSHINAGAR DANTIWADA AGRICUTURAL UNIVERSITY, S. K. NAGAR

15.2.1.1 Development and validation of station integrated farming system model at Sardarkrushinagar

The small and marginal farmers of North Gujarat Agro-climatic Zone are recommended to adopt integrated farming system approach under irrigated condition for obtaining higher crop equivalent yield, system productivity, system profitability, employment generation, improve soil fertility, assured livelihood and nutritional security and increasing climate resilient sustainability with integration of following components of farming system :

Sr.	Components of IFS	Area (ha)
1.	C_1: Greengram – Castor relay cropping system (3 :1) C_2: Groundnut - Wheat – Fodder Rajka Bajra cropping system C_3: Green gram -Mustard-Pearl millet cropping system C_4: Hy. Napier + Cowpea (F) - Lucerne + Forage Chicory cropping system (Note: Each cropping system should be adjusted as per family need and feasibility)	0.70 ha
2	Multi –storey horticultural fruits [Mango (8 m x 8 m), lemon (4 m inter row), custard apple(4 m intra row)] and seasonal vegetables (bottle gourd, okra, guar, brinjal, cauliflower, cabbage, radish and vegetable cowpea should be adjusted as per family need and feasibility)	0.25 ha
3	Boundary plantation: 1. Ardusa and Aonla (farm boundary) 2. Hy. Napier grass and Drumstick (in between two cropping system boundary)	-
4	Live stock (Two Mehsani buffaloes) + vermicompost + nursery unit	0.035 ha
5	Farm pond (Water harvesting and recharging)	0.015 ha
	Total	**1.0 ha**

ઉત્તર ગુજરાત ખેત આબોહવાકીય વિસ્તારના નાના અને સીમાંત ખેડુતોએ એકમ વિસ્તારમાંથી વધુ સમતુલ્ય પાક ઉત્પાદન, ઉત્પાદકતા અને નફાકારકતા વધારવા, ખેડુત કુટુંબના સભ્યોને વર્ષ દરમ્યાન નિયમિત રોજગારી માટે, જમીનની ફળદ્રુપતા સુધારવા, ખેડુત કુટુંબની આજીવિકા અને પોષણ સુરક્ષા માટે અને આબોહવા સ્થિતિસ્થાપક ટકાઉપણુ (કલાયમેન્ટ રેસીલીયન્સ સસ્ટેનેબીલીટી) માટે સંકલિત ખેતી પધ્ધતિ મોડલના નીચે મુજબના ઘટકો અપનાવવાની ભલામણ કરવામાં આવે છે.

અ. નં.	સંકલિત ખેતી પધ્ધતિના ઘટકો	વિસ્તાર(હે.)
૧.	• મગ – દિવેલા રીલે પાક પધ્ધતિ (૩:૧) • મગફળી – ઘઉ– રજકાબાજરી પાક પધ્ધતિ • મગ–રાયડો–બાજરી પાક પધ્ધતિ • હા.નેપિયર+ ઘાસચારાની ચોળી–રજકો + ઘાસચારાની ચીકોરી પાક પધ્ધતિ (નોંધઃ ખેડૂત કુટુંબની જરૂરિયાત અને અનુકુળતા મુજબ દરેક પાક પધ્ધતિ નો સમાવેશ અવશ્ય કરવો)	૦.૭૦ હે.
૨.	બહુમાળીય ફળઝાડ : આંબા (૮ x ૮ મી) , લીંબુ (આંબાની બે લાઈન વચ્ચે ૪ મી ના અંતરે), સીતાફળ (આંબાના બે ઝાડ વચ્ચે ૪ મી ના અંતરે) અને શાકભાજી (દુધી, ભીંડા, ગુવાર, રીંગણ, ફલાવર, કોબીજ, મુળા અને ચોળી ખેડૂત કુટુંબની જરૂરિયાત અને અનુકુળતા મુજબ સમાવેશ અવશ્ય કરવો)	૦.૨૫ હે.
૩.	શેઢાપાળાના ઝાડ : ૧. અરડુસા અને આમળા(ખેતરના શેઢા પાળા પર) ૨. સરગવા અને હાઈબ્રીડ નેપીયર ઘાસ (બે પાક પધ્ધતિ વચ્ચે)	–
૪.	પશુપાલન (બે મહેસાણી ભેંસ) + અળસીયાનું ખાતર + નર્સરીનું એકમ	૦.૦૩૫ હે.
૫.	પાણીના એકત્રીકરણ તેમજ રીચાર્જીગ માટેનું તળાવ	૦.૦૧૫ હે.
કુલ		**૧.૦૦ હે.**

Approved

(Action : Research Scientist, Centre for Research on Integrated Farming System, SDAU, S K Nagar)

15.2.1.2 Response of different biofertilizer formulation and methods of application in greengram

The farmers of North Gujarat Agro-climatic Zone growing *kharif* greengram are recommended to apply 2.5 t FYM/ha and 75 % recommended dose of fertilizer (15-30-00 NPK kg/ha) along with soil application of *Rhizobium (Rhizobium selenitireducens)* and PSB *(Bacillus coagulanse)* as liquid formulation (1.0 lit/ha) by mixing with 100 kg FYM /ha for obtaining higher seed yield and net return.

ઉત્તર ગુજરાત ખેત આબોહવાકીય વિસ્તારના ખેડૂતોને ચોમાસુ મગનુ મહત્તમ ઉત્પાદન અને ચોખ્ખો નફો મેળવવા માટ પ્રતિ હેકટર ૨.૫ ટન છાણિયા ખાતર અને ભલામણ કરેલ ખાતરના ૭૫ % (૧૫–૩૦–૦૦ ના.–ફો.–પો.કિ.ગ્રા. પ્રતિ હેકટર)ની સાથે રાઈઝોબીયમ (રાઈઝોબીયમ સેલેનીટીરીડયુસન્સ)અને પી.એસ.બી.(બેસીલસ કોગ્યુલન્સ) પ્રવાહી જૈવિક ખાતરો (હેકટરે ૧.૦ લિટર મુજબ) ૧૦૦ કિ.ગ્રા. છાણિયા ખાતર સાથે ભેળવી જમીનમાં આપવુ.

Approved

(Action : Professor & Head, Agronomy Department, CPCA, SDAU. S K Nagar)

15.2.1.3 Effect of iron and zinc enriched FYM on yield and quality of wheat

The farmers of North west Gujarat Agro-climatic Zone growing wheat under salt affected soil are recommended to apply RDF (120-60-0 kg NPK/ha, on the basis of STV) + 0.5 t FYM enriched with 3.6 kg $ZnSO_4.7H_2O$ and 8.0 kg $FeSO_4.7H_2O$ per ha for obtaining higher yield and net returns.

<table>
<tr><td></td><td>ઉત્તર–પશ્ચિમ ખેત આબોહવાકીય વિસ્તારની ક્ષારીય જમીનમાં ઘઉનુ વાવેતર કરતા ખેડૂતોએ હેકટર દીઠ ઘઉનુ વધુ ઉત્પાદન અને ચોખ્ખો નફો મેળવવા માટે પાકમાં જમીનના પૃથ્થકરણ આધારિત ભલામણ કરેલ ખાતરના જથ્થાની સાથે (૧૨૦–૬૦–૦, ના.ફો.પો.) ૫૦૦ કી.ગ્રા. છાણીયા ખાતરને ૩.૬ કિ.ગ્રા. ઝીંક સલ્ફેટ અને ૮.૦ કિ.ગ્રા. ફેરસ સલ્ફેટ થી સમૃધ્ધ કરી આપવાની ભલામણ કરવામાં આવે છે.
Approved
(Action : Professor & Head, Dept. of Ag. Chem. & Soil Sci., CPCA, SDAU. S K Nagar)</td></tr>
<tr><td rowspan="3">15.2.1.4</td><td>Effect of FYM and sources of water on growth, yield and quality of wheat</td></tr>
<tr><td>The farmers of North West Agro-climatic Zone growing irrigated wheat under salt affected soil with canal and poor quality tube well water are recommended to apply 10 t FYM / ha and alternate irrigation from tube well and canal water for obtaining higher yield and net return.</td></tr>
<tr><td>ઉત્તર–પશ્ચિમ ખેત આબોહવાકીય વિસ્તારની ક્ષારીય જમીન અને નહેરથી સિંચાઈ તેમજ નબળી ગુણવત્તાવાળા બોરના પાણીની સગવડ ધરાવતા ખેડૂતોએ ઘઉનુ હેકટર દીઠ વધુ ઉત્પાદન અને ચોખ્ખો નફો મેળવવા માટે પ્રતિ હેકટરે ૧૦ ટન છાણીયુ ખાતર આપવું અન નહેરના પાણી અને બોરના પાણીથી એકાંતરે પિયતની સાથે પ્રતિ હેકટરે ૧૦ ટન છાણીયુ ખાતર આપવાની ભલામણ કરવામાં આવે છે.
Approved
(Action : Professor & Head, Dept. of Ag. Chem. & Soil Sci., CPCA, SDAU. S K Nagar)</td></tr>
<tr><td rowspan="3">15.2.1.5</td><td>Exploration production potential of castor (GCH 7) through fertigation</td></tr>
<tr><td>The farmers of North Gujarat Agro-climatic Zone growing castor under drip system are recommended to irrigate the crop at 1.2 PEF on alternate day and fertilize the crop with 270 kg N/ha of which 20 % N (54 kg N) as basal and remaining 80% N (216 kg N) through fertigation in 6 equal splits (36 kg N through urea) starting from 50 , 65, 80, 95, 110 and 125 DAS along with 37.5 kg P_2O_5/ha (through DAP) and 20 kg S/ha (through gypsum) as basal for obtaining higher yield and net return.

The operational schedule of drip system is as under:
System details :Operating Time : Alternate day
Lateral Spacing : 150 cm — October : 1 hour 40 minutes
Dripper line : 16 mm — November : 1 hour 34 minutes
Dripper discharge: 2 lph — Dec-Jan. : 1 hour 22 minutes
Dripper distance : 40 cm — February- March : 2 hour 08 minutes
Pressure : 1.2 kg/cm^2</td></tr>
<tr><td>ઉત્તર ગુજરાત ખેત આબોહવાકીય વિસ્તારના ટપકપધ્ધતિથી દિવેલા ઉગાડતા ખેડૂતોને વધુ ઉત્પાદન અને આવક મેળવવા માટે ૧.૨ બાષ્પીભવન ગુણાંકે એકાંતરે દિવસે પિયત આપવુ અને પ્રતિ હેકટર ૨૭૦ કિગ્રા નાઈટ્રોજન જે પૈકી ૨૦ % નાઈટ્રોજન (૫૪ કિગ્રા /હે) વાવણી સમયે અને બાકીનો ૮૦ % નાઈટ્રોજન (૨૧૬કિગ્રા) ટપક પધ્ધતિ મારફતે છ સરખા હપ્તા (૩૬ કિગ્રા નાઈટ્રોજન યૂરિયા માંથી) માં વાવણી પછી અનુક્રમે ૫૦, ૬૫, ૮૦, ૯૫, ૧૧૦ અને ૧૨૫ દિવસે આપવુ. આ ઉપરાંત પ્રતિ હેકટરે ૩૭.૫ કી.ગ્રા. ફોસ્ફરસ ડીએપી માંથી અને ૨૦ કી.ગ્રા. સલ્ફર જીપ્સમમાંથી વાવણી સમયે આપવાની ભલામણ કરવામાં આવે છે.

ટપક પધ્ધતિની માહિતી — ચલાવવાનો સમય
પ્રશાખાનું અંતર૧૫૦ સેમી — ઓકટોબર ૧કલાક ૪૦ મિનીટ
ટપકણીયાનું અંતર૪૦સેમી — નવેમ્બર ૧કલાક ૩૪ મિનીટ
ટપક સિસ્ટમનું દબાણ૧.૨ કિગ્રા/સેમી^{2} — ડીસેમ્બર–જાન્યુઆરી ૧કલાક ૨૨ મિનીટ
પ્રવાહ દર ૨ લી./કલાક — ફેબ્રુઆરી–માર્ચ ૨ કલાક ૦૮ મિનીટ
પ્રશાખાની સાઈઝ ૧૬મીમી
Approved
(Action :Research Scientist, Center for Natural Resource Management, SDAU, S. K. Nagar)</td></tr>
</table>

15.2.1.6	**Comparative efficiency of PSB and biophos on the performance of castor**
	The farmers of North Gujarat Agro-climatic Zone growing castor in light textured soil with assured irrigation facility are recommended to apply 40 kg phosphorus as basal along with seed treatment with biophos (600 g inoculants/ 1 kg seeds) or 40 kg phosphorus as basal along with seed treatment of phosphate solubilizing bacteria (5 ml/kg seeds) besides RDN @ 180 kg/ha and S @ 20 kg/ha for obtaining higher yield and net return.
	ઉત્તર ગુજરાત ખેત આબોહવાકીય વિસ્તારની હલકી પ્રતવાળી જમીનમાં પિયત દિવેલાનું વાવેતર કરતા ખેડૂતોએ હેકટર દીઠ વધુ ઉત્પાદન અને ચોખ્ખો નફો મેળવવા માટે પાયાના ખાતર તરીકે પ્રતિ હેકટર ૪૦ કિ.ગ્રા. ફોસ્ફરસની સાથે ૬૦૦ ગ્રામ બાયોફોસ પ્રતિ કી.ગ્રા. બીજદીઠ માવજત અથવા ૪૦ કિ.ગ્રા. ફોસ્ફરસની સાથે ૫ મી.લી. પી.એસ.બી. પ્રતિ કી.ગ્રા. બીજદીઠ માવજત આપી વાવેતર કરવાની ભલામણ કરવામાં આવે છે. આ ઉપરાંત ભલામણ કરેલ નાઈટ્રોજન (૧૮૦ કિ.ગ્રા. પ્રતિ હેકટર) અને ગંધક (૨૦ કિ.ગ્રા. પ્રતિ હેકટર) આપવુ. **Approved** **(Action :** Research Scientist, Castor and Mustard Research Station, SDAU, S. K. Nagar**)**
15.2.1.7	**Enhancing resources use efficiency and crop productivity in cowpea**
	The recommendation was <u>not approved</u> due to differed in results **(Action :**Research Scientist, Pulse Research Station, SDAU, S. K. Nagar**)**
15.2.1.8	**Effect of date of sowing and spacing on yield of cumin**
	The farmers of North Gujarat Agro-climatic Zone are recommended to sow cumin crop during first week of November at 30 cm row spacing for obtaining higher yield and net return. **ઉત્તર ગુજરાત ખેત આબોહવાકીય વિસ્તારના ખેડૂતોને જીરાનુ વધુ ઉત્પાદન અને ચોખ્ખો નફો મેળવવા માટે જીરૂની વાવણી નવેમ્બર મહીનાના પહેલા અઠવાડિયામાં બે હાર વચ્ચે ૩૦ સે.મી. નું અંતર રાખીને વાવેતર કરવાની ભલામણ કરવામાં આવે છે.** **Approved** **(Action :**Research Scientist, Seed Spices Research Station, SDAU, Jagudan**)**
15.2.1.9	**Effect of date of sowing and spacing on yield of ajwain**
	The farmers of North Gujarat Agro-climatic Zone are recommended to sow the ajwain crop on third week of October at 45 cm row spacing for obtaining higher yield and net return.
	ઉત્તર ગુજરાત ખેત આબોહવાકીય વિસ્તારના ખેડૂતોને અજમાનુ વધુ ઉત્પાદન અને ચોખ્ખો નફો મેળવવા માટે અજમાની વાવણી ઓકટોબર મહીનાના ત્રીજા અઠવાડિયામાં બે હાર વચ્ચે ૪૫ સે.મી. નું અંતર રાખીને વાવેતર કરવાની ભલામણ કરવામાં આવે છે. **Approved** **(Action :**Research Scientist, Seed Spices Research Station, SDAU, Jagudan**)**
15.2.1.10	**Response of coriander varieties to various levels of fertility under different cutting management**
	The farmers of North Gujarat Agro-climatic Zone growing *rabi* coriander for leafy purpose are recommended to adopt GDLC 1 variety with one cutting at 40-45 DAS and fertilized with 60:30:00 kg NPK/ha in which full dose of phosphorus and half dose of nitrogen as basal while remaining half dose of nitrogen after first cut *i.e.* 40-45 DAS for obtaining higher yield and net return. For seed purpose, grow the cultivar GCo 2 and fertilized with 40:20:00 kg NPK/ha as full dose of phosphorus and half dose of nitrogen as basal and remaining half dose of nitrogen at 30 DAS.
	ઉત્તર ગુજરાત ખેત આબોહવાકીય વિસ્તારના ખેડૂતોને શિયાળુ લીલાધાણા(કોથમીર)નુ વધુ ઉત્પાદન અને ચોખ્ખો નફો મેળવવા માટે જી.ડી.એલ.સી ૧ જાતની વાવણી સમયે ૩૦ : ૩૦ કિ.ગ્રા ના.ફો./હે. આપવો અને બાકીનો ૩૦ કિ.ગ્રા ના./હે. ૪૦–૪૫ દિવસે પ્રથમ કાપણી બાદ આપવાની ભલામણ કરવામાં આવે છે.

જયારે દાણાના ઉત્પાદન માટે ધાણાની વાવણી કરતા ખેડૂતોએ ગુ.ધાણા ૨ જાતની વાવણી કરી ખાતર તરીકે ૪૦ : ૨૦ કિ.ગ્રાના.ફો./હે. આપવો જેમાં બધોજ ફોસ્ફરસ અને અડધો નાઈટ્રોજન પાયાના ખાતર તરીકે વાવણી સમયે અને બાકીનો અડધો નાઈટ્રોજન વાવણીના ૩૦ દિવસે પુર્તિ ખાતર તરીકે આપવા ભલામણ કરવામાં આવે છે.

Approved

(Action : Research Scientist, Seed Spices Research Station, SDAU, Jagudan**)**

NAVSARI AGRICULTURAL UNIVERSITY, NAVSARI

15.2.1.11 **Effect of different levels of irrigation, nitrogen and foliar application of banana sap on drip irrigated sweet corn and their residual effect on succeeding summer green gram under South Gujarat conditions**

The farmers of South Gujarat Heavy Rainfall Agro-climatic Zone following sweet corn (*rabi*)-green gram (summer) cropping sequence are recommended to adopt drip irrigation (0.8 PEF), fertigation of nitrogen (120 kg/ha) and 1% foliar spray of banana pseudo stem sap (30 and 60 day after sowing) in sweet corn (*rabi*) for achieving higher net profit and water use efficiency along with 10% water saving. The full dose of P_2O_5 (60 kg/ha) and K_2O (40 kg/ha) should be applied as basal whereas nitrogen should be applied through fertigation in six equal splits in the form of urea at weekly interval starting from 15 days after sowing to sweet corn. Green gram should be fertilized as per recommended dose (20-40-00 N-P_2O_5-K_2O kg/ha).

System details

Lateral spacing	:	1.2 m
Dripper spacing	:	0.6 m
Dripper discharge	:	4 lph
Operating pressure	:	1.2 kg/cm^2
Operating frequency	:	Alternate day
Operating time		
November	:	1 hr and 30 minutes to 2 hrs and 10 minutes
December	:	1 hr and 5 minutes to 1 hr and 30 minutes
January	:	54 minutes to 1 hr and 12 minutes
February to March	:	1 hr and 10 minutes to 2 hrs

દક્ષિણ ગુજરાતના વધુ વરસાદવાળા ખેત આબોહવાકીય વિસ્તારમાં મીઠી મકાઈ (શિયાળુ)-મગ (ઉનાળુ) પાક પધ્ધતિ અપનાવતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે મીઠી મકાઈનાં પાકને ટપક પધ્ધતિ દ્વારા પિયત (૦.૮પીઈએફ), નાઈટ્રોજન ખાતર (૧૨૦ કિગ્રા/હે) અને ૧% કેળના થડનો રસ (વાવેતર બાદ ૩૦ અને ૬૦ દિવસે) છંટકાવ કરવાથી વધુ ઉત્પાદન, ચોખ્ખી આવક અને પાણીની કાર્યક્ષમતા મળે છે તેમજ ૧૦% પાણીની બચત થાય છે. ફોસ્ફરસ (૬૦ કિગ્રા/હે) અને પોટાશ (૪૦ કિગ્રા/હે) ખાતરનો પુરેપુરો જથ્થો પાયામાં મકાઈનાં પાકને આપવો જયારે નાઈટ્રોજન છ સરખા હપ્તામાં યુરિયા ખાતર દ્વારા અઠવાડીયાનાં અંતરે વાવેતર બાદ ૧૫ દિવસે ટપક પિયત પધ્ધતિથી આપવું. મગને ભલામણ મુજબ (૨૦-૪૦-૦૦ ના-ફો-પો કિગ્રા/હે) ખાતર આપવું.

ટપક પધ્ધતિની વિગત

બે નળી વચ્ચેનું અંતર	:	૧.૨ મી
ટપકણીયા વચ્ચેનું અંતર	:	૦.૬મી
ટપકણીયાનો પ્રવાહ	:	૪લી/કલાક
પધ્ધતિનું દબાણ	:	૧.૨કિગ્રા/મી^{2}
પધ્ધતિ ચલાવવાનો ગાળો	:	એકાન્તરે દિવસે
પધ્ધતિ ચલાવવાનો સમય		
નવેમ્બર	:	૧કલાક અને ૩૦મીનીટ થી ૨ કલાક અને ૧૦મીનીટ

<table>
<tr><td></td><td>ડિસેમ્બર : ૧કલાક અને ૫મીનીટ થી ૧કલાક અને ૩૦મીનીટ
જાન્યુઆરી : ૫૪મીનીટ થી ૧કલાક અને ૧૨ મીનીટ
ફેબ્રુઆરી-માર્ચ : ૧કલાક અને ૧૦મીનીટ થી ૨ કલાક
Approved
(Action : Research Scientist, SWMRU, NAU, Navsari)</td></tr>
<tr><td>15.2.1.12</td><td>Effect of precise application of planting material, irrigation and fertilizer through drip on productivity of sugarcane</td></tr>
<tr><td></td><td>Sugarcane growing farmers of South Gujarat Heavy Rainfall Agro-climatic Zone are recommended to plant two eye budded sugarcane setts in paired row (60 x 120 x 60 cm), adopt subsurface inline drip lateral at 7.5 cm below ground level and apply 80% RDN, i.e., 200-125-125 N-P_2O_5-K_2O kg/ha for plant crop and 240-62.5-125 N-P_2O_5-K_2O kg/ha for ratoon crop. The full dose of P_2O_5 and 10% N and K_2O each should be applied as basal, whereas remaining 90% N and K_2O each through fertigation in 10 equal splits starting from one month after planting at 15 days interval for getting higher cane yield and net return along with 20% saving in fertilizer.
System details
Lateral spacing : 1.8 m
Dripper spacing : 0.6 m
Dripper discharge : 4 lph
Operating pressure : 1.2 kg/cm^2
Operating frequency : Alternate day
Operating time
October to December : 1 hr and 50 minutes to 2.00 hrs
January to February : 1 hr and 20 minutes to 1 hr and 40 minutes
March to June : 3.00 to 4.00 hrs

દક્ષિણ ગુજરાતના વધુ વરસાદવાળા ખેત આબોહવાકીય વિસ્તારમાં શેરડી ઉગાડતા ખેડૂતોને શેરડીની રોપણી બે આંખવાળા ટુકડાથી જોડીયા હારમાં (૬૦ x ૧૨૦ x ૬૦ સેમી) કરવા, જમીનમાં ૭.૫ સેમી ઉંડાઈએ ઈન લાઈન લેટરલ અપનાવવા અને ભલામણ કરેલ ખાતરનો ૮૦% જથ્થો એટલે કે ૨૦૦-૧૨૫-૧૨૫ ના-ફો-પો કિગ્રા/હે રોપાણ પાક માટે અને ૨૪૦-૬૨.૫-૧૨૫ ના-ફો-પો કિગ્રા/હે લામ પાક માટે આપવાની ભલામણ કરવામાં આવે છે. ફોસ્ફરસ ખાતરનો પૂરેપૂરો જથ્થો તથા નાઈટ્રોજન અને પોટાશ ખાતરનો ૧૦% જથ્થો પાયામાં આપવો અને બાકીનો ૯૦% નાઈટ્રોજન તેમજ પોટાશ ૧૦ સરખાં હપ્તામાં રોપણીના એક મહિનાં બાદ ૧૫ દિવસનાં ગાળે ટપક દ્વારા આપવાથી શેરડીનું વધુ ઉત્પાદન અને ચોખ્ખી આવક મળે છે તથા ૨૦% ખાતરની બચત થાય છે.
ટપક પધ્ધતિની વિગત
બે નળી વચ્ચેનું અંતર : ૧.૮મી
ટપકણીયા વચ્ચેનું અંતર : ૦.૬મી
ટપકણીયાનો પ્રવાહ : ૪લી/કલાક
પધ્ધતિનું દબાણ : ૧.૨કિગ્રા/મી^{૨}
પધ્ધતિ ચલાવવાનો ગાળો : એકાન્તરે દિવસે
પધ્ધતિ ચલાવવાનો સમય
ઓકટોબર થી ડિસેમ્બર : ૧કલાક ૫૦મીનીટ થી ૨.૦૦કલાક
જાન્યુઆરી થી ફેબ્રુઆરી : ૧કલાક ૨૦મીનીટ થી ૧કલાક ૪૦મીનીટ
માર્ચ થી જુન : ૩.૦૦કલાક થી ૪.૦૦કલાક
Approved
(Action : Research Scientist, SWMRU, NAU, Navsari)</td></tr>
</table>

15.2.1.13 **Quantify the contribution of each factor towards productivity of banana**

The farmers of South Gujarat Heavy Rainfall Agro-climatic Zone growing banana are recommended to adopt improved technologies such as tissue plantation, drip irrigation, fertigation and mulching alone or in combinations for achieving higher net return over conventional practices.

Contribution of improved technologies :

Technology (Factors)	**Production contribution (%)**		**Extra benefits**
	Sucker	**Tissue**	
Surface irrigation	-	6.94	-
Mulch in surface irrigation	5.55	10.39	Effectively control weed
Drip irrigation	16.67	19.48	40% water saving
Mulch in drip irrigation	5.95	7.60	Effectively control weed
Fertigation	10.71	15.21	40 % saving in N & K
Fertigation + Mulch	19.05	19.56	Effectively control weed and 40% saving in N & K

દક્ષિણ ગુજરાતના વધુ વરસાદવાળા ખેત આબોહવાકીય વિસ્તારમાં કેળની ખેતી કરતાં ખેડુતોને ભલામણ કરવામાં આવે છે કે, કેળના પાકમાં સુધારેલી તાંત્રિકતાઓ જેવી કે, ટીસ્યુ છોડની રોપણી, ટપક પિયત પધ્ધતિ, ફર્ટીગેશન અને આવરણ પૈકીની એક અથવા એક થી વધુ તાંત્રિકતાઓ એક સાથે અપનાવવાથી પંરપરાગત પધ્ધતિ કરતા વધુ ચોખ્ખીઆવક મળે છે.

સુધારેલી તાંત્રિકતાઓનો ફાળો:

તાંત્રિકતા (પરિબળો)	પરિબળોની ઉત્પાદન વધારવામા ટકાવારી		વધારાનો ફાયદો
	કેળની ગાંઠો	ટીસ્યુ પ્લાન્ટ	
પૃષ્ઠ પિયત	-	૬.૯૪	-
પૃષ્ઠ પિયત સાથે આવરણ	૫.૫૫	૧૦.૩૯	અસરકારક નિંદણ નિયંત્રણ
ટપક પધ્ધતિ	૧૬.૬૭	૧૯.૪૮	૪૦% પિયત બચત
ટપક સાથે આવરણ	૫.૯૫	૭.૬૦	અસરકારક નિંદણ નિયંત્રણ
ફર્ટીગેશન	૧૦.૭૧	૧૫.૨૧	૪૦%નાઈટ્રોજન અને પોટેશીયમ ખાતરની બચત
ફર્ટીગેશન સાથે આવરણ	૧૯.૦૫	૧૯.૫૬	અસરકારક નિંદણ નિયંત્રણ અને ૪૦% નાઈટ્રોજન અને પોટેશીયમ ખાતરની બચત

Approved

***(Action :** Research Scientist, SWMRU, NAU, Navsari)*

15.2.1.14 **Soil test based fertilizer recommendation for targeted yield of rice**

Soil testing laboratories are recommended to adopt soil test based fertilizer recommendation as per ready reckoner for getting targeted yield of *kharif* rice in heavy clay soil.

Soil test based fertilizer recommendation in clay soils of South Gujarat for targeted yield of *kharif* rice (Ready reckoner)

Soil test values	**Fertilizer alone**				**With FYM 5 t/ha**				**With FYM 10 t/ha**			
	Targeted yield (q/ha)				**Targeted yield (q/ha)**				**Targeted yield (q/ha)**			
N	**45**	**55**	**65**	**75**	**45**	**55**	**65**	**75**	**45**	**55**	**65**	**75**
	N (kg/ha)				N (kg/ha)				N (kg/ha)			
100	72	94	115	136	70	91	113	134	68	89	110	132
150	60	81	103	124	58	79	100	122	55	77	98	120
200	48	69	91	112	45	67	88	110	43	65	86	107
250	35	57	78	100	33	55	76	98	31	52	74	95
300	23	45	66	88	21	42	64	85	19	40	62	83
350	11	33	54	75	9	30	52	73	7	28	49	71
400	0	20	42	63	0	18	40	61	0	16	37	59
450	0	8	30	51	0	6	27	49	0	4	25	46
500	0	0	17	39	0	0	15	37	0	0	13	34
550	0	0	5	27	0	0	3	24	0	0	1	22
600	0	0	0	14	0	0	0	12	0	0	0	10
	45	**55**	**65**	**75**	**45**	**55**	**65**	**75**	**45**	**55**	**65**	**75**
P_2O_5	P_2O_5 (kg/ha)				P_2O_5 (kg/ha)				P_2O_5 (kg/ha)			
21	6	12	18	24	3	9	14	20	0	5	11	17
26	1	7	13	19	0	4	10	15	0	0	6	12
31	0	2	8	14	0	0	5	11	0	0	1	7
36	0	0	3	9	0	0	0	6	0	0	0	2
41	0	0	0	4	0	0	0	1	0	0	0	0
	45	**55**	**65**	**75**	**45**	**55**	**65**	**75**	**45**	**55**	**65**	**75**
K_2O	K_2O (kg/ha)				K_2O (kg/ha)				K_2O (kg/ha)			
200	34	44	53	63	31	41	50	60	29	38	48	57
250	32	41	51	60	29	39	48	58	27	36	46	55
300	30	39	49	58	27	37	46	56	24	34	43	53
350	28	37	47	56	25	34	44	53	22	32	41	51
400	25	35	44	54	23	32	42	51	20	30	39	49
450	23	33	42	52	21	30	40	49	18	28	37	46
500	21	31	40	50	19	28	37	47	16	25	35	44
550	19	28	38	47	16	26	35	45	14	23	33	42
600	17	26	36	45	14	24	33	43	12	21	31	40
650	15	24	34	43	12	22	31	41	9	19	28	38
700	13	22	32	41	10	19	29	38	7	17	26	36
750	10	20	29	39	8	17	27	36	5	15	24	34
800	8	18	27	37	6	15	25	34	3	12	22	31
850	6	16	25	35	3	13	22	32	1	10	20	29
900	4	13	23	32	1	11	20	30	0	8	18	27
950	2	11	21	30	0	9	18	28	0	6	15	25
1000	0	9	19	28	0	6	16	25	0	4	13	23
1050	0	7	16	26	0	4	14	23	0	0	11	21
1100	0	5	14	24	0	2	12	21	0	0	9	18
1150	0	3	12	22	0	0	9	19	0	0	7	16
1200	0	0	10	19	0	0	7	17	0	0	5	14
1250	0	0	8	17	0	0	5	15	0	0	2	12

જમીન ચકાસણી પ્રયોગશાળાઓને ભલામણ કરવામાં આવે છે કે ચોમાસુ ડાંગરનું ભારે કાળી જમીનમાં લક્ષ્યાંકિત ઉત્પાદન મેળવવા માટે જમીન પૃથ્થકરણ આધારીત નીચેના કોઠામાં દર્શાવ્યા મુજબ રસાયણિક ખાતર આપવાની ભલામણ કરવી.

ચોમાસુ ડાંગરનું લક્ષ્યાંકિત ઉત્પાદન મેળવવા માટે જમીન પૃથ્થકરણ આધારીત ખાતરની ભલામણ

જમીન ચકાસણી આંક	ફક્ત રસાયણિક ખાતર				૫ ટન/હે છા.ખા.સાથે				૧૦ટન/હે છા.ખા.સાથે			
	લક્ષ્યાંકિત ઉત્પાદન (કિવ/હે)				લક્ષ્યાંકિત ઉત્પાદન (કિવ/હે)				લક્ષ્યાંકિત ઉત્પાદન(કિવ/હે)			
નાઈટ્રોજન	45	55	65	75	45	55	65	75	45	55	65	75
	નાઈટ્રોજન (કિગ્રા/હે)				નાઈટ્રોજન (કિગ્રા/હે)				નાઈટ્રોજન (કિગ્રા/હે)			
100	72	94	115	136	70	91	113	134	68	89	110	132
150	60	81	103	124	58	79	100	122	55	77	98	120
200	48	69	91	112	45	67	88	110	43	65	86	107
250	35	57	78	100	33	55	76	98	31	52	74	95
300	23	45	66	88	21	42	64	85	19	40	62	83
350	11	33	54	75	9	30	52	73	7	28	49	71
400	0	20	42	63	0	18	40	61	0	16	37	59
450	0	8	30	51	0	6	27	49	0	4	25	46
500	0	0	17	39	0	0	15	37	0	0	13	34
550	0	0	5	27	0	0	3	24	0	0	1	22
600	0	0	0	14	0	0	0	12	0	0	0	10
	45	55	65	75	45	55	65	75	45	55	65	75
ફોસ્ફરસ	ફોસ્ફરસ (કિગ્રા/હે)				ફોસ્ફરસ (કિગ્રા/હે)				ફોસ્ફરસ (કિગ્રા/હે)			
21	6	12	18	24	3	9	14	20	0	5	11	17
26	1	7	13	19	0	4	10	15	0	0	6	12
31	0	2	8	14	0	0	5	11	0	0	1	7
36	0	0	3	9	0	0	0	6	0	0	0	2
41	0	0	0	4	0	0	0	1	0	0	0	0
	45	55	65	75	45	55	65	75	45	55	65	75
પોટાશ	પોટાશ (કિગ્રા/હે)				પોટાશ (કિગ્રા/હે)				પોટાશ (કિગ્રા/હે)			
200	34	44	53	63	31	41	50	60	29	38	48	57
250	32	41	51	60	29	39	48	58	27	36	46	55
300	30	39	49	58	27	37	46	56	24	34	43	53
350	28	37	47	56	25	34	44	53	22	32	41	51
400	25	35	44	54	23	32	42	51	20	30	39	49
450	23	33	42	52	21	30	40	49	18	28	37	46
500	21	31	40	50	19	28	37	47	16	25	35	44
550	19	28	38	47	16	26	35	45	14	23	33	42
600	17	26	36	45	14	24	33	43	12	21	31	40
650	15	24	34	43	12	22	31	41	9	19	28	38
700	13	22	32	41	10	19	29	38	7	17	26	36
750	10	20	29	39	8	17	27	36	5	15	24	34
800	8	18	27	37	6	15	25	34	3	12	22	31
850	6	16	25	35	3	13	22	32	1	10	20	29
900	4	13	23	32	1	11	20	30	0	8	18	27
950	2	11	21	30	0	9	18	28	0	6	15	25
1000	0	9	19	28	0	6	16	25	0	4	13	23
1050	0	7	16	26	0	4	14	23	0	0	11	21
1100	0	5	14	24	0	2	12	21	0	0	9	18
1150	0	3	12	22	0	0	9	19	0	0	7	16
1200	0	0	10	19	0	0	7	17	0	0	5	14
1250	0	0	8	17	0	0	5	15	0	0	2	12

Approved

(Action :** Research Scientist, SWMRU, NAU, Navsari**)

15.2.1.15 Effect of gypsum and integrated nutrient management on *kharif* rice and their residual effect on succeeding onion under partially reclaimed coastal salt affected soil

The farmers of coastal area of South Gujarat Heavy Rainfall Agro-climatic Zone following rice-onion crop sequence in heavy textured soils are

recommended to apply gypsum @ 50% gypsum requirement before transplanting of rice crop along with recommended dose of fertilizer, *i.e.*, 100-30-00 N-P_2O_5-K_2O kg/ha+ 10 t FYM/ha and succeeding *rabi* onion crop should be fertilized with 80-40-00 N-P_2O_5-K_2O kg/ha for achieving higher yield and net return along with improvement in physical condition of salt affected soils.

દક્ષિણ ગુજરાતના દરિયાકાંઠાના વધુ વરસાદવાળા ખેત આબોહવાકીય વિસ્તાaરમાં ભારે પોતવાળી જમીનમાં ડાંગર-ડુંગળી પાક પધ્ધતિ અપનાવતાં ખેડૂતોને ભલામણ કરવામાં આવે છે કે, ડાંગરની ફેરરોપણી પહેલા જીપ્સમ જરૂરીયાતના ૫૦% મુજબ જીપ્સમ તથા ભલામણ કરેલ ખાતર ૧૦૦-૩૦-૦૦ ના-ફો-પો કિગ્રા/હે + ૧૦ ટન/હે છાણિયુ ખાતર અને રવિ ઋતુમાં ડુંગળીના પાકને ૮૦-૪૦-૦૦ ના-ફો-પો કિગ્રા/હે આપવાથી વધુ ઉત્પાદન અને ચોખ્ખી આવક મળે છે તેમજ ક્ષારગ્રસ્ત જમીનના ભૌતિક બંધારણમાં સુધારો થાય છે.

Approved

(Action :** Research Scientist, SWMRU, NAU, Navsari**)

15.2.1.16 Studies on irrigation scheduling through drip and nitrogen management in cotton var. G.Cot.Hy-8 (BG II)

The farmers of South Gujarat Agro-climatic Zone are recommended to adopt drip irrigation (1.0 PEF) and fertigation of nitrogen (180 kg/ha) in *Bt* cotton for achieving higher yield and net profit. The full dose of P_2O_5 (40 kg/ha) should be applied as basal, whereas nitrogen should be applied in six equal splits (basal, 30, 60, 75, 90 and 105 days after sowing) through drip system.

System details

Lateral spacing	: 1.2 m
Dripper spacing	: 0.45 m
Dripper discharge	: 4 lph
Operating pressure	: 1.2 kg/cm^2
Operating frequency	: Every three days interval
Operating time	
September and October	: 1:30 to 2:00 (hrs:min)
November and December	: 1:30 to 1:45 (hrs:min)
January and February	: 1:50 to 2:45 (hrs:min)

દક્ષિણ ગુજરાત ખેત આબોહવાકીય વિસ્તારનાં ખેડૂતોને બીટી કપાસનું વધુ ઉત્પાદન અને ચોખ્ખી આવક મેળવવા કપાસ પાકમાં ટપક પધ્ધતિ (૧.૦પીઈએફ) અપનાવા અને ટપક પધ્ધતિ દ્વારા નાઈટ્રોજન ખાતર (૧૮૦ કિગ્રા/હે) આપવાની ભલામણ કરવામાં આવે છે. ફોસ્ફરસનો પૂરેપૂરો જથ્થો (૪૦કિગ્રા/હે) પાયાના ખાતર તરીકે જયારે નાઈટ્રોજન ખાતર છ સરખા હપ્તામાં (એક હપ્તો પાયામાં અને બાકીના હપ્તા વાવણી બાદ ૩૦, ૬૦, ૭૫, ૯૦ અને ૧૦૫ દિવસે) ટપક પધ્ધતિ દ્વારા આપવો.

ટપક પધ્ધતિની વિગત

બે નળી વચ્ચેનું અંતર	: ૧.૨ મી
ટપકણીયા વચ્ચેનું અંતર	: ૦.૪૫મી
ટપકણીયાનો પ્રવાહ	: ૪લી/કલાક
પધ્ધતિનું દબાણ	: ૧.૨કિગ્રા/મી^{2}
પધ્ધતિ ચલાવવાનો ગાળો	: દર ત્રણ દિવસનાં અંતરે
પધ્ધતિ ચલાવવાનો સમય	
સપ્ટેમ્બર-ઓકટોબર	: ૧:૩૦થી ૨:૦૦ (કલાક : મિનિટ)
નવેમ્બર-ડીસેમ્બર	: ૧:૩૦થી ૧:૪૫ (કલાક : મિનિટ)
જાન્યુઆરી- ફેબ્રુઆરી	: ૧:૫૦થી ૨:૪૫ (કલાક : મિનિટ)

Approved ***(Action :** Assoc. Res. Sci., ARS, NAU, Achhalia**)***

15.2.1.17	**Effect of crop residue incorporation and nutrient management on nutrient economy and soil properties of drilled paddy based cropping systems**
	The farmers of South Gujarat Agro-climatic Zone are recommended to follow drilled rice (*kharif*)-gram (*rabi*)-sesame (summer) sequence, incorporate gram residue in soil before sowing of summer sesame and apply 100% RDF to each crop in sequence (drilled rice75-25-00 N-P_2O_5-K_2O kg/ha, gram 25-50-00 N-P_2O_5-K_2O kg/ha, sesame 50-25-40 N-P_2O_5-K_2O kg/ha) for getting higher net return. દક્ષિણ ગુજરાત ખેત આબોહવાકીય વિસ્તારનાં ખેડૂતોને વધુ ચોખ્ખો નફો મેળવવા ઓરાણ ડાંગર (ખરીફ)-ચણા (રવી)-તલ (ઉનાળુ) પાક પધ્ધતિ અપનાવવાની, ઉનાળુ તલ વાવતા પહેલાં ચણા પાકનાં અવશેષોને જમીનમાં ભેળવી દેવાની અને દરેક પાકની ભલામણ મુજબ રાસાયણિક ખાતરનો ૧૦૦% જથ્થો (ડાંગર ૭૫-૨૫-૦૦ ના-ફો-પો કિગ્રા/હે, ચણા ૨૫-૫૦-૦૦ ના-ફો-પો કિગ્રા/હે અને તલ ૫૦-૨૫-૪૦ ના-ફો-પો કિગ્રા/હે) આપવાની ભલામણ કરવામાં આવે છે. **Approved** ***(Action :** Assoc. Res. Sci., ARS, NAU, Achhalia**)***
15.2.1.18	**Effect of foliar fertilization on sorghum under conserved moisture condition**
	The farmers of Bara track of South Gujarat Agro-climatic Zone, growing *rabi* sorghum under conserved soil moisture condition are recommended to spray 1% urea and 1% Novel organic liquid nutrient at knee high stage (keeping one week interval) in addition to RDF (40-20-00 N-P_2O_5-K_2O kg/ha) for getting higher yield and net return. દક્ષિણ ગુજરાત ખેત આબોહવાકીય વિસ્તારના બારા પટટી વિસ્તારમાં સંગ્રહિત ભેજમાં રવિ જુવાર ઉગાડતા ખેડૂતોને વધુ ઉત્પાદન અને નફો મેળવવા જુવાર ધુંટણ સુધીની ઉંચાઈએ પહોંચે ત્યારે એક અઠવાડીયાના ગાળે ૧% યુરીયા અને ૧% નોવેલ સેન્દ્રિય પ્રવાહી પોષક તત્વનો છંટકાવ કરવાની ભલામણ કરવામાં આવે છે (ભલામાણ કરેલ ખાતર ૪૦-૨૦-૦૦ ના-ફો-પો કિગ્રા/હે ઉપરાંત). **Approved** ***(Action :** Assoc. Res. Sci., ARS, NAU, Tanchha**)***
15.2.1.19	**Study on critical periods of crop-weed competition in maize**
	The farmers of South Gujarat Heavy Rainfall Agro-climatic Zone are recommended to keep the *rabi* maize field weed free from 20 to 50 days after sowing for getting higher yield and net return. દક્ષિણ ગુજરાતના વધુ વરસાદવાળા ખેત આબોહવાકીય વિસ્તારમાં રવિ ઋતુ દરમિયાન મકાઈ ઉગાડતા ખેડૂતોને વધુ ઉત્પાદન અને નફો મેળવવા પાકને વાવણી બાદ ૨૦ થી ૫૦ દિવસ સુધી નિંદણ મુકત રાખવાની ભલામણ કરવામાં આવે છે. **Approved** ***(Action :** Prof. & Head, Dept. of Agronomy, NMCA, NAU, Navsari**)***
15.2.1.20	**Response of fodder sorghum (*Sorghum bicolor* L. Moench) varieties to bio fertilizer and nitrogen levels**
	The farmers of South Gujarat Heavy Rainfall Agro-climatic Zone growing fodder sorghum (GFS 5) are recommended to treat the seed with *Azospirillum*+ PSB (each 10 ml/kg seed) and apply 80 kg N/ha(40 kg/ha as basal and 40 kg/ha at 30 DAS) in addition to basal application of recommended dose of phosphorus (40 kg P_2O_5/ha) and FYM (5 t/ha) for getting higher yield and net return. દક્ષિણ ગુજરાતના વધુ વરસાદવાળા ખેત આબોહવાકીય વિસ્તારમાં ઘાસચારાની જુવાર (જીએફએસ૫)નું વાવેતર કરતા ખેડૂતોને વધુ ઉત્પાદન તેમજ ચોખ્ખો નફો મેળવવા વાવણી સમયે

	એઝોસ્પાયરીલમ + પીએસબી (દરેક ૧૦ મીલી/કિગ્રા બીજ પ્રમાણે)ની બીજ માવજત અને ૮૦ કિગ્રા નાઈટ્રોજન/હે (૪૦ કિગ્રા/હે વાવણી સમયે અને ૪૦ કિગ્રા/હે ૩૦ દિવસે) તેમજ ભલામણ મુજબ ફોસ્ફરસ (૪૦ કિગ્રા/હે) અને છાણિયું ખાતર (૫ ટન/હે) પાયામાં આપવાની ભલામણ કરવામાં આવે છે. **Approved** ***(Action :** Prof. & Head, Dept. of Agronomy, NMCA, NAU, Navsari**)***
15.2.1.21	**Effect of N, P and K levels on yield and quality of broccoli**
	The farmers of South Gujarat Heavy Rainfall Agro-climatic Zone intended to grow broccoli during *rabi* season are recommended to apply 120-60-00 N-P_2O_5-K_2O kg/ha along with bio-compost 5 t/ha for getting better quality of broccoli head and high net return. The full dose of P_2O_5 and 50% N should be applied as basal whereas remaining 50% N should be applied in two equal splits at 25 and 50 days after planting. દક્ષિણ ગુજરાતના વધુ વરસાદવાળા ખેત આબોહવાકીય વિસ્તારમાં શિયાળુ ઋતુમાં બ્રોકોલી ઉગાડવા ઈચ્છતા ખેડૂતોને ઉત્પાદનની સારી ગુણવત્તા અને વધુ આવક મેળવવા ૧૨૦-૬૦-૦૦ ના-ફો-પો કિગ્રા/હે સાથે ૫ ટન/હે બાયોકમ્પોસ્ટઆપવાની ભલામણ કરવામાં આવે છે. ફોસ્ફરસનો પૂરેપૂરો જથ્થો અને ૫૦% નાઈટ્રોજન વાવણી સમયે પાયાના ખાતર તરીકે જયારે બાકી રહેતો ૫૦% નાઈટ્રોજન બે સરખા હપ્તામાં વાવણી પછી ૨૫ અને ૫૦ દિવસે આપવા. **Approved** ***(Action :** Prof. & Head, Dept. of SSAC, NMCA, NAU, Navsari**)***
15.2.1.22	**Effect of different organic source on yield and quality of sorghum varieties**
	The farmers of South Gujarat Heavy Rainfall Agro-climatic Zone growing *rabi* sorghum (GJ 42) organically are recommended to apply 50% RDN (40 kg N/ha) through NADEP compost and spray 1% Novel organic liquid nutrient three times (20, 40 and 60 days after sowing) for attaining the higher yield and net profit. **Details of management for sorghum under organic farming** ➢ Sow the sorghum crop at 60 x 15 cm and apply 4.2 t/ha of NADEP compost. ➢ Apply 2 kg or l/ha each of *Azospirillum*, PSB, *Trichoderma* and *Pseudomonas* in soil at the time of sowing. ➢ Apply 900 l/ha of jeevamrut with irrigation water in three equal splits at 15 days interval starting from sowing. ➢ Need based alternative spray of 0.20 % neem oil, 4 % neem extract and 2 % cow urine should be done to control sucking pests. દક્ષિણ ગુજરાતના વધુ વરસાદવાળા ખેત આબોહવાકીય વિસ્તારમાં સેન્દ્રિય ખેતીથી શિયાળુ જુવાર (જીજે ૪૨) ઉગાડતા ખેડૂતોને વધુ ઉત્પાદન અને ચોખ્ખો નફો મેળવવા ભલામણનો ૫૦% નાઈટ્રોજન (૪૦ કીગ્રા/હે) નાડેપ કમ્પોસ્ટથી આપવો અને ૧% નોવેલ સેન્દ્રીય પ્રવાહી પોષકતત્વનો ત્રણ વખત છંટકાવ (વાવણી બાદ ૨૦, ૪૦ અને ૬૦ દિવસે) કરવા ભલામણ કરવામાં આવે છે. **સામાન્ય માવજતની વિગતો** : • ૬૦×૧૫ સેમી એ જુવારની વાવણી કરી ૪.૨ ટન/હે નાડેપ કમ્પોસ્ટ આપવું. • અઝોસ્પીરીલમ, પીએસબી, ટ્રાયકોડર્મા અને સ્યુડોમોનસ દરેક ૨ કિગ્રા અથવા ૨ લી/હે વાવણી વખતે જમીનમાં આપવું. • વાવણીથી પંદર દિવસનાં અંતરે ૯૦૦ લી જીવામૃત/હે પિયત પાણી સાથે ત્રણ સરખા હપ્તામાં આપવું. • ચુસીયા પ્રકારની જીવાતોના નિયંત્રણ માટે જરૂરીયાત મુજબ વારાફરતી ૦.૨૦% લીંબોળી તેલ, ૪% લીંબોળી અર્ક અને ૨% ગૌ મૂત્રનો છંટકાવ કરવો. **Approved** *(Action : Assoc.* Prof., Dept. of SSAC, ACHF, NAU, Navsari***)***

<table>
<tr><td>15.2.1.23</td><td>Agronomical evaluation of different pigeon pea varieties under organic farming</td></tr>
<tr><td></td><td>The farmers of South Gujarat Heavy Rainfall Agro-climatic Zone growing pigeon pea (Vaishali) organically are recommended to apply 100% RDN (25 kg N/ha) through vermicompost or NADEP compost or FYM for achieving higher yield and net profit.
Details of management for pigeon pea under organic farming
➢ Sow the pigeon pea crop at 60 cm x 20 cm x 120 cm (Row x Plant x Pair). Apply 1.6 t/ha vermicompost in two equal splits at the time of sowing and one month after sowing.
➢ Soil application of Trichoderma and Pseudomonas @ 2.0 kg/ha each at the time of sowing.
➢ Inoculate seeds with Rhizobium @ 10 ml/kg seed before sowing.
➢ Grow marigold plant as a trap crop in the surrounding of the field.
➢ Keep 12 pheromone trap/ha to control Helicoverpa armigera.
➢ Spray 4% neem extract, 0.2 % neem oil and 2 % cow urine alternatively at 15 days interval from the flowering. Keep 50 bird perch/ha to control the insects.

દક્ષિણ ગુજરાતના વધુ વરસાદવાળા ખેત આબોહવાકીય વિસ્તારમાં સેન્દ્રિય ખેતીથી તુવેર (વૈશાલી) ઉગાડતા ખેડૂતોને વધુ ઉત્પાદન અને ચોખ્ખો નફો મેળવવા ભલામણનો ૧૦૦% નાઈટ્રોજન (૨૫ કીગ્રા/હે) વર્મીકમ્પોસ્ટ અથવા નાડેપ કમ્પોસ્ટ અથવા છાંણિયા ખાતરથી આપવા ભલામણ કરવામાં આવે છે.
સામાન્ય માવજતની વિગતો :
• તુવેરની 60 સેમી×૨૦ સેમી×૧૨૦ સેમી (હાર×છોડ×જોડ) નાં અંતરે વાવણી કરવી. વાવણી સમયે અને વાવણીનાં એક મહિના બાદ ૧.૬ ટન/હે વર્મીકમ્પોસ્ટ બે સરખા હપ્તેથી આપવો.
• ટ્રાયકોડર્મા અને સ્યુડોમોનસ દરેક ૨ કિગ્રા/હે વાવણી વખતે જમીનમાં આપવું.
• વાવણી વખતે રાઈઝોબીયમ જીવાણુ ૧૦ મિલી/કિગ્રા બીજને પટ આપવો.
• ખેતરનાં ફરતે ગલગોટાનો પિંજર પાક ઉગાડવો.
• ૧૨ ફેરોમોન ટ્રેપ હેલીકોવર્પાનાં નિયંત્રણ માટે લગાવવા.
• ફૂલ અવસ્થાએથી ૧૫ દિવસનાં અંતરે વારાફરથી ૪% લીંબોળી અર્ક, ૦.૨% લીંબોળી તેલ અને ૨% ગૌ મૂત્રનો છંટકાવ કરવો. પ્રતિ હેક્ટર પક્ષીને બેસવાના ૫૦ સ્ટેન્ડ ગોઠવવા.
Approved
(Action : Assoc. Prof., Dept. of SSAC, ACHF, NAU, Navsari)</td></tr>
<tr><td>15.2.1.24</td><td>Evaluation of sugarcane varieties under organic farming</td></tr>
<tr><td></td><td>The farmers of South Gujarat Heavy Rainfall Agro-climatic Zone growing sugarcane organically are recommended to prefer CoN 05072 or CoN 05071 (for Jaggery) or Co 62175 (for Jaggery) variety for attaining higher yield and net profit.
Details of management for sugarcane under organic farming
➢ Planting at 120 cm spacing and treat two eye budded setts with biofertilizer i.e. 0.5 % each of Acetobacter, PSB, Trichoderma and Pseudomonas for 20 minutes.
➢ At planting: Apply 3.4 t NADEP compost and 2.4 t vermicompost per hectare.
➢ At 45 DAP: Apply 3.3 t NADEP compost and 2.4 t vermicompost per hectare.
➢ At 90 DAP: Apply 3.3 t NADEP compost and 2.3 t vermicompost per hectare.
➢ Spraying of 0.5 % Acetobacter should be done at 30 and 45 days after planting.</td></tr>
</table>

	➢ Apply 900 l/ha of jeevamrut with irrigation water in three equal splits at 45, 90 and 120 days after planting. ➢ Apply 5 kg or l per hector each of *Trichoderma* and *Pseudomonas* at the time of earthing up. દક્ષિણ ગુજરાતના વધુ વરસાદવાળા ખેત આબોહવાકીય વિસ્તારમાં સેન્દ્રિય ખેતીથી શેરડી ઉગાડતા ખેડૂતોને વધુ ઉત્પાદન અને ચોખ્ખું વળતર મેળવવા શેરડીની જાતો સીઓએન ૦૫૦૭૨અથવા સીઓએન ૦૫૦૭૧ (ગોળ માટે) અથવા સીઓ ૬૨૧૭૫ (ગોળ માટે) જાત પસંદ કરવા ભલામણ કરવામાં આવે છે. **સામાન્ય માવજતની વિગતો** : • શેરડી પાકનાં ૧૨૦ સેમી રોપણી અંતરે, બે આંખનાં ટુકડાને એસિટોબેક્ટર, પીએસબી અને કેએમબી જેવા બાયો ફર્ટીલાઈઝર તેમજ ટ્રાયકોડર્મા અને સ્યુડોમોનાસ જેવી બાયોપેસ્ટીસાઇડ દરેકનાં ૦.૫% દ્રાવણમાં ૨૦ મિનિટ સુધી બોળી રોપવા. • રોપણી સમયે પાયામાં ૩.૪ ટન નાડેપ કંપોષ્ટ અને ૨.૪ ટન વર્મીકમ્પોસ્ટ પ્રતિ હેક્ટર આપવું. • રોપણીનાં ૪૫ દિવસ બાદ ૩.૩ ટન નાડેપ કંપોષ્ટ અને ૨.૪ ટન વર્મીકમ્પોસ્ટ પ્રતિ હેક્ટર આપવું. • રોપણીનાં ૯૦ દિવસ બાદ ૩.૩ ટન નાડેપ કંપોષ્ટ અને ૨.૩ ટન વર્મીકમ્પોસ્ટ પ્રતિ હેક્ટર આપવું. • રોપણીનાં ૩૦ અને ૪૫ દિવસ બાદ ૦.૫% એસિટોબેક્ટરનાં દ્રાવણનો છંટકાવ કરવો. • રોપણી બાદ ૯૦૦ લી/હે જીવામૃત પિયત પાણી સાથે ત્રણ સરખા હપ્તામાં ૪૫, ૯૦ અને ૧૨૦ દિવસે આપવું. • ૫ કિગ્રા અથવા લી/હે ટ્રાયકોડર્મા અને સ્યુડોમોનાસને પાળા ચઢાવતી વખતે આપવું. **Approved** ***(Action :** Assoc. Prof., Dept. of SSAC, ACHF, NAU, Navsari)*
15.2.1.25	**Effect of different systems of nutrient management in nagli**
	The farmers of South Gujarat Heavy Rainfall Agro-climatic Zone growing *kharif* finger millet (GN 4) are recommended to apply FYM 5 t/ha or incorporate forest tree leaves 5 t/ha one month before transplanting and fertilize the crop with 75% RDF (30-15-00 N-P_2O_5-K_2O kg/ha) for getting higher yield and net income. દક્ષિણ ગુજરાતના વધુ વરસાદવાળા ખેત આબોહવાકીય વિસ્તારમાં ચોમાસુ નાગલી (જીએન ૪)ની ખેતી કરતાં ખેડૂતોને વધુ ઉત્પાદન અને નફો મેળવવા છાણિયુ ખાતર ૫ ટન/હે આપવાની અથવા જંગલમાંથી પાંદડા એકઠાં કરી ૫ ટન/હે મુજબ ફેરરોપણીના એક માસ અગાઉ જમીનમાં ભેળવવાની તેમજ ભલામણ કરેલ ખાતરનો ૭૫% જથ્થો (૩૦-૧૫-૦૦ ના-ફો-પો કિગ્રા/હે) આપવાની ભલામણ કરવામાં આવે છે. **Approved** ***(Action :** Assoc. Prof., Agronomy, COA, NAU, Waghai)*
15.2.1.26	**Sustaining castor productivity in relation to green manures and fertility levels**
	The recommendation was <u>not approved</u> due to differed in results **(Action :** *Assoc. Prof. & Head, Dept. of Agronomy, COA, NAU, Bharuch***)**
15.2.1.27	**N and P management in *kharif* sorghum with and without bio organics under south Gujarat conditions**
	The farmers of South Gujarat Agro-climatic Zone growing rainfed sorghum (GJ 42) are recommended to apply RDF 80-40-00 N-P_2O_5-K_2O kg/ha (40-40-00 N-P_2O_5-K_2O kg/ha as basal and 40 N kg/ha at 30 DAS) and spray 1% NAUROJI Novel organic liquid nutrient at 45 and 60 days after sowing for getting higher yield and net return.

	દક્ષિણ ગુજરાત ખેત આબોહવાકીય વિસ્તારમાં વરસાદ આધારીત જુવાર (જીજે ૪૨) ઉગાડતા ખેડૂતોને વધુ ઉત્પાદન તેમજ ચોખ્ખો નફો મેળવવા ભલામણ મુજબ ખાતર ૮૦-૪૦-૦૦ ના-ફો-પો કિગ્રા/હે (૪૦-૪૦-૦૦ ના-ફો-પો કિગ્રા/હે પાયામાં તેમજ ૪૦ કિગ્રા નાઈટ્રોજન/હે વાવણી બાદ ૩૦ દિવસે) અને વાવણી બાદ ૪૫ અને ૬૦ દિવસે ૧% નૌરોજી નોવેલ સેન્દ્રિયપ્રવાહી પોષક તત્વનો છંટકાવ કરવાની ભલામણ કરવામાં આવે છે. **Approved** ***(Action :** Assoc. Prof. & Head, Dept. of Agronomy, COA, NAU, Bharuch)*
15.2.1.28	**Study on row spacing and inter cropping in pigeon pea under rainfed condition of South Gujarat**
	The farmers of South Gujarat Agro-climatic Zone growing rainfed pigeonpea are recommended to sow pigeonpea at 120 cm row spacing with two rows of soybean or greengram as intercrop for obtaining higher yield and net profit. દક્ષિણ ગુજરાત ખેત આબોહવાકીય વિસ્તારમાં વરસાદ આધારીત તુવેર ઉગાડતા ખેડૂતો ને વધુ ઉત્પાદન અને ચોખ્ખો નફો મેળવવા તુવેરનું વાવેતર બે હાર વચ્ચે ૧૨૦ સેમી અંતરે કરી સાથે આંતરપાક સોયાબીન અથવા મગની બે હારનું વાવેતર કરવાની ભલામણ કરવામાં આવે છે. **Approved** ***(Action :** Assoc. Prof. & Head, Dept. of Agronomy, COA, NAU, Bharuch)*
15.2.1.29	**Effect of foliar spray of silicon on growth and yield of paddy**
	The farmers of South Gujarat Heavy Rainfall Agro-climatic Zone growing *kharif* rice are recommended to spray 1.5% potassium silicate at tillering and panicle initiation stage, in addition to recommended dose of fertilizers for obtaining higher yield, net income and minimum incidence of stem borer, sheath mite and lodging percentage. દક્ષિણ ગુજરાતના વધુ વરસાદવાળા ખેત આબોહવાકીય વિસ્તારમાં ડાંગરની ખેતી કરતા ખેડૂતોને વધુ ઉત્પાદન, ચોખ્ખી આવક, ગાભમારો અને કથીરીના ઓછા ઉપદ્રવ તેમજ ઢળવાનું પ્રમાણ ઘટાડવા ફૂટ અને જીવ પડવાની અવસ્થાએ ૧.૫% પોટેશિયમ સિલિકેટનો ભલામણ કરેલ ખાતર ઉપરાંતછંટકાવ કરવાની ભલામણ કરવામાં આવે છે. **Approved** ***(Action :**Scientist, Agronomy, KVK, NAU, Navsari)*
15.2.1.30	**Evaluation of different biofertilizeers products for the supplementation of phosphorous and potash in sugarcane with graded chemical fertilizers**
	Sugarcane growers of South Gujarat Heavy Rainfall Zone are recommended to treat the setts of sugarcane before planting with the liquid Acetobacter, PSB and KMB (1x10^8 cfu/ml) for setts treatment @300ml mixed in 300lit. water/ha for 30 minutes before sowing. Soil applications of each biofertilizers @1000 ml/ha mixed in pulverized soil, first at the time of planting and second at the time of earthing up along with 125:62.5:62.5 NPK kg/ha to get higher cane yield and simultaneously save fifty per cent chemical fertilizres. દક્ષિણ ગુજરાતના વધુ વરસાદ ખેત આબોહવાકીય વિસ્તાર ના શેરડીની ખેતી કરતાં ખેડૂતોને શેરડીનું વધુ ઉત્પાદન મેળવવા તથા ૫૦ ટકા રસાયણિક ખાતરની બચત કરવા માટે, દરેક પ્રવાહી જૈવિક ખાતરો; એસિટોબેક્ટર, પી.એસ.બી.અને કે.એમ.બી. (૧x૧૦^{૮} સી.એફ.યુ./મિલિ)નું પ્રત્યેક કલ્ચર ૩૦૦ મિલી ને ૩૦૦ લિટર પાણીમા મિશ્ર કરી પ્રતિ હેક્ટરે ૩૦ મિનિટ માટે વાવણી પહેલા કટકાની માવજત આપવી. જમીન માવજત માટે રસાયણિક ખાતર ૧૨૫:૬૨.૫:૬૨.૫ ના.ફો.પો. કી/હે પ્રમાણે આપવું તેમજ દરેક જૈવિક ખાતર ૧૦૦૦ મિલીને ભરભરી માટી સાથે મિશ્ર કરી પ્રતિ હેક્ટર પ્રમાણે, પ્રથમ વાવણી સમયે ચાસમાં અને બીજી વખત પાળા ચડાવવાના સમયે જમીનમાં આપવાની

	ભલમણ કરવામા આવે છે. **Approved** (***Action***: *Professor & Head, Dept. of Plant Pathology, NMCA, NAU, Navsari*)
JUNAGADH AGRICULTURAL UNIVERSITY, JUNAGADH	
15.2.1.31	**Integrated weed management in Indianbean**
	The farmers of South Saurashtra Agro-climatic Zone growing Indian bean in *rabi* season are recommended to carryout hand weeding at 15, 30 and 45 DAS for effective weed management and achieving higher seed yield and net realization. દક્ષિણ સૌરાષ્ટ્ર ખેત આબોહવાકીય વિસ્તારમાં શિયાળુ વાલનું વાવેતર કરતાં ખેડૂતોને ભલામણ કરવામાં આવે છે કે અસરકારક નીંદણ નિયંત્રણ તથા વાલનું વધુ ઉત્પાદન અને વળતર મેળવવા માટે વાવણી બાદ ૧૫, ૩૦ અને ૪૫ દિવસે હાથ નિંદામણ કરવું. **Approved** ***(Action:*** *Professor & Head, Department of Agronomy, CoA, JAU, Junagadh)*
15.2.1.32	**Post-emergence weed management in wheat**
	The farmers of South Saurashtra Agro-climatic Zone growing wheat are recommended to carry out hand weeding at 15 DAS *fb* either ready-mix sulfosulfuron + metsulfuron 32 g/ha (75 + 5 % WDG 0.8 g/10 L water) or ready-mix clodinafop + metsulfuron 64 g/ha (15 + 1 % WP 8 g/10 L water) at 30 DAS or hand weeding at 15 and 30 DAS as per availability of labourers for effective weed management along with higher yield and net returns. દક્ષિણ સૌરાષ્ટ્ર ખેત આબોહવાકીય વિસ્તારમાં ઘઉનું વાવેતર કરતાં ખેડૂતોને ભલામણ કરવામાં આવે છ કે અસરકારક નીંદણ નિયંત્રણ તથા વધુ ઉત્પાદન અનેવળતર મેળવવા માટે મજૂરોની ઉપલબ્ધતા મુજબ વાવણી બાદ ૧૫ દિવસે હાથ નિંદામણ કરવું અને વાવણી બાદ ૩૦ દિવસે પૂર્વ મિશ્રિત સલ્ફોસલ્ફયુરોન + મેટસલ્ફયુરોન ૩૨ ગ્રામ પ્રતિ હેકટર (૭૫ + ૫ % ડબલ્યુડીજી ૦.૮ ગ્રામ/૧૦ લીટર પાણી) અથવા પૂર્વ મિશ્રિત કલોડીનાફોપ + મેટસલ્ફયુરોન ૬૪ ગ્રામ પ્રતિ હેકટર (૧૫ + ૧ % વેપા ૮ ગ્રામ/૧૦ લીટર પાણી) પ્રમાણે છંટકાવ કરવો અથવા વાવણી બાદ ૧૫ તથા ૩૦ દિવસે હાથ નિંદામણ કરવું. **Approved** ***(Action:*** *Professor & Head, Department of Agronomy, CoA, JAU, Junagadh)*
15.2.1.33	**Herbicidal control of purple nutsedge**
	The farmers of South Saurashtra Agro-climatic Zone are recommended to spray either tank-mix glyphosate 1230 g/ha (41% SL 60 ml/10 L water) + halosulfuron-methyl 33.75 g/ha (75% WG 0.9 g/10 L water) or halosulfuron-methyl 67.5 g/ha (75 % WG 1.8 g/10 L water) at 30 days after emergence for effective control of purple nutsedge under non-cropped condition during summer season. These herbicides have no residual effect on the succeeding *kharif* crops (groundnut, pearlmillet, cotton and sesame) grown 90 days after spray. દક્ષિણ સૌરાષ્ટ્ર ખેત આબોહવાકીય વિસ્તારનાં ખેડૂતોને ભલામણ કરવામાં આવે છે કે ચીઢો નીંદણનું અસરકારક નિયંત્રણ કરવા માટે ઉનાળામાં બિન–પાક પરિસ્થિતિમાં ચીઢોના ઉગાવા બાદ ૩૦ દિવસે ગ્લાયફોસેટ ૧૨૩૦ ગ્રામ/હે. (૪૧ % એસએલ ૬૦ મીલી/૧૦ લીટર પાણી) + હેલોસલ્ફયુરોન મીથાઈલ ૩૩.૭૫ ગ્રામ/હે. (૭૫ % ડબલ્યુજી ૦.૯ ગ્રામ/૧૦ લીટર પાણી)નું ટાંકી મિશ્રણ અથવા હેલોસલ્ફયુરોન મીથાઈલ ૬૭.૫ ગ્રામ/હે. (૭૫ % ડબલ્યુજી ૧.૮ ગ્રામ/૧૦ લીટર પાણી)નો છંટકાવ કરવો. આ નીંદણનાશક દવાઓના છંટકાવ બાદ ૯૦

દિવસે વાવેતર કરેલ ચોમાસુ પાકો (મગફળી, બાજરો, કપાસ અને તલ) પર તેની અવશેષીય અસર જોવા મળેલ નથી.

Approved

***(Action:** Professor & Head, Department of Agronomy, JAU, Junagadh)*

15.2.1.34 Evaluation of groundnut + sweet corn mix/inter cropping systems

The farmers of South Saurashtra Agro-climatic Zone growing *kharif* groundnut are recommended to adopt paired row (45-75-45 cm) groundnut + sweet corn (2:1) or groundnut + sweet corn (3:1) additive intercropping system for achieving higher net returns as compared to sole groundnut.

દક્ષિણ સૌરાષ્ટ્ર ખેત આબોહવાકીય વિસ્તારમાં ચોમાસુ મગફળીનું વાવેતર કરતાં ખેડૂતોને એકલી મગફળી કરતાં વધારે વળતર મેળવવા માટે જોડીયા હાર (૪૫–૭૫–૪૫ સે.મી.) મગફળી + સ્વીટ કોર્ન (મીઠી મકાઈ)(૨:૧) અથવા મગફળી + સ્વીટ કોર્ન (૩:૧)ની ઉમેરણ આંતરપાક પધ્ધતિ અપનાવવાની ભલામણ કરવામાં આવે છે.

Approved

***(Action:** Professor & Head, Department of Agronomy, CoA, JAU, Junagadh)*

15.2.1.35 Response of *Bt* cotton to high density planting and nitrogen levels through fertigation

The farmers of South Saurashtra Agro-climatic Zone growing *Bt* cotton (Cv. G.Cot.Hy.-8 BG-II) under high density planting are recommended to sow the crop at 30-60-30 cm x 30 cm or 30-90-30 cm x 30 cm in paired row and fertilized with 125 % RDN (300 kg N/ha) in eight equal splits at 15 days interval through drip fertigation along with 50 kg P_2O_5 and 150 kg K_2O/ha for obtaining higher yield and net return.

Details of drip system

Details of drip system particular	Detail	Duration of irrigation
Lateral spacing	: 90 cm	Oct.: 1 hour 30 minutes
Dripper distance	: 40 cm	Nov.: 1 hour 20 minutes
Dripper discharge rate	: 4 L/h	Dec.: 1 hour 15 minutes
Operation pressure	: 1.2 kg/cm^2	
Irrigation interval	: Alternate day	

દક્ષિણ સૌરાષ્ટ્ર ખેત આબોહવાકીય વિસ્તારમાં ઘનિષ્ઠ વાવેતર પધ્ધતિમાં બીટી કપાસ (ગુ.ક.સંકર–૮ બીજી–II) નું વધારે ઉત્પાદન અને વળતર મેળવવા કપાસને ૩૦–૬૦–૩૦ સે.મી. × ૩૦ સે.મી. અથવા ૩૦–૯૦–૩૦ સે.મી. × ૩૦ સે.મી. જોડીયા હારમાં વાવેતર કરી પાકને ૫૦ કિ.ગ્રા. ફોસ્ફરસ તથા ૧૫૦ કિ.ગ્રા. પોટાશ ઉપરાંત ભલામણ કરેલ નાઈટ્રોજનના ૧૨૫ % (૩૦૦ કિ.ગ્રા.ના./હે.) ૮ સરખા હપ્તામાં ૧૫ દિવસના ગાળે ટપક પધ્ધતિ દ્વારા આપવા ભલામણ કરવામાં આવે છે.

ટપક પધ્ધતિની વિગત

વિગત			પરીચલનનો સમય
પાણીની નળીઓનું અંતર	:	૯૦ સે.મી.	ઓકટોમ્બર : ૧ કલાક ૩૦ મિનિટ
ટપકણીયાનું અંતર	:	૪૦ સે.મી.	નવેમ્બર : ૧ કલાક ૨૦ મિનિટ
ટપકણીયાના સ્ત્રાવ ક્ષમતા	:	૪ લી./કલાક	ડીસેમ્બર : ૧ કલાક ૧૫ મિનિટ
પરીચલનનું દબાણ	:	૧.૨ કિ.ગ્રા./ચો.મી.	
પિયતનો ગાળો	:	એકાંતરા દિવસે	

Approved

	*(**Action:** Professor & Head, Department of Agronomy, CoA, JAU, Junagadh)*
15.2.1.36	**Integrated weed management in castor**
	The house has suggested to consider the recommendation for <u>Scientific community</u> *(**Action:** Research Scientist (Groundnut), Main Oilseeds Research Station, JAU, Junagadh)*
15.2.1.37	**Optimization of seed rate and spacing in semi-spreading groundnut cultivars having differential seed sizes**
	The farmers of South Saurashtra Agro-climatic Zone growing *kharif* semi-spreading groundnut varieties having seed index of 42-45 and 50-52 g/100-seed are recommended to sow at spacing of 45 cm x 10 cm with seed rate of 110 and 125 kg/ha, respectively for obtaining higher yield and net returns. દક્ષિણ સૈારાષ્ટ્ર ખેત આબોહવાકીય વિસ્તારમાં ચોમાસામાં અર્ધ વેલડી મગફળીનુ વાવેતર કરતા ખેડૂતોને વધુ ઉત્પાદન અને ચોખ્ખી આવક મેળવવા માટે દાણાનું વજન ૪૨–૪૫ અને ૫૦–૫૨ ગ્રામ/૧૦૦ દાણા ધરાવતી જાતોનું વાવેતર ૪૫ સે.મી. × ૧૦ સે.મી.ના અંતરે તેમજ બીજનો દર અનુક્રમે ૧૧૦ અને ૧૨૫ કિ.ગ્રા./હે. રાખવાની ભલામણ કરવામાં આવે છે. **Approved** *(**Action:** Research Scientist (Groundnut), Main Oilseeds Research Station, JAU, Junagadh)*
15.2.1.38	**Production potential and economics of *Bt* cotton based intercropping system under rainfed condition**
	The farmers of North Saurashtra Agro-climatic Zone adopting *Bt* cotton-based intercropping system under rainfed condition are recommended to intercrop one row of cowpea or sesame or groundnut or green gram in between two rows of cotton (Spacing: 120 cm x 30 cm) for obtaining higher yield and net return. ઉતર સૌરાષ્ટ્ર ખેત આબોહવાકીય વિસ્તારમાં વરસાદ આધારિત બીટી કપાસનાં પાકમાં આંતરપાક પધ્ધતિ અપનાવતાં ખેડૂતોને ભલામણ કરવામાં આવે છે કે કપાસની બે હાર વચ્ચે (અંતરઃ ૧૨૦ સે.મી. × ૩૦ સે.મી.) આંતરપાક તરીકે ચોળી અથવા તલ અથવા મગફળી અથવા મગની એક હાર વાવવાથી વધારે ઉત્પાદન અને આવક મેળવી શકાય છે. **Approved** *(**Action :** Research Scientist (Dry Farming), Main Dry Farming Research Station, JAU, Targhadia)*
15.2.1.39	**Weed control in *kharif* groundnut**
	The farmers of North Saurashtra Agro-climatic Zone growing groundnut during *kharif* season are recommended to keep their crop weed free through hand weeding and interculturing at 15, 30, 45 and 60 DAS or apply Quizalofop-ethyl 40 g/ha at 20 DAS *fb* IC & HW at 40 DAS for effective weed management as well as to obtain higher yield and net return. ઉતર સૌરાષ્ટ્ર ખેત આબોહવાકીય વિસ્તારમાં વરસાદ આધારીત ખરીફ મગફળી ઉગાડતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે મગફળીના પાકને નિંદણ મુકત રાખવા માટે ૧૫, ૩૦, ૪૫ અને ૬૦ દિવસે હાથ નિંદામણ અને આંતરખેડ કરવી અથવા મગફળી પાક ઉગ્યા બાદ ૨૦ દિવસે કવીઝાલોફોપ ઈથાઈલ ૪૦ ગ્રામ/હે. નો છંટકાવ અને ૪૦ દિવસે આંતરખેડ અને હાથ નિંદામણ કરવાથી અસરકારક નીંદણ નિયંત્રણ તથા મહત્તમ ઉત્પાદન અને ચોખ્ખુ વળતર મેળવી શકાય છે.

	Approved *(**Action :** Research Scientist (Dry Farming), Main Dry Farming Research Station, JAU, Targhadia)*
15.2.1.40	**Effect of spacing on castor under conserved moisture condition at Ratia**
	The farmers of North Saurashtra Agro-climatic Zone growing castor in *Ghed* area under conserved soil moisture are recommended to sow the castor at 120 cm x 60 cm for obtaining higher yield and net return. ઉતર સૌરાષ્ટ્ર ખેત આબોહવાકીય વિસ્તારમાં સંગ્રહિત ભેજ આધારીત એરંડાના પાકનું વાવેતર કરતા ઘેડ વિસ્તારના ખેડૂતોને વધુ ઉત્પાદન અને વળતર મેળવવા માટે પાકને ૧૨૦ સે.મી. × ૬૦ સે.મી.ના અંતરે વાવેતર કરવાની ભલામણ કરવામાં આવે છે. **Approved** *(**Action :** Assistant Research Scientist, Dry Farming Research Station, JAU, Ratia & Research Scientist (Dry Farming), Main Dry Farming Research Station, JAU, Targhadia)*
15.2.1.41	**Fertilizer management in groundnut + castor (3:1) intercropping system under rainfed condition**
	The farmers of North Saurashtra Agro-climatic Zone growing groundnut + castor (3:1) intercropping system are recommended to apply 75 % of recommended fertilizer dose to groundnut and 100 % recommended fertilizer dose to castor on area basis of both the crops for obtaining higher yield and net return. ઉતર સૌરાષ્ટ્ર ખેત આબોહવાકીય વિસ્તારમાં વરસાદ આધારિત મગફળી + દિવેલા (૩:૧) નું આંતર પાક તરીકે વાવેતર કરતાં ખેડૂતોને વધુ ઉત્પાદન અને વળતર મેળવવા માટે મગફળીના પાકમાં ભલામણ કરેલ ખાતરના ૭૫% તથા દિવેલાના પાકને ભલામણ કરેલ ખાતર બંને પાકના વિસ્તાર મુજબ આપવાની ભલામણ કરવામાં આવે છે. **Approved** *(**Action :** Research Scientist (Dry Farming), Main Dry Farming Research Station, JAU, Targhadia)*
15.2.1.42	**Weed management in autumn planted sugarcane-chickpea intercropping system**
	The farmers of South Saurashtra Agro-climatic Zone growing autumn-planted sugarcane are recommended to grow one row of chickpea as an intercrop in sugarcane planted at 90 cm row spacing for securing higher yield and net return. Weed control should be done with two hand weeding at 30 and 60 days after sowing of the intercrop. દક્ષિણ સૌરાષ્ટ્ર ખેત આબોહવાકીય વિસ્તારમાં શરદકાલીન શેરડી ઊગાડતા ખેડૂતોને વધારે ઉત્પાદન અને વળતર મેળવવા માટે ૯૦ સે.મી.ના અંતરે વાવેલ શેરડીમાં આંતરપાક તરીકે ચણાની એક હારનુ વાવેતર કરવાની ભલામણ કરવામાં આવે છે. આંતરપાકની વાવણી બાદ ૩૦ અને ૬૦ દિવસે હાથ નિંદામણ કરીને નિંદણ નિયંત્રણ કરવું જોઈએ. **Approved** *(**Action:** Research Scientist (Sugarcane), Main Sugarcane Research Station, JAU, Kodinar)*
15.2.1.43	**Performance of pearlmillet hybrid and popular cultivars under organic condition**
	The farmers of North Saurashtra Agro-climatic Zone adopting organic farming of pearlmillet are recommended to apply FYM 10 t/ha and sow

<table>
<tr><td></td><td>pearlmillet hybrid GHB 732 or GHB 744 or GHB 538 for achieving higher yield and net realization, maintaining soil fertility and improving quality of produce.

ઉત્તર સૌરાષ્ટ્ર ખેત આબોહવાકીય વિસ્તારમાં બાજરાની સેન્દ્રીય ખેતી આપનાવતાં ખેડૂતોને ભલામણ કરવામાં આવે છે કે વધારે ઉત્પાદન અને વળતર મેળવવા, જમીનની ફળદ્રુપતા જાળવવા તેમજ ઉત્પાદનની ગુણવત્તા સુધારવા માટે ૧૦ ટન છાણીંયુ ખાતર પ્રતિ હેકટર આપી બાજરાની જીએચબી ૭૩૨ અથવા જીએચબી ૭૪૪ અથવા જીએચબી ૫૩૮ જાતનું વાવેતર કરવું.
Approved
(Action: Research Scientist (Pearl millet), Main Pearlmillet Research Station, JAU, Jamnagar)</td></tr>
<tr><td>15.2.1.44</td><td>Effect of N, P and K fertilizers on growth, yield and nutrients uptake by brinjal</td></tr>
<tr><td></td><td>The farmers of South Saurashtra Agro-climatic Zone growing brinjal under medium black calcareous soil in late kharif season are recommended to apply nitrogen @ 125 kg/ha in four equal splits (Basal, 25, 50 and 75 days after transplanting), P_2O_5 @ 50 kg/ha and K_2O @ 50 kg/ha as basal for achieving higher yield and net return.

દક્ષિણ સૌરાષ્ટ્ર ખેત આબોહવાકિય વિસ્તારમાં મધ્યમ કાળી ચૂનાયુકત જમીનમાં મોડી ચોમાસું ઋતુમાં રીંગણનું વાવેતર કરતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે, રીંગણના પાકમાં નાઈટ્રોજન ૧૨૫ કિ.ગ્રા./હેકટર ચાર સરખા હપ્તામાં (પાયામાં તથા ફેર રોપણી બાદ ૨૫, ૫૦ અને ૭૫ દિવસે), ફોસ્ફરસ ૫૦ કિ.ગ્રા./હેકટર અને પોટાશ ૫૦ કિ.ગ્રા./હેકટર પાયામાં આપવાથી વધુ ઉત્પાદન અને ચોખ્ખો નફો મળે છે.
Approved
(Action: Professor & Head, Dept. of Agril. Chem. & Soil Sci. and Research Scientist (G&O), Vegetable Research Station, JAU, Junagadh)</td></tr>
<tr><td colspan="2">ANAND AGRICULTURAL UNIVERSITY, ANAND</td></tr>
<tr><td>15.2.1.45</td><td>Effect of spacing and topping on yield of summer sesame (Sesamum indicum L.)

The farmers of middle Gujarat agroclimatic zone growing summer sesame are recommended to follow 45 cm spacing between two rows along with topping (removal of terminal bud) during 25 to 35 days after sowing for securing higher yield and net return.

મધ્ય ગુજરાત ખેત આબોહવાકીય વિસ્તારમાં ઉનાળું તલની ખેતી કરતા ખેડ્રતોને વધુ ઉત્પાદન અને નફો મેળવવા માટે બે હાર વચ્ચે ૪૫ સે.મી. નું અંતર રાખી વાવેતર કરવાની અને વાવણી બાદ ૨૫ થી ૩૫ દિવસ દરમિયાન ડુંખ (અગ્રકાલિકા) દુર કરવાની ભલામણ કરવામાં આવે છે.
Approved
(Action: Professor and Head, Department of Agronomy, BACA, AAU, Anand)</td></tr>
</table>

15.2.1.46	**Evaluation of efficacy of sulphur and zinc containing complex fertilizer for maximizing yield and quality through balanced nutrition of groundnut crop** The farmers of middle Gujarat agroclimatic zone growing summer groundnut having S and Zn deficient soil are recommended to apply recommended dose of 25 kg N and 50 kg P_2O_5/ha through S (5.6 kg/ha) and Zn (1.1 kg/ha) containing fertilizers for getting higher yield and better quality. મધ્ય ગુજરાત ખેત આબોહવાકીય વિસ્તારમાં ઉનાળુ મગફળીનું વાવેતર કરતાં ખેડૂતોને ભલામણ કરવામાં આવે છે કે ગંધક અને જસત તત્વની ઉણપવાળી જમીનમાં ભલામાણ કરાયેલ ૨૫ કિ.ગ્રા. નાઈટ્રોજન અને ૫૦ કિ.ગ્રા. ફોસ્ફરસ પ્રતિ હેકટરે ગંધક (૫.૬ કિ.ગ્રા./હે.) અને જસત (૧.૧ કિ.ગ્રા./હે.) તત્વયુક્ત ખાતર ધ્વારા આપવાથી ગુણવત્તાસભર વધુ ઉત્પાદન મેળવી શકાય છે. **Approved** (***Action:*** *Associate Res. Scientist, Micronutrient Research Scheme, AAU, Anand)*
15.2.1.47	**Evaluation of efficacy of sulphur and zinc containing complex fertilizer for maximizing yield and quality through balanced nutrition of mustard crop** The farmers of middle Gujarat agroclimatic zone growing mustard in S and Zn deficient soil are recommended to apply recommended dose of 50 kg N and 50 kg P_2O_5/ha through S (5.6 kg/ha) and Zn (1.1 kg/ha) containing fertilizers for getting higher yield and better quality. Further, an application of recommended dose of 50 kg N and 50 kg P_2O_5/ha along with either 10 t FYM/ha or 40 kg S and 5 kg Zn/ha is equally effective. મધ્ય ગુજરાત ખેત આબોહવાકીય વિસ્તારમાં રાઈનું વાવેતર કરતાં ખેડૂતોને ભલામણ કરવામાં આવે છે કે ગંધક અને જસત તત્વની ઉણપવાળી જમીનમાં ભલામણ કરાયેલ ૫૦ કિ.ગ્રા. નાઈટ્રોજન અને ૫૦ કિ.ગ્રા. ફોસ્ફરસ પ્રતિ હેકટરે ગંધક (૫.૬ કિ.ગ્રા./હે.) અને જસત (૧.૧ કિ.ગ્રા./હે.) તત્વયુક્ત ખાતર ધ્વારા આપવાથી ગુણવત્તાસભર વધુ ઉત્પાદન મેળવી શકાય છે. ઉપરાંત ભલામણ કરાયેલ ૫૦ કિ.ગ્રા. નાઈટ્રોજન અને ૫૦ કિ.ગ્રા. ફોસ્ફરસ પ્રતિ હેકટરની સાથે ૧૦ ટન છાણીયુ ખાતર પ્રતિ હેક્ટર અથવા ભલામણ મુજબ ૪૦ કિ.ગ્રા. ગંધક અને ૫ કિ.ગ્રા. જસત પ્રતિ હેકટરે આપવાથી એક સરખી અસરકારકતા જોવા મળે છે. **Approved** (**Action:** Associate Res. Scientist, Micronutrient Research Scheme, AAU, Anand)
15.2.1.48	**Effect of cutting management and fertility status levels on growth and seed yields of multicut forage sorghum [*Sorghum bicolor* (L.) Moench] var. CoFS-29** The farmers of middle Gujarat agroclimatic zone growing multicut forage sorghum variety CoFS 29 for seed production purpose are recommended to apply 40 kg N/ha and 40 kg P_2O_5/ha as basal and 120 kg N/ha in three equal splits at 30 days after sowing, after first cut (50 DAS) and at 30 days after first cut for obtaining higher seed yield and net return. મધ્ય ગુજરાત ખેત આબોહવાકીય વિસ્તારમાં બહુકાપણી જુવારની જાત કોઇમ્બતુર ઘાસચારા જુવાર ૨૯નું બીજ ઉત્પાદન કરતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે ૪૦ કિ.ગ્રા.

	નાઇટ્રોજન તથા ૪૦ કિ.ગ્રા. ફોસ્ફોરસ પ્રતિ હેક્ટરે પાયામાં તથા ૧૨૦ કિ.ગ્રા. નાઇટ્રોજન પ્રતિ હેક્ટરે ત્રણ સરખા હપ્તામાં વાવણી પછી ૩૦, ૫૦ દિવસે (પ્રથમ કાપણી બાદ) અને પ્રથમ કાપણી પછી ૩૦ દિવસે આપવાથી વધુ બીજ ઉત્પાદન અને નફો મેળવી શકાય છે. **Approved** (**Action:** Research Scientist, Main Forage Research Station, AAU, Anand)
15.2.1.49	**Management of complex weed flora in garlic (*Allium sativum* L.)** The farmers of middle Gujarat agroclimatic zone growing garlic are recommended to apply paddy straw mulch 5 t/ha followed by hand weeding at 30 and 60 days after planting (DAP) for effective management of complex weed flora and higher net return. મધ્ય ગુજરાત ખેત આબોહવાકીય વિસ્તારમાં લસણના પાકમાં અસરકારક નીંદણ વ્યવસ્થાપન અને વધુ નફો મેળવવા માટે ડાંગરના પરાળનું ૫ ટન/હે. મુજબ આચ્છાદન (પાથરવું) કર્યા બાદ ૩૦ અને ૬૦ દિવસે હાથ નીંદામણ કરવાની ભલામણ કરવામાં આવે છે. **Approved** (**Action:** Agronomist, AICRP-Weed Management, AAU, Anand)
15.2.1.50	**Bio-efficacy of new molecules of herbicides for weed management in soybean [*Glycine max* (L.) Merrill]** The farmers of middle Gujarat agroclimatic zone growing soybean are recommended to adopt any of the following orders • Post-emergence (15-20 DAS) application of fluazifop-p-butyl 11.1% w/w + fomesafen 11.1% w/w SL 250 g a.i./ha (premix) **or** Post-emergence (15-20 DAS) application of propaquizafop-p-butyl 2.5% + imazethapyr 3.75% w/w ME 125 g a.i./ha (premix) **or** Post-emergence (15-20 DAS) application of imazethapyr 10% SL 100 g a.i./ha followed by IC + HW at 30 DAS **or** • Pre-emergence (2-3 DAS) application of pendimethalin 30% EC 750 g a.i./ha followed by IC + HW at 30 DAS **or** Pre-emergence (2-3 DAS) application of diclosulam 84% WDG 25.2 g a.i./ha followed by IC + HW at 30 DAS **or** Pre-emergence (2-3 DAS) application of pendimethalin 30% + imazethapyr 2% EC 960 g a.i./ha (premix) followed by HW at 30 DAS for effective management of complex weed flora and higher net return without any herbicide residues in produce and soil. There was no adverse effect of herbicide applied in soybean on succeeding crops. મધ્ય ગુજરાત ખેત આબોહવાકીય વિસ્તારમાં સોયાબીનના પાકમાં અસરકારક નીંદણ વ્યવસ્થાપન અને વધુ નફો મેળવવા માટે નીચેના પૈકી કોઈપણ માવજત અપનાવવાની ભલામણ કરવામાં આવે છે.

	• વાવણી બાદ ૧૫-૨૦ દિવસે ફ્લ્યુઆઝીફોપ-પી-બ્યુટાઇલ ૧૧.૧% ડબલ્યુ/ડબલ્યુ + ફોમેસાફેન ૧૧.૧% ડબલ્યુ/ડબલ્યુ એસ.એલ. ૨૫૦ ગ્રામ સક્રિય તત્વ/હે. (પૂર્વ મિશ્રિત) **અથવા** વાવણી બાદ ૧૫-૨૦ દિવસે પ્રોપાક્વીઝાફોપ-પી-બ્યુટાઇલ ૨.૫% + ઈમાઝેથાપીર ૩.૭૫% ડબલ્યુ/ડબલ્યુ એમ.ઇ. ૧૨૫ ગ્રામ સક્રિય તત્વ/હે. (પૂર્વ મિશ્રિત) **અથવા** વાવણી બાદ ૧૫-૨૦ દિવસે ઈમાઝેથાપીર ૧૦% એસ. એલ. ૧૦૦ ગ્રામ સક્રિય તત્વ/હે. અને ૩૦ દિવસે આંતરખેડ તથા હાથ નીંદામણ **અથવા** • વાવણી બાદ ૨-૩ દિવસે પેન્ડીમિથાલીન ૩૦% ઇ.સી. ૭૫૦ ગ્રામ સક્રિય તત્વ/હે. અને ૩૦ દિવસે આંતરખેડ તથા હાથ નીંદામણ **અથવા** વાવણી બાદ ૨-૩ દિવસે ડાયક્લોસુલામ ૮૪% ડબલ્યુ.ડી.જી. ૨૫.૨ ગ્રામ સક્રિય તત્વ/હે. અને ૩૦ દિવસે આંતરખેડ તથા હાથ નીંદામણ **અથવા** વાવણી બાદ ૨-૩ દિવસે પેન્ડીમિથાલીન ૩૦% + ઈમાઝેથાપીર ૨% ઇ.સી. ૯૬૦ ગ્રામ સક્રિય તત્વ/હે. (પૂર્વ મિશ્રિત) અને ૩૦ દિવસે હાથ નીંદામણ સોયાબીનમાં છંટકાવ કરેલ નીંદણનાશકોની તે પછીના પાકોમાં કોઈ આડઅસર જોવા મળેલ નથી. વધુમાં, સોયાબીનના ઉત્પાદન અને જમીનમાં નીંદણનાશકના અવશેષ નોંધાયેલ નથી. **Approved** (**Action:** Agronomist, AICRP-Weed Management, AAU, Anand)
15.2.1.51	**Effect of irrigation scheduling and fertigation on wheat (*Triticum aestivum* L.) under middle Gujarat condition**
	The recommendation was <u>not approved</u> due to differ in time of operation of irrigation system. (**Action:** Research Scientist, Regional Research Station, AAU, Anand)
15.2.1.52	**Assessment of alternate crop sequences for bidi tobacco growing area of middle Gujarat agroclimatic zone**
	The recommendation was <u>not approved</u> as it confirmed the earlier recommendation made by the same center. (**Action:** Research Scientist, Bidi Tobacco Research Station, AAU, Anand)
15.2.1.53	**Effect of different levels of phosphorus, potassium and sulphur on growth, yield and quality of Bt Cotton Var.G.Cot.Hy.8 (BG II) under middle Gujarat conditions.** The farmers of middle Gujarat agroclimatic zone growing Bt. cotton (G Cot Hy 8 BG II) are recommended to apply 20 kg P_2O_5/ha, 80 kg K_2O/ha and 20 kg S/ha besides RDN 240 kg N/ha for getting higher yield and net return.

	મધ્ય ગુજરાત ખેત આબોહવાકીય વિસ્તારમાં બીટી કપાસ (ગુ કપાસ હા. ૮ બી.જી. II) ની ખેતી કરતાં ખેડૂતોને વધારે ઉત્પાદન અને નફો મેળવવા માટે ભલામણ કરેલ ૨૪૦ કી.ગ્રા. નાઈટ્રોજન ઉપરાંત ૨૦ કી.ગ્રા. ફોસ્ફરસ, ૮૦ કી.ગ્રા. પોટાશ અને ૨૦ કી.ગ્રા. ગંધક પ્રતિ હેક્ટરે વાવણી સમયે ચાસમાં આપવાની ભલામણ કરવામાં આવે છે. **Approved** (**Action:** Asso. Research Scientist, TRTC, AAU, Devagadhbaria)
15.2.1.54	**Effect of organic manures, bio-fertilizers, levels of nitrogen and phosphorus on soybean (*Glycine max* (L.) Merrill) and their residual effects on *rabi* maize** The farmers of middle Gujarat agroclimatic zone growing *rabi* maize (Gujarat Maize 3) after *kharif* soybean (NRC 37) are recommended to apply 10 t FYM/ha along with 45 kg N/ha and 60 kg P_2O_5/ha before sowing, besides seed treatment of biofertilizers (*Rhizobium japonicum* 5 mL/kg seed) + PSB (*Bacillus coagulans* 5 mL/kg seed). It is also recommended to apply 75% recommended dose of fertilizer (90 kg N/ha and 45 kg P_2O_5/ha) to the succeeding *rabi* maize crop for obtaining higher yield and net return. મધ્ય ગુજરાત ખેત આબોહવાકીય વિસ્તારના ચોમાસુ સોયાબીન (એનઆરસી ૩૭) પછી શિયાળુ મકાઇ (ગુજરાત મકાઇ 3) ની ખેતી કરતાં ખેડૂતોને વધારે ઉત્પાદન અને નફો મેળવવા માટે સોયાબીનના બિયારણને જૈવિક ખાતર (રાઇઝોબીયમ જાપોનીકમ ૫ મિ.લિ./કિ.ગ્રા. બિયારણ) + પી.એસ.બી. (બેસીલસ કોએગુલંસ ૫ મિ.લિ./કિ.ગ્રા. બિયારણ) ની બીજ માવજત સાથે પ્રતિ હેક્ટર ૧૦ ટન છાણીયા ખાતર તથા ૪૫ કિ.ગ્રા. નાઇટ્રોજન અને ૬૦ કિ.ગ્રા. ફોસ્ફરસ વાવણી સમયે આપવાની ભલામણ કરવામાં આવે છે. શિયાળુ મકાઇ ને ભલામણ કરેલ રાસાયણીક ખાતરના ૭૫% ખાતર (૯૦ કિ.ગ્રા. નાઇટ્રોજન અને ૪૫ કિ.ગ્રા. ફોસ્ફરસ પ્રતિ હેક્ટર) આપવાની ભલામણ કરવામાં આવે છે. **Approved** (**Action:** Asso. Research Scientist, TRTC, AAU, Devagadhbaria)
15.2.1.55	**Varietal performance of pearl millet under varying transplanting period in semi *rabi* season** The farmers of middle Gujarat agroclimatic zone are recommended to adopt semi *rabi* pearl millet by transplanting one month old seedlings of GHB 744 or GHB 732 during 20th to 30th September for getting higher grain and dry fodder yield as well as net return. મધ્ય ગુજરાત ખેત આબોહવાકીય વિસ્તારના ખેડૂતોને અર્ધ શિયાળુ બાજરીનું વાવેતર કરવા ભલામણ કરવામાં આવે છે, જે માટે જીએચબી ૭૪૪ અથવા જીએચબી ૭૩૨ જાતના એક માસના ધરૂની ફેર રોપણી ૨૦ થી ૩૦ સપ્ટેમ્બર દરમ્યાન કરવાથી વધુ અનાજ અને ઘાસનું ઉત્પાદન તેમજ આવક મળે છે. **Approved** (**Action:** Principal, COA, AAU, Jabugam)

15.2.1.56	**Effect of different levels of nitrogen, phosphorus and bio-fertilizer on yield of irrigated wheat (*Triticum aestivum* L.) in *Bhal* region** The farmers of *Bhal* and coastal agroclimatic zone growing wheat (GW 496) under restricted irrigation condition are recommended to apply 60 kg N/ha and 60 kg P_2O_5/ha as a basal and 60 kg N/ha in two equal splits at 30 and 45 DAS for obtaining higher grain yield and return. ભાલ અને દરિયાકાંઠા ખેત આબોહવાકીય વિસ્તારમાં ઘઉં (જી.ડબલ્યુ ૪૯૬) ઉગાડતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે ૬૦ કિગ્રા નાઈટ્રોજન અને ૬૦ કિગ્રા ફોસ્ફરસ પ્રતિ હેકટરે પાયાના ખાતર તરીકે અને ૬૦ કિગ્રા નાઈટ્રોજન પ્રતિ હેકટરે બે સરખા હપ્તામાં વાવણી બાદ ૩૦ અને ૪૫ દિવસે પિયત આપ્યા બાદ આપવાથી વધુ ઉત્પાદન અને નફો મેળવી શકાય છે. **Approved** (**Action:** Assoc. Res. Scientist, ARS, AAU, Arnej)
15.2.1.57	**Integrated weed management in blackgram (*Vigna mungo* L.)**
	Not Approved: The house has suggested to conduct the experiment for one more year and present the recommendation in next AGRESCO. (**Action:** Assoc. Res. Scientist, ARS, AAU, Derol)
15.2.1.58	**Standardization of crop spacing and its effect on yield and fibre quality of *desi* cotton under rainfed condition** The farmers of North - West agroclimatic zone cultivating rainfed *desi* cotton are recommended to sow cotton variety G Cot 21 at 60 x 30 cm spacing to get higher seed cotton yield and net return ઉત્તર- પશ્ચિમ ખેત આબોહવાકીય વિસ્તારમાં બિનપિયત દેશી કપાસ ઉગાડતા ખેડૂતોને કપાસનું વધુ ઉત્પાદન અને નફો મેળવવા માટે ગુજરાત કપાસ ૨૧ જાતનું વાવેતર ૬૦ x ૩૦ સેમી. ના અંતરે કરવાની ભલામણ કરવામાં આવે છે. **Approved** **(Action:** Associate Research Scientist, RCRS, AAU, Viramgam**)**

15.2.2 FOR SCIENTIFIC COMMUNITY

SARDARKRUSHINAGAR DANTIWADA AGRICUTURAL UNIVERSITY, SKNAGAR

15.2.2.1	**Delineation of nutrient status of soils of Arvalli district and their relationship with soil properties**
	The soils of Aravalli district are sandy, loamy sand, sandy loam and sandy clay loam in texture, neutral to alkaline in reaction and soluble salt content within safe limit. These soils are low in organic carbon, whereas medium to high in available phosphorus, potassium, sulphur, DTPA–extractable iron and zinc status. The DTPA–extractable manganese and copper status of these soils are high. However, deficiency of DTPA–extractable zinc and iron is also noted in these soils. **Approved** **(Action :**Unit Head, CIL, SDAU, S.K. Nagar**)**
15.2.2.2	**Delineation of nutrient status of soils of Mehsana district and their relationship with soil properties**
	The soils of Mahesana district are neutral to alkaline in reaction and soluble salt content within safe limit. These soils are low in organic carbon, where as

	medium in nitrogen, medium to high in available phosphorus, potassium, sulphur, DTPA–extractable iron and zinc status. The DTPA–extractable manganese, copper and boron status of these soils are high. However, deficiency of DTPA–extractable iron and zinc is also noted in these soils. **Approved** **(Action :** Research Scientist, Wheat Research Station, SDAU, Vijapur**)**

NAVSARI AGRICULTURAL UNIVERSITY, NAVSARI

15.2.2.3	**Comparison of different digestion methods for analysis of multi element (P, K, Fe, Mn, Zn, Cu) from plant**
	Considering cost effectiveness and comparatively higher digestion capability, hot plate based digestion method was found superior over infrared digestion, microwave digestion and block digestion methods for elemental analysis of plant. **Approved** ***(Action :** Prof. & Head, Dept. of SSAC, NMCA, NAU, Navsari)*
15.2.2.4	**Calibration and validation of DSSAT model for sugarcane crop for South Gujarat region**
	Calibrated genetic coefficients of two sugarcane cultivars (Co 86032 and Co 99004) furnished in the following table can be used to run DSSAT model to simulate sugarcane yield under south Gujarat condition.

Calibrated genetic coefficients of two cultivars of sugarcane

Parameter	Description of parameter coefficients controlling development aspects	Co 86032	Co 99004
MaxPARCE	Maximum (no stress) radiation conversion efficiency expressed as assimilate produced before respiration, per unit PAR. (g/MJ)	9.88	9.90
APFMX	Maximum fraction of dry mass increments that can be allocated to aerial dry mass (t/t)	0.93	0.87
STKPFMAX	Fraction of daily aerial dry mass increments partitioned to stalk at high temperatures in a mature crop (t/t on a dry mass basis)	0.78	0.78
SUCA	Sucrose partitioning parameter: Maximum sucrose contents in the base of stalk (t/t)	0.62	0.55
TBFT	Sucrose partitioning: Temperature at which partitioning of unstressed stalk mass increments to sucrose is 50% of the maximum value	26	27
Tthalfo	Thermal time to half canopy (^{o}Cd)	250	250
TBase	Base temperature for canopy development (^{o}Cd)	16	16
LFMAX	Maximum number of green leaves a healthy, adequately-watered plant will have after it is old enough to lose some leaves.	12	12
MXLFAREA	Max leaf area assigned to all leaves above leaf number MXLFARNO (cm^2)	629	369
MXLFARNO	Leaf number above which leaf area is limited to MXLFAREA	15	15
PI1	Phyllocron interval 1 (for leaf numbers below Pswitch, ^{o}C.d (base TTBASELFEX))	94	107
PI2	Phyllocron interval 2 (for leaf numbers above Pswitch, ^{o}C.d (base TTBASELFEX))	199	218
PSWITCH	Leaf number at which the phyllocron changes.	18	17
TTPLNTEM	Thermal time to emergence for a plant crop (degree C days, base TTBASEEM)	450	500
TTRATNEM	Thermal time to emergence for a ratoon crop (degree C days, base TTBASEEM)	203	203
CHUPIBASE	Thermal time (baseTTBASEEM) from emergence to start of stalk growth	1050	1050

TT_POPGROWTH	Thermal time to peak tiller population (deg C days, TTBASEPOP)	680	557
MAX_POP	Maximum tiller population (stalks/m^2)	38	38
POPTT16	Stalk population at/after 1600 degree days (/m^2)	11.3	11.3
LG_AMBASE	Aerial mass (fresh mass of stalks, leaves, and water attached to them) at which lodging starts; t/ha	220	220

Approved

(Action :*Prof. & Head, Dept. of NRM, COF, NAU, Navsari)*

15.2.2.5	**Evaluation of different biofertilizeers products for the supplementation of phosphorous and potash in sugarcane with graded chemical fertilizers**
	Five times higher concentration (200 ml prepared from 1000 ml normal Biofertilizers) of Phosphate Solublizing Bacteria (*Bacillus megaterium*) and lyophilized Phosphate Solublizing Bacteria (5 g prepared from 1000 ml of Biofertilizer) can be used as a new formulation of Biofertilizer. (***Action***: *Professor & Head, Dept. of Plant Pathology, NMCA, NAU, Navsari*)
15.2.2.6	**Evaluation of different biofertilizeers products for the supplementation of phosphorous and potash in sugarcane with graded chemical fertilizers**
	Conninghemella sp. NAUB-5 fungal isolate can be used for the preparation of Biofertilizers to convert unavailable phosphorous into available for the plant in the soil for the sugarcane growth. **Approved** (***Action***: *Professor & Head, Dept. of Plant Pathology, NMCA, NAU, Navsari*)

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15.2.2.7	**Integrated weed management in castor**
	Under South Saurashtra Agro-climatic Zone, effective weed management as well as higher seed yield and net returns from irrigated castor during *kharif* season can be achieved by keeping the crop weed free through interculturing and hand weeding at 20, 40, 60, 80, 120 and 150 DAS or pendimethalin as pre-emergence 1 kg/ha *fb* Quizalofop ethy1 0.05 kg/ha as post-emergence at 25 DAS *fb* IC & HW at 60 DAS. **Approved** ***(Action :****Research Scientist (Groundnut), Main Oilseeds Research Station, JAU, Junagadh)*
15.2.2.8	**Weed control in *kharif* groundnut**
	Under North Saurashtra Agro-climatic Zone, effective weed management as well as higher yield and net returns from *kharif* groundnut can be achieved by application of Oxyfluorfen 0.24 kg/ha as pre-emergence *fb* IC & HW at 40 DAS. **Approved** ***(Action :*** *Research Scientist (Dry Farming), Main Dry Farming Research Station, JAU, Targhadia)*

15.2.2.9	**Integrated weed management in Indianbean**
	Under South Saurashtra Agro-climatic Zone, effective weed management along with higher yield and net returns from *rabi* Indian bean can be achieved by pre-emergence application of either pendimethalin 30 % EC 900 g a.i./ha as pre-emergence or pendimethalin 37.8 % CS 900 g a.i./ha as pre-plant incorporation followed by interculturing and hand weeding at 45 DAS. **Approved** ***(Action:** Professor & Head, Department of Agronomy, JAU, Junagadh)*
15.2.2.10	**Weed management in autumn planted sugarcane + chickpea intercropping system**
	The scientific community is informed that application of pendimethalin 1.0 kg/ha as pre-emergence followed by hand weeding at 45 days after sowing of chickpea as intercrop in sugarcane planted at 90 cm row spacing gave higher yield and net return as well as effective weed management. **Approved** ***(Action:** Research Scientist (Sugarcane), Main Sugarcane Research Station, JAU, Kodinar)*
15.2.2.11	**Performance of sesame genotypes differing in maturity and plant types and their response to spacing in *kharif* season**
	In North Saurashtra Agro-climatic Zone, sesame varieties/genotypes differing in maturity and plant type gave higher seed yield with different spacing in *kharif* season as below. ➢ Variety with profuse branches and late maturity (G.Til 10) at 45 cm x 10 cm or 60 cm x 10 cm spacing. ➢ Variety with few branches and mid late (G.Til 3 and GJT 5) as well as late maturity (AT 308) at 45 cm x 10 cm or 30 cm x 10 cm spacing. ➢ Variety with few branches and early maturity (AT 375 and AT 377) at 30 cm x 10 cm spacing. ➢ Uniculm variety with late maturity (AT 363 and AT 374) at 30 cm x 10 cm spacing. **Approved** ***(Action:** Research Scientist (Pl. Br.), Agricultural Research Station, JAU, Amreli)*
15.2.2.12	**Establishment of critical limit of sulphur for green gram crop in medium blackcalcareous soils**
	For recommending sulphur application to green gram crop grown in calcareous soils of Saurashtra, STLs of Gujarat should consider the critical limit of 13.8 ppm in soil and 0.395 per cent in green gram plant at 45 DAS. **Approved** ***(Action:** Professor& Head, Dept. of Agril. Chem. & Soil Sci., JAU, Junagadh)*
15.2.2.13	**Soil test based fertilizers application for targeted yield of soybean in Saurashtra region of Gujarat**
	The soil testing laboratories are informed that the nutrients requirement for production of one quintal soybean seed was assessed as 5.65, 0.91 and 2.53 kg; N, P_2O_5 and K_2O, respectively. The fertilizer prescription equations are: for N: [FN = (7.87 x T) - (0.50 x SN) - (0.39 x FYM)], P: [FP_2O_5 = (3.10 x T) - (1.87 x SP) - (0.17 x FYM)] and K:[FK_2O: = (4.70 x T) - (0.20 x SK) - (0.19 x FYM)] with FYM. Targeted yield concept could effectively be adopted up to 20 q/ha for site specific fertilizer recommendationto achieve high yields of soybean in the medium

	black calcareous soils of Saurashtra region of Gujarat. **Approved** ***(Action:*** *Professor& Head, Dept. of Agril. Chem. & Soil Sci.& Research Scientist (Groundnut), Main Oilseed Research Station, JAU, Junagadh)*
15.2.2.14	**Effect of saline irrigation water on wheat crop**
	It is information for scientific community especially plant breeders that wheat varieties GW 366 and KRL 19 recorded higher mean salinity index (86.7 and 79.8 %), comparable mean seed yield (18.4 and 14.4 g/pot), minimum yield decline (29.38 and 34.89 %) at EC 8.0 dS/m and for 50 % yield reduction at EC 12.24 and 10.54 dS/m, respectively as well as lower Na/K ratio in grain (GW 366) and straw (KRL19), hence found more tolerant as compared to GW 451 and GW 463. **Approved** ***(Action:*** *Professor & Head, Dept. ofAgril. Chem. & Soil Sci., JAU, Junagadh)*
15.2.2.15	**Effect of saline irrigation water on tomato crop**
	It is information for scientific community especially plant breeders that tomato varieties Anand Tomato 3 and Gujarat Tomato 1 recorded higher mean fruit yield (219.3 and 213.1 g/pot), higher mean salinity index (80.8 and 76.9 %), minimum yield decline (29.84 and 37.84 %) at 8.0 dS/m and for 50 % yield reduction at EC 11.92 and 10.21 dS/m, respectively, hence found more salt tolerant compared to Gujarat Tomato 2 and Junagadh Tomato-3. **Approved** ***(Action:*** *Professor & Head, Dept. of Agril. Chem. & Soil Sci., JAU, Junagadh)*
15.2.2.16	**Effect of saline irrigation water on brinjal crop**
	It is information for scientific community especially plant breeders that brinjal variety GJB 2 recorded higher mean fruit yield (1490.2 g/plot) with mean salinity index (78.7 %), yield decline (31.16 %) at 8.0 dS/m and for 50 % yield reduction at EC 11.28 dS/m, as well as lower Na/K ratio in fruit (0.124) and stalk (0.10) comparable with other varieties. **Approved** ***(Action:*** *Professor & Head, Dept. of Agril. Chem. & Soil Sci., JAU, Junagadh)*

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15.2.2.17	**To find out critical limit of Ni for soil** The critical limit of DTPA extractable nickel in soil is 0.50 mg/kg. **Approved** (**Action:**Associate Res. Scientist, Micronutrient Research Scheme, AAU, Anand)
15.2.2.18	**Management of complex weed flora in garlic (*Allium sativum* L.)** For effective and economical management of complex weed flora in garlic, it is recommended to adopt any one of the below mentioned weed management practices. Pre-emergence (2-3 DAP) application of oxyfluorfen 23.5% EC 240 g a.i./ha *fb* paddy straw mulch 5 t/ha *fb* hand weeding at 60 DAP **or**

	Early post-emergence (8-10 DAP) application of pendimethalin 30% EC 500 g a.i./ha + oxyfluorfen 23.5% EC 120 g a.i./ha (tank mix) *fb* paddy straw mulch 5 t/ha **or** Pre-emergence (2-3 DAP) application of pendimethalin 30% EC 500 g a.i./ha + oxyfluorfen 23.5% EC 120 g a.i./ha (tank mix) *fb* paddy straw mulch 5 t/ha **or** Pre-emergence (2-3 DAP) application of pendimethalin 30% EC 500 g a.i./ha *fb* paddy straw mulch 5 t/ha *fb* hand weeding at 60 DAP. No residues of the applied herbicide were found in the garlic bulb. There was no adverse effect of herbicide applied in garlic on succeeding crops. **Approved** (**Action:** Agronomist, AICRP-Weed Management, AAU, Anand)
15.2.2.19	**Effect of secondary and micro nutrients on growth, yield and quality of tobacco** Tobacco crop is not responding to application of secondary and micronutrients on the loamy sand soil having medium to sufficient status of these nutrients. **Approved** **(Action:** Research Scientist, Bidi Tobacco Research Station, AAU, Anand**)**

15.2.3 New Technical Programme

SARDARKRUSHINAGAR DANTIWADA AGRICUTURAL UNIVERSITY, SKNAGAR

Sr. No.	Title/Centre	Suggestions	Remarks
15.2.3.1	Sustainable resource management for climate smart IFS model for North Gujarat condition	**Accepted** (**Action**: Research Scientist, Centre for IFS, SDAU, S. K. Nagar)	Approved
15.2.3.2	Weather based yield forecasting of potato and fennel for Banaskantha district	**Not accepted** (**Action**: Professor and Head, Department of Agronomy, C. P. C. A.,SDAU, S. K. Nagar)	Dropped
15.2.3.3	Mix cropping study in green gram under *rainfed* condition	**Accepted with following suggestions** 1.Fertiizer should be calculate based on plant population of castor in addition to RDF of greengram at 30/45 DAS based on moisture availability (**Action**: Research Scientist Centre for Natural Resource Management, SDAU, S. K. Nagar)	Approved
15.2.3.4	Effect of different ploughing implements on *in situ* moisture conservation and yield of castor	**Accepted with following suggestions** 1.Should also be discuss in Ag. Engg. sub-committee (**Action**: Research Scientist, Centre for	Approved

		Natural Resource Management, SDAU,S. K. Nagar)	
15.2.3.5	Weed management in organic *rabi* fennel	**Accepted with following suggestions** 1.Treatment recast as follow, T_5: Replace bajara husk with wheat straw T_6: IC *fb* HW at 30 and 60 DAS + Earthing up at 70 DAS T_7: Two IC at 30 and 60 DAS+ Earthing up at 70 DAS 2. Microbial count at Initial and after harvest should be taken (**Action**: Research Scientist, Centre for Natural Resource Management, SDAU, S. K. Nagar	Approved
15.2.3.6	Production potentiality of *ajwain* under organic farming	**Accepted with following suggestions** 1.Take RBD design with ten treatments including control 2.Add microbial count (Initial and after harvest) in observation (**Action**: Research Scientist, Centre for Natural Resource Management, SDAU, S. K. Nagar)	Approved
15.2.3.7	Effect of irrigation schedules on grain amaranth under sprinkler irrigation system	**Accepted** (**Action**: Research Scientist, Centre for Crop Improvement, SDAU, S. K. Nagar)	Approved
15.2.3.8	Response of quinoa to different levels of spacing and fertilizer	**Accepted with following suggestions** 1.Recast the treatments as under, Nitrogen level : 20,40 and 60 Kg N/ha Phosphorus level : 20 and 40 Kg P_2O_5/ha Spacing : 20 and 45 cm row spacing 2. Add observation of protein content as well as soil and plant nutrient content and uptake (**Action**: Research Scientist, Centre for Crop Improvement, SDAU, S. K. Nagar)	Approved
15.2.3.9	Effect of date of sowing and spacing on summer *kalingda* for vegetable purpose	**Accepted with following suggestions** 1.In treatments instead of date of sowing use D_1: Second week of February, D_2: First week of March and D_3: Third week of March 2.Design should be SPD 3. Date of sowing in main plot and spacing in sub plot. 4.Record the observation on thermal indices (**Action**: Research Scientist, Centre for Crop Improvement, SDAU, S. K. Nagar)	Approved
15.2.3.10	Effect of date of sowing and spacing on kankoda	**Accepted with following suggestions** 1.In treatments instead of date of sowing use D_1: Last week of April, D_2: Second	Approved

		week of May and D_3: Fourth week of May 2.Design should be SPD 3. Date of sowing in main plot and spacing in sub plot. (**Action**: Research Scientist, Centre for Crop Improvement, SDAU, S. K. Nagar)	
15.2.3.11	Influence of resource conservation techniques on castor based intercropping system and soil health (ICAR)	**Accepted** (**Action**: Research Scientist Castor Mustard Research Station, SDAU, S. K. Nagar)	Approved
15.2.3.12	Influence of crop residue and integrated nitrogen management in castor	**Not accepted** (**Action**: Research Scientist Castor Mustard Research Station, SDAU, S. K. Nagar	Dropped
15.2.3.13	Effect of nutrients and biofertilizers on yield and economics of chickpea	**Accepted with following suggestions** 1.Recast the title as "Nutrient management in chickpea" 2.Add T_2 treatment from T_3 to T_8 as common (**Action**: Research Scientist, Pulses Research Station, SDAU, S. K. Nagar)	Approved
15.2.3.14	Phosphorus and zinc economy with phosphate and zinc solubilizing microbs in field pea (AICRP approved)	**Accepted** (**Action**: Research Scientist, Pulses Research Station, SDAU,S. K. Nagar)	Approved
15.2.3.15	Weed management in summer sesame	**Accepted with following suggestions** 1. In W_9 and W_{10},take Quizalofop-ethyle 40 g/ha instead of 30 g/ha 2. W_1 : Weed free (IC *fb* HW at 20 and 40 DAS) (**Action**: Research Scientist, Seed Technology, SDAU, S K Nagar)	Approved
15.2.3.16	Integrated nutrient management in summer sesame	**Not accepted** **Action**: Research Scientist Seed Technology, SDAU, S K Nagar)	Dropped
15.2.3.17	Zinc management in wheat	**Accepted with following suggestions** 1.Bacteria should be given at the time of first irrigation 2.Bacillus culture should be finalize after consulting with microbiologist 3.Recast the treatment as under T_2 : 5 kg ZnSO4/ ha T_3 : 10 kg ZnSO4/ ha T_7 : T_2 + Bacterial culture T_8 : T_3 + Bacteria culture	Approved

		T_{10} : Three water spray at CRI, Tillering and Booting 4. Delete CRI stage from treatments T_4,T_5 and T_6 (**Action**: Research Scientist, Central Instrumentation Laboratory, SDAU, S. K. Nagar)	
15.2.3.18	Effect of potassium and iron on yield attributes, yield and quality of *kharif* groundnut	**Accepted with following suggestions** 1.Remove the word yield attributes from the title 2.Recast the treatments as under, • Potassium levels : 00,20 and 40 kg K_2O/ha • Iron levels : 0 and 15 kg $FeSO_4$/ha and foliar spray 0.5 % $FeSO_4$ at 30 & 45 DAS 3.Take the observation on chlorophyll A and B content in leaves. 4. Delete Zn content and uptake from observation (**Action**: Research Scientist, Central Instrumentation Laboratory, SDAU, S. K. Nagar)	Approved
15.2.3.19	Effect of phosphorus and potassium on yield attributes, yield and quality of mustard	**Accepted with following suggestions** 1. Remove the word yield attributes from the title 2.Recast the treatments as under, • Phosphorus levels : P_1:50 kg P2O5/ha P_2: 37.5Kg P_2O_5/ha + PSB • Potassium levels :K_1: 00 Kg K2O/ha • K_2:20 Kg K_2O/ha • K_3:20 Kg K_2O/ha + KMB K_4: KMB only Rate of PSB and KMB should be mentioned (**Action**: Research Scientist, Central Instrumentation Laboratory, SDAU, S. K. Nagar)	Approved
15.2.3.20	Effect of silicon and sulphur on yield attributes, yield and quality of wheat	**Accepted with following suggestions** 1.Remove the word yield attributes from the title 2.Add observation on lodging percentage, pest and disease index, number of tillers per meter row length (**Action**: Research Scientist, Central Instrumentation Laboratory, SDAU, S. K. Nagar)	Approved
15.2.3.21	Response of fenugreek to varying levels of sulphur and zinc	**Accepted with following suggestions** 1.Recast the treatments as follow, **Sulphur levels :**	Approved

		S_1 : 00 kg S/ha S_2 : 10 kg S/ha S_3 : 20 kg S /ha **Zinc levels :** Z_1:Control (Water spray) Z_2: 0.5 % $ZnSO_4$ 3.Source of sulphur : Bentonite (**Action**: Research Scientist, Seed Spices Research Station, SDAU, Jagudan)	
15.2.3.22	Study on fennel based intercropping system.	**Accepted with following suggestions** 1.Mention the words additive series in the treatment T_5 to T_{10} 2.No fertilizer should be given to intercrop (**Action**: Research Scientist, Seed Spices Research Station, SDAU, Jagudan)	Approved
15.2.3.23	Effect of seed bio-priming on growth and yield of wheat	**Not accepted** 1.Recast and prepare review based new experiment and present in next AGRESCO (**Action**: Research Scientist, Wheat Research Station, SDAU, Vijapur)	Dropped
15.2.3.24	Study on weed control in wheat.	**Accepted with following suggestions** 1.Recast the title as “Study on weed management in irrigated wheat” 2.Mention CS 37.5 % formulation in treatment T_1 3.Sowing should be done under vapsa condition 4.Mention the word “as when required” in treatment T_{10} (**Action**: Research Scientist, Wheat Research Station, SDAU, Vijapur)	Approved
15.2.3.25	Module base organic wheat package of practice	**Accepted with following suggestions** 1. Plot size should be 0.25 ha for each module and quadrate size should be 1 m x 1m 2.Add observation on insect, pest and disease incidences (**Action**: Research Scientist, Wheat Research Station, SDAU, Vijapur)	Approved
15.2.3.26	Effect of high density planting system on late sown wheat	**Accepted with following suggestions** 1.Replication should be four (4) 2.Recast the treatment as follow Spacing : S_1 : 20 cm, S_2 : 10 cm and S_3 : Broadcasting 3.Sowing should be done under vapsa condition	Approved

		4. Seed rate : 150 for 20 cm and 300 kg for 10 cm and broadcasting sowing (**Action**: Research Scientist, Wheat Research Station, SDAU, Vijapur)	
15.2.3.27	Efficacy of herbicides against complex weed flora in *kharif* maize	**Accepted with following suggestions** 1.Recast T_4 as add 1.0 kg Atrazine as PE followed by halosulfuran as 67.5 g/ha as PoE at 25 DAS (**Action**: Assistant Research Scientist, Agricultural Research Station, SDAU, Ladol)	Approved
15.2.3.28	Effect of antitranspirants on *Para wilt* and seed cotton yield of *Bt*. Cotton	**Accepted** (**Action**: Associate Research Scientist, Cotton Research Station, SDAU, Talod)	Approved
15.2.3.29	Effect of herbicidal and mechanical methods of post monsoon weed management in *Bt* cotton	**Accepted with following suggestions** 1.Add treatment T_{10} : Herbigation with pendimethalin @ 1.0 kg a.i. /ha at first irrigation after cessation of monsoon 2.Delete the word protective from the treatments 3.Add the observations on weed seed bank at initial and at harvest from 10 cm soil depth 4. Carried out residual analysis for herbicide 5. Add the observation of weed count and dry weight at 45 and at harvest (**Action**: Associate Research Scientist, Cotton Research Station, SDAU, Talod)	Approved
15.2.3.30	Effect of de–topping and spacing on yield of *Bt* cotton	**Accepted** (**Action**: Associate Research Scientist, Cotton Research Station, SDAU, Talod)	Approved
15.2.3.31	Response of castor GCH 8 to spacing	**Accepted with following suggestions** Recast the title as “Response of castor GCH 8 to variable spacing” (**Action**: Research Scientist Regional Research Station, SDAU, Bhachau)	Approved
15.2.3.32	Response of soybean to date of sowing and spacing	**Accepted with following suggestions** 1.Delete the variety levels and kept NRC37 for sowing purpose 2. Spacing levels S_1 : 30 cm x 10 cm S_2 : 45 cm x 10 cm S_3 : 60 cm x 10 cm 2.Four replication with RBD (Factorial) (**Action**: Assistant Research Scientist, Maize Research Station, SDAU,	Approved

		Bhiloda)	
15.2.3.33	Response of blackgram to phosphorus and biofertilizers	**Accepted** (**Action**: Assistant Research Scientist, Agricultural Research Station, SDAU, Aseda)	Approved
15.2.3.34	Response of summer pearlmillet to irrigation and nitrogen levels under sprinkler irrigation system	**Accepted with following suggestions** 1.Recast the treatment as follow Nitrogen levels N_1 : 80 kg N /ha N_2 : 100 kg N /ha N_3 : 120 kg N /ha 2.Design should be Large plot technique (CRD) 3.Four (4) quadrate 4.Size of quadrate : 2 mt x 2 mt 5. Delete the plot size of 6 mt x 4.5 mt (**Action**: Assistant Research Scientist, Agricultural Research Station, SDAU, Shihori)	Approved
15.2.3.35	Relay cropping of castor in *kharif* groundnut	**Accepted with following suggestions** 1.Mention the word replacement series 2.Replace the symbol of "+" with "- " in treatments T_4 and T_5 (**Action**: T.O., KVK, SDAU, Tharad)	Approved
15.2.3.36	Effect of dates of sowing and seed rates on yield of forage maize	**Not accepted** (**Action**: Research Scientist, Livestock Research Station, Sardarkrushinagar,)	Dropped
15.2.3.37	Response of summer fodder sorghum to NPK fertilization	**Accepted with following suggestions** 1.Application of the fertilizer should be 25 % equal split of nitrogen (25 % as basal and 25 % after each cut) 2.Take the observation on HCN (**Action**: Research Scientist, Livestock Research Station, Sardarkrushinagar)	Approved
15.2.3.38	Nitrogen management in *kharif* pearlmillet	**Accepted with following suggestions** 1.Write the 50 % RDN instead of 75 % RDN for treatment T_5,T_6 and T_7 (**Action**: Principal, Polytechnic in Agriculture, Amirgadh)	Approved
15.2.3.39	Evaluation of carbon sequestration potential of different multipurpose tree species	**Accepted** (**Action** : Research Scientist, Agroforestry Research Station, SDAU, Sardarkrushinagar)	Approved

Sr.	Centre & Title of Experiment		Remarks
15.2.3.40	Effect of irrigation, fertigation and mulching on fruit yield and quality of musk melon	**Accepted with following suggestions:** 1) In fertilizer treatment add F_3:100. 2) In subplot treatment delete M_R: Red plastic sheet and M_Y: Yellow plastic sheet. 3) Add observation of soil temperature and moisture (periodical). *(**Action** : Research Scientist, SWMRU, NAU, Navsari)*	Approved
15.2.3.41	Effect of methods and levels of irrigation on sweet potato under South Gujarat conditions	**Accepted with following suggestions:** 1) Delete observation on tuber length and girth 2) Add observation on tuber volume. 3) In place of carbohydrate write total carbohydrate. *(**Action** : Research Scientist, SWMRU, NAU, Navsari)*	Approved
15.2.3.42	Effect of fertigation on vegetable okra in clay soils of South Gujarat	**Accepted** *(**Action** : Research Scientist, SWMRU, NAU, Navsari)*	Approved
15.2.3.43	Nutrient management for higher productivity in different rice establishment methods in rice- Indian bean sequence (AICRP trial)	**Accepted** *(**Action** : Research Scientist, SWMRU, NAU, Navsari)*	Approved
15.2.3.44	Effect of zinc on hybridrice under South Gujarat condition	**Accepted with following suggestions:** 1) Modify treatments as bellow. Z_2^*: Application of Zn as per soil Test based through $ZnSO_4$ Z_4: spray 0.5 % $ZnSO_4$ at tillering + PI stage Z_5: spray 1.0 % $ZnSO_4$ at tillering + PI stage Z_6: spray 0.5 % Zn EDTA at tillering + PI stage Z_7: spray 1.0 % Zn EDTA at tillering + PI stage Z_8: Application of Zn as per soil Test based through Zn EDTA *Note: Deficient 25 kg $ZnSO_4$ Medium 8 kg *(**Action** : Research Scientist, SWMRU, NAU, Navsari)*	Approved
15.2.3.45	Response of *Bt.* cotton to gypsum, organic manure and nitrogen	**Accepted**	Approved

	levels under partially reclaimed coastal salt affected soils	*(**Action** : Research Scientist, SWMRU, NAU, Navsari)*	
15.2.3.46	Effect of irrigation and mulching on productivity of brijnal under coastal salt affected soils	**Accepted** *(**Action** : Research Scientist, SWMRU, NAU, Navsari)*	Approved
15.2.3.47	Evaluation of ground water suitability for irrigation inNavsari taluka	**Accepted** *(**Action** : Research Scientist, Soil Science, Navsari)*	Approved
15.2.3.48	Optimization of inter and intra row spacing for pigeonpea*var.* GT 104	**Accepted with following suggestions:** 1) Replace word "straw yield" with "stalk yield" 2) Gross plot size be recasted *(**Action** : Nodal Officer, Megaseed & Unit Head, PCRS, Navsari)*	Approved
15.2.3.49	Effect of different spacing and nitrogen levels on intra-*hirsutum* hybrid (GSHH-2799) of cotton	**Accepted** *(**Action** : Res. Sci., Main Cotton Res. Station, Surat)*	Approved
15.2.3.50	Performance of *Arboreum* cotton to nitrogen levels and planting density under rainfed condition	**Accepted with following suggestions:** 1) Modify D_2: 90 cm x 30 cm *(**Action** : Res. Sci., Main Cotton Res. Station, Surat)*	Approved
15.2.3.51	Integrated nutrient management in fodder pearl millet (*Pennisetumglaucum*L.) under south Gujarat condition	**Accepted with following suggestions:** 1) Modify title as Integrated nutrient management in summer fodder pearl millet (*Pennisetumg laucum*L.) under south Gujarat condition *(**Action** : Prof. & Head, Dept. of Agronomy, NMCA, Navsari)*	Approved
15.2.3.52	Integrated nutrient management in seed purpose fodder cowpea (*Vignaunguiculata* L.) under south Gujarat condition	**Accepted with following suggestions:** 1) Modify title as Integrated nutrient management in seed production of fodder cowpea (*Vigna unguiculata* L.) under south Gujarat condition *(**Action** : Prof. & Head, Dept. of Agronomy,*	Approved
15.2.3.53	Persistence and dissipation studies of registered herbicides in sugarcane	**Accepted** *(**Action** : Prof. & Head, FQTL, Navsari)*	Approved
15.2.3.54	Effect of spacing and organic manure on growth, yield and quality of banana cv.	**Accepted with following suggestions:** 1) Modify title as Effect of spacing and organic manure on growth, yield and quality	Approved

	Grand naine	of organically grown banana cv. Grand naine 2) Add observation on soil bulk density *(**Action** : Assoc Prof., Dept. of SSAC, ACHF, Navsari)*	
15.2.3.55	Suitability of various turmeric varieties under organic farming	**Accepted with following suggestions:** 1) Change treatments as follow M_1: 100 % RDN through NADEP M_2: 50 % RDN through NADEP 2) Add observation on soil bulk density *(**Action** : Assoc Prof., Dept. of SSAC, ACHF, Navsari)*	Approved
15.2.3.56	Evaluation of feasibility of different crops under organic farming	**Accepted with following suggestions:** 1. Consider as feeler trial and present result in next meeting *(**Action** : Assoc Prof., Dept. of SSAC, ACHF, Navsari)*	Approved as feeler trial
15.2.3.57	Assessment of suitable crop under organic farming	**Accepted with following suggestions:** 1. Consider as feeler trial and present result in next meeting *(**Action** : Assoc Prof., Dept. of SSAC, ACHF, Navsari)*	Approved as feeler trial
15.2.3.58	Effect of land configuration and drought mitigating strategies in pigeonpea under *rainfed* condition	**Accepted with following suggestions:** 1) M_2: 1 % KNO_3 spray after cessation of rainfall 2) Moisture content: periodical observation in soil and plant *(**Action** : Assoc. Prof. & Head, Dept. of Agronomy, CoA, Bharuch)*	Approved
15.2.3.59	Response of pigeonpea to waste decomposer under *rainfed* condition	**Accepted with following suggestions:** 1) Add treatment T_8: Anubhav Bacterial Biodegrader @ 10 lit/ha with 5 t FYM. 2) Add observation on • Soil OC (Initial and after harvest) • Germination of seeds *(**Action** : Assoc. Prof. & Head, Dept. of Agronomy, CoA, Bharuch)*	Approved
15.2.3.60	Allelopathy evaluation of facultative weed species	**Accepted with following suggestions:** 1) Experimental Design: CRD (factorial) 2) Add observation on • Germination of seeds *(**Action** : Assoc. Prof. & Head, Dept. of Agronomy, CoA, Bharuch)*	Approved
15.2.3.61	Effect of phosphorus and potassium application in *rabi* sweet corn *(Zea mays* L. *var. saccharata*	**Accepted with following suggestions:** 1) Delete K_3: 90 kg/ha	Approved

	Sturt) under south Gujarat condition	(**Action** : *Scientist, Agronomy, KVK, Navsari)*	

JUNAGADH AGRICULTURAL UNIVERSITY, JUNAGADH

Sr. No	Title	Department/Res. Station	Remarks
15.2.3.62	Development and evaluation of microbial consortia enriched vermicompost formulation in wheat	**Accepted with following suggestion** 1. Maintain moisture content <30 % in vermicompost. (**Action:** *Professor & Head, Department of Agronomy, JAU, Junagadh)*	Approved
15.2.3.63	Evaluation of microbial consortia enriched vermicompost in *kharif* groundnut	**Accepted with following suggestions** 1. Maintain moisture content <30 % in vermicompost. 2. Add T_8: Biogold @ 200 kg/ha (**Action:** *Professor & Head, Department of Agronomy, JAU, Junagadh)*	Approved
15.2.3.64	Effect of NPK levels on growth, yield and nutrient uptake by isabgol	**Accepted with following suggestion** 1. Keep P_2O_5 levels as 15 & 30 kg/ha (**Action:** *Professor & Head, Department of Agronomy, JAU, Junagadh)*	Approved
15.2.3.65	Weed management in isabgol	**Accepted with following suggestion** 1. Take as feeler trial (**Action:** *Professor & Head, Department of Agronomy, JAU, Junagadh)*	Not Approved
15.2.3.66	Herbicidal control of purple nutsedge (*Cyperus rotundus* L.) in *kharif* maize	**Accepted with following suggestion** 1. Change title as "Weed management in *kharif* maize" (**Action:** *Professor & Head, Department of Agronomy, JAU, Junagadh)*	Approved
15.2.3.67	Role of *Rajyoga* meditation on chickpea under organic management system	**Accepted with following suggestion** 1. The programme may be revised as per AAU, Anand (**Action:** *Professor & Head, Department of Agronomy, JAU, Junagadh)*	Approved

15.2.3.68	Role of *Rajyoga* meditation on *kharif* groundnut under organic management system	**Accepted with following suggestion** 1. The programme may be revised as per AAU, Anand (**Action:** *Professor & Head, Department of Agronomy, JAU, Junagadh)*	Approved
15.2.3.69	Improving phosphorus use efficiency in summer groundnut with microbial cultures(AICRP)	**Accepted** (**Action:** *Res. Sci. (G'nut), Main Oilseed Res. Station, JAU, Junagadh)*	Approved
15.2.3.70	Effect of different management practices on yellowing and yield of pre-monsoon groundnut	**Accepted with following suggestion** 1. Record nodule number & dry weight only at 45 DAS. (**Action:** *Res. Sci. (G'nut), Main Oilseed Res. Station, JAU, Junagadh)*	Approved
15.2.3.71	Identifying suitable crop geometries for mechanical interculturing and yield of Spanish bunch groundnut-pigeonpea relay cropping (AICRP)	**Accepted** (**Action:** *Res. Sci. (G'nut), Main Oilseed Res. Station, JAU, Junagadh)*	Approved
15.2.3.72	Standardization of seed rate for groundnut cultivars having differential seed sizes during *kharif (*AICRP)	**Accepted** (**Action:** *Res. Sci. (G'nut), Main Oilseed Res. Station, JAU, Junagadh)*	Approved
15.2.3.73	Improving phosphorus use efficiency in *kharif* groundnut with microbial cultures (AICRP)	**Accepted** (**Action:** *Res. Sci. (G'nut), Main Oilseed Res. Station, JAU, Junagadh)*	Approved
15.2.3.74	Effects of nutrient management and high density planting of *Bt* cotton under rainfed condition in Saurashtra region	**Accepted with following suggestions** 1. Replace the word "nutrient management" with "nitrogen" in title. 2. Keep seed rate as per treatments 3. Common application of FYM 5 t/ha (**Action:** *Research Scientist (Dry Farming), Main Dry Farming Research Station, JAU, Targhadia)*	Approved

15.2.3.75	Effect of mulching on different cultivars of castor under rainfed condition of Ghed area	**Accepted with following suggestions** 1. Use word "conserved moisture" instead of "rainfed" in title 2. Take soil moisture content at 30 days interval. (**Action:** *Research Scientist (Dry Farming), Main Dry Farming Research Station, JAU, Targhadia)*	Approved
15.2.3.76	Evaluation of castor + green gram intercropping system under various row spacings and nitrogen levels	**Accepted with following suggestion** 1. Keep GM 4 variety of green gram in intercropping. (**Action:** *Research Scientist (Dry Farming), Main Dry Farming Research Station, JAU, Targhadia)*	Approved
15.2.3.77	Production potential and economics of *Bt* cotton based intercropping system under rainfed condition	**Accepted with following suggestions** 1. Delete the word "economics" from title. 2. Delete the word "gum" from gum gaur in intercrops. (**Action:** *Research Scientist (Dry Farming), Main Dry Farming Research Station, JAU, Targhadia)*	Approved
15.2.3.78	High density planting and detopping in *Bt* cotton under rainfed condition	**Accepted with following suggestion** 1. Keep seed rate as per treatments. (**Action:** *Asst. Res. Sci., Dry Farming Res. Station, JAU, Vallabhipur)*	Approved
15.2.3.79	Nutrient management through organic sources in rainfed pearlmillet (AICRP Trial)	**Accepted** (**Action:** *Res. Scientist (Pearl millet), Main Pearl Millet Res. Station, JAU, Jamnagar)*	Approved
15.2.3.80	Performance of different weed management practices on pearlmillet productivity (AICRP Trial)	**Accepted** (**Action:** Res. Scientist (Pearl millet), Main Pearl Millet Res. Station, *JAU, Jamnagar)*	Approved
15.2.3.81	Evaluation of microbial consortia enriched vermicompost in pearlmillet	**Accepted with following suggestions** 1. Maintain moisture content <30 % in vermicompost. 2. Add T_8: Biogold @ 200 kg/ha (**Action:** *Res. Scientist (Pearl millet), Main Pearl Millet Res. Station, JAU, Jamnagar)*	Approved

15.2.3.82	Response of summer sesame to potassium and sulphur	**Accepted with following suggestions** 1. Delete treatments K_4: 60 kg K_2O/ha and S_4: 30 kg S/ha. 2. Recast the title as "Response of summer sesame to levels of potassium and sulphur. 3. Delete trade name cosavet from the note and keep "Wettable sulphur 90 %" (**Action:** *Research Sci. (Pl. Br.), ARS, JAU, Amreli)*	Approved
15.2.3.83	Performance of sesame cultivars/genotypes under different levels of irrigation during summer seasons	**Accepted with following suggestions** 1. Take 4 replications 2. Mention irrigation depth 50 mm (**Action:** *Research Sci. (Pl. Br.), ARS, JAU, Amreli)*	Approved
15.2.3.84	Integrated weed management study in ridge gourd	**Accepted with following suggestion** 1. Keep dose of oxyfluorfen 180 g/ha in T_2 and 90 g/ha in T_3. (**Action:** *Research Sci. (G&O), Vegetable Res. Station, JAU, Junagadh)*	Approved
15.2.3.85	Management of reddening in *Bt* cotton	**Accepted with following suggestions** 1. Replace T_8 with soil application of 40 kg S/ha 2. Replace T_{10} with sea weed extract 2 % 3. Add T_8 in T_{11} (**Action:** *Research Scientist (Cotton), Cotton Research Station, JAU, Junagadh)*	Approved
15.2.3.86	Evaluation of multicut fodder sorghum varieties under different levels of nitrogen	**Accepted** (**Action:** *Associate Research Scientist, Grassland Research Station, JAU, Dhari)*	Approved
15.2.3.87	Establishment of critical limit of zinc for summer green gram in medium black calcareous soils	**Accepted** (**Action:** *Professor & Head, Department of Agril. Chemistry & Soil Science, JAU, Junagadh)*	Approved
15.2.3.88	Effect of N, P and K levels on growth, yield and nutrients uptake by bottle gourd	**Accepted** (**Action:** *Prof. & Head, Dept. of Agril. Chem. & Soil Sci. & Res. Sci. (G & O), Vegetable Res. Station, JAU, Junagadh)*	Approved

15.2.3.89	Optimization of nutrient package in *Bt* cotton under irrigated condition	**Accepted with following suggestions** 1. Delete N_1 level 2. Add K_2O level K_3: 100 % of RDF (**Action:** *Prof. & Head, Dept. of Agril. Chem. & Soil Sci. & Res. Sci. (Cotton), Cotton Res. Station, JAU, Junagadh)*	Approved
15.2.3.90	Remedial measures in groundnut under poor drained medium black calcareous soils	**Accepted with following suggestions** 1. Recast the title as "Integrated management practices in groundnut under poor drained medium black calcareous soil" 2. Delete word "cosavet" and keep "wettable sulphur 90 %" (**Action:** *Prof. & Head, Dept. of Agril. Chem. & Soil Sci., & Professor & Head, Dept. of Agronomy, JAU, Junagadh)*	Approved
15.2.3.91	Effect of saline irrigation water on sesame	**Accepted** (**Action:** *Professor & Head, Department of Agril. Chemistry & Soil Science, JAU, Junagadh)*	Approved
15.2.3.92	Effect of saline irrigation water on garlic	**Accepted** (**Action:** *Professor & Head, Department of Agril. Chemistry & Soil Science, JAU, Junagadh)*	Approved
15.2.3.93	Effect of foliar application of seaweed liquid fertilizer on yield of *Bt* cotton under dry farming condition	**Accepted** (**Action:** *Research Scientist (Dry Farming), Main Dry Farming Research Station, JAU, Targhadia)*	Approved

ANAND AGRICULTURAL UNIVERSITY, ANAND

Sr. No.	Title /Centre	Suggestion/s	Remarks
15.2.3.94	Composting of cereal crop waste residues through bacterial consortium	**Accepted with following suggestion** 1. compost pit: 2 x 2 x 1 feet instead of basket (**Action**: Professor and Head, Department of Agronomy, BACA, AAU, Anand)	Approved
15.2.3.95	Effect of *Rajayoga* Meditation under organically grown crops	**Accepted** (**Action**: Professor and Head, Department of Agronomy, BACA, AAU, Anand)	Approved
15.2.3.96	Feasibilities of use of Reverse Osmosis (RO) waste water in Agriculture	**Accepted** **(Action**: Professor and Head, Department of Soil Science and Agril. Chem., BACA, AAU, Anand)	Approved

15.2.3.97	Efficacy of schoenite as indigenous source of potassic fertilizer for potato	**Accepted** (**Action**: Professor and Head, Department of Soil Science and Agril. Chem., BACA, AAU, Anand)	Approved
15.2.3.98	Assessment of nitrate-N and fluoride content in ground water of middle Gujarat region	**Accepted** (**Action**: Professor and Head, Department of Soil Science and Agril. Chem., BACA, AAU, Anand)	Approved
15.2.3.99	Biodegradation of weed biomass through native microbial biodegrader consortium	**Accepted with following suggestion** 1. Compost pit: 2' x 2' x1' instead of bamboo basket (**Action**: Professor and Head, Department of Microbiology & Biofertilizer, BACA, AAU, Anand)	Approved
15.2.3.100	Green fodder yield and quality of fodder maize as influenced by *in-situ* wheat straw incorporation and nitrogen levels	**Accepted with following suggestion/s** 1. Delete FYM 10 t/ha from treatments T_2 & T_4 2. Delete treatment T_3 3. Take four replications (**Action**: Research Scientist, Main Forage Research Station, AAU, Anand)	Approved
15.2.3.101	Integrated weed management in *rabi* maize	**Accepted** (**Action**: Agronomist & PI, AICRP-Weed Management, BACA, AAU, Anand)	Approved
15.2.3.102	Chemical and non chemical approach for weed management in turmeric	**Accepted** (**Action**: Agronomist & PI, AICRP-Weed Management, BACA, AAU, Anand)	Approved
15.2.3.103	Effect of different organic manures and bio NPK consortium on dry biomass yield and quality of Kalmegh (*Andrographispeniculata* L.) and its residual effect on Kaligiri (*Baccharoidesanthelmintica* (L.) Moench)	**Accepted** (**Action**: Associate Research Scientist, Medicinal and Aromatic Plants Research Station, AAU, Anand)	Approved
15.2.3.104	Effect of nitrogen and phosphorus on yield of baby corn hybrid in *kharif* season	**Accepted** (**Action**: Assistant Research Scientist, Main Maize Research Station, AAU, Godhara)	Approved
15.2.3.105	Effect of nitrogen and phosphorus on yield of baby corn hybrid in *Rabi* season	**Accepted** (**Action**: Assistant Research Scientist, Main Maize Research Station, AAU, Godhara)	Approved

15.2.3.106	Nutrient management in *kharif* mungbean (*Vigna radiata* L.) through different organic sources in *Bhal* region	**Accepted** (**Action**: Assistant Research Scientist, Agricultural Research Station, AAU, Dhandhuka)	Approved
15.2.3.107	Effects of spacing and nitrogen levels on castor grown on heavy black soil	**Accepted** (**Action**: Assistant Research Scientist, Narmada Irrigation Research Project, AAU, Khandha)	Approved
15.2.3.108	Effects of spacing and phosphorus management on pigeonpea grown on heavy black	**Accepted** (**Action**: Assistant Research Scientist, Narmada Irrigation Research Project, AAU, Khandha)	Approved
15.2.3.109	Integrated nutrient management in summer black gram (*Vigna mungo* L. hepper)	**Accepted with following suggestion** 1. Take experiment in *kharif* season instead of summer season (**Action**: Research Scientist, Tribal Research cum Training Centre, AAU, Devgadh Baria)	Approved
15.2.3.110	Effect of nitrogen and sulphur on growth and yield of Castor	**Accepted with following suggestion/s** 1. Recast treatments as follow Nitrogen levels : 50, 75 and 100 kg/ha Phosphorus levels: 0 and 25 kg/ha 2. Change the title as "Nutrient management in castor (GAC 11) (**Action**: Principal, College of Agriculture, AAU, Vaso)	Approved
15.2.3.111	Feasibility of summer sesame intercrops with optimum row ratios	**Not accepted** (**Action**: Principal, College of Agriculture, AAU, Jabugam)	Dropped
15.2.3.112	Response of chickpea variety to irrigation at critical growth stages	**Accepted** (**Action**: Research Scientist, Agricultural Research Station, AAU, Derol)	Approved
15.2.3.113	Effect of sowing time and green shed net covering on summer paddy (*Oryza sativa* L.) nursery	**Accepted** (**Action**: Associate Research Scientist, ARS for Irrigated Crops, AAU, Thasra)	Approved

15.3 PLANT PROTECTION

Chairman : Dr. P. V. Patel, DEE, JAU, Junagadh

Co-Chairman : Dr. V. V. Rajani, ADR, JAU, Junagadh

: Dr. P. K. Borad, Prof. & Head, AAU, Anand

Rapporteurs : Dr. P. G. Shah, Residue Analyst, AAU

: Dr. M. F. Acharya, JAU

: Dr. D. A. Dodia, SDAU

Statistician : Dr. A. D. Kalola, Asso. Prof., AAU

Summary

Name of Sub Committee	**No. of Recommendations**						**No. of New Technical Programmes**
	Farming Community			**Scientific Community**			
	Presented	**Shifted**	**Approved**	**Presented**	**Shifted**	**Approved**	
SDAU, S.K. Nagar	6	+1* -1**	6	3	-1*+ 1**	3	22
NAU, Navsari	5	- 1** - 1***	3	4	- 2***+ 1**	3	20
JAU, Junagadh	20	- 1**** - 1*****	18	7	- 2*****	5	29
AAU, Anand	4	+ 2*	6	9	-2*	7	39
Total	**35**		**33**	**23**	**-**	**18**	**110**

***** = Converted from scientific information to farmers community
****** = Converted from farmers community to scientific information
***= Presented in crop production group
****= Endorsed and presented in Agril. Engg. group
*****= Dropped

15.3.1 RECOMMENDATION FOR FARMING COMMUNITY

SARDARKRUSHINAGAR DANTIWADA AGRICULTURAL UNIVERSITY, S. K. NAGAR

15.3.1.1	Development of biocontrol based management practices for mustard aphid

Farmers of North Gujarat Agro-Climatic Zone (IV) growing mustard are advised to apply two sprays of *Lecanicillium lecanii*1.15 WP(1 x 10^{8}cfu/g)@ 20 g/ 10 l water + azadirachtin 1500 ppm @ 40 ml/10 l of water,first at initiation of aphid infestation (small colonies of aphid) and second at 15 days after the first spray for effective and economical management of mustard aphid.

Summary of recommendation for farming community

Year	Crop	Pest	Pesticides with formulation	Dosage				Appl. Schedule at DAS	Waiting period /PHI (Days)	Remarks
				g.a. i./ ha	Quantity of formulation per ha	Conc. (%)	Dilution in water (10 lit)			
2018-19	Mustard	Aphid	*Lecanicillium lecanii* 1.15 WP (1 x10^{8} cfu/g + Azadirachtin 1500 ppn	20 g + --	1.0 kg + 2.0 lit	0.004 % + 0.2 %	40 + 40	First spray at initiation of aphid infestation (small colonies of aphid) and second at 15 days after the first spray	--	--

ખેડૂતોપયોગી ભલામણ:

ઉત્તર ગુજરાત ખેત હવામાન વિસ્તારના (૪) રાઈની ખેતી કરતા ખેડૂતોને મોલોના અસરકારક અને અર્થક્ષમ નિયંત્રણ માટે *લેકાનીસીલીયમ લેકાની* ૧.૧૫ વે.પા.(૧ x ૧૦^{૮} સી.એફ.યુ./ગ્રા.)૨૦ ગ્રામ/૧૦ લીટર પાણી + એઝાડીરેકટીન ૧૫૦૦ પી.પી.એમ. ૪૦ મીલી/૧૦ લી પાણીના બે છંટકાવ કરવા ભલામણ કરવામાં આવે છે. જે પૈકી પ્રથમ છંટકાવ જયારે મોલોના ઉપદ્રવની શરૂઆત (નાના સમુહમાં મોલો) જોવા મળે ત્યારે અને બીજો છંટકાવ પ્રથમ છંટકાવ બાદ ૧૫ દિવસે કરવો.

વર્ષ	પાક	જીવાત	જંતુનાશક	પ્રમાણ				છંટકાવદિવસે	છેલ્લો છંટકાવ અને ઉતાર વચ્ચેનો સમયગાળો	રીમાર્ક
				સ.ત. /હે(ગ્રામ)	જંતુનાશક / હે	સાંદ્રતા (%)	જરૂરિયાત (૧૦ લી પાણીમાં)			
૨૦૧૮–૧૯	રાઈ	મોલો	લેકાનીસીલીયમ લેકાની ૧.૧૫ વે.પા. (૧ X ૧૦ ૮)/ગ્રામ	૨૦ ગ્રામ +	૨.૦ કિ/હે. + ૨.૦ લી.	૦.૦૦૪ % +	૪૦ + ૪૦	પ્રથમ છંટકાવ જયારે મોલોના	–	–

			+ એઝાડીરાકટીન ૧૫૦૦ પીપીએમ			૦.૨%		ઉપદ્રવની શરૂઆત (નાના સમુહમાં મોલો) જોવા મળે ત્યારે અને બીજો છંટકાવ પ્રથમ છંટકાવ બાદ ૧૫ દિવસે કરવો.		

Suggestions:

1.cfu counts should be added

2. Formulation of bio-pesticides should be mentioned.

[**Action:** Assoc. Professor (Pl.Path.), Polytechnic in Agriculture, SDAU , Khedbrahmma]

15.3.1.2 Integrated management of root knot nematode in pomegranate

The farmers of North Gujarat Agro-climatic Zone (IV) growing pomegranate are advised to apply poultry manure 5 t/ha at 9 inches depth in a root zone surrounding the tree trunk during 20 to 31 July for effective management of root knot nematodes.

ખેડૂતોપયોગી ભલામણ:

ઉત્તર ગુજરાત ખેત હવામાન વિસ્તારના (૪)માં દાડમની ખેતી કરતા ખેડુતોને ગંઠવા કૃમિના અસરકારક નિયંત્રણ માટે મરઘાનું ખાતર ૫ ટન/હેકટર છોડના મૂળ વિસ્તારમાં થડની ફરતે ૯(નવ) ઇંચ ઉંડી રીંગ કરીને ૨૦ થી ૩૧ જુલાઈ વચ્ચે આપવાની ભલામણ કરવામાં આવે છે.

Suggestions:

1. Remove "Well decomposed" and "Organic" words
2. Delete Castor cake, neem cake and bio-agent.

[Action: Professor, Dept. of Nematology, C.P.C.A., S.D. A. U.,Sardarkrushinagar

15.3.1.3 Management of foliar diseases of groundnut through fungicides

Farmers of North Gujarat Agro-climatic Zone (IV) growing groundnut are advised to spray propiconazole 25 EC(10 ml) or tebuconazole 25WG (10 g) or manzozeb 75 WP (30 g) in 10 l of water at initiation of disease and subsequent two sprays at 15 days interval for the effective and economical management of foliar diseases.

Summary of recommendation for farming community

Year	**Crop**	**Disease**	**Pesticides with formulation**	**Dosage**				**Appl. Schedule at DAS**	**Waiting period /PHI**	**Remarks**
				g.a. i./	**Quantity of**	**Conc**	**Dilution in**			

				ha	formulation per ha	. (%)	water (10 lit)		(Days)	
2018-19	Groundnut	Leaf spot	propiconazole 25 EC	125 ml	500 ml	0.025	10 ml	First spray at initiation of disease and subsequent two sprays at 15 days intervals	--	--
			tebuconazole 25WG	125 g	500 g	0.025	10 g			
			manzozeb 75 WP	1.225 g	1.5 kg	0.2	30 g			

ખેડૂતોપયોગી ભલામણ :

ઉત્તર ગુજરાત ખેત હવામાન વિસ્તારના (૪)ના મગફળી ઉગાડતા ખેડુતોને પાનના ટપકા રોગના અસરકારક અને અર્થ ક્ષમ નિયંત્રણ માટે રોગની શરુઆત થાય કે તરતજ પ્રોપીકોનાઝોલ ૨૫ ઈસી (૧૦ મીલી) અથવા ટેબ્યુકોનાઝોલ ૨૫ ડબલ્યુજી (૧૦ ગ્રામ) અથવા મેંન્કોઝેબ ૭૫ વે.પા. (૩૦ ગ્રામ) ૧૦ લીટર પાણીમા મિશ્ર કરી છંટકાવ કરવો. બાકીના બે છંટકાવ પ્રથમ છંટકાવ પછી ૧૫ દિવસના અતરે કરવા.

વર્ષ	પાક	**રોગ**	જંતુનાશક	પ્રમાણ				છંટકાવદિવસે	છેલ્લો છંટકાવ અને ઉતાર વચ્ચેનો સમયગાળો	રીમાર્ક
				સ.ત./હે(ગ્રામ)	જંતુનાશક / હે	સાંદ્રતા (%)	જરૂરિયાત (૧૦ લી પાણીમાં)			
૨૦૧૮–૧૯	મગફળી	પાનના ટપકા રોગ	પ્રોપીકોનાઝોલ ૨૫ ઈસી	૧૨૫ મીલી	૫૦૦ મીલી	૦.૦૨૫	૧૦ મીલી	રોગની શરુઆત થાય કે તરતજ બાકીના બે છંટકાવ પ્રથમ છંટકાવ પછી ૧૫ દિવસના અતરે કરવા	–	–
			ટેબ્યુકોનાઝોલ ૨૫ ડબલ્યુજી	૧૨૫ ગ્રામ	૫૦૦ ગ્રામ	૦.૦૨૫	૧૦ ગ્રામ			
			મેંન્કોઝેબ ૭૫ વે.પા	૧.૧૨૫ કિલો	૧.૫ કિલો	૦.૨	૩૦ ગ્રામ			

Suggestion:

1. Delete treatments carbendazim and hexaconazole.

Action: Asstt. Professor(Pl.Path.), Dept. of Pl.Path., C.P.C.A., S.D.A.U, SKNagar

15.3.1.4 Evaluation of *Pseudomonas fluorescens*, Rhizobium and VAM on nodulation, protein content and seed yield of green gram

The farmers of North Gujarat Agro-climatic Zone (AES1) are advised to apply VAM (100 propagules/g) @10kg/ha in soil before sowing and to sow greengram

	seeds treated with *Pseudomonas fluorescens* (10^6 cfu/gm) @10g/kg seed and *Rhizobium* (10^9 cfu/ml) @10ml/kg seed in order to get maximum yield of greengram in *kharif* season. **ખેડૂતોપયોગી ભલામણ** : ઉત્તર ગુજરાતના ખેત હવામાન વિસ્તારના(૪) ના ખરીફ મગનું વાવેતર કરતા ખેડુતોને મગનું વધુ ઉત્પાદન મેળવવા માટે વાવેતર કરતા પહેલા ચાસમાં વામ (૧૦૦ ઈન્ફેકટીવ પ્રોપેગ્યૂલ્સ/ગ્રામ)૧૦ કિગ્રા/હેકટરે નાખવું અને ત્યાર બાદ *સ્યુડોમોનાસ ફ્લુરોસન્સ* (૧૦^૬ સીએફયુ) ૧૦ ગ્રામ/કિગ્રા અને રાઈઝોબિયમ (૧૦^૯ સીએફયુ/મિલિ) ૧૦ મિલિ/કિગ્રા પ્રમાણે મગના બીજને માવજત આપી વાવણી કરવાની ભલામણ કરવામાં આવે છે. **Suggestion/s: Approved** **NOTE: The house suggested to present this rec. in Basic Science and Humanities sub-commiittee, however in the plenary session it was decided to maintain the *status-co*.** **Action:** Asstt.Professor (Ag.Micro.), Dept. of Ag.Microbiology, C.P.C.A., S.D.A.U, SKNagar
15.3.1.5	**Evaluation of *Pseudomonas fluorescens*, *Rhizobium* and VAM on nodulation, protein content and seed yield of chickpea**
	The farmers of North Gujarat Agro-climatic Zone (AES-1) are advised to apply VAM (100 infective propagules/gm) @10kg/ha in soil before sowing and to sow chickpea seeds treated with *Pseudomonas fluorescens* (10^6cfu/gm) @10g/kg seed and *Rhizobium* (10^9cfu/gm) @10ml/kg seed in order to get maximum yield of chickpea. **ખેડૂતોપયોગી ભલામણ**: ઉત્તર ગુજરાતના ખેત હવામાન વિસ્તારના (૪) ચણાનું વાવેતર કરતા ખેડુતોને ચણાનું વધુ ઉત્પાદન મેળવવા માટે વાવેતર કરતાં પહેલા ચાસમાં વામ (૧૦૦ ઈન્ફેકટીવ પ્રોપેગ્યૂલ્સ/ગ્રામ) ૧૦ કિગ્રા/હેકટરે નાખવું અને ત્યાર બાદ *સ્યુડોમોનાસ ફ્લુરોસન્સ* (૧૦^૬ સીએફયુ/ગ્રામ) ૧૦ ગ્રામ/કિગ્રા અને રાઈઝોબિયમ (૧૦^૯ સીએફયુ/મિલિ) ૧૦ મિલિ/કિગ્રા પ્રમાણે ચણાના બીજને માવજત આપી વાવણી કરવાની ભલામણ કરવામાં આવે છે. **Suggestion/s: Approved** **NOTE: The house suggested to present this rec. in Basic Science and Humanities cub-commiittee, however in the plenary session it was decided to maintain the *status-co*.** [**Action:** Asstt.Professor (Ag.Micro.), Dept. of Ag.Microbiology, C.P.C.A., S.D.A.U, SKNagar]
15.3.1.6	**Integrated management of root knot nematode in potato**
	Application of poultry manure 15 t/ha in furrow and treating potato seeds with carbosulfan 25 EC 2 ml/kg seed before planting resulted in effective management of root knot nematode. **Suggestions:** **1.** House suggested to consider this recommendation as scientific recommendation instead of farming community. **Action:** Professor, Dept. of Nematology, C.P.C.A., S.D. A. U., Sardarkrushinagar

15.3.1.7	**Testing of different races and hybrids of mulberry silkworm in the laboratory for its suitability** The mulberry silkworm rearing farmers of South Gujarat Heavy Rainfall Zone (I) are advised to use mulberry silkworm hybrid, FC1xFC2 or FC2xFC1 for rearing. This exhibited the highest quality parameters and economic traits. [Source of Availability of DFLs: National Silkworm Seed Organization, Central Silk Board, Bangaluru] **ખેડૂતોપયોગી ભલામણ:** દક્ષિણ ગુજરાતના ભારે વરસાદ ખેત આબોહવાકીય વિસ્તાર(૧)ના શેતુરના રેશમના કીડાનો ઉછેર કરતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે, શેતુરના રેશમ કીડાની સંકરજાત, FC1xFC2 **અથવા** FC2xFC1નો ઉછેર કરવાથી ઉચ્ચ ગુણવત્તા વાળું અર્થક્ષમ રેશમ પ્રાપ્ત કરી શકાય છે. **[ઈંડાનું પ્રાપ્તિ સ્થાન: નેશનલ સિલ્ક વોર્મ સીડ ઓર્ગેનાઈઝેશન, સેન્ટ્રલ સિલ્ક બોર્ડ, બેંગલુરૂ]** **Suggestations:**Approved **Action:** Professor & Head, Dept. of Entomology, NMCA, NAU, Navsari
15.3.1.8	**Management of mango hopper and thrips using entomopathogens** Mango growers of South Gujarat are advised to spray *Lecanicillum* (*Verticillium*) *lecanii* 1.15WP @50 g/10 l (1x10^8cfu/g) or *Beauveria bassiana* 1.15WP (1x10^8cfu/ml) @ 10 g/10 l with following schedule for effective management of mango hoppers. I at panicle initiation stage II spray 7 days after 1st spray III spray 7 days after 2nd spray IV spray at pea size stage Vsprayat marble size stage **ખેડૂતોપયોગી ભલામણ:** દક્ષિણ ગુજરાતના આંબાના બગીચા ધરાવતા ખેડુતોને મધિયાના અસરકારક નિયંત્રણ માટે મોર આવવાના સમયે લેકાનિસીલીયમ (વર્ટીસીલીયમ) લેકાની ૧.૧૫ વેપા ૫૦ ગ્રામ/૧૦ લિટર (**૧x૧૦**^{૮}સી.એફ.યુ./ગ્રામ) બીવેરીયા બેસીયાના ૧.૧૫ વેપા ૧૦ ગ્રામ/૧૦ લિટર (૧**x**૧૦^{૮}સી.એફ.યુ./મિલી) નો છંટકાવ કરવો અને ત્યાર બાદ બે વખત સાત દિવસના અંતરે અને ચોથો છંટકાવ વટાણા અવસ્થા એ તેમજ પાંચમો છંટકાવ લખોટી અવસ્થાએ કરવાની ભલામણ કરવામા આવે છે. **Suggestations:** 1. Biopesticies formulation should be mention **Action:** Asstt. Res. Sci., AES, NAU, Paria
15.3.1.9	**Evaluation of different biofertilizers products for the supplementation of phosphorous and potash in sugarcane with graded chemical fertilizers** Sugarcane growers of South Gujarat Heavy Rainfall Zone (I) are

	recommended to treat the setts of sugarcane before planting with the liquid Acetobacter, PSB and KMB ($1x10^8$cfu/ml) for setts treatment @300mlmixed in 300 l water/ha for 30 minutes before sowing. Soil applications of each biofertilizers @1000 ml/ha mixed in pulverized soil, first at the time of planting and second at the time of earthing up along with 125:62.5:62.5 NPK kg/ha to get higher cane yield and simultaneously save fifty per cent chemical fertilizers. **ખેડૂતોપયોગી ભલામણ:** દક્ષિણ ગુજરાતના ભારે વરસાદ ખેત આબોહવાકીય વિસ્તાર (૧)ના શેરડીની ખેતી કરતાં ખેડૂતોને શેરડીનું વધુ ઉત્પાદન મેળવવા તથા ૫૦ ટકા રસાયણિક ખાતરની બચત કરવા માટે,દરેક પ્રવાહી જૈવિક ખાતરો; એસિટોબેક્ટર, પી.એસ.બી.અને કે.એમ.બી. (૧x૧૦^૮સી.એફ.યુ./મિલિ)નું પ્રત્યેક કલ્ચર ૩૦૦ મિલીને ૩૦૦ લિટર પાણીમા મિશ્રકરી પ્રતિ હેક્ટરે ૩૦ મિનિટ માટે વાવણી પહેલા કટકાની માવજત આપવી. જમીન માવજત માટે રસાયણિક ખાતર ૧૨૫:૬૨.૫:૬૨.૫ ના.ફો.પો. કી/હે પ્રમાણે આપવું તેમજ દરેક જૈવિક ખાતર ૧૦૦૦ મિલીને ભરભરી માટી સાથે મિશ્ર કરી પ્રતિ હેક્ટર પ્રમાણે, પ્રથમ વાવણી સમયે ચાસમાં અને બીજી વખત પાળા ચડાવવાના સમયે જમીનમાં આપવાની ભલમણ કરવામા આવે છે. **Suggestions** 1. House has suggested to present this recommendation in crop production group **Action:** Professor & Head, Dept. of Pl. Pathology, NMCA, NAU, Navsari
15.3.1.10	**Evaluation of different substrate for oyster mushroom** The mushroom growers of South Gujarat are advised to use wheat or paddy straw for the higher production of oyster mushroom, *Pleurotussajor-caju*cultivation. **ખેડૂતોપયોગી ભલામણ:** દક્ષિણ ગુજરાતનાં મશરૂમ ઉત્પાદકોને ઢીંગરી મશરૂમ (પ્લુરોટ્સ સજોર-કાજુ)ના વધુ ઉત્પાદન માટે ઘઉં અથવા ડાંગરના પરાળનો ઉપયોગ કરવા ભલામણ કરવામાં આવે છે. **Suggestation:** Approved **Action:** Professor & Head, Dept. of Pl. Pathology, NMCA, NAU, Navsari
15.3.1.11	**Development of IDM modules for management of cotton diseases** For the management of altrenaria leaf spot disease in cotton following module was found effecive. Seed treatment with *Pseudomonas fluorescens* CICR ($2 x 10^8$cfu/g) @ 10 g/kg seed + soil application of *Trichoderma viride* TNAU1 ($2 x 10^6$ cfu/g) @ 2.5 kg/ha in 250 kg of vermicompost and sprays of kresoxim methyl (0.0443%), followed by captan + hexaconazole @ 1.5 g/l for fungal diseasesfirst at the initiation of the disease and second at 15 days. **Suggestations:** 1. House suggested to consider this recommendation as scientific information 2. Biopesticies formulation should be mention 3. Delete copper oxychloride and streptocycline

15.3.1.12 **Effectiveness of *Beauveria bassiana*in combination with different insecticides against onion thrips**

The farmers of South Saurashtra Agro-climatic Zone (VII) are advised to apply three sprays of dimethoate 30 EC 0.03 % (10 ml/10 l of water) OR *Beauveria bassiana* 1.15 WP 0.0035 % (Min. 2 x 10^6 cfu/g) + dimethoate 30 EC 0.015 % (30 g + 5.0 ml/10 l of water) OR *Beauveria bassiana*1.15 WP 0.007 % (60 g/10 l of water) first at initiation of pest infestation and subsequent two sprays at ten days interval for effective and economical management of thrips, *Thripstabaci*in onion.

Summary of recommendation for farming community

Year	Crop	Pest	Pesticides/ Biopesticides formulation	Dosage				Qty. of water/ soil amendments required (kg or l/ha)	Application schedule	Waiting period/ PHI (days)
				a.i. (g/ha)	Qty. of formulation g or ml/kg seed, kg or l/ha	Con. (%)	Qty. of formulation in 10 l of water (g or ml)			
2018-19	Onion	Thrips	Dimethoate 30 EC	150	0.500 l	0.03	10 ml	500 l	First spray at pest initiation and subsequent two sprays at ten days interval after first spray	-
			*Beauveria bassiana*1.15 WP + dimethoate 30 EC	17 + 75	1.5 kg + 0.250 l	0.0035 (Min 2 X 10^6 cfu/g) + 0.015	30 g + 5 ml	500 l		-
			*Beauveria bassiana*1.15 WP	35	3.0 kg	0.007 (Min 2 X 10^6 cfu/g)	60 g	500 l		-

ખેડૂતોપયોગી ભલામણ:

દક્ષિણ સૌરાષ્ટ્ર ખેત આબોહવાકીય વિસ્તાર (૭) માં ડુંગળીની ખેતી કરતા ખેડૂતોને થ્રીપ્સના અસરકારક અને અર્થક્ષમ નિયંત્રણ માટે ડાયમીથોએટ 30 ઇસી 0.03% (૧૦ મીલી/૧૦ લીટર પાણીમાં) અથવા બ્યુવેરીયા બાસીયાના ૧.૧૫ વે.પા. (ન્યુનતમ ૨x$૧૦^{૬}$ સીએફ્યુ/ગ્રામ) 0.003૫ % + ડાયમીથોએટ 30 ઇસી 0.0૧૫ % (30 ગ્રામ + ૫ મીલી/૧૦ લીટર પાણીમાં) અથવા બ્યુવેરીયા બાસીયાના ૧.૧૫ વે.પા. (ન્યુનતમ ૨x$૧૦^{૬}$ સીએફ્યુ/ગ્રામ) 0.00૭ % (૬0 ગ્રામ/૧૦ લીટર પાણીમાં) ના ત્રણ છંટકાવ, પ્રથમ જીવાત દેખાયે અને ત્યાર બાદ બીજા બે છંટકાવ ૧૦ દિવસના અંતરે કરવાની ભલામણ છે.

ખેડૂતોપયોગી ભલામણ સારાંશ

વર્ષ	પાક	જીવાત	જંતુઘ્ન/ જૈવિકજંતુઘ્ન દવાઓ અને સ્વરૂપ	પ્રમાણ				પાણી/ જમીન સુધારકોનો જથ્થો (કિ.ગ્રા. અથવા લી./હે)	વાપરવા નીરીત અને સમય	છેલ્લી માવજત અને કાપણી વચ્ચેનો સમયગાળો/વેઈટીંગ પિરિયડ/ પી.એચ.આઈ. (દિવસ)
				સક્રિયતત્વ (ગ્રામ/હે)	દવાનો જથ્થોગ્રા. અથવા મીલી/ કિ.ગ્રા. બીજ, કિ.ગ્રા. અથવા લી./હે	સાંદ્રતા (%)	૧૦લીટર પાણીમાં જરૂરીદવાનો જથ્થો (મીલી અથવા ગ્રામ)			
૨૦૧૮-૧૯	ડુંગળી	થ્રીપ્સ	ડાયમીથોએટ ૩૦ ઈસી	૧૫૦	૦.૫૦૦ લી.	૦.૦૩	૧૦ મીલી	૫૦૦ લી.	પ્રથમ છંટકાવ જીવાત દેખાયે અને ત્યારબાદ બીજા બે છંટકાવ,	--
			બ્યુવેરીયા બાસીયાના ૧.૧૫વે.પા. + ડાયમીથોએટ ૩૦ ઈસી	૧૭ + ૭૫	૧.૫ કી.ગ્રા. + ૦.૨૫૦ લી.	૦.૦૦૩૫(ન્યુનતમ ૨ x $૧૦^{૬}$ સીએફ્યુ/ગ્રામ) + ૦.૦૧૫	૩૦ ગ્રામ + ૫ મીલી	૫૦૦ લી.		--

			બ્યુવેરીયા બાસીયાના ૧.૧૫ વે.પા.	૩૫	૩.૦ કી.ગ્રા.	૦.૦૦૭ (ન્યુનતમ ૨ x ૧૦૬ સીએફ્યુ/ગ્રામ)	૬૦ ગ્રામ	૫૦૦ લી.	પ્રથમ છંટકાવના ૧૦ દિવસના અંતરે	--

Approved with following suggestion

1. Remove the second paragraph of organic farming

(**Action**: Professor & Head, Department of Entomology, JAU, Junagadh

15.3.1.13 Effect of different schedule base insecticidal spray against garlic thrips

The farmers of South Saurashtra Agro-climatic Zone (VII) are advised to apply schedule spraying of *Beauveria bassiana* 1.15 WP (Min. 2 x 10^6 cfu/g), first spray at initiation of pest infestation 0.0035 % (30 g/10 l of water). Subsequent second 0.007 % (60 g/10 l of water) and third 0.009 % (80 g/10 l of water) spray at ten days interval for effective and economical management of thrips, *Thripstabaci*in garlic.

Summary of recommendation for farming community

Year	Crop	Pest	Pesticides/ Biopesticides formulation	Dosage				Qty. of water/ soil amendments required (kg or l/ha)	Application schedule	Waiting period/ PHI (days)
				a.i. (g/ ha)	Qty. of formulation g or ml/kg seed, kg or l/ha	Con. (%)	Qty. of formulation in 10 l of water (g or ml)			
2018-19	Garlic	Thrips	*Beauveria bassiana* 1.15 WP	17	1.50 kg	0.0035 % (Min. 2x10^6 cfu/g)	30 g	500 l	First spray at initiation of pest infestation and subsequent two sprays at ten days interval after first spray	-
			Beauveria bassiana 1.15 WP	35	3.00 kg	0.007% (Min. 2x10^6 cfu/g)	60 g			
			Beauveri bassiana 1.15 WP	46	4.00 kg	0.009% (Min. 2x10^6 cfu/g)	80 g			-

ખેડૂતોપયોગી ભલામણ:

દક્ષિણ સૌરાષ્ટ્ર ખેત આબોહવાકીય વિસ્તાર (૭) માં લસણની ખેતી કરતા ખેડૂતોને થ્રીપ્સના અસરકારક અને અર્થક્ષમ નિયંત્રણ માટે બ્યુવેરીયા બાસીયાના ૧.૧૫ વે.પા. (ન્યુનતમ ૨x૧૦૬ સીએફ્યુ/ગ્રામ) નો પ્રથમ છંટકાવ જીવાત દેખાય ત્યારે ૦.૦૦૩૫ % (૩૦ ગ્રામ/૧૦ લીટર પાણીમાં), બીજો ૦.૦૦૭ % (૬૦ ગ્રામ/૧૦ લીટર પાણીમાં) અને ત્રીજો ૦.૦૦૯ % (૮૦ ગ્રામ/૧૦ લીટર પાણીમાં) ૧૦ દિવસના અંતરે કરવાની ભલામણ છે.

ખેડૂતોપયોગી ભલામણ સારાંશ

વર્ષ	પાક	જીવાત	જંતુઘ્ન/ જૈવિકજંતુઘ્ન દવાઓ અને સ્વરૂપ	પ્રમાણ				પાણી/ જમીન સુધારકોનો જથ્થો (કિ.ગ્રા. અથવા લી./હે)	વાપરવાનીરીત અને સમય	છેલ્લી માવજત અને કાપણી વચ્ચેનો સમયગાળો/વેઈટીંગ પિરિયડ/ પી.એચ.આઈ. (દિવસ)
				સક્રિયતત્વ (ગ્રામ/હે)	દવાનો જથ્થોગ્રા. અથવા મીલી/ કિ.ગ્રા. બીજ, કિ.ગ્રા. અથવા લી./હે	સાંદ્રતા (%)	૧૦લીટર પાણીમાં જરૂરીદવાનો જથ્થો (મીલી અથવા ગ્રામ)			
૨૦૧૮-૧૯	લસણ	થ્રીપ્સ	બ્યુવેરીયા બાસીયાના ૧.૧૫	૧૭	૧.૫ કીલો	૦.૦૦૩૫ (ન્યુનતમ ૨ x ૧૦૬	૩૦ ગ્રામ	૫૦૦ લી.	પ્રથમ છંટકાવ જીવાત દેખાયે અને બીજા બે	--

			વે.પા.			સીએફ્યુ/ગ્રામ)			છંટકાવ પ્રથમ છંટકાવના ૧૦ દિવસના અંતરે	
			બ્યુવેરીયા બાસીયાના ૧.૧૫ વે.પા.	૩૫	૩.૦ કીલો	૦.૦૦૭ (ન્યુનતમ ૨ x ૧૦⁶ સીએફ્યુ/ગ્રામ)	૬૦ ગ્રામ			--
			બ્યુવેરીયા બાસીયાના ૧.૧૫ વે.પા.	૪૬	૪.૦ કીલો	૦.૦૦૯ (ન્યુનતમ ૨ x ૧૦⁶ સીએફ્યુ/ગ્રામ)	૮૦ ગ્રામ			--

Suggestions: Approved

(Action: Professor & Head, Department of Entomology, JAU, Junagadh)

15.3.1.14 **Management of sucking pests in cumin**

The farmers of South Saurashtra Agro-climatic Zone (VII) are advised to apply two sprays of *Beauveria bassiana* 1.15 WP (Min. $2x10^6$ cfu/g) 0.007 % (60 g/10 l of water), first at initiation of pest infestation and second at ten days interval for effective, economical and eco-friendly management of thrips, *Thripstabaci*in cumin.

Summary of recommendation for farming community										
Year	**Crop**	**Pest**	**Pesticides/ Biopesticid esformulat ion**	**Dosage**				**Qty. of water/ soil amendm ents required (kg or l/ha)**	**Application schedule**	**Waiting period/ PHI (days)**
				a.i. (g/ ha)	**Qty. of formula tion g or ml/kg seed, kg or l/ha**	**Con. (%)**	**Qty. of formulati on in 10 l of water (g or ml)**			
2018-19	Cumin	Thrips	*Beauveria bassiana* 1.15 WP	35	3.0 kg	0.007 (Min. $2x10^6$ cfu/g)	60 g	500 l	First spray at intiation of pest infestation and second spray at 10 days interval after first spray	-

ખેડૂતોપયોગી ભલામણ:

દક્ષિણ સૌરાષ્ટ્ર ખેત આબોહવાકીય વિસ્તાર (૭) માં જીરુની ખેતી કરતા ખેડૂતોને થ્રીપ્સના અસરકારક, અર્થક્ષમ અને પર્યાવરણ અનૂકુળ નિયંત્રણ માટે બ્યુવેરીયા બાસીયાના ૧.૧૫ વે.પા. (ન્યુનતમ ૨ x ૧૦⁶ સીએફ્યુ/ગ્રામ) ૦.૦૦૭% (૬૦ ગ્રામ/૧૦ લીટર પાણીમાં) નો પ્રથમ છંટકાવ જીવાત દેખાયે અને ત્યારબાદ બીજો છંટકાવ, પ્રથમ છંટકાવના ૧૦ દિવસના અંતરે કરવાની ભલામણ છે.

ખેડૂતોપયોગી ભલામણ સારાંશ										
વર્ષ	**પાક**	**જીવાત**	**જંતુઘ્ન/ જૈવિકજંતુઘ્ન દવાઓ અને સ્વરૂપ**	**પ્રમાણ**				**પાણી/ જમીન સુધારકો નો જથ્થો (કિ.ગ્રા. અથવા લી./હે)**	**વાપરવાનીરીત અને સમય**	**છેલ્લી માવજત અને કાપણી વચ્ચેનો સમયગાળો/વેઈટીંગ પિરિયડ/ પી.એચ.આઈ. (દિવસ)**
				સક્રિયતત્વ (ગ્રામ/હે)	**દવાનો જથ્થોગ્રા. અથવા મીલી/ કિ.ગ્રા. બીજ, કિ.ગ્રા. અથવા લી./હે**	**સાંદ્રતા (%)**	**૧૦લીટર પાણીમાં જરૂરીદવાનો જથ્થો (મીલી અથવા ગ્રામ)**			

૨૦૧૮-૧૯	જીરુ	થ્રીપ્સ	બ્યુવેરીયા બાસીયાના ૧.૧૫વે. પા. ૦.૦૦૭ %	૩૫	૩.૦ કી.ગ્રા.	૦.૦૦૭ (ન્યુનતમ ૨ x ૧૦⁶ સીએફયુ/ગ્રામ)	૬૦ ગ્રા.	૫૦૦ લી.	પ્રથમ છંટકાવ જીવાત દેખાયે અને બીજો છંટકાવ પ્રથમ છંટકાવના ૧૦ દિવસના અંતરે	--

Suggestions: Approved

(Action: Professor & Head, Department of Entomology, JAU, Junagadh)

15.3.1.15 Evaluation of new pheromone based mating disruption technology for fruit fly in mango

The farmers of South Saurashtra Agro-climatic Zone (VII) growing mango are advised togiveSawaj MDP technology 400 g paste/ha uniformly distributed in 1000 dots on main and subsidiary branches of each tree against fruit fly, first application in the month of March, when fruit fly catches in the trap and successive two applications at 30 days interval for effective, economical and eco-friendly management.

Summary of recommendation for farming community

Year	Crop	Pest	Pesticides/ Biopesticide sformulatio n	Dosage				Qty. of water/ soil amendme nts required (kg or l/ha)	Application schedule	Waitin g period/ PHI (days)
				a.i. (g /ha)	Qty. of formulati on g or ml/kg seed, kg or l/ha	Con. (%)	Qty. of formulati on in 10 l of water (g or ml)			
2018-19	Mango	Fruit fly	Sawaj MDP technology	-	400 g Paste per applicatio n per ha	-	-	-	First application in the month of march, while second and third at 30 days interval after first application.	-

ખેડૂતોપયોગી ભલામણ:

સૌરાષ્ટ્ર ખેત આબોહવાકીય વિસ્તાર (૭) માં આંબાની ખેતી કરતા ખેડૂતોને ફળ માખીના અસરકારક,, અર્થક્ષમ અને પર્યાવરણ અનૂકુળ નિયંત્રણ માટે સાવજ એમડીપી ટેકનોલોજીની ૪૦૦ ગ્રામ પેસ્ટ/હે ના એકસરખા ૧૦૦૦ ટપકાને મુખ્ય અને ગૌણ ડાળીઓ પર મુકવા, પ્રથમ માવજત માર્ચ મહિનામાં ફળ માખી, ટ્રેપમાં પકડાય ત્યારે અને ત્યાર પછીની બે માવજત 30 દિવસના અંતરે આપવાની ભલામણ છે.

ખેડૂતોપયોગી ભલામણ સારાંશ

વર્ષ	પાક	જીવાત	જંતુઘ્ન/ જૈવિકજંતુ ઘ્ન દવાઓ અને સ્વરૂપ	પ્રમાણ				પાણી/ જમીન સુધારકો નો જથ્થો (કિ.ગ્રા. અથવા લી./હે)	વાપરવાનીરીત અને સમય	છેલ્લી માવજત અને કાપણી વચ્ચેનો સમયગાળો/વે ઈટીંગ પિરિયડ/ પી.એચ.આઈ . (દિવસ). (દિવસ)
				સક્રિયતત્વ (ગ્રામ/હે)	દવાનો જથ્થોગ્રા. અથવા મીલી/ કિ.ગ્રા. બીજ, કિ.ગ્રા. અથવા લી./હે	સાંદ્ર તા (%)	૧૦લીટર પાણીમાં જરૂરીદવા નો જથ્થો (મીલી અથવા ગ્રામ)			

૨૦૧૮-૧૯	આંબો	ફળ માખી	સાવજ એમડીપીટીક નોલોજી	-	૪૦૦ ગ્રામ પેસ્ટ/ માવજત/હે	-	-	-	પ્રથમ માવજત માર્ચ મહિનામાંઅને બીજી અને ત્રીજી માવજત પ્રથમ માવજતના ૩૦ દિવસના અંતરે	

Suggestions: Approved

(Action: Professor & Head, Department of Entomology, JAU, Junagadh)

15.3.1.16 Effectiveness of different bio-pesticides against mealybug in custard apple

The farmers of South Saurashtra Agro-climatic Zone (VII) are advised to apply two sprays of *Lecanicillium lecanii*1.15 WP (Min. $2x10^6$ cfu/g) 0.007 % (60 g/10 l of water) OR *Beauveria bassiana* 1.15 WP (Min. $2x10^6$ cfu/g) 0.007 % (60 g/10 l of water) along with sticker (3 ml/10 l of water), first at initiation of pest infestation and second at 20 days interval for effective, economical and eco-friendly management of mealybugin custard apple.

Summary of recommendation for farming community

Year	Crop	Pest	Pesticides/ Biopesticid esformulat ion	Dosage: a.i. (g/ ha)	Dosage: Qty. of formulatio n g or ml/kg seed, kg or l/ha	Dosage: Con. (%)	Dosage: Qty. of formulat ion in 10 l of water (g or ml)	Qty. of water/ soil amendme nts required (kg or l/ha)	Applicatio n schedule	Waiting period/ PHI (days)
2018-19	Custard apple	Mealy bug	*Lecanicillium lecanii*1.15 WP	83	7.2 kg	0.007 (Min. $2x10^6$ cfu/g)	60 g	1200 l	First spray at initiation of pest infestation and second spray at 20 days interval after first spray	-
			Beauveria bassiana 1.15 WP	83	7.2 kg	0.007 (Min. $2x10^6$ cfu/g)	60 g			-

ખેડૂતોપયોગી ભલામણ:

દક્ષિણ સૌરાષ્ટ્ર ખેત આબોહવાકીય વિસ્તાર(૭) માં સીતાફળની ખેતી કરતા ખેડૂતોને મીલીબગના અસરકારક, અર્થક્ષમ અને પર્યાવરણ અનૂકુળ નિયંત્રણ માટે લેકાનીસીલીયમ લેકાની ૧.૧૫ વે.પા. (ન્યુનતમ ૨ x ૧૦^{૬} સીએફ્યુ/ગ્રામ) ૦.૦૦૭ % (૬૦ ગ્રામ/૧૦ લીટર પાણીમાં) અથવા બ્યુવેરીયા બાસીયાના ૧.૧૫ વે.પા. (ન્યુનતમ ૨ x ૧૦^{૬} સીએફ્યુ/ગ્રામ) ૦.૦૦૭ % (૬૦ ગ્રામ /૧૦ લીટર પાણીમાં) સ્ટીકર સાથે (૩ મીલી/૧૦ લીટર પાણીમાં) ભેળવી, પ્રથમ જીવાત દેખાય ત્યારે અને ત્યારબાદ બીજો, પ્રથમ છંટકાવના ૨૦ દિવસના અંતરે કરવાની ભલામણ છે.

ખેડૂતોપયોગી ભલામણ સારાંશ

વર્ષ	પાક	જીવાત	જંતુઘ્ન/ જૈવિકજંતુઘ્ન દવાઓ અને સ્વરૂપ	પ્રમાણ: સક્રિયતત્વ (ગ્રામ/હે)	પ્રમાણ: દવાનો જથ્થોગ્રા. અથવા મીલી/ કિ.ગ્રા. બીજ, કિ.ગ્રા. અથવા લી./હે	પ્રમાણ: સાંદ્રતા (%)	પ્રમાણ: ૧૦લીટર પાણીમાં જરૂરીદવાનો જથ્થો (મીલી અથવા ગ્રામ)	પાણી/ જમીન સુધારકોનો જથ્થો (કિ.ગ્રા. અથવા લી./હે)	વાપરવાનીરીત અને સમય	છેલ્લી માવજત અને કાપણી વચ્ચેનો સમયગાળો/ વેઈટીંગ પિરિયડ/ પી.એચ.આઈ.) (દિવસ)

૨૦૧૮-૧૯	સીતાફળ	મીલીબગ	લેકાનીસીલીયમ લેકાની ૧.૧૫વે.પા.	૮૩	૭.૨ કી.ગ્રા.	૦.૦૦૭ (ન્યુનતમ ૨ x $૧૦^{૬}$ સીએફયુ/ગ્રામ)	૬૦ ગ્રા.	૧૨૦૦ લી.	પ્રથમ છંટકાવ જીવાત દેખાયે અને બીજો છંટકાવ પ્રથમ છંટકાવના ૨૦ દિવસના અંતરે	--
			બ્યુવેરીયા બાસીયાના ૧.૧૫વે.પા.	૮૩	૭.૨ કી.ગ્રા.	૦.૦૦૭ (ન્યુનતમ ૨ x $૧૦^{૬}$ સીએફયુ/ગ્રામ)	૬૦ ગ્રા.			--

Suggestions: Approved

(Action: Professor & Head, Department of Entomology, JAU, Junagadh)

15.3.1.17 Testing the bio-efficacy of newer insecticides against castor defoliators

The farmers of South Saurashtra Agro-climatic Zone (VII) growing castor are advised to apply two sprays of chlorantraniliprole 18.5 SC 0.006 % (3.0 ml/10 l of water) OR indoxacarb 14.5 SC 0.0073 % (5.0 ml/10 l of water) OR spinosad 45 SC 0.009 % (2.0 ml/10 l of water) OR emamectin benzoate 5 % WG 0.002 % (4.0 g/10 l of water) at 15 days interval starting from pest infestation for effective and economical management of defoliators (*Spodoptera* and Semilooper).

Note: Castor being a nonedible crop CIB recommendation for insecticides are not considered.

Summary of recommendation for farming community

Year	Crop	Pest	Pesticides/ Biopesticidesformulation	Dosage				Qty. of water/ soil amendments required (kg or l/ha)	Application schedule	Waiting period/ PHI (days)	Remarks
				a.i. (g/ ha)	Qty. of formulation g or ml/kg seed, kg or l/ha	Con. (%)	Qty. of formulation in 10 l of water (g or ml)				
2018	Castor	Defoliators	Chlorantraniliprole 18.5 SC	27.8	0.150 l	0.006	03 ml	500 l	First spray at initiation of defoliators and second at 15 days after first spray	112	Result of residual analysis was found below detection limit.
			Indoxacarb 14.5 SC	36.3	0.250 l	0.0073	05 ml	500 l			
			Spinosad 45 SC	45	0.100 l	0.009	02 ml	500 l			
			Emamectin benzoate 5 WG	10	0.200 l	0.002	04 g	500 l			

ખેડૂતોપયોગી ભલામણ:

દક્ષિણ સૌરાષ્ટ્ર ખેત આબોહવાકીય વિસ્તાર (૭) માં દિવેલા વાવતા ખેડુતોને પાન ખાનાર ઈયળો જેવી કે લશ્કરી ઈયળ અને ઘોડીયા ઈયળનાં અસરકારક અને અર્થક્ષમ નિયંત્રણ માટે ક્લોરાન્ટ્રાનીલીપ્રોલ ૧૮.૫ એસ.સી. ૦.૦૦૬ % (૩.૦ મીલી/૧૦ લીટર પાણીમાં) અથવા ઇન્ડોક્ઝાકાર્બ ૧૪.૫ એસ.સી. ૦.૦૦૭૩% (૫.૦ મીલી/૧૦ લીટર પાણીમાં) અથવા સ્પીનોસેડ ૪૫ એસ.સી. ૦.૦૦૯ % (૨.૦ મીલી/૧૦ લીટર પાણીમાં) અથવા એમામેક્ટીન બેન્ઝોએટ ૫ ડબ્લ્યુ.જી. ૦.૦૦૨ % (૪.૦ ગ્રામ/૧૦ લીટર પાણીમાં) દવાના બે છંટકાવ જીવાતનો ઉપદ્રવ શરુ થયાના પંદર દિવસના અંતર કરવાની ભલામણ કરવામાં આવે છે.

ખેડૂતોપયોગી ભલામણ સારાંશ										
વર્ષ	પાક	જીવાત	જંતુઘ્ન/ જૈવિકજંતુઘ્ન દવાઓ અને સ્વરૂપ	પ્રમાણ				પાણી/ જમીન સુધારકો નો જથ્થો (કિ.ગ્રા. અથવા લી./હે)	વાપરવા નીરીત અને સમય	છેલ્લી માવજત અને કાપણી વચ્ચેનો સમયગાળો/ વેઈટીંગ પિરિયડ/ પી.એચ.આઈ. (દિવસ)
				સક્રિયતત્વ (ગ્રામ/હે)	દવાનો જથ્થોગ્રા. અથવા મીલી/ કિ.ગ્રા. બીજ, કિ.ગ્રા. અથવા લી./હે	સાંદ્રતા (%)	૧૦લીટર પાણીમાં જરૂરીદવા નો જથ્થો (મીલી અથવા ગ્રામ)			
૨૦૧૮	મગફળી	પાન ખાનાર ઈયળ	ક્લોરાન્ટ્રાનીલીપ્રોલ ૧૮.૫ એસ. સી.	૨૭.૮	૦.૧૫૦ લી.	૦.૦૦૬	૦૩	૫૦૦ લી.	પ્રથમ છંટકાવ જીવાતનો ઉપદ્રવ શરુ થયે ત્યારબાદ બીજો ૧૫દિવસ બાદ	૧૧૨
			ઈન્ડોક્ઝાકાર્બ ૧૪.૫ એસ. સી.	૩૬.૩	૦.૨૫૦ લી.	૦.૦૦૭૩	૦૫	૫૦૦ લી.		
			સ્પીનોસેડ ૪૫ એસ. સી.	૪૫	૦.૧૦૦ લી.	૦.૦૦૯	૦૨	૫૦૦ લી.		
			એમામેક્ટીન બેન્ઝોએટ ૫ ડબ્લ્યુ. જી.	૧૦	૦.૨૦૦ લી.	૦.૦૦૨	૦૪	૫૦૦ લી.		

Suggestions: Approved

(Action: Research Scientist (Groundnut), Main Oilseeds Research Station, JAU, Junagadh)

Centre: Main Oilseeds Research Station, JAU, Junagadh

15.3.1.18 Management of lepidopteron pests using botanicals in groundnut

The farmers of South Saurashtra Agro-climatic Zone (VII) growing groundnut in *kharif* season are advised to apply two sprays of pongamia oil (30 ml/10 l of water) OR ponneem (30 ml/10 l of water) at 15 days interval starting from pest infestation for effective and economical management of defoliators (*Helicoverpa* and *Spodoptera*). To prepare ponneem, mix 450 ml of neem oil + 450 ml of pongemia oil (karanj oil) + 100 ml of soap solution (wetting agent).

ખેડૂતોપયોગી ભલામણ:

દક્ષિણ સૌરાષ્ટ્ર ખેત આબોહવાકીય વિસ્તાર(૭) માં ચોમાસું ઋતુમાં મગફળી વાવતા ખેડુતોને પાન ખાનાર ઈયળો જેવી કે લીલી ઈયળ અને લશ્કરી ઈયળનાં અસરકારક અને અર્થક્ષમ નિયંત્રણ માટે કરંજ તેલ (૩૦ મીલી/૧૦ લીટર પાણીમાં) અથવા પોનીમ (૩૦ મીલી/૧૦ લીટર પાણીમાં) ના બે છંટકાવ જીવાતનો ઉપદ્રવ શરુ થયાના પંદર દિવસના અંતરે કરવાની ભલામણ કરવામાં આવે છે. પોનીમ બનાવવા માટે ૪૫૦ મીલી લીમડાનું તેલ + ૪૫૦ મીલી કરંજતેલ અને ૧૦૦ મીલી સાબુનું દ્રાવણ (વેટીંગ એજન્ટ) ભેળવવું.

Approved with following suggestions:

1. Remove chemical insecticides from recommendation

2. For preparation of ponneem, give the quantity of individual component instead of their percentage.

(Action: Research Scientist (Groundnut), Main Oilseeds Research Station, JAU, Junagadh)

Centre: Cotton Research Station, JAU, Junagadh

15.3.1.19 Evaluation of egg parasitoid *Trichogramma bactrae* through inundative release

	for the management of cotton pink bollworm

The farmer of the South Saurashtra Agro-climatic Zone (VII) growing cotton are advised to apply *Trichogramma bactrae* 1.5 lakh parasitoid eggs per hector, two release at flowering stage (40-50 days) at weekly interval and three release at boll formation stage (60-75 days) at weekly interval for biological management of pink bollworm.

ખેડૂતોપયોગી ભલામણ:

દક્ષિણ સૌરાષ્ટ્ર ખેત આબોહવાકીય વિસ્તાર (૭) માં કપાસની ખેતી કરતા ખેડૂતોને ગુલાબી ઇયળના અસરકારક નિયંત્રણ માટે ટ્રાયકોગ્રામા ભમરીના પરજીવીકરણ કરેલા ૧.૫ લાખ ઇંડા પ્રતિ હેક્ટર કપાસના પાકમાં ફુલ અવસ્થાએ (૪૦ થી ૫૦ દિવસે) બે વાર અઠવાડીયાના અંતરે અને જીંડવા બંધાવાની અવસ્થાએ (૬૦ થી ૭૫ દિવસે) ત્રણ વાર અઠવાડીયાના અંતરે છોડવાની ભલામણ કરવામાં આવે છે.

Approved with following suggestion.

1. Remove the chemical insecticides from the recommendation

2. Remove the mating disruption pheromone as it is not found effective

(Action: Research Scientist (Cotton), Cotton Research Station, JAU, Junagadh)

15.3.1.20 Evaluation of pheromone traps and lures against cotton pink bollworm through mass trapping

The farmers of the South Saurashtra Agro-climatic Zone (VII) growing cotton are advised to install the phero-sensor TM-BP-sleeve trap OR phero-sensor TM-SP-sleeve trap, 20 traps/ha after 30 days of germination. Change the sex pheromone trap lure thrice in a season at 45 days interval for effective management of pink bollworm.

Summary of recommendation for farming Community

Year	Crop	Pest	Pesticides/ Biopesticide sformulation	Dosage: a.i. (g/ha)	Dosage: Qty. of formulation g or ml/kg seed, kg or l/ha	Dosage: Con. (%)	Dosage: Qty. of formulation in 10 l of water (g or ml)	Qty. of water/ soil amendments required (kg or l/ha)	Application schedule	Waiting period/ PHI (days)
2018	Cotton	Pink bollworm	Phero-sensor TM-BP-sleeve trap	-	20 traps/ha	-	-	-	Installation of traps at 30-35 days after germination and each trap lure changed after 45 days interval.	-
			Phero-sensor TM-SP-sleeve trap	-	20 traps/ha	-	-	-		

ખેડૂતોપયોગી ભલામણ:

દક્ષિણ સૌરાષ્ટ્ર ખેત આબોહવાકીય વિસ્તાર (૭) માં કપાસની ખેતી કરતા ખેડૂતોને ગુલાબી ઇયળના અસરકારક અને અર્થક્ષમ નિયંત્રણ માટે બીજ ઉગવાના એક મહીના બાદ ફેરો-સેન્સર ટીએમ-બીપી સ્લીવ ટ્રેપ અથવા ફેરો-સેન્સર ટીએમ-એસપી સ્લીવ ટ્રેપ પ્રતિ હેક્ટરે ૨૦ લગાવવા, તેમજ આ

	ટ્રેપમાં ૪૫ દિવસના અંતરે ત્રણ વાર ફેરોમેન લ્યુર બદલવાની ભલામણ કરવામાં આવે છે.

ખેડૂતોપયોગી ભલામણસારાંશ

વર્ષ	પાક	જીવાત	જંતુઘ્ન/ જૈવિકજંતુઘ્ન દવાઓ અને સ્વરૂપ	પ્રમાણ				પાણી/ જમીન સુધારકોનો જથ્થો (કિ.ગ્રા. અથવા લી./હે)	વાપરવાનીરીત અને સમય	છેલ્લી માવજત અને કાપણી વચ્ચેનો સમયગાળો/ વેઈટીંગ પિરિયડ/ પી.એચ.આઈ.(દિવસ)
				સક્રિયતત્વ (ગ્રામ/હે)	દવાનો જથ્થોગ્રા. અથવા મીલી/ કિ.ગ્રા. બીજ, કિ.ગ્રા. અથવા લી./હે	સાંદ્રતા (%)	૧૦લીટર પાણીમાં જરૂરીદવાનો જથ્થો			
૨૦૧૮	કપાસ	ગુલાબી ઈયળ	ફેરોસેન્સર ટીએમ-બીપી સ્લીવ ટ્રેપ	-	૨૦ ટ્રેપ/હેક્ટર	-	-	-	કપાસના ઉગવાના ૩૦ થી ૩૫ દિવસ બાદ ફેરોમોન ટ્રેપ લગાવવા અને ૪૫ દિવસના અંતરે લ્યુર બદલવી.	-
			ફેરો સેન્સર ટીએમ-એસપી સ્લીવ ટ્રેપ	-	૨૦ ટ્રેપ/હેક્ટર	-	-	-		-

Suggestions: Approved

(Action: Research Scientist (Cotton), Cotton Research Station, JAU, Junagadh)

15.3.1.21 Bio-efficacy of insecticides against major sucking pests in *Bt* cotton

The farmers of South Saurashtra Agro-climatic Zone (VII) growing *Bt* cotton are advised to apply three sprays of flonicamid 50 WG 0.02 % (4.0 g/10 l of water) OR diafenthiuron 50 WP 0.06 % (12.0 g/10 l of water) OR dinotefuran 20 SG 0.008 % (4.0 g/10 l of water), first at pest initiation and subsequent two sprays at 15 days interval for effective and economical management of aphid, jassid, whitefly and thrips.

Summary of recommendation for farming community

Year	Crop	Pest	Pesticides/ Biopesticides formulation	Dosage				Qty. of water/ soil amendments required (kg or l/ha)	Application schedule	Waiting period/ PHI (days)
				a.i. (g/ha)	Qty. of formulation g or ml/kg seed, kg or l/ha	Con. (%)	Qty. of formulation in 10 l of water (g or ml)			
2017-18	Cotton	Aphid, Jassid, Thrips and Whitefly	Flonicamid 50 WG	100	0.200 kg	0.02	4 g	500 l	First spray at pest appearance and subsequent two sprays at 15 days interval after first spray	25
			Diafenthiuron 50 WP	300	0.600 kg	0.06	12 g			21
			Dinotefuran 20 SG	40	0.200 kg	0.008	4 g			15

ખેડૂતોપયોગી ભલામણ:

દક્ષિણ સૌરાષ્ટ્ર ખેત આબોહવાકીય વિસ્તાર (૭) માં કપાસની ખેતી કરતા ખેડૂતોને મોલો, તડતડીયા, થ્રીપ્સ અને સફેદ માખીના અસરકારક અને અર્થક્ષમ નિયંત્રણ માટે ફ્લોનીકામાઈડ ૫૦ ડબલ્યુજી ૦.૦૨ % (૪.૦ ગ્રામ/૧૦ લીટર પાણીમાં) અથવા ડાયફેન્થ્યુરોન ૫૦ વે.પા. ૦.૦૬ % (૧૨.૦

ગ્રામ/૧૦ લીટર પાણીમાં) અથવા ડીનેટોફ્યુરાન ૨૦ એસજી ૦.૦૦૮ % (૪.૦ ગ્રામ/૧૦ લીટર પાણીમાં) ના ત્રણ છંટકાવ, પ્રથમ છંટકાવ જીવાત દેખાયે અને બીજા બે, પ્રથમ છંટકાવના ૧૫ દિવસના અંતરાયે કરવાની ભલામણ કરવામાં આવે છે.

ખેડૂતોપયોગી ભલામણ સારાંશ										
વર્ષ	પાક	જીવાત	જંતુઘ્ન/ જૈવિકજંતુઘ્ન દવાઓ અને સ્વરૂપ	પ્રમાણ				પાણી/ જમીન સુધારકો નો જથ્થો (કિ.ગ્રા. અથવા લી./હે)	વાપરવાનીરીત અને સમય	છેલ્લી માવજત અને કાપણી વચ્ચેનો સમયગાળો/ વેઈટીંગ પિરિયડ/ પી.એચ.આઈ (દિવસ)
				સક્રિયત ત્વ (ગ્રામ/હે)	દવાનો જથ્થોગ્રા. અથવા મીલી/ કિ.ગ્રા. બીજ, કિ.ગ્રા. અથવા લી./હે	સાંદ્રતા (%)	૧૦લીટર પાણીમાં જરૂરીદ વાનો જથ્થો			
૨૦૧૭-૧૮	કપાસ	મોલો, તડતડીયા, થ્રીપ્સઅનેસફેદમાખી	ફ્લોનીકામાઈડ૫૦ડબલ્યુજી	૧૦૦	૦.૨૦૦કિ.ગ્રા.	૦.૦૨	૪ગ્રામ	૫૦૦લી.	પ્રથમછંટકાવ જીવાતદેખાયે અનેબીજાત્રણ છંટકાવપ્રથમછંટકાવના૧૫દિવસનાઅંતરાયે	૨૫
			ડાયફેન્થ્યુરોન ૫૦વે. પા.	૩૦૦	૦.૬૦૦કિ.ગ્રા	૦.૦૬	૧૨ગ્રામ			૨૧
			ડીનોટેફ્યુરાન ૨૦એસજી	૪૦	૦.૨૦૦કિ.ગ્રા	૦.૦૦૮	૪ગ્રામ			૧૫

Suggestions: Approved

(**Action:** Research Scientist (Cotton), Cotton Research Station, JAU, Junagadh)

Centre: Department of Processing & Food Engg., CAET, JAU, Junagadh

15.3.1.22 To study the effect of different packing materials against groundnut bruchid (*Caryedon serrates* olivier.) during storage

The farmers are advised to store the well dried groundnut pods in PICS bag (Perdue improved crop storage bag) OR closely woven net bag for effective and economical management of bruchid pest up to six month.

ખેડૂતોપયોગી ભલામણ:

ખેડૂતો માટે ભલામણ કરવામાં આવે છે કે સારી રીતે સૂકવેલ મગફળીના ડોડવાને પીઆઇસીએસ (પરડ્યુ ઈમ્પ્રુવડક્રોપ સ્ટોરેજ બેગ) માં અથવા ઝીણી (ક્લોઝ્લી) ગુથણવાળી નેટની બેગમાં સંગ્રહ કરવાથી છ માસ સુધી ભોટવાનું અસરકારક અને અર્થક્ષમ વ્યસ્થાપન કરી શકાય છે.

Approved with following suggestions:

1. Approved and presented in Agril. Engineering and AIT group.

(**Action:** Professor & Head, Department of Processing & Food Engg., CAET, JAU, Junagadh)

Centre: Pearl Millet Research Station, JAU, Jamnagar

15.3.1.23 Management of major insect pests infesting pearl millet under organic cultivation

The farmers of North Saurashtra Agro-climatic Zone (VI) growing organic pearl millet are advised to apply two sprays of *Beauveria bassiana* 1.15 WP (2 x 10^6 cfu/g) 50 g/10 l of water at 30 and 60 days after sowing for the effective and economical management of shoot fly and stem borer, whereas for ear head worm, *Helicoverpa armigera* one spray of *Ha*NPV 250 LE/ha at anthesis stage to be carried out.

Summary of recommendation for farming community

Year	Crop	Pest	Pesticides/ Biopesticidesformulation	Dosage: a.i. (g/ ha)	Dosage: Qty. of formulation g or ml/kg seed, kg or l/ha	Dosage: Con. (%)	Dosage: Qty. of formulation in 10 l of water (g or ml)	Qty. of water/ soil amendments required (kg or l/ha)	Application schedule	Waiting period / PHI (days)	Remarks
2019	Pearl millet (bajra)	Shoot fly and stem borer	*Beauveria bassiana*1.15 WP (2 x 10^6 cfu/g)	28.75	2.500 kg	5g/l	50 g	500 l	Two spray at 30 and 60 DAS	-	-
		Helicoverpa armigera	*Ha*NPV @ 250 LE/ha	--	0.250 l	250 LE/ ha	5 ml	500 l	Single spray at anthesis stage	-	--

ખેડૂતોપયોગી ભલામણ:

ઉત્તર સૌરાષ્ટ્ર ખેત આબોહવાકીય વિસ્તાર(૬) માં ચોમાસુ બાજરાની સજીવ ખેતી કરતા ખેડુતોને સાંઠાની માખી અને ગાભમારાની ઇયળના અસરકારક અને અર્થક્ષમ નિયંત્રણ માટે બાજરીના વાવેતરના ૩૦ અને ૬૦ દિવસ બાદ બ્યુવેરીયા બાસીયાના ૧.૧૫ વેપા (૨ x ૧૦^૬ સીએફ્યુ/ગ્રામ) ૫૦ ગ્રામ/૧૦ લીટર પાણીનો છંટકાવ કરવો. જ્યારે ડુંડાની લીલી ઈયળના અસરકારક અને અર્થક્ષમ નિયંત્રણ માટે એચ.એ.એન.પી.વી.૨૫૦ એલ.ઈ. પ્રતિ હેકટરનો બાજરીની થુલી અવસ્થાએ છંટકાવ કરવાની ભલામણ કરવામાં આવે છે.

ખેડૂતોપયોગી ભલામણ સારાંશ

વર્ષ	પાક	જીવાત	જંતુઘ્ન/ જૈવિકજંતુઘ્ન દવાઓ અને સ્વરૂપ	પ્રમાણ: સક્રિયતત્વ (ગ્રામ/હે)	પ્રમાણ: દવાનો જથ્થો ગ્રા. અથવા મીલી/ કિ.ગ્રા. બીજ, કિ.ગ્રા. અથવા લી./હે	પ્રમાણ: સાંદ્રતા (%)	પ્રમાણ: ૧૦લીટર પાણીમાં જરૂરીદવાનો જથ્થો	પાણી/ જમીન સુધારકોનો જથ્થો (કિ.ગ્રા. અથવા લી./હે)	વાપરવાની રીત અને સમય	છેલ્લી માવજત અને કાપણી વચ્ચેનો સમયગાળો/વેઈટીંગ પિરિયડ/ પી.એચ.આઈ. (દિવસ)
૨૦૧૯	બાજરી	સાંઠાની માખી અને ગાભમારાની ઈયળ	બ્યુવેરીયા બાસીયાના ૧.૧૫ વે.પા.	૨૮.૭૫	૨.૫ કિ. ગ્રા.	૨ x૧૦^૬ સીએફ્યુ/ગ્રામ	૫૦ ગ્રામ	૫૦૦ લી.	વાવેતર બાદ ૩૦ અને ૬૦ દીવસે બે છંટકાવ કરવા	લાગુ પડતુ નથી.
		ડૂંડાની ઈયળ (લીલી ઈયળ)	એચએએન. પી. વી. ૨૫૦એલ.ઈ./ હે.	--	૦.૨૫૦ લી.	૨૫૦એલ.ઈ./ હે.	૫ મિલી	૫૦૦ લી.	થુલી અવસ્થાએ છંટકાવ કરવો	લાગુ પડતુ નથી.

Suggestions: Approved

(Action: Research Scientist, Pearl millet Research Station, JAU, Jamnagar)

Centre: Agricultural Research Station, JAU, Amreli

15.3.1.24 Screening of sesame genotypes against insect pests and diseases under unprotected as well as protected condition

The farmers interested in organic sesame cultivation are advised to grow

sesame variety G. Til 10. This variety require minimum plant protection measures as it found resistant to mite pest as well as powdery mildew and phytophthora blight diseases under unprotected as well as protected condition.

ખેડૂતોપયોગી ભલામણ:

સેન્દ્રિય ખેતી પધ્ધતિથી તલની ખેતી કરવા ઇચ્છતા ખેડૂતોને તલની ગુ. તલ ૧૦ જાતનું વાવેતર કરવા ભલામણ કરવામાં આવે છે. આ જાતમાં ઓછામાં ઓછા પાક સંરક્ષણનાં પગલાં લેવાની જરૂર પડે છે. બિનછંટકાવ તથા છંટકાવ પરિસ્થિતીમાં પાન કથીરી જીવાત તથા ભૂકી છારો અને ફાયટોપ્થોરા બ્લાઇટ (પાન અને થડનો કોહવારો) રોગ સામે પ્રતિકારકતા ધરાવતી માલૂમ પડેલ છે.

Suggestions: Dropped

Such types of the observation are mendatory to recoredduring the release of variety, therefore present recommendation dropped.

(Action: Research Scientist, Agricultural Research Station, JAU, Amreli)

15.3.1.25 Efficacy of bio-agents against *Aspergillus flavus* and aflatoxin production in groundnut

Farmers of South Saurashtra Agro-climatic Zone (VII) growing groundnut are advised furrow application of *Trichoderma harzianum* 1 % WP (2 x 10^6 cfu/g) 0.625 kg + *Pseudomonas fluorescens* 1% WP (1x10^8 cfu/g) 0.625 kg in 125 kg of castor cake/ha at the time of sowing and soil application (broadcasting at plant base) of same quantity at one month after sowing found effective for management of aflarot (*Aspergillus flavus)*.

Summary of recommendation for farming community

Year	Crop	Disease	Pesticides/ Biopesticide sformulation	Dosage: a.i. (g/ha)	Dosage: Qty. of formulation g or ml/kg seed, kg or l/ha	Dosage: Con. (%)	Dosage: Qty. of formulation in 10 l of water (g or ml)	Qty. of water/ soil amendments required (kg or l/ha)	Application schedule	Waiting period/ PHI (days)	Reamrks
2019	Groundnut	Aflarot disease	*Trichoderma harzianum*	-	0.625 kg	2 x 10^6 cfu/g	--	125 kg	At sowing and 30 DAS	Nil	These bio pesticides are not registered with CIB & RC for use in groundnut crop for management of this disease.
			Pseudomons fluorescens	-	0.625 kg	1 x 10^8 cfu/g	--	125 kg	At sowing and 30 DAS	NIl	

ખેડૂતોપયોગી ભલામણ:

દક્ષિણ સૌરાષ્ટ્ર આબોહવાકીય વિસ્તાર(૭) ના ખેડૂતોને ભલામણ કરવામાં આવે છે કે મગફળીમાં અફ્લારોટના અસરકારક નિયંત્રણ માટે ૦.૬૨૫ કિ.ગ્રા. ટ્રાયકોડર્મા હારજીયાનમ ૧ % વે.પા. (૨ x ૧૦^{૬} સીએફ્યુ/ગ્રામ) + ૦.૬૨૫ કિ.ગ્રા. સ્યુડોમોનાસ ફ્લુરોસન્સ ૧ % વે.પા. (૧ x ૧૦^{૮} સીએફ્યુ/ગ્રામ) ને ૧૨૫ કિ.ગ્રા./હે એરંડીના ખોળમા ભેળવી વાવેતર સમયેચાસમાં અને તેનો તેટલોજ જથ્થો વાવેતરના એક

મહિના પછી જમીનમાં આપવાની ભલામણ કરવામાં આવે છે.

ખેડૂતોપયોગી ભલામણ સારાંશ

વર્ષ	પાક	રોગ	જંતુઘ્ન/ જૈવિકજંતુઘ્ન દવાઓ અને સ્વરૂપ	પ્રમાણ				પાણી/ જમીન સુધારકોનો જથ્થો (કિ.ગ્રા. અથવા લી./હે)	વાપરવાની રીત અને સમય	છેલ્લી માવજત અને કાપણી વચ્ચેનો સમયગાળો/વૈઈટીંગ પિરિયડ/ પી.એચ.આઈ.) (દિવસ)	નોંધ
				સક્રિયતત્વ (ગ્રામ/)	દવાનો જથ્થો ગ્રા. અથવા મીલી/ કિ.ગ્રા. બીજ, કિ.ગ્રા. અથવા લી./હે	સાંદ્રતા (%)	૧૦લીટર પાણીમાં જરૂરીદવાનો જથ્થો				
૨૦૧૯	મગફળી	અફલારોટ	ટ્રાયકોડર્મા હારજીયાનમ	_	૦.૬૨ ૫કિ. ગ્રા.	૨ x૧૦૬ સીએફ્યુ/ગ્રામ	_	૧૨૫કિ.. ગ્રામ	વાવણીસમયે અનેવાવણી બાદત્રીસદિવસે	નીલ	--
			સ્યુડોમોનસ ફ્લુરોસન્સ	_	૦.૬૨ ૫કિ. ગ્રા.	૧ x ૧૦૮ સીએફ્યુ/ગ્રામ	_	૧૨૫કિ.. ગ્રામ		નીલ	

Suggestions: Approved

(Action: Professor & Head, Department of Plant Pathology, JAU, Junagadh)

15.3.1.26 Management of groundnut diseases through organic amendments, bio products and biocontrol agents

Farmers interested in organic cultivation of groundnut are advised to apply *Trichoderma harzianum* 1 % WP (2 x 10^6 cfu/g) as a seed treatment 10 g/kg seed along with its furrow application 4.0 kg/ha enriched in 300 kg FYM at the time of sowing for management of collar rot and stem rot diseases. Whereas, for leaf spot spray neem seed kernel extract 5 % (500 g/10 l of water) at 30, 45 and 60 DASOR to spray cow urine 10 % (1000 ml/10 l of water) at 20, 40, 60 and 80 days after sowing.

Summary of recommendation for farming community

Year	Crop	Disease	Pesticides/ Biopesticides formulation	Dosage				Qty. of water/ soil amendments required (kg or l/ha)	Application schedule	Waiting period / PHI (days)	Remark (s)
				a.i. (g/ha)	Qty. of formulation g or ml/kg seed, kg or l/ha	Con. (%)	Qty. of formulation in 10 l of water (g or ml)				
2019	Groundnut	Collar rot, Stem tot & leaf spot disease	*Trichoderma harzianum*	--	10 g/ kg seed	2 x 10^6 cfu/g	--	--	As a seed treatment	Nil	-
			Trichoderma harzianum	--	4.0 kg	2 x 10^6 cfu/g	--	300 kg FYM	Furrow application at the time of sowing	Nil	
			Neem seed kernel extract	-	25 l	5 %	0.500 l	500 l	Three sprays at 30, 45 and 60 DAS	Nil	
			Cow urine	--	50 l	10 %	1.000 l	500 l	Four sprays at 20, 40, 60	Nil	

									and 80 DAS		

ખેડૂતોપયોગી ભલામણ:

સજીવ ખેતીમાં રસ ધરાવતા ખેડૂત ભાઇઓને મગફળીમાં આવતા ઉગસુક અને થડના સડાના રોગના અસરકારક અને અર્થક્ષમ નિયંત્રણ માટે વાવેતર સમયે ટ્રાયકોડર્મા હારજીયાનમ ૧ % વે.પા. (૨ x ૧૦^{૬}સીએફ્યુ/ગ્રામ) ફુગની બીજ માવજત ૧૦ ગ્રામ પ્રતિ કિલો અને હેક્ટરે ૪ કિલો ટ્રાઇકોડર્મા હારજીયાનમ પાવડર ૩૦૦ કિલો છાણીયા ખાતરમાં સંવર્ધિત કરી વાવેતર સમયે ચાસમા આપવાની ભલામણ કરવામાં આવે છે. જ્યારે, પાનનાં ટપકાંના નિયંત્રણ માટે લીંબોળીના બીજનો અર્ક ૫ % (૫૦૦ મીલી/૧૦ લીટર પાણીમાં) વાવેતર બાદ ૩૦, ૪૫, અને ૬૦ દિવસે અથવા ગૌમુત્ર ૧૦ % (૧૦૦૦ મીલી/૧૦ લીટર પાણીમાં) વાવેતર બાદ ૨૦, ૪૦, ૬૦ અને ૮૦ દિવસે છંટકાવ કરવાની ભલામણ કરવામાં આવે છે.

ખેડૂતોપયોગી ભલામણ સારાંશ

વર્ષ	પાક	રોગ	જંતુઘ્ન/ જૈવિકજંતુઘ્ન દવાઓ અને સ્વરૂપ	પ્રમાણ				પાણી/ જમીન સુધારકોનો જથ્થો (કિ.ગ્રા. અથવા લી./હે)	વાપરવાની રીત અને સમય	છેલ્લી માવજત અને કાપણી વચ્ચેનો સમયગાળો/વેઈટીંગ પિરિયડ/ પી.એચ.આઈ.) (દિવસ)	રીમાર્કસ
				સક્રિયતત્વ (ગ્રામ/હે)	દવાનો જથ્થો ગ્રા. અથવા મીલી/ કિ.ગ્રા. બીજ, કિ.ગ્રા. અથવા લી./હે	સાંદ્રતા (%)	૧૦લીટર પાણીમાં જરૂરીદવાનો જથ્થો				
૨૦૧૯	મગફળી	ઉગસુક અને થડના સડા અને પાનના ટપકાંના રોગ	ટ્રાયકોડર્મા હારજેનીયમ પાવડર	--	૧૦ ગ્રામ/ કિ.ગ્રા. બીજ	૨x ૧૦^{૬} સીએફ્યુ/ગ્રામ	--	--	બીજ માવજત તરીકે	નીલ	-
			ટ્રાયકોડર્મા હારજેનીયમ પાવડર	--	૪.૦૦ કિ.ગ્રા.			૩૦૦ કીલો છાણીયા ખાતરમાં સંવર્ધિત કરીને	વાવની સમયે ચાસમાં આપવા		
			લીંબોળીનાં બીજનો અર્ક	--	૨૫ લી.	૫%	૫૦૦ મીલી	૫૦૦ લી.	વાવેતર બાદ ૩૦,૪૫ અને ૬૦ દિવસે ત્રણ છંટકાવ	નીલ	
			ગૌમુત્ર	--	૫૦ લી.	૧૦%	૧૦૦૦ મીલી	૫૦૦ લી.	વાવેતર બાદ ૨૦, ૪૦, ૬૦ અને ૮૦ દિવસે ચાર છંટકાવ	નીલ	

Suggestions: Approved

(**Action**: Research Scientist (Groundnut), Main Oilseeds Research Station, JAU, Junagadh)

15.3.1.27 **Efficacy of *Trichoderma harzianum* on growth and stem rot disease management in groundnut**

The farmers of South Saurashtra Agroclimatic Zone (VII) growing *kharif* groundnut are advised to apply *Trichoderma harzianum* 1 % WP (2x 10^6 cfu/g) as furrow application 4 kg/ha in 250 kg of castor cake at the time of sowing and soil drenching 4 kg/ha in soil at 30 days after sowing for effective and economical management of stem rot disease and obtaining higher pod yield. The application of

Trichoderma harzianum also resulted in growth promoting ability by increasing leaf dry weight, leaf area, plant height, number of branches, pods per plant and root length in groundnut.

Summary of recommendation for farming community

Year	Crop	Disease	Pesticides/ Biopesticidesformulation	Dosage				Qty. of water/ soil amendments required (kg or l/ha)	Application schedule	Waiting period/ PHI (days)	Remark(s)
				a.i. (g/ha)	Qty. of formulation g or ml/kg seed, kg or l/ha	Con. (%)	Qty. of formulation in 10 l of water (g or ml)				
2019	Groundnut	Stem tot & Growth promoting Ability	*Trichoderma harzianum*	---	4.00 kg	2 x 10^6 cfu /g	--	250 kg castor cake	Furrow application at the time of sowing	NIL	-
			Trichoderma harzianum	--	4.0 kg	2 x 10^6 cfu /g	--	1000 l	As a soil drenching at 30DAS	NIL	

ખેડૂતોપયોગી ભલામણ:

દક્ષિણ સૌરાષ્ટ્ર ખેત આબોહવાકિય વિસ્તાર (૭) ના ચોમાસુ મગફળી ઉગાડતા ખેડુતોને મગફળીમાં આવતા થડના સડાના રોગના અસરકારક અને અર્થક્ષમ નિયંત્રણ તેમજ વધુ ઉત્પાદન મેળવવા માટે વાવેતર સમયે ૪ કિલો ટ્રાયકોડર્મા હારજીયાનમ ૧ % વે.પા. (૨x ૧૦^{૬} સીએફયુ/ગ્રામ) પાવડર પ્રતિ હેક્ટર ૨૫૦ કિલો દિવેલીના ખોળ સાથે મિશ્રણ કરી ચાસમાં તથા વાવેતર બાદ ૩૦ દિવસે પાણી સાથે ૪ કિલોપ્રતિ હેક્ટરે પ્રમાણે છોડની બાજુમાં જમીનમા (ડ્રેન્ચિગ) આપવાની ભલામણ કરવામાં આવે છે. મગફળીના પાકમાં ટ્રાઇકોડર્મા હારજીયાનમના ઉપયોગથી છોડમાં વૃધ્ધિ ક્ષમતામાં વધારો થતા પાનના વિસ્તાર તેમજ વજન, છોડની ઉંચાઇ, ડાળીઓની સંખ્યા, ડોડવાની સંખ્યા અને મૂળની લંબાઇમાં વધારો જોવા મળે છે.

ખેડૂતોપયોગી ભલામણ સારાંશ

વર્ષ	પાક	રોગ	જંતુઘ્ન/ જૈવિકજંતુઘ્ન દવાઓ અને સ્વરૂપ	પ્રમાણ				પાણી/ જમીન સુધારકોનો જથ્થો (કિ.ગ્રા. અથવા લી./હે)	વાપરવાનીરીત અને સમય	છેલ્લી માવજત અને કાપણી વચ્ચેનો સમયગાળો/વેઈટીંગ પિરિયડ/ પી.એચ. આઈ.) (દિવસ)	રીમાર્કસ
				સક્રિયત ત્વ (ગ્રામ/ હે)	દવાનો જથ્થોગ્રા. અથવા મીલી/ કિ.ગ્રા. બીજ, કિ.ગ્રા. અથવા લી./હે	સાંદ્રતા (%)	૧૦લીટર પાણીમાં જરૂરીદવાનો જથ્થો				
૨૦૧૯	મગફળી	થડના સડા અને વૃધ્ધિ કારક તરીકે	ટ્રાયકોડર્મા હારજેનીયમ પાવડર	--	૪.૦૦ કિ.ગ્રા.	૨x ૧૦ ૬ સીએફયુ/ ગ્રામ		૨૫૦ કિલો દિવેલના ખોળ સાથે મિશ્રણ કરી	વાવણી સમયે ચાસમાં આપવા		
			ટ્રાયકોડર્મા હારજેનીયમ પાવડર	--	૪.૦૦ કિ.ગ્રા.		--	૧૦૦૦ લી. પાણીમાંમિશ્રણ કરી	વાવેતર બાદ ૩૦ દિવસે પાણી સાથે છોડની	નીલ	

									બાજુમાં જમીનમાં (ડ્રેન્ચીંગ)		

Suggestions: Approved

(Action: Research Scientist (Groundnut), Main Oilseeds Research Station, JAU, Junagadh)

15.3.1.28 **Integrated management practices to minimize *Aspergillus flavus* infection and other diseases in groundnut**

The farmers of South Saurashtra Agro climatic Zone (VII) growing *kharif* groundnut are advised seed treatment with mancozeb (75 % WP) 3g/kg of seed + furrow application of *Trichoderma harzianum* 1 % WP (2 x 10^6cfu/g) 2.5 kg in 250 kg of castor cake/ha at the time of sowing for effective and economical management of aflarot and obtaining higher pod yield. It is also effective for management of stem rot and collar rot.

Farmers interested in nonchemical cultivation of groundnut are advised seed treatment with *Trichoderma harzianum* 1 % WP(2x 10^6 cfu/g) 10g/kg of seed + furrow application of *Trichoderma harzianum* 2.5 kg enriched before one week in 250 kg of FYM/ha at the time of sowing for effective and economical management of aflarot and obtaining higher pod yield. It is also effective for management of stem rot and collar rot.

Summary of recommendation for farming community

Year	**Crop**	**Disease**	**Pesticides/ Biopesticidesformulation**	**Dosage**				**Qty. of water/ soil amendments required (kg or l/ha)**	**Application schedule**	**Waiting period / PHI (days)**	**Remark (s)**
				a.i. (g/ha)	**Qty. of formulation g or ml/kg seed, kg or l/ha**	**Con. (%)**	**Qty. of formulation in 10 l of water (g or ml)**				
2019	Groundnut	Aflarot disease and collar and stem rots	Mancozeb 75 % WP	0.36	3 g/kg seed	0.2 %	---	--	As a seed treatment	---	Registered product with CIB
			Trichoderma harzianum	---	2.5 kg	2 x 10^6 cfu/g	--	250 kg castor cake	Furrow application at the time of sowing	Nil	-
OR											
2019	Groundnut	Aflarot	*Trichoderma harzianum*	---	10 g /kg seed	2 x 10^6 cfu/	--	--	As a seed treatment	Nil	-

			Trichoderma harzianum	--	2.5 kg	g	--	250 kg FYM	Furrow application at the time of sowing	Nil

ખેડૂતોપયોગી ભલામણ:

દક્ષિણ સૌરાષ્ટ્ર ખેત આબોહવાકિય વિસ્તાર (૭) ના ચોમાસુ મગફળી ઉગાડતા ખેડુતોને મગફળીમાં આવતા અફ્લારોટ રોગના અસરકારક અને અર્થક્ષમ નિયંત્રણ તેમજ વધુ ઉત્પાદન મેળવવા માટે વાવેતર સમયે મેન્કોઝેબ ફુગનાશક દવાની બીજ માવજત ૩ ગ્રામ પ્રતિ કિલો અને વાવેતર સમયે પ્રતિ હેક્ટરે ૨.૫ કિલો ટ્રાયકોડર્મા હારજીયાનમ ૧ % વે.પા. (૨x ૧૦^{૬} સીએફયુ/ગ્રામ) પાવડર ૨૫૦ કિલો દિવેલીના ખોળ સાથે મિશ્રણ કરી ચાસમા આપવાની આથી ભલામણ કરવામાં આવે છે. આ ભલામણ ઉગસુક અને થડના સડાના રોગ માટે પણ અસરકારક માલુમ પડેલ છે.

બીનરાસાયણીક ખેતીમાં રસ ધરાવતા ખેડુતભાઇઓને મગફળીમાં આવતા અફ્લારોટરોગ માટેના અસરકારક અને અર્થક્ષમ નિયંત્રણ તેમજ વધુ ઉત્પાદન મેળવવા માટે વાવેતર સમયે ટ્રાયકોડર્મા હારજીયાનમ ૧% વે.પા. (૨x ૧૦^{૬} સીએફયુ/ગ્રામ) પાવડર બીજ માવજત ૧૦ ગ્રામ પ્રતિ કિલો અને હેક્ટરે ૨.૫ કિલો ટ્રાયકોડર્મા હારજીયાનમ પાવડર ૨૫૦ કિલો છાણીયા ખાતરમાં અઠવાડીયા પહેલા સંવર્ધિત કરી વાવેતર સમયે ચાસમા આપવાની ભલામણ કરવામાં આવે છે. આ ભલામણ ઉગસુક અને થડના સડાના રોગ માટે પણ અસરકારક માલુમ પડેલ છે.

ખેડૂતોપયોગી ભલામણ સારાંશ

વર્ષ	પાક	રોગ	જંતુઘ્ન/ જૈવિકજંતુઘ્ન દવાઓ અને સ્વરૂપ	પ્રમાણ: સક્રિયતત્વ (ગ્રામ/હે)	પ્રમાણ: દવાનો જથ્થોગ્રા. અથવા મીલી/કિ.ગ્રા. બીજ, કિ.ગ્રા. અથવા લી./હે	પ્રમાણ: સાંદ્રતા (%)	પ્રમાણ: ૧૦લીટર પાણીમાં જરૂરી દવાનો જથ્થો	પાણી/ જમીન સુધારકોનો જથ્થો (કિ.ગ્રા. અથવા લી./હે)	વાપરવા નીરીત અને સમય	છેલ્લી માવજત અને કાપણી વચ્ચેનો સમયગાળો/વેઈટીંગ પિરિયડ/ પી.એચ.આઈ.) (દિવસ)	રીમાર્ક્સ
૨૦૧૯	મગફળી	મગફળીના અફ્લારોટ, ઉગસુક અને થડના સડા માટે	મેનકોઝેબ ૭૫% ડબલ્યુ.પી.	૦.૩૬૦ ગ્રામ/હે.	૩ ગ્રામ/કિ. ગ્રા. બીજ	૦.૨ ટકા	--	૦.૩૬૦ ગ્રામ/હે.	બીજ માવજત તરીકે	--	--
			ટ્રાઈકોડર્મા હરજીએનમ પાવડર	--	૨.૫ કિલો	૨ x૧૦^{૬} સીએફ્યુ/ગ્રામ	--	૨૫૦ કિલો દિવેલીના ખોળ સાથે મિશ્રણ કરી	વાવેતર સમયે ચાસમાં આપવા	--	--
સજીવ ખેતી માટે											
૨૦૧૯	મગફળી	મગફળીના	ટ્રાઈકોડર્મા હરજીએનમ પાવડર	--	૧૦ ગ્રામ/કિ. ગ્રા. બીજ	૨x ૧૦^{૬} સીએફ્યુ/ગ્રામ	--	--	બીજ માવજત તરિકે	--	--

			ટ્રાઈકોડર્મા હરજીએનમ પાવડર	--	૨.૫ કિલો			૨.૫ કિલો પાવડરર ૫૦ કિલો છાણીયા ખાતરમાં સંવર્ધિત કરીને	વાવેતર સમયે ચાસમાં આપવા		

Suggestions: Approved

(Action: Research Scientist (Groundnut), Main Oilseeds Research Station, JAU, Junagadh)

15.3.1.29 Biological control of root rot of castor

The farmers of South Saurashtra Agro climatic Zone (VII) growing castor during *kharif* season are advised to apply *Trichoderma harzianum* 1 % WP (2 x 10^6 cfu/g) as seed treatment 4g/kg seed along with its soil application 2.5 kg enriched in 100 kg FYM/ha for a week and applied at the time of sowing for effective and economical management of root rot disease.

Summary of recommendation for farming community

Year	Crop	Disease	Pesticides/ Biopesticides formulation	Dosage: a.i. (g/ ha)	Dosage: Qty. of formulation g or ml/kg seed, kg or l/ha	Dosage: Con. (%)	Dosage: Qty. of formulation in 10 l of water (g or ml)	Qty. of water/ soil amendments required (kg or l/ha)	Application schedule	Waiting period/ PHI (days)	Remark (s)
2019	Castor	Root rot of castor	*Trichoderma harzianum*	---	4 g/kg seed	2 x 10^6 cfu/g	---	--	As a seed treatment	---	--
			Trichoderma harzianum	---	2.5 kg	2 x 10^6 cfu/g	--	100 kg FYM	Furrow application at the time of sowing	---	

ખેડૂતોપયોગીભલામણ:

દક્ષિણ સૌરાષ્ટ્ર ખેત આબોહવાકિય વિસ્તાર(૭) ના ચોમાસુ દિવેલાની ખેતી કરતા ખેડુતોને મુળના કોહવારાના અસરકારક અને અર્થક્ષમ નિયંત્રણ માટે ટ્રાઇકોડર્મા હારજીયાનમ (૨ x ૧૦^{૬} સીએફ્યુ/ગ્રામ) પાવડરની બીજ માવજત ૪ ગ્રામ પ્રતિ કિલો તેમજ હેક્ટરે ૨.૫ કિલો ટ્રાઇકોડર્મા હારજીયાનમ (૨x ૧૦^{૬} સીએફ્યુ/ગ્રામ) પાવડર ૧૦૦ કિલો છાણીયા ખાતરમાં અઠવાડીયા પહેલા સંવર્ધિત કરી વાવેતર સમયે ચાસમા આપવાની ભલામણ કરવામાં આવે છે.

ખેડૂતોપયોગી ભલામણ સારાંશ

વર્ષ	પાક	રોગ	જંતુઘ્ન/ જૈવિકજંતુઘ્ન દવાઓ અને સ્વરૂપ	પ્રમાણ: સક્રિય તત્વ (ગ્રામ / હે)	પ્રમાણ: દવાનો જથ્થોગ્રા. અથવા મીલી/ કિ.ગ્રા. બીજ, કિ.ગ્રા. અથવા લી./હે	પ્રમાણ: સાંદ્રતા (%)	પ્રમાણ: ૧૦લીટર પાણીમાં જરૂરીદવાનો જથ્થો	પાણી/ જમીન સુધારકોનો જથ્થો (કિ.ગ્રા. અથવા લી./હે)	વાપરવા નીરીત અને સમય	છેલ્લી માવજત અને કાપણી વચ્ચેનો સમયગાળો/વૈઈટીંગ પિરિયડ/ પી.એચ.આઈ.) (દિવસ)	રીમાર્ક્સ

૨૦૧૯	દિવેલા	દિવેલાના મૂળના સડા માટે	ટ્રાઈકોડર્મા હારજીયાનમ પાવડર	--	૪ ગ્રા./કિ.ગ્રા.	૨ x૧૦૬ સીએફ્યુ/ગ્રામ	--	--	બીજ માવજત તરીકે	--	--
			ટ્રાઈકોડર્મા હારજીયાનમ પાવડર	--	૨.૫ કિ.ગ્રા.	૨ x૧૦૬ સીએફ્યુ/ગ્રામ	--	૧૦૦ કિ.ગ્રા. છાણીયા ખાતરમાં સંવર્ધિત કરીને	વાવેતર સમયે ચાસમાં આપવા	--	

Suggestions: Approved

(Action: Research Scientist (Groundnut), Main Oilseeds Research Station, JAU, Junagadh)

Ad-hoc Recommendations

15.3.1.30 Standardization of numbers of pheromone traps for fall army worm in maize

For effective management of fall army worm in maize, the farmers are advised to install 50 sex pheromone traps per hectare. The lure to be changed after 40 days

ખેડૂતોપયોગી ભલામણ:

મકાઇની ખેતી કરતા ખેડુતોને ભલામણ કરવામાં આવે છે કે, ચાર ટપકાવાળી ઇયળના અસરકારક નિયંત્રણ માટે ૫૦ ફીરોમોન ટ્રેપ પ્રતિ હેકટરે લગાવવા તથા તેમની લ્યુર ૪૦ દિવસે બદલવાની ભલામણ કરવામાં આવે છે.

Suggestions: Approved as *Ad-hoc*

(**Action:** Prof.& Head, Dept. of Entomology, COA, JAU, Junagadh)

15.3.1.31 Evaluation of bio-agents and chemical insecticides against fall army worm in maize

For effective management of fall army worm in maize, the farmers are advised to apply three sprays of *Beauveria bassiana* 1.15 WP (2 x 10^6 cfu/g) 0.009 % (80 g/10 l of water) OR *Nomuria rileyi* 1.15 WP (2 x 10^6 cfu/g) 0.007 % (60 g/10 l of water) + *Sf*NPV 450 LE (10 ml/10 l of water) OR two sprays of emamectin benzoate 5 SG 0.0025 % (5g/10 l of water) OR thiodicarb 75 WP 0.075 % (10 g/10 l of water) OR spinetoram 11.7 EC 0.012 % (10ml/10 l of water), first at initiation of pest infestation and second at 15-day interval.

ખેડૂતોપયોગી ભલામણ:

મકાઇની ખેતી કરતા ખેડુતોને ભલામણ કરવામાં આવે છે કે, ચાર ટપકાવાળી ઇયળના અસરકારક નિયંત્રણ માટે બ્યુવેરીયા બાસીયાના ૧.૧૫ % વે.પા. (ન્યુનતમ ૨ x ૧૦૬ સી.એફ.યુ./ગ્રામ) ૦.૦૦૯ % (૮૦ ગ્રામ/૧૦ લી. પાણીમાં) અથવા ન્યુમેરીયા રાયલી ૧.૧૫ % વે.પા. (ન્યુનતમ ૨ x ૧૦૬ સી.એફ.યુ./ગ્રામ) ૦.૦૦૭ % (૮૦ ગ્રામ/૧૦ લી. પાણીમાં) અથવા બ્યુવેરીયા બાસીયાના ૧.૧૫ % વે.પા. (ન્યુનતમ ૨ x ૧૦૬ સી.એફ.યુ./ગ્રામ) ૦.૦૦૭% (૬૦ ગ્રામ/૧૦ લી. પાણીમાં) + એસ.એફ.એન.પી.વી. ૪૫૦ એલ.ઇ. (૧૦ મિ.લી./૧૦ લી. પાણીમાં) અથવા એમામેકટીન બેન્ઝોએટ ૫ એસ.જી. ૦.૦૦૨૫ % (૫ ગ્રામ/૧૦ લી. પાણીમાં અથવા થાયોડીકાર્બ ૭૫ ડબલ્યુ. પી. ૦.૦૭૫ % (૧૦ ગ્રામ/૧૦ લી. પાણીમાં) અથવા સ્પીનેટોરામ ૧૧.૭ % ઇ.સી. ૦.૦૧૨ % (૧૦ મિ.લી./૧૦ લી. પાણીમાં) નો પ્રથમ છંટકાવ જીવાત દેખાય ત્યારે અને ત્યાર બાદ બીજો છંટકાવ ૧૫ દિવસના અંતરે કરવાની ભલામણ છે.

Suggestions: Approved as *Ad-hoc*

	(**Action:** Prof.& Head, Dept. of Entomology, COA, JAU, Junagadh)

ANAND AGRICULTURAL UNIVERSITY, ANAND

15.3.1.32	**Evaluation of pre-harvest spray of insecticides for control of pulse beetle, *Calloso bruchus* spp. in green gram**
	Green gram seed producers of Middle Gujarat Agro climatic zone (III) are advised to spray indoxacarb 14.5 SC, 0.012 % (8 ml/10 l water) at pod maturity stage to check the infestation of pulse beetle during storage up to two months without adverse effect on seed germination**.** **ખેડૂતોપયોગીભલામણ:** મધ્ય ગુજરાત ખેત આબોહવાકીય વિસ્તાર (3)ના મગના બિયારણના ઉત્પાદકોને સલાહ આપવામાં આવે છે કે, બિયારણ સંગ્રહ માટે કઠોળના ભોટવાના નિયંત્રણ માટે, શિંગો પાકવાની અવસ્થાએ ઈન્ડોક્ઝાકાર્બ ૧૪.૫ એસસી, ૦.૦૧૨% (૮ મિલિ પ્રતિ ૧૦ લિટર પાણી) નો છંટકાવ કરવાથી બે માસ સુધી આ જીવાતનો ઉપદ્રવ બિયારણના સ્કુરણને આડઅસર થયા વગર અટકાવી શકાય છે. **Suggestions:** Approved (**Action:** Prof.& Head, Dept. of Entomology, BACA, AAU, Anand**)**
15.3.1.33	**Biorational management of cumin pests**
	Farmers of Middle Gujarat Agro climatic Zone (III) are advised to spray neem oil, 1% (100 ml/10 l water) or garlic extract, 5% at appearance of pest and secondspray at 10 days after first spray for effective control of aphid and thrips in cumin. For preparation of 5% garlic extract, 500 g garlic cloves to be crushed in required quantity of water followed by filtration and dilution in 10 litres of water. **ખેડૂતોપયોગી ભલામણ:** મધ્ય ગુજરાત ખેત આબોહવાકીય વિસ્તાર (3)માં જીરૂની ખેતી કરતા ખેડૂતોને મોલો-મશી અને થ્રીપ્સનાં અસરકારક નિયંત્રણ માટે લીમડાનું તેલ ૧% (૧૦૦ મિ.લિ./૧૦ લિટર પાણી) અથવા લસણનો અર્ક ૫% નો પ્રથમ છંટકાવ જીવાત દેખાવાની શરૂઆત થયે અને બીજો ૧૦ દિવસ બાદ કરવાની સલાહ આપવામાં આવે છે. લસણનો ૫% અર્ક બનાવવા ૫૦૦ ગ્રામ લસણની કળીઓને જરૂરી પાણી લઈ છુંદીને ગાળ્યા બાદ ૧૦ લિટર પાણીમાં ઓગાળવું. **Suggestions:** Approved (**Action:** Prof.& Head, Dept. of Entomology, BACA, AAU, Anand**)**
15.3.1.34	**Bio-efficacy of different insecticides against serpentine leaf miner, *Liriomyza trifolii* (Burgess) on watermelon**
	Farmers of Middle Gujarat Agro climatic Zone (III) growing watermelon are advised to spray cyantraniliprole 10 OD, 0.01% (10 ml/10 l water) at 40 days after sowing and second spray at 15 days after first spray for effective management of serpentine leaf miner, *Liriomyza trifolii*. Interval between last spray and harvest should be minimum 5 days. **ખેડૂતોપયોગી ભલામણ:** મધ્ય ગુજરાત ખેત આબોહવાકીય વિસ્તાર (3)માં તરબૂચની ખેતી કરતા ખેડૂતોને પાન કોરીયાના અસરકારક નિયંત્રણ માટે સાયન્ટ્રાનીલિપ્રોલ ૧૦ ઓડી, ૦.૦૧% (૧૦ મિ.લિ./૧૦ લિટર પાણી)

નો પ્રથમ છંટકાવ વાવણી બાદ ૪૦ દિવસે અને ત્યારબાદ બીજો છંટકાવ ૧૫ દિવસે કરવાની ભલામણ કરવામાં આવે છે. છેલ્લા છંટકાવ અને ઉતાર વચ્ચે ઓછામાં ઓછો ૫ દિવસનો ગાળો રાખવો.

Suggestions: Approved

(**Action:** Principal, CoA, AAU, Jabugam)

15.3.1.35 Efficacy of insecticides against fall armyworm, *Spodoptera frugiperda* (J. E. Smith) infesting maize

Spinetoram 11.7 SC, 0.0117% (10 ml/10 l water) or emamectin benzoate 5 SG, 0.0025% (5 g/10 lwater) or chlorantraniliprole 18.5 SC, 0.006% (3 ml/10 l water) or chlorantraniliprole 0.4% G (whorl application, 20 kg/ha), or poison bait consisting maize flour 25 kg + jaggery 5 kg + thiodicarb 75 WP 250 g/ha (for preparation of poison bait, dissolve 5 kg jaggery in 5litre of water and add in 25 kg rice bran/maize flour 10- 12 hrs in advance before its application, add 250 g thiodicarb in this bait and mix properly) or spray *Bacillus thurengiensis* 0.5 WP (10^8 cfu /g) @20 g/10 l of water or *Metarhizium (Nomuria) rileyii*1.15 WP (2 x 10^6 cfu/g) 40 g/10 l of water were found effective in checking the population and damage caused by *Spodoptera frugiperda* in maize.

ખેડૂતોપયોગી ભલામણ:

મકાઈમાં આવતી ટપકાંવાળી લશ્કરી ઈયળનાં વસ્તી નિયંત્રણ તથા નુકસાન અટકાવવા માટે સ્પીનેટોરમ ૧૧.૭ એસસી, 0.૦૧૧૭% (૧૦ મિ.લિ./૧૦ લિટર પાણી) અથવા એમામેક્ટીન બેન્ઝોએટ ૫ એસજી, 0.00૨૫% (૫ ગ્રામ/૧૦ લિટર પાણી) અથવા ક્લોરાન્ટ્રાનીલિપ્રોલ ૧૮.૫ એસસી, 0.00૬% (૩ મિ.લિ./૧૦ લિટર પાણી) અથવા ક્લોરાન્ટ્રાનિલીપ્રોલ ૦.૪% જી ૨૦ કિ.ગ્રા./હે અથવા ડાંગરની કુશકી ૨૫ કિ.ગ્રા. + ગોળ ૫ કિ.ગ્રા. + થાયોડીકાર્બ ૭૫ વેપા ૨૫૦ ગ્રામ અથવા મકાઈનો લોટ ૨૫ કિ.ગ્રા. + ગોળ ૫ કિ.ગ્રા. + થાયોડીકાર્બ ૨૫૦ ગ્રામનો ઉપયોગ કરી બનાવેલ વિષ પ્રલોભિકા ભૂંગળીમાં આપવી (વિષ પ્રલોભિકા બનાવવા ગોળને ૫ લિટર પાણીમાં ઓગાળી તેને ૨૫ કિ.ગ્રા. ડાંગરની કુશકી/મકાઈના લોટમાં ૧૦ થી ૧૨ કલાક પહેલા ભેળવવું. માવજતમાં ઉપયોગ કરતાં પહેલા તેમાં ૨૫૦ ગ્રામ થાયોડીકાર્બ બનાવેલ પ્રલોભિકામાં ઉમેરી બરાબર ભેળવવું) અથવા બેસીલસ થુરીન્ઝીન્સીસ ૦.૫ વેપા (૧૦^{૮} સીએફયુ/ગ્રામ) ૨૦ ગ્રામ અથવા મેટારીઝીયમ (ન્યુમેરીયા) રીલી ૧.૧૫ વેપા (૨ x ૧૦^{૬} સીએફયુ/ગ્રામ) ૪૦ ગ્રામ ૧૦ લિટર પાણીનો છંટકાવ અસરકારક જોવા મળેલ છે.

Suggestions: Approved

(**Action:** Prof.& Head, Dept. of Entomology, BACA, AAU, Anand)

15.3.1.36 Study on foraging activities of honeybees in Middle Gujarat on various crops

Farmers interested to start the bee keeping are advised to grow following various crops in different seasons to settle bee colonies in their area.

Season	Crops
Kharif	*Shankhavali*, sesame, sunflower, golden rod, bajara, green gram, cowpea, maize, pigeon pea, *senna*, castor, *damaro*, cotton, water lily, *rudrakh*, basil and gallardia
Rabi	*Shankhavali*, fennel, mustard, lucerne, coriander, sunflower, maize, fenugreek, water lily, *damaro* and gallardia
Summer	Sesame, sunflower, *Shankhavali*,, green gram, bajara and maize

These crops should be grown periodically to provide pollen and nectar to bees.

ખેડૂતોપયોગી ભલામણ:

મધમાખી પાલન કરવામા રસ ધરાવતા ખેડૂતોને મધમાખીની વસાહતો સ્થાયી કરવા તેમના ખેતરમા નીચે મુજબના પાકો ઋતુ મુજબ વાવવાની સલાહ આપવામાં આવે છે.

ઋતુ	પાકો
ચોમાસું	શંખપુષ્પી, તલ, સુર્યમુખી, ગોલ્ડન રોડ, બાજરા, મગ, ચોળી, મકાઈ, તુવેર, સોનામુખી, દીવેલા, ડમરો, કપાસ, લીલી, રુદ્રાક્ષ, તુલસી અને વીજળી
શિયાળું	શંખપુષ્પી, વરિયાળી, રાઈ, રજકો, ધાણા, સુર્યમુખી, મકાઈ, મેથી, લીલી, ડમરો અને વીજળી
ઉનાળું	તલ, સુર્યમુખી, શંખપુષ્પી, મગ, બાજરા અને મકાઈ

આ પાકોનું સમયાંતરે ઋતુ મુજબ વાવેતર કરવાથી મધમાખી પુરતા પ્રમાણમા પરાગરજ અને મધુરસ મેળવી શકે છે.

Suggestions: Approved

1. This recommendation shifted from scientific community to farming community

(**Action:** Prof.& Head, Dept. of Entomology, BACA, AAU, Anand**)**

15.3.1.37 Efficacy of bio agents in the management of *Meloidogyne* species in bitter gourd

For effective management of root-knot nematode, *Meloidogyne* spp. infecting bitter gourd, farmers of middle Gujarat Agro-climatic Zone are advised toapply 2.5 tons of vermicompost/ha enriched with *Purpureocillium lilacinum* @ 2.5 kg/ha before sowing.

ખેડૂતોપયોગી ભલામણ:

મધ્ય ગુજરાત ખેત આબોહવાકિય વિસ્તારમાં કારેલીના પાકમાં ગંઠવા કૃમીનું અસરકારક નિયંત્રણ કરવા ૨.૫ ટન/હે વર્મીકમ્પોસ્ટને પરપુરીયોસિલીયમ લીલાસિનમ ૨.૫ કી.ગ્રા./હે. પ્રમાણે સવર્ધિતકરી વાવણી પહેલા જમીનમાં આપવા ભલામણ છે.

Suggestions: Approved

1. This recommendation shifted from scientific community to farming community

(**Action:** Prof & Head, Dept. of Nematology, AAU, Anand)

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Statistician	: Dr. A. D. Kalola, Asso. Prof., AAU

15.3.2 RECOMMENDATION FOR SCIENTIFIC COMMUNITY

SARDARKRUSHINAGAR DANTIWADA AGRICULTURAL UNIVERSITY, S. K. NAGAR

15.3.2.1	**Bio-efficacy of newer molecules of insecticides against cumin aphid**
	For effective management of cumin aphid, first spray of thiamethoxam 25WG (25g a.i./ha ; 2.5g/10 l water) should be done at aphid infestation on 10% umbels and second spray of thiacloprid 21.7 SC (25g a.i./ha; 2.88 ml/10 l water) should be made after 10 days of the first spray. **Suggestions:** **1. PHI should be removed.** **Action:** Assoc. Res.Sci.(Ento.), Seed Spices Res. Station, SDAU,Jagudan
15.3.2.2	**Chemical management schedule for cumin blight**
	Spraying of kresoxym methyl 44.3 SC (10 ml/10 l), mancozeb 75 WP (37g/10l) and difenoconazole 25 EC (5 ml/10 l) at 40, 50 and 60 days, respectively after germination effective in managing the cumin blight. **Suggestions:** **1. Add "Respectively"** **Action**: Assoc. Res.Sci.(Pl.Path.), Seed Spices Res. Station, SDAU,Jagudan
15.3.2.3	**Management of foliar fungal diseases potato through chemicals**
	Farmers of North Gujarat Agro-climatic Zone (IV) are recommended to apply three sprays of fenamidone 10% + mancozeb 50% WDG @ 0.15% (25 g/10 l) at 15 days interval, first at the time of initiation of the disease and subsequent two sprays at 15 days interval for the management of early blight of potato. **ખેડૂતોપયોગી ભલામણ** : ઉત્તર ગુજરાત ખેત હવામાન વિસ્તાર (૪)ના બટાટા ઉગાડતા ખેડુતોને આગોતરા સુકારાના રોગના અસરકારક નિયંત્રણ માટે ફીનામીડોન ૧૦% + મેન્કોઝેબ ૫૦% ડબલ્યુડીજી 0.૧૫% (૨૫ ગ્રામ/૧૦ લિ) ના ત્રણ છંટકાવ ૧૫ દિવસના અંતરે કરવા ભલામણ કરવામાં આવે છે. પ્રથમ છંટકાવ રોગની શરૂઆત થયે તેમજ બાકીના બે છંટકાવ પ્રથમ છંટકાવ બાદ ૧૫ દિવસના અંતરે કરવા. **Suggestion:** 1. House suggestd to consider this recommendation for farming community instead of scientific community. [**Action:** Asstt. Res. Sci. (Pl. Patho.), Agril. Research station, SDAU, Ladol and Deesa] (**Action:** Professor, Dept. of Nematology, C.P.C.A., S.D. A. U., Sardarkrushinagar)

NAVSARI AGRICULTURAL UNIVERSITY, NAVSARI

15.3.2.4	**Investigation of phylloplane microflora of tomato and banana**
	Phylloplane microflora were found maximum in diseased leaves of tomato and banana as compared to healthy leaves. This investigation confirmed that among all the leaf surface mycobiota, *Trichoderma viride* was found effective against *Alternaria solani* and *Fusarium proliferatum* of tomato and *Colletotrichum musae* of banana. **Suggestations:**Approved

	Action: Professor & Head, Dept. of Pl. Pathology, NMCA, NAU, Navsari
15.3.2.5	**Assessment of elite and ISH genotypes for resistance to red rot in sugarcane** Sugarcane elite and ISH genotypes, only SES 594 exhibited resistant reaction. While, ISH 58, ISH 100, ISH 111, ISH 114, ISH 115, ISH 117, ISH 118, ISH 147, ISH 267, MA 5/22, AS 04 1687, GU 07 2276, CyM 07 986, BM 101068 and SA 04 454 exhibited moderately resistant reaction against red rot sugarcane. **Suggestations**:.Approved **Action:** Asst. Res. Sci., (Patho.) MSRS, NAU, Navsari
15.3.2.6	**Evaluation of different biofertilizers products for the supplementation of phosphorous and potash in sugarcane with graded chemical fertilizers** *Cunninghamella* sp. NAUB-5 fungal isolate can be used for the preparation of Biofertilizers to convert unavailable phosphorous to available for the plant in the soil for the sugarcane growth. **Suggestations:** 1. House suggested to present this recommendation in crop production group **Action:** Professor & Head, Dept. of Pl. Pathology, NMCA, NAU, Navsari
15.3.2.7	**Evaluation of different biofertilizers products for the supplementation of phosphorous and potash in sugarcane with graded chemical fertilizers** Five times higher concentration (200 ml prepared from 1000 ml normal Biofertilizers) of Phosphate Solublizing Bacteria (*Bacillus megaterium*) and lyophilized Phosphate Solublizing Bacteria (5 g prepared from 1000 ml of Biofertilizer) can be used as a new formulation of Biofertilizer. **Suggestations**: **1.** House has suggested to present this recommendation in crop productiongroup **Action:** Professor & Head, Dept. of Pl. Pathology, NMCA, NAU, Navsari

JUNAGADH AGRICULTURAL UNIVERSITY, JUNAGADH

15.3.2.8	**Effectiveness of *Beauveria bassiana*in combination of different insecticides against onion thrips**
	For effective and economical management of thrips, *Thrips tabaci* in onion, three sprays of spinosad 45 SC 0.0135 % (3 ml/10 l of water) OR *Beauveria bassiana* 1.15 WP 0.0035 % (Min. 2 x 10^6cfu/g) + spinosad 45 SC 0.0068 % (30 g + 1.5 ml/10 l of water), first at initiation of pest infestation and subsequent two sprays at ten days interval found effective in onion.
	Suggestions: Approved
	(**Action:** Professor & Head, Department of Entomology, JAU, Junagadh**)**
15.3.2.9	**Effect of different schedule base insecticidal spray against garlic thrips**
	For effective and economical management of thrips, *Thrips tabaci*in garlic, schedule spraying of dimethoate 30 EC 0.003 % (10 ml/10 l of water), fipronil 5 SC 0.01 % (5 ml/10 l of water) and acetamiprid 20 SP 0.006 % (4 g/10 l of water) OR profenophos 50 EC 0.075 % (20 ml/10 l of water), spiromesifen 240 SC 0.011 % (10 ml/10 l of water) and thiamethoxam 25 WG 0.01 % (4 g/10 l of water), first at initiation of pest infestation and subsequent two sprays at ten days interval after first spray.

	Suggestions: Approved
	(**Action:** Professor & Head, Department of Entomology, JAU, Junagadh)
15.3.2.10	**Management of sucking pests in cumin**
	For effective and economical management of thrips, *Thrips tabaci* in cumin, two sprays of *Beauveria bassiana* 1.15 % WP + dinotefuran 20 % SG 0.005% (60 g + 2.5 g/10 l of water) OR *B. bassiana* + flonicamide 50 % SG 0.0125% (60 g + 2.5 g/10 l of water), first at pest infestation and second at ten days interval.
	Suggestions: Approved
	(**Action:** Professor & Head, Department of Entomology, JAU, Junagadh)
15.3.2.11	**Screening of sesame genotypes against insect pests and diseases under unprotected as well as protected condition**
	Sesame genotype AT 382 and variety G.Til 10 found resistant to mite pest whereas G.Til 10 also found resistant to powdery mildew and phytophthora diseases. These cultures can be utilized as multiple resistant source for further breeding programme.
	Suggestions: Approved
	(**Action:** Research Scientist, Agriculture Research Station, JAU, Amreli)
15.3.2.12	**Management of whitefly and aphid in summer sesame**
	Seed treatment with clothianidin 50 % WDG 7.5 g/kg seed followed by two foliar sprays of difenthiuron 50 % WP 0.07 % (14 g / 10 l of water) OR seed treatment with imidacloprid 600 FS 9g/kg seed followed by 2 foliar sprays of difenthiuron 50 % WP 0.07 % (14 g /10 l of water). 1st at 20 days after germination and 2nd spray at 15 days after 1st spray found effective and economical for management of whitefly in summer sesame.
	Suggestions: Dropped due to out of two year yield data one was below state average
	(**Action:** Research Scientist, Agriculture Research Station, JAU, Amreli)
15.3.2.13	**Management of leaf spot of custard apple**
	For the effective and economical management of leaf spot of custard apple, apply three spray of tebuconazole 50 % + trifloxystrobin 25 % WG 0.045 % (6 g/10 l of water) OR carbendazim 12 % + mancozeb 63% WP, 0.15 % (20 g/10 l of water) OR azoxystrobin 23 % SC, 0.023 % (10 ml /10 l of water) OR mancozeb 75 % WP 0.2 % (27 g/10 l of water), first at initiation of disease and subsequent sprays at 20 days interval.
	Suggestions: Approved
	(**Action:** Professor & Head, Department of Plant Pathology, JAU, Junagadh)
15.3.2.14	**IDM package for cucurbit diseases (bottle gourd)**
	It is informed to the scientific community that for effective and economical integrated management of most of the prominent diseases of bottle gourd *viz.*, damping off/root rot, alternaria leaf blight and cercospora disease and to improve the marketable fruit yield, two rows of maize should grow as border crop and agri. silver mulch sheet should be used in cultivation of bottle gourd. Beside this, the seeds of

	bottle gourd should be treated with carbendazim 12 % + mancozeb 63 % WP 3 g per kg seeds at the time of sowing and soil drenching with captan 70 % + hexaconazole 5 % WP 0.1 % (13.33 g/10 l of water) at 1st true leaf stage after germination followed by spraying of tebuconazole 50% + trifloxystrobin 25 % WG 0.075 % (10 g /10 l of water) followed by spraying of imidacloprid 17.8 SL 0.0089 % (5 ml / 10 l of water) + neem oil 0.15 EC 0.2 % (15 ml/10 l of water) followed by spraying of fosetyl-Al 1 % (12.50 g/10 l of water) followed by spraying of tebuconazole 50% + trifloxystrobin 25 % WG 0.075 % (10 g/10 l of water) followed by spraying with imidacloprid 17.8 SL 0.0089 % (5 ml/10 l of water) + neem oil 0.15 EC 0.2 % (15 ml/10 l of water) followed by fosetyl-Al 0.1 % (12.5 ml/10 l of water) at 10 days interval.
	Suggestions: Dropped due to high toxicity of fosetyl-Al
	(Action: Research Scientist (Garlic-Onion), Vegetable Research Station, JAU, Junagadh)

ANAND AGRICULTURAL UNIVERSITY, ANAND

15.3.2.15	**Establishment of processing factor for different pesticides in chilli fruits**
	Foliar application of acephate, chlorpyriphos, carbendazim, azoxystrobin and ethion in chilli at red chilli fruiting stage at double the recommended dose resulted in built up of residues in red chilli powder to the tune of 1.11, 3.45, 2.88, 1.46 and 3.26 times, respectively compared to fresh red chilli fruits. As no MRLs of these pesticides are available for red chilli powder, respective processing factors can be adopted in extrapolating MRLs from green chilli fruits to red chilli powder. **Suggestions:** **1.** Mention the dose of pesticides **Approved:** (**Action:** Residue Analyst, AINP on Pesticide Residues, AAU, Anand)
15.3.2.16	**Bio-efficacy of insecticides against pest complex in greengram**
	Seed treatment in greengram with imidacloprid 48 FS, 5 ml/kg and spray of flubendiamide 48 SC, 0.01% (2 ml/10 l water) at 50% floweringstage can effectively manage thrips, spotted pod borer and pod borer. **Suggestions:** **1. Remove the scientific name of pests** **Approved** (**Action:** Unit Officer, RRS, AAU, Anand)
15.3.2.17	**Screening of greengram genotypes against insect pests and diseases under natural conditions**
	Out of 17 greengram genotypes screened, VMG-67 was found resistant against insect pests *viz.*, whitefly, aphid, jassid, thrips, spotted pod borer (*Marucavitrata*) and yellow mosaic disease and gave higher grain yield under field conditions. The scientists working in breeding programme are advised to utilise genotype VMG-67 for resistance breeding programme. **Suggestions: Approved**

	(**Action:** Res. Sci. (Pulse) & Unit Officer, PRS, AAU, Model Farm, Vadodara & Assoc. Res. Sci. & Unit Head, ARS, AAU, Derol)
15.3.2.18	**Screening of blackgram genotypes against insect pests and diseases**
	Out of 20 blackgram genotypes screened, VUG-07 was found resistant against insect pests *viz.*, whitefly, aphid, jassid, thrips and spotted pod borer, *Marucavitrata* and gave higher grain yield under field condition. The scientists working in breeding programme are advised to utilise genotype VUG-07 for resistance breeding programme. **Suggestions: Approved** (**Action:** Res. Sci. (Pulse) & Unit Officer, PRS, AAU, Model Farm, Vadodara & Assoc. Res. Sci. & Unit Head, ARS, AAU, Derol)
15.3.2.19	**Bio-efficacy of different insecticides against serpentine leaf miner, *Liriomyza trifolii* (Burgess) on watermelon**
	Two sprays, first at 40 days after sowing and second at 15 days after first spray of deltamethrin 2.8 EC, 0.0028% (10 ml/10 l water) or flonicamid 50 WG, 0.015% (3 g/10 l water) found effective against serpentine leaf miner, *Liriomyza trifolii* infesting watermelon. **Suggestions: Approved** (**Action:** Principal, CoA, AAU, Jabugam)
15.3.2.20	**Detection of seed borne nature of Mungbean Yellow Mosaic Virus (MYMV) in urdbean and Bean Common Mosaic virus (BCMV) in mungbean**
	Mungbean yellow mosaic virus was not detected as seed borne in urdbean, while bean common mosaic virus detected as seed borne in mungbean. **Suggestions: Approved** **(Action:** Prof. & Head, Department of Plant Pathology, BACA, Anand)
15.3.2.21	**Management of early blight of potato**
	For the effective management of early blight disease of potato, dry seed (cut tubers) treatment with 5 kg talc powder followed by 1 kg mancozeb 75 WP for 100 kg potato seed tuber before 12 hrs. of planting followed by three foliar sprays *viz.*, first spray of propiconazole 25 EC, 0.025% at disease initiation, second of azoxystrobin 23 SC, 0.023% and third of propiconazole 25 EC, 0.025% at 15 days interval were found effective. **Suggestions: Approved** **(Action:** Prof. & Head, Department of Plant Pathology, BACA, Anand)

15.3.3 NEW TECHNICAL PROGRAMMES

Summary

Name of Sub Committee	New Technical Programmes			Total
	Proposed	Approved	Not Approved	
SDAU, S.K. Nagar	25	22	3 (2+1#)	22
NAU, Navsari	22	20	2(1+1)**	20
JAU, Junagadh	30	29	1*	29
AAU, Anand	39	39	0	39
Total	**116**	**110**	**6**	**110**

 # Shifted to basic science sub-committee, * Suggested as filler trial, ** Two experiments merged as one and one is dropped

COMMITTEE OF NEW TECHNICAL PROGRAMMES

Chairman : Dr. K. G. Patel, Principal, NAU

Co-Chairman : Dr. V. V. Rajani, ADR, JAU, Junagadh

: Dr. P. K. Borad, Prof. & Head, AAU, Anand

Rapporteurs : Dr. L. V. Ghetiya, NAU

: Dr. S. I. Patel, SDAU

: Dr. D. B. Sisodiya, AAU

Statistician : Dr. A. D. Kalola, Asso. Prof., AAU

SARDARKRUSHINAGAR DANTIWADA AGRICULTURAL UNIVERSITY, SKNAGAR

Sr. No.	Title	Suggestions
15.3.3.1	Management of isabgul aphid (*Aphis gossypii* Glover) through eco-friendly insecticides	**Accepted with following suggestions:** 1. Change title as ‘Eco-friendly management of aphid in isabgul’ 2. Delete T3& T5 (Azadirachtin 300 & 10000 ppm) and add Azadirachtin 0.15 EC 3. Add new treatments ginger and garlic bulb extract 5% 4. Add stickers in all botanicals as 0.1% soap solution 5. Record natural enemies 6. Add formulation of *B. bassiana* 1.15 WP

		[Action: Assoc. Res. Sci.(Ento.), Seed Spices Res. Station, SDAU, Jagudan**]**
15.3.3.2	Field evaluation of newer insecticides for the management of coriander aphid (*Hydaphis coriandri* Das)	**Accepted with following suggestions:** 1. Change title as 'Evaluation of insecticides for the management of coriander aphid' 2. Observations should be recorded on 1,3,5,7 & 14 days after spray 3.Addobservations of phytotoxicity 4. Add treatment acetamiprid 20 SP, 0.004% as check 5. Add observation of honey bee **[Action:** Assoc. Res. Sci.(Ento.), Seed Spices Res. Station, SDAU, Jagudan**]**
15.3.3.3	Eco-friendly management of thrips (*Scirtothrips dorsalis*) on pomegranate	**Accepted with following suggestions:** 1. Change title as **'**Evaluation of bio-pesticides against thrips in pomegranate' 2. Delete Azadirachtin 10000 ppm (T5) 3. Correct *B. bassiana* 1.0 WP @ 50 g/ 10 l instead of 50 ml/ 10 l 4. Conduct experiment in CRD 5. Write the name of variety "Bhagvo" 6. Parasites observations should be deleted &observation of mite should be recorded **[Action:** Assoc. Res.sci.(Ento.) Arid Zone fruits, SDAU, Sardarkrushinagar]
15.3.3.4	Status of insect pests and diseases of pomegranate in North Gujarat	**Accepted with following suggestions:** 1.Add methodology 2.Add more villages in survey [**Action:**Assoc. Res.Sci.(Ento.) Arid Zone fruits, SDAU, Sardarkrushinagar]
15.3.3.5	Efficacy of different insecticides and bioagents against sucking pests of *Bt* cotton	**Not approved** (**Action:** Asstt. Res. Sci.(Ento.), Cotton Research Station, SDAU, Talod
15.3.3.6	Bio-efficacy of different insecticides against pink bollworm in *Bt* cotton	**Accepted with following suggestions:** 1.Mention BG-II insteadof name of variety 2. First spray at bud formation and subsequent two at 15 days interval 3. Take design RBD with 4 replications 4. Details of treatments as follow 1 i. Deltamethrin 2.8 EC, 12.5 g a.i /ha ii Spinosad 45 SC, 73 g a.i. /ha iii Chlorantraniliprole 18.5 SC, 30 g a.i./ha 2 i.Cypermethrin 25 EC, 50 g a.i./ha

		ii Emamectin benzoate 5 SG, 11 g a.i./ha iii Flubendamide 20 WG, 50 g a.i./ha 3 iIndoxacarb 14.5 SC, 75 g a.i./ha ii Profenophos 50 EC, 1000 g a.i./ha iii Alpha cypermethrin 10 EC, 20 g a.i./ha 4 iCyantraniliprole 10.26 OD, 60 g a.i./ha ii Fenvalerate 20 EC, 75 g a.i./ha iii Spinetoram 11.7 SC, 58.5 g a.i./ha 5 i. Profenophos 40 EC+ Cypermethrin 4 EC, 440 g a.i./ha ii. Deltamethrin 1 EC+Trizophos 35 EC, 462.5 g a.i./ha iii. Cypermethrin 10 SC+Indoxacarb 10 SC, 100 g a.i./ha 6 Control Note: Sequential sprays as per treatments [**Action:** Asstt. Res. Sci.(Ento.), Cotton Research Station, SDAU,Talod]
15.3.3.7	Eco-friendly management of scale (*Perisopneumon ferox* Newstead) (Monophlebidae: Hemiptera) on Custard apple	**Accepted with following suggestions:** 1.Change title as 'Evaluation of biocides against scale insect in custard apple' 2. It should be taken in hot spot area 3. Delete Azadirachtin 10000 ppm and add neem oil 0.5% 4. Repeat spray after 10 days instead of 15 days 5. Mention formulation in T-8 as *L. lecanii* 1.15 WP (1x10 ^{9}cfu/g)@ 40g/10 l (**Action:**Asstt. Professor(Ento.), College of Horti., SDAU,Jagudan
15.3.3.8	Management of American serpentine leaf miner (*Liriomyza trifolii* Burgess) on tomato under protected cultivation	**Not approved** [**Action:** Asstt. Professor(Ento.), College of Horti., SDAU,Jagudan]
15.3.3.9	Evaluation of different insecticides against sucking pests infesting brinjal	**Accepted with following suggestions:** 1. Observations should be recorded at 1,3,5,7 & 14 days after spray 2. Add g a.i./ha for all treatments 3. Add sulfoxaflur 21.8 SC @ 7.5, 10 and 12.5 ml/ 10 l instead of Thiacloprid 21.7 SC 4. Add observations of predatory fauna and phytotoxicity [**Action:** Asstt. Res. Sci.(Ento.), Agril. Res. Station, SDAU, Ladol]
15.3.3.10	Evaluation of insecticides against fall army worm (*Spodoptera frugiperda* (J.E. Smith)) in maize	**Accepted with following suggestions:** 1. Add chlorpyriphos 20EC, 0.04%@20ml/10 l water as treated check 2. Add observations of predatory fauna,

		phytotoxicity, grain yield, fodder yield, cob damage and plant damage 3.Recorded observations on 1,3, 7, 10 &14 days after spray 4. First spray at initiation of fall armyworm and subsequent two sprays to be made at 15 days interval (**Action:**Asstt. Professor(Ento.), Polytechnic in Agri., SDAU, Khedbrahmma.
15.3.3.11	Eco-friendly management of fall army worm [*Spodoptera frugiperda* (J.E. Smith)] in maize.	**Accepted with following suggestions:** 1. Delete T-2 and add *Metarhizium* (*Nomurea)rileyi* 0.4%@ 40 g/ 10 l 2.Azadiractin 1500 ppm, 0.15EC @0.0006% 3. First spray at initiation of fall armyworm and subsequent two sprays to be made at 10 days interval 4. Add observations of predatory fauna , phytotoxicity, grain yield, fodder yield and plant damage [**Action:**Asstt. Professor(Ento.), Polytechnic in Agri., SDAU, Khedbrahmma]
15.3.3.12	Integrated pest & disease management in coriander(AICRP trial)	**Accepted with following suggestion:** 1. Remove AICRP trial from title [**Action:** Assoc. Res.Sci.(Pl.Path.), Seed Spices Res. Station, SDAU, Jagudan]
15.3.3.13	Integrated pest & disease management in cumin (AICRP trial)	**Accepted with following suggestion:** 1. Remove AICRP trial from title [**Action:**Asstt.Res.Sci.(Pl.Path.), Seed Spices Res. Station, SDAU, Jagudan]
15.3.3.14	Screening of maize germplasmagainst maydis leaf blight and fall armyworm	**Accepted with following suggestions:** 1.Consider sowing date as onset of monsoon 2. Add observation of plant damage and take weekly observations 3. Take experiment in 2 replications [**Action:**Asstt.Res.Sci.(Pl.Path.), Maize Res. Station, SDAU, Bhiloda
15.3.3.15	Detection of durable leaf rust resistance genes in wheat by molecular markers	**Accepted with following suggestions:** 1. Delete 'durable' from title, Correct title as 'Detection of leaf rust resistance genes in wheat by molecular markers' 2. Add indicator markers [**Action:**Asstt.Res.Sci.(Pl.Path.), Wheat Res.

		Station, SDAU, Vijapur]
15.3.3.16	Management of root rot /wilt in soybean	**Accepted with following suggestions:** 1. Change the title as 'Management of soil-borne diseases in soybean' 2.Soil application of *Trichoderma* and *Pseudomonas* should be given after enriching in 250 kg FYM/ ha 3. Modify T-7 as T-5+soil application of *P.fluorescens* 4. Take observations from all plants from net plot instead of 100 plants [**Action:**Asstt.Res. Sci.(Pl.Path.), Agril. Res. Station, SDAU, Ladol]
15.3.3.17	Management of foliar diseases of soybean	**Accepted with following suggestions:** 1. Change title as'Management of foliar fungal diseases of soybean' 2. Add g a.i./ha in all treatments 3.Correct T3 as 0.05% and T5 as 0.055% 4. Correct T1 formulation as 5 SC 5. Use standard scale for different diseases [**Action:**Asstt.Res. Sci.(Pl.Path.), Agril. Res. Station, SDAU, Ladol]
15.3.3.18	Survey and isolation of major diseases of soybean in Aravali district	**Accepted with following suggestions:** 1. Change title as 'Survey of major diseases of soybean in Aravalli district' 2. Remove word Aravalli district from objective -1 3. Remove objective 2 [**Action:**Asstt. Res. Sci.(Pl.Path.), Maize. Res.Station, SDAU, Bhiloda]
15.3.3.19	Eco-friendly management of fungal leaf/fruit spot of pomegranate	**Accepted with following suggestions:** 1. Take design CRD instead of RBD 2. Take azadiractin 1500 ppm, 0.15EC@ 40ml/10 l in T-7 3. Use LR grade chemicals inT1 and T2 4. Correct the objective as**"**To evaluate effective chemicals for management of fungal leaf/ fruit spot of pomegranate" 5. Apply sprays at 15 days interval [**Action:** Assoc. Professor(Pl. Path.), College of Horticulture, SDAU,Jagudan]
15.3.3.20	Management of pomegranate	**Accepted with following suggestions:**

	wilt	1. Correct spelling of *P. fluorescens* 2. Add treatment T-7 as FYM @5kg/tree 3. Add cfu of *Trichoderma* and *Pseudomonas* 4. Correct design CRD instead of CBD 5. Delete name of SRA [**Action:**Asstt. Res. Sci.(Pl. Path.), Arid Zone Fruits, SDAU, Sardarkrushinagar]
15.3.3.21	Biological management of common scab of potato	**Accepted with following suggestions:** 1. Delete name of SRA 2. Maintain cfu as 10^8 per ml in standard final solution for seed treatment 3. Add treatment 5 as seed treatment with *Bacillus subtilis* @ 1 kg/ha and soil application of *B. subtilis* as per treatment 2 4. Measure pH of soil before planting and after harvest **[Action:** Asstt. Res. Sci.(Pl.Path.), Potato Research station,SDAU, Deesa]
15.3.3.22	Interaction between Rhizobium bioinoculant and root-knot nematode on cowpea	**Accepted with following suggestion:** 1. Add Root Knot Index [**Action:**Asstt.Professor(Nema), Dept. of Nematology , CPCA, SDAU, Sardarkrushinagar**]**
15.3.3.23	Interaction between Rhizobium bioinoculant and root-knot nematode on chickpea	**Accepted with following suggestion:** 1. Add Root Knot Index [**Action:**Asstt.Professor(Nema), Dept. of Nematology , CPCA, SDAU, Sardarkrushinagar**]**
15.3.3.24	Antinematic properties of aqueous leaf extracts of marigold and neem on root –knot in tomato (Pot study)	**Accepted with following suggestions:** 1. Modify title as ‘Nematicidal properties of aqueous leaf extracts of marigold and neem against root –knot nematodes in tomato (pot study)’ 2. Add concentration (%) and delete from individual treatments [**Action:**Asstt.Professor(Nema), Dept. of Nematology , CPCA, SDAU, Sardarkrushinagar**]**
15.3.3.25	Effect of different concentrations of pendimethalin and isoproturon on beneficial soil microbial communities in wheat	**Accepted with following suggestions:** 1. **This experiment is shifted to basic science subcommittee of AGRESCO** [**Action:**Asstt. Professor (Ag.Micro.), Dept. of Ag.Microbiology , CPCA, SDAU, Sardarkrushinagar]

15.3.3.26	Seasonal incidence of insect-pests of lac host, *Flemingia semialata* Roxb under South Gujarat condition	**Accepted with following suggestion:** 1. Delete ‘lac host’ from title **[Action:** Professor & Head, Deptt. of Entomology, NMCA, NAU, Navsari**]**
15.3.3.27	Studies on natural enemies of *Spodoptera frugiperda* (J. E. Smith)	**Accepted with following suggestion:** 1. Add Multilocation survey in title instead on studies **[Action:** Professor & Head, Deptt. of Entomology, NMCA, NAU, Navsari**]**
15.3.3.28	Survey of pollinators fauna in different cucurbit vegetables in South Gujarat	**Approved** **[Action:** Professor & Head, Deptt. Of Entomology, NMCA, NAU, Navsari**]**
15.3.3.29	Testing the effect of stingless bee release as a pollinators in cucurbit vegetables under South Gujarat condition	**Accepted with following suggestions :** 1. Delete ‘testing the’ from title 2.Specify crop ‘*parval*’ instead of cucurbitvegetables 3. Record other pollinators and name of insecticides 4. use design” Large plot CRD” **[Action:** Professor & Head, Deptt. of Entomology, NMCA, NAU, Navsari**]**
15.3.3.30	Development of stingless bee nest capturing techniques from natural cavities and designing suitable stingless bee hive box	**Approved** **[Action:** Professor & Head, Deptt. of Entomology, NMCA, NAU, Navsari**]**
15.3.3.31	Screening of pigeonpea (SSET-Dual) entries against important pod borer and pod fly	**Accepted with following suggestions:** 1. Record grain damage due to pod fly 2. Morphological and biochemical constituents should be recorded for each of two resistant and two susceptible entries **[Action:** Research Scientist, Castor and Pulse, NAU, Navsari**]**
15.3.3.32	Screening of chickpea (SSET-Desi) entries against important pod borer	**Approved** **[Action:** Professor & Head, Deptt. of Entomology, NMCA, NAU, Navsari**]**
15.3.3.33	Determination of ETLs and estimation of yield losses for cotton pink bollworm	**Accepted with following suggestions:** 1. Delete ‘determination of ETLs and’ from title 2. Mention BG-II instead of name of variety **[Action:** Research Scientist, MCRS, NAU,

		Surat**]**
15.3.3.34	Validation of IPM module for pink bollworm	**Accepted with following suggestion:** 1.Mention spray interval between different insecticide spray in farmer's practice **[Action:** Research Scientist, MCRS, NAU, Surat**]**
15.3.3.35	Evaluation of different botanical formulations for management of sucking pest complex in mango	**Accepted with following suggestion:** 1. Design: CRD **[Action:** Research Scientist, AES, NAU, Paria**]**
15.3.3.36	Module based pest management in mango	**Not Approved** As banned pesticide "DDVP" is included **[Action:** Research Scientist, AES, NAU, Paria**]**
15.3.3.37	Studies on natural parasitization on invasive pest., fall armyworm, *Spodoptera frugiperda* (J.E. Smith) infesting maize in Tapi district	**Accepted with following suggestion:** **1. Merge trial with trial No. 27** **[Action:** KVK, NAU, Vyara**]**
15.3.3.38	Bioefficacy of biopesticides against brown plant hopper (*Nilaparva talugens* Stal.) and green leaf hopper (*Nephotettix virescens* Distant) of rice crop	**Accepted with following suggestions:** 1.Change title as 'Bioefficacy of bio-pesticides against brown plant hopper and green leaf hopper in rice crop' 2. Mention formulation of *M. anisopliae* **[Action:** Research Scientist, MRRS, NAU, Navsari**]**
15.3.3.39	Testing of fenugreek germplasms against powdery mildew	**Accepted with following suggestions:** 1. Write screening instead of testing in title 2. Conduct experiment in *rabi*2019-20 **[Action:** Professor & Head, Dept. of Plant Pathology, NMCA, NAU, Navsari**]**
15.3.3.40	Chemical control of fenugreek powdery mildew	**Accepted with following suggestions:** 1. Write quantity of fungicide in 10 l as per standard format 2. Toxicity of sulphur should be recorded **[Action:** Professor & Head, Dept. of Plant Pathology, NMCA, NAU, Navsari**]**
15.3.3.41	Screening of pigeonpea (SSET-Dual) entries against sterility mosaic disease	**Accepted with following suggestions:** 1. Delete SSET-Dual from title 2. Add ICPL-2376 as check -Resistant variety

		3.Biochemical characters should be recorded for each of two resistant and two susceptible entries **[Action:** Research Scientist, Castor & Pulse Station, NAU, Navsari**]**
15.3.3.42	Screening of chickpea (SSET-Desi) entries against wilt under natural field condition	**Accepted with following suggestions:** 1. Delete SSET-Dual from title 2. Biochemical characters should be recorded for each of two resistant and two susceptible entries **[Action:** Research Scientist, Castor & Pulse Station, NAU, Navsari**]**
15.3.3.43	Evaluation of rice promising genotypes against bacterial leaf blight caused by *Xanthomonas oryzae*pv. oryzae	**Accepted with following suggestion:** 1. Design: RBD **[Action:** Asstt, Res. Scientist, Regional Rice Research Station, NAU, Vyara**]**
15.3.3.44	Screening of rice promising genotypes against blast disease caused by *Pyricularia oryzae*	**Accepted with following suggestion:** 1. Design: RBD **[Action:** Asstt, Res. Scientist, Regional Rice Research Station, NAU, Vyara**]**
15.3.3.45	Evaluation of rice genotypes against sheath blight caused by *Rhizoctonia solani*	**Accepted with following suggestion:** 1. Design: RBD **[Action:** Assitt, Res. Scientist, Regional Rice Research Station, NAU, Vyara**]**
15.3.3.46	Management of collar rot disease of chickpea (*Cicer arietinum* L.) caused by *Sclerotium rolfsii*	**Accepted with following suggestions:** 1. In treatments T4 and T5 add enrich "FYM@ 250 kg/ha with 2 kg of *Trichoderma*" 2. Mention formulation of bioagents **[Action:** Assitt, Res. Scientist, Regional Rice Research Station, NAU, Vyara**]**
15.3.3.47	Management of collar rot disease of groundnut caused by *Aspergillus niger*	**Accepted with following suggestions:** 1. Mention formulation of bioagents 2. Delete treatments 6,7 and 8 **[Action:** Assitt, Res. Scientist, Regional Rice Research Station, NAU, Vyara]

15.3.3.48	Bio-efficacy of *Beauveria bassiana* and different insecticides against insect pests of groundnut	**Accepted with following suggestions:** 1.Remove hexaconazole 5 SC from T5 and leaf spot incidence from observation 2. Add market available product of *B. bassiana* as check 3.Consider dose in T1 as 45 g and T3 as 75g 4. Sucking pests to be recorded as per standard method 5. Record yield: haulm and pod yield 6. Refer CIB registration guidelines for bioagents and modify the experiment accordingly **[Action:** Professor & Head, Department of Entomology, JAU, Junagadh**]**
15.3.3.49	Monitoring of fall army worm,*Spodoptera frugiperda* (J. E. Smith) infesting maize in saurashtra region	**Accepted with following suggestions:** 1. Remove 'Saurashtra region' from title 2. Record plant damage / 10 plants instead of leaf damage **[Action:** Professor & Head, Department of Entomology,JAU, Junagadh**]**
15.3.3.50	Quantification of pheromone trap for fall army worm, S*podoptera frugiperda* (J. E. Smith) infesting maize	**Accepted with following suggestions:** 1.Change the title as 'Standardization of number of pheromone trap for fall army worm inmaize' 2.Revise number of pheromone traps as @ 40, 50 and 60 trap per ha 3. Mention plot size as1 acre per treatment 4. Record plant damage / 10 plants instead of leaf damage **[Action:** Professor & Head, Department of Entomology, JAU, Junagadh**]**
15.3.3.51	Evaluation of pheromone based Mating Disruption Paste (MDP) technology for fall armyworm, *Spodoptera frugiperda* (J. E. Smith) in maize	**Accepted with following suggestions:** 1. ChangeTitle as 'Standardization of doses of Mating Disruption Paste (MDP) technology for fall armyworm,*Spodoptera frugiperda* (J. E. Smith) in maize' 2. Revise treatment as 300, 400 and 500 g paste /ha 3. Add objective to standardize dose of MDP technology **[Action:** Professor & Head, Department of Entomology, JAU, Junagadh**]**
15.3.3.52	Bio-efficacy of different biopesticides against fall army	**Approved**

	worm,*Spodoptera frugiperda* (J. E. Smith) infesting maize	**[Action:** Professor & Head, Department of Entomology, JAU, Junagadh**]**
15.3.3.53	Effect of different schedule base insecticides and biopesticides spray against fall army worm, *Spodoptera frugiperda* (J.E. Smith) infesting maize	**Accepted with following suggestions:** 1. Apply biocides of 1 to 3 treatment as recommended dose in all sprays 2. Modify T4 as NLE 10 %, NSKE 5 % and Azadiractin 0.0006 % **[Action:** Professor & Head, Department of Entomology, JAU, Junagadh**]**
15.3.3.54	Bio-efficacy of different insecticides against fall army worm, *Spodoptera frugiperda* (J. E. Smith) infesting maize	**Approved** **[Action:** Professor & Head, Department of Entomology, JAU, Junagadh**]**
15.3.3.55	Bio-efficacy of different biopesticidesand plant extracts against aphid population in coriander	**Accepted with following suggestions:** 1. Change Title as 'Bio-efficacy of different biocides against aphid in coriander' 2. Delete T1, T4 and T6 3. Add *L. lecanii* and *M. anisopliae*- 0.009 % **[Action:** Professor & Head, Department of Entomology, JAU, Junagadh**]**
15.3.3.56	Effect of biorationals against aphid, *Lipaphis erysimi* (Kalt.) infesting mustard	**Accepted with following suggestion:** 1. Replace vermiwash by neem oil 50 ml/10 l water [**Action:** Research Scientist (Groundnut), Main Oilseeds Research Station, JAU, Junagadh**]**
15.3.3.57	Evaluation of ready mix insecticides against groundnut defoliators	**Approved** **[Action:** Research Scientist (Groundnut), Main Oilseed Research Station, JAU, Junagadh**]**
15.3.3.58	Validation of IPM module for pink bollworm on cotton. (AICCIP Trial)	**Accepted with following suggestion:** 1. Delete 'AICCIP trial' from title **[Action:** Research Scientist, Cotton Research Station, JAU, Junagadh**]**
15.3.3.59	Estimation of yield losses for cotton pink bollworm (AICCIP Trial)	**Accepted with following suggestion:** 1. Delete 'AICCIP trial' from title **[Action:** Research Scientist, Cotton Research

		Station, JAU, Junagadh**]**
15.3.3.60	Compatibility of insecticides with foliar nutrients in chickpea (AICRP)	**Accepted with following suggestion:** 1. Delete 'AICRP' from title **[Action:** Research Scientist, Pulse Research Station, JAU, Junagadh**]**
15.3.3.61	Evaluation of eco-friendly approaches for the management of gram pod borer, *Helicoverpa armigera* in chickpea.	**Accepted with following suggestions:** 1. Change title as 'Evaluation of different biopesticides and insecticides for management of gram pod borer in chickpea' 2. Modify T7 as0.006 % @ 3 ml/10 l water **[Action:** Research Scientist, Pulse Research Station, JAU, Junagadh**]**
15.3.3.62	Management of pod borer complex in urdbean	**Accepted with following suggestions:** 1. Second spray should be 10 days after first spray 2. Change dose of flubendamide as 72 g a.i./ha **[Action:** Research Scientist, Pulse Research Station, JAU, Junagadh**]**
15.3.3.63	Pest management modules against sucking pests infesting bitter gourd (*Momordica charantia*)	**Accepted with following suggestions:** 1.Change title as 'Evaluation of spray schedules against sucking pest infesting bitter gourd' 2. Record pollinators population 3. Modify experiment as schedule base (S1, S2, S3 and S4) 4. Change dose of fenazaquin 0.01% @ 10 ml/10 l and Propargite 20 ml/ 10 l **[Action:** Research Scientist (G & O), Vegetable Research Station, JAU, Junagadh**]**
15.3.3.64	Effect of solarization on bruchids (pulse beetle) infestation and quality of pulse seeds	**Accepted with following suggestions:** 1. Change title as 'Effect of solarization on infestation of pulse beetleand quality of chickpea seeds' 2. Experiment to be conducted during summer season **[Action:** Research Scientist, Pearl Miller Research Station, JAU, Jamnagar**]**

15.3.3.65	Efficacy of different fungicides for management of blight and powdery mildew diseases in fennel	**Accepted with following suggestions:** 1. Remove % from formulation 2. Delete T1 and T4 3. Add sticker in all the treatments 4. Concentration in T7 should be 0.027 % **[Action:** Professor & Head, Department of Plant Pathology, JAU, Junagadh**]**
15.3.3.66	Evaluation of mixed formulation of fungicides against foliar diseases of cumin	**Accepted with following suggestions:** 1. Add 'ready mix' instead of 'mixed' in title 2. Remove T11 3. Change concentration of T2- 0.03 % 4. Change concentration in T5 –Pyraclostrobin 13.3 % + Epoxiconazole 5 % **[Action:** Professor & Head, Department of Plant Pathology, JAU, Junagadh**]**
15.3.3.67	Testing of resistance inducing compounds against the fungal diseases of cumin	**Accepted with following suggestions:** 1. Mention concentration of T3 2. Mention ppm in T1 to T8 3. Delete T10 **[Action:** Professor & Head, Department of Plant Pathology, JAU, Junagadh**]**
15.3.3.68	Efficacy of different fungicides against powdery mildew diseases of sesame	**Accepted with following suggestions:** 1. Change concentration in T5 –Pyraclostrobin 13.3 % + Epoxiconazole 5 % 2. Use latest scale as perpowdery mildew of fenugreek **[Action:** Professor & Head, Department of Plant Pathology, JAU, Junagadh**]**
15.3.3.69	Efficacy of different fungicides against powdery mildew diseases of fenugreek	**Accepted with following suggestions:** 1. Change concentration in T6 –Pyraclostrobin 13.3 % + Epoxiconazole 5 % **[Action:** Professor & Head, Department of Plant Pathology, JAU, Junagadh**]**
15.3.3.70	Utilization of different wastes on the yield of oyster mushroom (*Pleurotus sajor caju*).	**Accepted with following suggestions:** 1. Delete T5 2. Add Spawn rate @ 5 % instead of 10 %

		[Action: Professor & Head, Department of Plant Pathology, JAU, Junagadh**]**
15.3.3.71	Integrated pest management in papaya with special reference to viral diseases	**1. Not Approved and suggested to take filler trial with following treatments** i. Panchgavya 3 % ii. Jeevamurut 3 % iii. Neem oil 0.5 % iv. Bouganvalia extract 2 % v. Spiromesifen 22.9 SC, 0.02 % vi. Control 2. Use CRD design instead of RBD **[Action:** Professor & Head, Department of Horticulture, JAU, Junagadh**]**
15.3.3.72	Integrated management of root rot of castor (AICRP)	**Accepted with following suggestion:** 1. Remove 'AICRP' from title **[Action:** Research Scientist (Groundnut), Main OilseedsResearch Station, JAU, Junagadh**]**
15.3.3.73	Management of sooty mould (*Capnodium* spp.) in cotton (AICCIP Trial)	**Accepted with following suggestion:** 1. Remove 'AICCIP trial' from title **[Action:** Research Scientist, Cotton Research Station, JAU, Junagadh**]**
15.3.3.74	Management of parawiltof cotton	**Accepted with following suggestions:** 1. Change T6-0.05 % concentration instead of 0.1 % 2. Add treatment as 2 % urea 3. Add treatment as 0.5 ppm GA3 for spraying 4. Modify T8- irrigate crop at initiation of plant withering stage **[Action:** Research Scientist, Cotton Research Station, JAU, Junagadh**]**
15.3.3.75	Identification of races of *Fusarium oxysoporium* f. sp. *ciceri* in wilt sick plot using set of differentials of chickpea	**Approved** **[Action:** Research Scientist, Pulse Research Station, JAU, Junagadh**]**
15.3.3.76	Integrated management of bitter gourd virus diseases (AICRP)	**Accepted with following suggestion:** 1. Remove 'AICRP' from title **[Action:** Research Scientist (G & O), Vegetable Research Station, JAU, Junagadh**]**

15.3.3.77	Seedling stage management options for control of bud rot disease in coconut (*Cocos nucifera* L.).	**Accepted with following suggestions:** 1. Change title as 'Managementof bud rot disease in coconut nursery' 2. Mention formulation of all bioagents 3. Revise T4 as decoction of leaves of 5 plants (neem, custard apple, datura, calotropis and karanj) with cow urine **[Action:** Research Scientist, Agricultural Research Station, JAU, Mahuva**]**

ANAND AGRICULTURAL UNIVERSITY, ANAND

15.3.3.78	Impact of date of sowing on incidence of fall armyworm, *Spodoptera frugiperda* (J. E. Smith) infesting maize	**Accepted with following suggestions:** 1. Replication should be 4 instead of 3 2. Record cob damage and fodder yield 4. Record healthy and damage plants **[Action:** Professor & Head, Deptt. of Entomology, BACA, AAU, Anand**]**
15.3.3.79	Efficacy of insecticides against fall armyworm, *Spodoptera frugiperda* (J. E. Smith) infesting maize	**Accepted with following suggestions:** 1. Record healthy and damage plants 2. Record cob damage and fodder yield **[Action:** Prof. & Head, Department of Entomology, BACA, AAU, Anand, Assoc. Res. Sci. & Unit Head, ARS, AAU, Sansoli& Res. Sci. (Maize), MMRS, AAU, Godhra**]**
15.3.3.80	Efficacy of granular insecticides against fall armyworm, *Spodoptera frugiperda* (J. E. Smith) in maize	**Accepted with following suggestions:** 1. Record healthy and damage plants 2. Record cob damage and fodder yield **[Action:** Prof. & Head, Department of Entomology, BACA, AAU, Anand, Assoc. Res. Sci. & Unit Head, ARS, AAU, Sansoli& Res. Sci. (Maize), MMRS, AAU, Godhra**]**
15.3.3.81	Evaluation of bio-pesticides against fall army worm, *Spodoptera frugiperda* (J. E. Smith) in maize	**Accepted with following suggestions:** 1. Record healthy and damage plants 2. Record cob damage and fodder yield 3. Correct the spelling of *Metarhizium* **[Action:** Prof. & Head, Department of Entomology, BACA, AAU, Anand, Assoc. Res. Sci. & Unit Head, ARS, AAU, Sansoli&Res. Sci. (Maize), MMRS, AAU, Godhra**]**

15.3.3.82	Efficacy of poison baits against fall armyworm, *Spodoptera frugiperda*(J. E. Smith) infesting maize	**Accepted with following suggestions:** 1. Record healthy and damage plants 2. Record cob damage and fodder yield **[Action:** Prof. & Head, Department of Entomology, BACA, AAU, Anand, Assoc. Res. Sci. & Unit Head, ARS, AAU, Sansoli&Res. Sci. (Maize), MMRS, AAU, Godhra**]**
15.3.3.83	Evaluation of attractants on foraging activity of honey bee in mustard	**Approved** **[Action:** Prof. & Head, Department of Entomology, BACA, AAU, Anand**]**
15.3.3.84	Evaluation of different biopesticides against fall armyworm,*Spodoptera frugiperda* (J. E. Smith) (Lepidoptera: Noctuidae)in maize	**Accepted with following suggestion**s: 1. Delete the name of Research Associate 2. Record healthy and damage plants 3. Record cob damage and fodder yield **[Action:** Principal Res. Sci., AICRP on Biological Control of Crop Pests, AAU, Anand**]**
15.3.3.85	Role of birds in the natural regulation of pod borer, *Helicoverpa armigera* (Hubner) in pigeon pea	**Approved** **[Action:** Ornithologist & Head, AINPVPM: Agril. Ornithology, AAU, Anand**]**
15.3.3.86	Predation of insect pest by cattle egret in chickpea agroecosystem	**Accepted with following suggestion:** 1. Remove the name of SRF **[Action:** Ornithologist & Head, AINPVPM: Agril. Ornithology, AAU, Anand**]**
15.3.3.87	Estimation of damage caused by rose ringed parakeet (*Psittacula krameri*) in pomegranate	**Approved** **[Action:** Ornithologist, AINPVPM: Agril. Ornithology, AAU, Anand**]**
15.3.3.88	Effect of transplanting date on yield and insect-pest incidence in calcutti tobacco (*Nicotiana rustica* L.) varieties	**Approved** **[Action:** Unit Officer, BTRS, AAU, Anand**]**
15.3.3.89	Decontamination study of water by ozone treatment for about 100 pesticides	**Approved** **[Action:** Residue Analyst, AINP on Pesticide Residues, AAU, Anand**]**
15.3.3.90	Multi-residue analysis of 100 pesticides in water using QuEChERS method and detection by LC-MS/MS and/or GC-MS/MS	**Approved** **[Action:** Residue Analyst, AINP on Pesticide Residues, AAU, Anand**]**
15.3.3.91	Multi-residue analysis of 100 pesticides in cumin seeds using	**Approved**

	QuEChERS method and detection by LC-MS/MS and/or GC-MS/MS	**[Action:** Residue Analyst, AINP on Pesticide Residues, AAU, Anand**]**
15.3.3.92	Evaluation of insecticides against sucking pests infesting chilli at nursery stage	**Accepted with following suggestions:** 1. Remove % from formulation 2.Record the ancillary observation of Leaf curl disease 3. Record the pest & disease data up to 6 week of transplanting **[Action:** Res. Sci., MVRS, AAU, Anand & Residue Analyst, AINP on Pesticide Residues, AAU, Anand**]**
15.3.3.93	Management of aphid in coriander through insecticidal seed treatments and bio-pesticides	**Accepted with following suggestion:** 1. Dose should be considered as 40 g instead of 50g in all three treatments of bio pesticides **[Action:** Asstt. Prof. (Ento.), Department of Plant Protection, College of Horticulture, AAU, Anand**]**
15.3.3.94	Efficacy of radiation for the control of lesser grain borer (*Rhyzopertha dominica*) in wheat	**Approved** **[Action:** Principal, SMC Polytechnic in Agriculture, AAU, Anand &Unit Officer, RRS, AAU, Anand**]**
15.3.3.95	Efficacy of radiation for the control of pulse beetle in green gram	**Approved** **[Action:** Res. Scientist & Unit Head, RRS, AAU, Anand**]**
15.3.3.96	Evaluation of insecticides against yellow stem borer and leaf folder in rice	**Accepted with following suggestion:** 1. Correct the Carbosulfan as 0.05% 20ml/10 l **[Action:** Res. Sci. (Rice), MRRS, AAU, Nawagam**]**
15.3.3.97	Screening of inbreeds, hybrids, released varieties as well as sweet corn hybrids of maize for resistant against fall armyworm, *Spodoptera frugiperda*	**Approved** **[Action:** Prof. & Head, Dept. of Entomology, BACA, AAU, Anand & Res. Sci. (Maize), MMRS, AAU, Godhra& Assoc. Res. Sci.& Unit Head, ARS, AAU, Sansoli**]**
15.3.3.98	Evaluation of local practices for management of fall armyworm, *Spodoptera frugiperda*in maize	**Approved** **[Action:** Prof. & Head, Dept. of Entomology, BACA, AAU, Anand &Res. Sci. (Maize), MMRS, AAU, Godhra&Assoc. Res. Sci.& Unit Head, ARS, AAU, Sansoli**]**

15.3.3.99	Effect of transplanting dates on pest complex and diseases in tomato	**Approved** **[Action:** Asstt. Prof., Department of Entomology, CoA, AAU, Vaso&Asstt. Prof., Department of Plant Pathology, CoA, AAU,Vaso**]**
15.3.3.100	Field evaluation of ready-mix fungicides against cumin blight	**Approved** **[Action:** Prof.& Head, Department of Plant Pathology, BACA, AAU, Anand**]**
15.3.3.101	Management of foliar diseases of turmeric through fungicides	**Accepted with following suggestion:** 1. Add observation of residue analysis **[Action:** Prof.& Head, Department of Plant Pathology, BACA, AAU, Anand**]**
15.3.3.102	Evaluation of silver nanoparticles as antiviral agent against tomato leaf curl disease	**Approved** **[Action:** Prof.& Head, Department of Plant Pathology, BACA, AAU, Anand**]**
15.3.3.103	Screening and evaluation of diverse germplasm of okra for nematode resistance	**Approved** **[Action:** Prof.& Head, Department of Nematology, BACA, AAU, Anand**]**
15.3.3.104	Management of phytonematodes in chickpea by bacterial bioagents	**Approved** **[Action:** Prof.& Head, Department of Nematology, BACA, AAU, Anand**]**
15.3.3.105	Management of root-knot nematode, *Meloidogyne* sp. in groundnut	**Approved** **[Action:** Prof.& Head, Department of Nematology, BACA, AAU, Anand**]**
15.3.3.106	Bio-management of root-knot nematode, *Meloidogyne* spp. and fungal wilt complex, *Fusarium* spp. in guava	**Approved** **[Action:** Prof.& Head, Department of Nematology, BACA, AAU, Anand**]**
15.3.3.107	Documentation of nematode infested horticultural nurseries in the state	**Approved** **[Action:** Prof.& Head, Department of Nematology, BACA, AAU, Anand**]**
15.3.3.108	Evaluation of new chemical molecules against *Meloidogyne* spp.infecting cucumber in polyhouse	**Approved** **[Action:** Prof.& Head, Department of Nematology, BACA, AAU, Anand**]**
15.3.3.109	Demonstration on integrated nematode management on cucumber in polyhouses	**Approved** **[Action:** Prof.& Head, Department of Nematology, BACA, AAU, Anand**]**
15.3.3.110	Effects of bio-fumigation for management of root-knot	**Approved**

	nematode in bidi tobacco nursery	**[Action:** Unit Officer, BTRS, AAU, Anand**]**
15.3.3.111	Re-evaluation of ready mix fungicides for the management of blast disease of rice	**Approved** **[Action:** Res. Sci. (Rice), MRRS, AAU, Nawagam**]**
15.3.3.112	Evaluation of ready mix fungicides for the management of false smut disease of rice	**Approved** **[Action:** Res. Sci. (Rice), MRRS, AAU, Nawagam**]**
15.3.3.113	Management of late wilt of maize caused by *Fusarium verticilloides*	**Accepted with following suggestion:** 1. T2 = T1 + Furrow application **[Action:** Res. Sci. (Maize), MMRS, AAU, Godhra**]**
15.3.3.114	Evaluation of different modules for effective management of banded leaf and sheath blight (*Rhizoctonia solani*) of maize	**Approved** **[Action:** Res. Sci. (Maize), MMRS, AAU, Godhra**]**
15.3.3.115	Screening of various white and yellow maize genotypes for their resistance against turcicum leaf blight (*Exserohilum turcicum*) of maize under artificial conditions	**Approved** **[Action:** Res. Sci. (Maize), MMRS, AAU, Godhra**]**
15.3.3.116	Effect of transplanting date on yield and insect pest and disease incidence in calcutti tobacco	**Accepted with following suggestion:** 1. Write *Rustica* tobacco instead of *calcutt*i tobacco in the title **[Action:** Asstt. Prof., Department of Plant Pathology, CoA, AAU, Vaso&Asstt. Prof., Department of Entomology, CoA, AAU, Vaso**]**

15.4. HORTICULTURE AND AGRO-FORESTRY

Technical Session-I: Recommendations for Farmers and Scientific Community

Chairman	Dr. V. P. Chovatia, Director of Research, Junagadh Agricultural University, Junagadh
Co-Chairman	1. Dr. B. N. Patel, Principal and Dean, ASPEE College of Horticulture & Forestry, Navsari Agricultural University, Navsari 2. Dr. H. C. Patel, Principal and Dean, College of Horticulture, Anand Agricultural University, Anand
Rapporteurs	1. Dr. M. J. Patel, Associate Professor, AAU, Anand
	2. Dr. Piyush Verma, Associate Professor, SDAU, Sardarkrushinagar
	3. Dr. K. D. Patel, Associate Professor, JAU, Junagadh

Technical Session-II: New Technical Programs

Chairman	Dr. V. P. Chovatia, Director of Research, Junagadh Agricultural University, Junagadh
Co-Chairman	1. Dr. B. N. Patel, Principal and Dean, ASPEE College of Horticulture & Forestry, Navsari Agricultural University, Navsari 2. Dr A. U. Amin, Principal and Dean, College of Horticulture, SDAU, Jagudan
Rapporteurs	1. Dr. D. K. Varu, Professor, JAU, Junagadh
	2. Dr. B. N. Satodiya, Associate Professor, AAU, Anand
	3. Dr. Devraj, Associate Professor, NAU, Navsari

University	RECOMMENDATION					
	Proposed		Approved		Not approved	
	For Farmers	For Scientist	For Farmers	For Scientist	For Farmers	For Scientist
SDAU	05+2*	02	05	01	00	01
NAU (Horti)	14+7**	01	13	01	01	00
NAU Forestry	06	02	06	02	00	00
JAU	06+2***	00	05	00	01	00
AAU	03	00	03	00	00	00
TOTAL	**34+11**	**05**	**32**	**04**	**02**	**01**

<u>**NEW TECHNICAL PROGRAMMES**</u>

University	Proposed	Approved	Not Approved	Remarks
SDAU	22+01**	21	01	--
NAU (Horti)	18+05*+02**	18	00	--
NAU Forestry	17	17	00	--
JAU	06+01#	06	00	01 conditionally approved
AAU	08	08	00	--
Total	**71+09**	**70**	**01**	**01**

* Presented in Crop Improvement sub-committee.

** Recommendation presented in Dairy and Food Tech./Dairy Science and FPT and Bio energy sub committee

*** Recommendation presented Agriculture Engineering and AIT sub committee

\# Recommendation presented in Plant Protection sub committee

15.4.1 RECOMMENDATIONS FOR FARMING COMMUNITY

SARDARKRUSHINAGAR DANTIWADA AGRICULTURAL UNIVERSITY, S.K.NAGAR

15.4.1.1	Effect of plant growth substances and antioxidants on growth, yield and quality of pea (*Pisum sativum* L.) cv. Bonneville
	The farmers of North Gujarat growing garden pea are recommended to spray 50 mg/l gibberellic acid (GA_3) at 30 days after sowing for getting higher pod yield and net return. **ઉત્તર ગુજરાતના શાકભાજી માટે વટાણાની ખેતી કરતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે વટાણાની વાવણી બાદ ૩૦ દિવસે જીબ્રેલિક એસિડ ૫૦ મીલીગ્રામ પ્રતિ લિટરના દ્રાવણનો છંટકાવ કરવાથી વધુ ઉત્પાદન અને ચોખ્ખો નફો મેળવી શકાય છે.** **Approved** **(Action:** Principal, College of Horticulture, SDAU, Jagudan)
15.4.1.2	Effect of time of pollination on fruit setting in date palm cv. Barhee
	Date growers are recommended to pollinate within 2 to 3 days of spathe opening during 8.00 to 12.00 hours to increase fruit set, retention and yield of date palm. **ઉત્તર ગુજરાતના ખારેક ઉગાડનાર ખેડૂતોને ભલામણ કરવામાં આવે છે કે સારા ફળોના બેસવા અને જાળવણી માટે પરાગનયનની પ્રક્રિયા સવારે ૮ વાગ્યાથી બપોરના ૧૨ વાગ્યા સુધી હાથા ખુલવાના ૨–૩ દિવસમાં કરવાથી સારૂ ઉત્પાદન મેળવી શકાય છે.** **Approved** **(Action:** Research Scientist, DPRS, Mundra)
15.4.1.3	Evaluation of different pollen mixtures (with inert materials) on fruit set and yield of date palm cv. Halawy
	Date growers are recommended to use the pollen mixture of 5 g pollen with 95 g talcum powder for pollination to save the pollen without affecting fruit retention and yield. **ઉત્તર ગુજરાતના ખારેક ઉગાડનાર ખેડૂતોને સલાહ આપવામાં આવે છે કે ખારેકના પરાગનયનમાં ૫ ગ્રામ પરાગરજ સાથે ૯૫ ગ્રામ ટેલકમ પાઉડર ભેળવી ઉપયોગ કરવાથી પરાગરજની બચત ઉપરાંત ફળધારણ અને ઉત્પાદન જળવાઈ રહે છે.** **Approved** **(Action:** Research Scientist, DPRS, Mundra)
15.4.1.4	Varietal Trial in guava
	Varietal proposal presented in Crop Improvement sub-committee. **(Action:** Assistant Research Scientist, FRS, Dehgam)
15.4.1.5	Nutrient management in guava cv. L 49
	Guava growers of North Gujarat are recommended to apply 500 g nitrogen per adult tree (50 % nitrogen through chemical fertilizer and 50% nitrogen through vermicompost) in two splits i.e. in June and September gave higher yield and net return. Each P_2O_5 and K_2O at 250 g apply during the month of June. **ઉત્તર ગુજરાત માં જામફળની ખેતી કરતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે, જામફળના પુખ્ત વયના ઝાડને ૫૦૦ ગ્રામ નાઈટ્રોજન (૫૦% રાસાયણીક ખાતર ધ્વારા અને ૫૦% વર્મીકમ્પોસ્ટ ધ્વારા) જૂન અને સપ્ટેમ્બર માસમાં એમ બે હપ્તામાં આપવાથી વધુ ઉત્પાદન અને ચોખ્ખો નફો મળે છે. ફોસ્ફરસ અને પોટાશ દરેક ૨૫૦ ગ્રામ**

	ખાતર જૂન મહિનામાં આપવું. **Approved** **(Action:** Assistant Research Scientist, FRS, Dehgam)
15.4.1.6	Effect of spacing and nitrogen fertilizer on growth and yield of gaillardia cv. Local
	Farmers of North Gujarat growing gaillardia are recommended to grow plant at 45 x 30 cm spacing and apply nitrogen 200 kg/ha to get higher yield and net return. Nitrogen should be apply in 5 equal split, first as basal dose and there after 30, 60, 90 and 120 days after planting. FYM 15 t/ha and phosphorus and potash each at 50 kg/ha should be given as basal dose. આથી ઉત્તર ગુજરાતમાં ગેલાર્ડીઆ(ગાદલિયા)ની ખેતી કરતાં ખેડૂતોને ભલામણ કરવામાં આવે છે કે, ગેલાર્ડીઆની ૪૫ × ૩૦ સે.મી. ના અંતરે રોપણી કરી, ૨૦૦ કિગ્રા/હે નાઈટ્રોજન આપવાથી વધુ ઉત્પાદન અને ચોખ્ખો નફો મળે છે. નાઈટ્રોજન ખાતર પાંચ સરખા હપ્તામાં આપવુ, પહેલો હપ્તો પાયાના ખાતર તરીકે અને બાકીના હપ્તા રોપણીના ૩૦, ૬૦, ૯૦ અને ૧૨૦ દિવસે આપવા તેમજ છાણીયુ ખાતર ૧૫ ટન/હે અને ફોસ્ફરસ અને પોટાશ દરેક ખાતર ૫૦ કિગ્રા/હે પાયામાં આપવું. **Approved** **(Action:** Assistant Research Scientist,FRS,Dehgam)
15.4.1.7	Proposal for endorsement of early bulking potato variety kufri khyati (j/93-86)
	Varietal proposal presented in Crop Improvement sub-committee. **(Action:** Associate Research Scientist, PRS, Deesa)

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15.4.1.8	**Effect of foliar spray of KNO_3 and plant growth regulators on flowering and fruiting behaviour of mango cv. Alphonso** The farmers of South Gujarat having adult mango orchard of Alphonso variety are advised to apply paclobutrazol at 5.0 g a.i./ tree at 1st fortnight of August in soil and two foliar spray of 2% KNO_3 (20 g/litre) during starting of third week of October and November to increase the yield and improve quality of fruits along with higher net realization. દક્ષિણ ગુજરાતમાં પુખ્ત વયના આંબાની હાફુસ જાતની વાડી ધરાવતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે, હાફુસના ઝાડને ઓગસ્ટ મહિનાના પ્રથમ પખવાડિયામાં પેકલોબ્યુટ્રાઝોલ ૫ ગ્રામ સક્રિય તત્વ/ઝાડ જમીનમાં આપવું તેમજ ઓકટોબર અને નવેમ્બરના ત્રીજા અઠવાડિયાની શરૂઆતમાં ૨ % પોટેશિયમ નાઈટ્રેટ (૨૦ ગ્રામ/લીટર) ના બે છંટકાવ કરવાથી કેરીનું ગુણવતાસભર અને વધુ ઉત્પાદન સાથે વધારે આવક મેળવી શકાય છે. **Approved** ***(Action:*** Research Scientist. RHRS, NAU, Navsari***)***
15.4.1.9	**Evaluation of nutrient management under coconut based cropping systems for different agro climatic regions** The farmers of South Gujarat growing coconut cv. D x T at 7.5 m x 7.5 m are advised to grow banana, elephant foot yam, tannia and turmeric as a component crop under coconut garden and apply the nutrients as per following schedule to increase the yield of coconut and component crops along with higher remuneration.

S N.	Name of Crop and variety	In-organic and Organic nutrients					Time of application	
		50% RDF of NPK	Vermicompost from dry coconut leaves (Kg/plant)	Biofertilizer *Azotoactor* (ml/plant)	*In situ* green manuring with sunhemp (kg/plant)	Vermiwash (lit/ha)	Organics (two splits)	In-organics
1	Coconut (DxT)	N 750 P 375 K 750 (g/plant)	40 (20 + 20)	100 (50+50)	20 (10+10)	100 (50+50)	one month after application of In-organics	As per the recomondation
2	Banana (G-9)	N 150 P 45 K 100 (g/plant)	6 (3+ 3)	20 (10+10)	5 (2.5 + 2.5)	10 (5+5)	First at basal and second 3 MAP	
3	Elephant Foot Yam (Gajendra)	N 40 P 30 K 50 (Kg/ha)	3 (1.5 + 1.5)	10 (5+5)	3 (1.5 + 1.5)	5 (2.5+2.5)		
4	Tannia (Local)	N 40 P 30 K 50 (Kg/ha)	1 (0.5 + 0.5)	5 (2.5+2.5)	2 (1.0 + 1.0)	5 (2.5+2.5)		
5	Turmeric (Sugandham)	N 30 P 30 K 30 (Kg/ha)	5 t/ha (at time of planting)	20 lit/ha (10+10)	100 kg/ha (at time of planting)	10 (5+5)		

દક્ષિણ ગુજરાતમાં નાળિયેરીની ડી×ટી જાત ૭.૫ મી.× ૭.૫ મીટરે ઉગાડતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે નાળિયેરીની વાડીમાં કેળ, સુરણ, તાનીયા (પત્તરવેલી) અને હળદર પાકોનું ઘટક પાક તરીકે વાવેતર કરી નીચે દર્શાવેલ કોષ્ટક મુજબ ખાતર આપવાથી નાળિયેરી તેમજ કેળ, સુરણ, તાનીયા (પત્તરવેલી) અને હળદરનું વધુ ઉત્પાદન સાથે વધારે ચોખ્ખી આવક મેળવી શકાય છે.

અ. નં.	પાકનું નામ/જાત	રાસાયણિક અને સેન્દ્રીય ખાતર					ખાતર આપવાનો સમય	
		ભલામણ કરેલ ખાતરનો ૫૦ % જથ્થો(નાઃફોઃપો)	નાળિયેરીના સુકા પાનનું વર્મીકંમ્પોસ્ટ (કિલો/છોડ)	*બાયોફર્ટીલાઈઝર (એઝેટોબેકટર) (મિલી/છોડ)*	શણનો લીલો પડવાશ (કિલો/છોડ)	વર્મીવોશ (લિ./હે.)	સેન્દ્રીય (બે હપ્તામાં)	રાસાયણિક
૧	નાળિયેરી (ડી×ટી)	ના : ૭૫૦ ફો : ૩૭૫ પો : ૭૫૦ (ગ્રામ/છોડ)	૪૦ (૨૦+૨૦)	૧૦૦ (૫૦+૫૦)	૨૦ (૧૦ +૧૦)	૧૦૦ (૫૦+૫૦)	રાસાયણિક ખાતર આપવાના ૧ માસ પછી	ભલામણ મુજબ
૨	કેળ (જી–૯)	ના : ૧૫૦ ફો : ૪૫	૬ (૩+૩)	૨૦ (૧૦+૧૦)	૫ (૨.૫+૨.	૧૦ (૫+૫)	પહેલો હપ્તો	

		પો : ૧૦૦ (ગ્રામ/છોડ)			૫)		વાવેતર સમયે અને બીજો હપ્તો વાવેતરના ૩ માસ પછી	
૩	સુરણ (ગજેન્દ્ર)	ના : ૪૦ ફો : ૩૦ પો : ૫૦ (કિલો/હે.)	૩ (૧.૫+૧.૫)	૧૦ (૫+૫)	૩ (૧.૫ +૧.૫)	૫ (૨.૫+૨. ૫)		
૪	પાતરા (લોકલ)	ના : ૪૦ ફો : ૩૦ પો : ૫૦ (કિલો/હે.)	૧ (૦.૫૦૦+૦. ૫૦૦)	૫ (૨.૫+૨.૫)	૨ (૧ +૧)	૫ (૨.૫+૨. ૫)		
૫	હળદર (સુગંધમ)	ના : ૩૦ ફો : ૩૦ પો : ૩૦ (કિલો/હે.)	૫ ટન/હે. (વાવેતર સમયે)	૨૦ લિ./હે. (૧૦ +૧૦)	૧૦૦ કિ./હે (વાવેતર સમયે)	૧૦ (૫+૫)		

Approved

(Action: Research Scientist. RHRS, NAU, Navsari**)**

15.4.1.10 **Enhancing the inputs use efficiency in banana cv. Grand Naine:**

Farmers of South Gujarat growing banana cv. Grand Naine under drip irrigation are advised to adopt soil test based fertilizer recommendation as per ready reckoner and following modules for getting targeted yield of banana.

- 10 kg FYM/pit at the time of land preparation.
- Drip irrigation (80% ER at all stages) system should be operated for 80 minute in winter and 130 minute in summer on alternate day having two drippers of 4lph spaced at 30 cm either side of pseudostem.
- 50% cover of black plastic mulch (100 micron thickness).
- 2% Banana Shakti micro nutrient foliar spray at 3, 4 and 5 month after planting (formulated by NRCB)
- Bunch spray of 2% SOP (1st spray after male bud removal and 2nd spray at 30 days after 1st spray)
- Adopt fertilizer dose of N, P_2O_5 and K_2O as per STCR ready reckoner in below table. N and K_2O applied in three equal split through fertigation at 3, 4 and 5 month after planting, whereas P_2O_5 as soil application one month after planting.

Ready-reckoner: Soil test based NPK dose (g/plant) for targeted yield of Grand Naine banana

Target (t/ha)	STCR N available (Kg/Ha)												
	100	**125**	**150**	**175**	**200**	**225**	**250**	**275**	**300**	**325**	**350**	**375**	**400**
N dose (g/plant)													
60	114	110	105	100	95	91	86	82	77	73	68	64	59
72	65	136	131	127	122	117	113	108	104	99	95	90	86
84	167	162	158	153	149	144	140	134	130	125	121	116	112
Urea g/plant													
60	248	239	228	217	207	198	187	178	167	159	148	139	128
72	141	296	285	276	265	254	246	235	226	215	207	196	187
84	363	352	343	333	324	313	304	291	283	272	263	252	243
Target (t/ha)	**STCR P_2O_5 Available (Kg/Ha)**												
	14	**18**	**23**	**27**	**32**	**37**	**41**	**46**	**50**	**55**	**60**	**64**	**69**
P_2O_5 dose (g/plant)													
60	26	26	24	24	22	22	21	21	19	19	17	17	15

72	33	31	31	29	29	27	27	26	26	24	22	22	21
84	38	36	36	34	34	33	33	31	31	29	29	27	27
SSP dose (g/plant)													
60	161	161	150	150	140	140	129	129	118	118	107	107	97
72	204	193	193	182	182	172	172	161	161	150	140	140	129
84	236	225	225	215	215	204	204	193	193	182	182	172	172

Target (t/ha)	**STCR K_2O available (Kg/Ha)**												
	129	**161**	**194**	**226**	**258**	**290**	**323**	**355**	**387**	**419**	**452**	**484**	**516**
K_2O dose (g/plant)													
60	203	199	195	193	189	185	182	178	174	171	167	164	161
72	246	243	239	235	232	228	224	222	218	214	211	207	203
84	289	286	283	279	276	272	268	265	261	257	254	251	247
MOP dose (g/plant)													
60	339	332	326	321	314	308	303	297	290	285	279	273	268
72	410	405	398	392	387	381	374	369	363	356	352	345	339
84	482	477	471	464	460	453	447	442	435	429	424	418	411

***STCR = Soil Test Based Crop Response**

દક્ષિણ ગુજરાતમાં ટપક સિંચાઇ દ્વારા કેળની ગ્રાન્ડ નૈન જાતની ખેતી કરતા ખેડૂતોને સલાહ આપવામાં આવે છે કે જમીન પૃથ્થકરણ આધારિત રાસાયણિક ખાતરની ભલામણ નીચેના કોઠામાં અને મૉડ્યુલમાં દર્શાવ્યા મુજબ કરવાથી લક્ષ્યાંક મુજબનું કેળાનું ઉત્પાદન મેળવી શકાય છે.

- કેળની રોપણીના ખાડા દીઠ ૧૦ કિ.ગ્રા. છાણીયું ખાતર આપવું.
- ટપક સિંચાઇ (પુન :પ્રાપ્ય બાષ્પીભવનના ૮૦ %બધા તબકકે) પધ્ધતિમાં કલાકે ૪ લિટરની ક્ષમતાવાળા બે ડ્રીપર છોડના થડની બંને બાજુ ૩૦ સે.મી. દુર મુકી શિયાળામાં ૮૦ મીનીટ અને ઉનાળામાં ૧૩૦ મીનીટ સુધી એકાંતરે દિવસે ચલાવવું
- કાળા પ્લાસ્ટીકનું (૧૦૦ માઇક્રોન) ૫૦% વિસ્તારમાં આવરણ કરવું.
- ૨ % બનાના શકિત સૂક્ષ્મ પોષક તત્વોના રોપણી પછી ૩,૪ અને ૫ માં મહિને પાન પર છંટકાવ કરવો (એન.આર.સી.બી. ખાતે વિકસિત)
- લૂમપર ૨% સલ્ફેટ ઓફ પોટાશના બે છંટકાવ (પ્રથમ છંટકાવ ફૂલનો ડોડો નર ફુલ) તોડ્યા બાદ અને બીજો છંટકાવ પ્રથમ છંટકાવના ૩૦ દિવસ પછી કરવો)
- રોપણી પછી ત્રીજા, ચોથા અને પાંચમા મહીને ફર્ટીગેશન દ્વારા નાઇટ્રોજન (યુરીયા) અને પોટાશ (મ્યુરેટ ઓફ પોટાશ) ખાતરના ત્રણ સરખા ભાગમા આપવું અને ફોસ્ફરસ (સીંગલ સુપર ફોસ્ફેટ) ખાતર રોપણીના ૧ મહિના પછી જમીનમાં આપવું.

રેડી રેકનર: કેળાની ગ્રાન્ડ નૈન જાતમાં ઉત્પાદન લક્ષ્ય મેળવવા માટે જમીન પૃથ્થકરણ આધારિત ના.ફો.પો. (ગ્રામ/પ્લાન્ટ) ની ગણતરી

ટાર્ગેટ (ટન/ હેકટર)	એસટીસીઆર નાઈટ્રોજન ઉપલબ્ધ (કિગ્રા./હેકટર)												
	૧૦૦	૧૨૫	૧૫૦	૧૭૫	૨૦૦	૨૨૫	૨૫૦	૨૭૫	૩૦૦	૩૨૫	૩૫૦	૩૭૫	૪૦૦
	નાઈટ્રોજનનો પ્રમાણ (ગ્રામ/છોડ)												
૬૦	૧૧૪	૧૧૦	૧૦૫	૧૦૦	૯૫	૯૧	૮૬	૮૨	૭૭	૭૩	૬૮	૬૪	૫૯
૭૨	૬૫	૧૩૬	૧૩૧	૧૨૭	૧૨૨	૧૧૭	૧૧૩	૧૦૮	૧૦૪	૯૯	૯૫	૯૦	૮૬
૮૪	૧૬૭	૧૬૨	૧૫૮	૧૫૩	૧૪૯	૧૪૪	૧૪૦	૧૩૪	૧૩૦	૧૨૫	૧૨૧	૧૧૬	૧૧૨
યુરિયાનો પ્રમાણ (ગ્રામ/છોડ)													
૬૦	૨૪૮	૨૩૯	૨૨૮	૨૧૭	૨૦૭	૧૯૮	૧૮૭	૧૭૮	૧૬૭	૧૫૯	૧૪૮	૧૩૯	૧૨૮

૭૨	૧૪૧	૨૯૬	૨૮૫	૨૭૬	૨૬૫	૨૫૪	૨૪૬	૨૩૫	૨૨૬	૨૧૫	૨૦૭	૧૯૬	૧૮૭
૮૪	૩૬૩	૩૫૨	૩૪૩	૩૩૩	૩૨૪	૩૧૩	૩૦૪	૨૯૧	૨૮૩	૨૭૨	૨૬૩	૨૫૨	૨૪૩
ટાર્ગેટ (ટન/ હેકટર)	એસટીસીઆર P_2O_5 ઉપલબ્ધ (કિગ્રા./હેકટર)												
	૧૪	૧૮	૨૩	૨૭	૩૨	૩૭	૪૧	૪૬	૫૦	૫૫	૬૦	૬૪	૬૯
ફાસફોરસનો પ્રમાણ (ગ્રામ/છોડ)													
૬૦	૨૬	૨૬	૨૪	૨૪	૨૨	૨૨	૨૧	૨૧	૧૯	૧૯	૧૭	૧૭	૧૫
૭૨	૩૩	૩૧	૩૧	૨૯	૨૯	૨૭	૨૭	૨૬	૨૬	૨૪	૨૨	૨૨	૨૧
૮૪	૩૮	૩૬	૩૬	૩૪	૩૪	૩૩	૩૩	૩૧	૩૧	૨૯	૨૯	૨૭	૨૭
સિંગલ સુપર ફોસ્ફેટનો પ્રમાણ (ગ્રામ/છોડ)													
૬૦	૧૬૧	૧૬૧	૧૫૦	૧૫૦	૧૪૦	૧૪૦	૧૨૯	૧૨૯	૧૧૮	૧૧૮	૧૦૭	૧૦૭	૯૭
૭૨	૨૦૪	૧૯૩	૧૯૩	૧૮૨	૧૮૨	૧૭૨	૧૭૨	૧૬૧	૧૬૧	૧૫૦	૧૪૦	૧૪૦	૧૨૯
૮૪	૨૩૬	૨૨૫	૨૨૫	૨૧૫	૨૧૫	૨૦૪	૨૦૪	૧૯૩	૧૯૩	૧૮૨	૧૮૨	૧૭૨	૧૭૨
ટાર્ગેટ (ટન/ હેકટર)	એસટીસીઆર K_2O ઉપલબ્ધ (કિગ્રા./હેકટર)												
	૧૨૯	૧૬૧	૧૯૪	૨૨૬	૨૫૮	૨૯૦	૩૨૩	૩૫૫	૩૮૭	૪૧૯	૪૫૨	૪૮૪	૫૧૬
પોટાશનો પ્રમાણ (ગ્રામ/છોડ)													
૬૦	૨૦૩	૧૯૯	૧૯૫	૧૯૩	૧૮૯	૧૮૫	૧૮૨	૧૭૮	૧૭૪	૧૭૧	૧૬૭	૧૬૪	૧૬૧
૭૨	૨૪૬	૨૪૩	૨૩૯	૨૩૫	૨૩૨	૨૨૮	૨૨૪	૨૨૨	૨૧૮	૨૧૪	૨૧૧	૨૦૭	૨૦૩
૮૪	૨૮૯	૨૮૬	૨૮૩	૨૭૯	૨૭૬	૨૭૨	૨૬૮	૨૬૫	૨૬૧	૨૫૭	૨૫૪	૨૫૧	૨૪૭
મ્યુરેટ ઓફ પોટાસનો પ્રમાણ (ગ્રામ/છોડ)													
૬૦	૩૩૯	૩૩૨	૩૨૬	૩૨૧	૩૧૪	૩૦૮	૩૦૩	૨૯૭	૨૯૦	૨૮૫	૨૭૯	૨૭૩	૨૬૮
૭૨	૪૧૦	૪૦૫	૩૯૮	૩૯૨	૩૮૭	૩૮૧	૩૭૪	૩૬૯	૩૬૩	૩૫૬	૩૫૨	૩૪૫	૩૩૯
૮૪	૪૮૨	૪૭૭	૪૭૧	૪૬૪	૪૬૦	૪૫૩	૪૪૭	૪૪૨	૪૩૫	૪૨૯	૪૨૪	૪૧૮	૪૧૧

* STCR = Soil Test Based Crop Response

Approved

(Action: Associate Res. Sci., FRS, Gandevi**)**

15.4.1.11 **Root stock trial of mango**

Farmers of Gujarat growing mango cv. Kesar are advised to use rootstock Kensington and Vellaikolamban for normal plantation and Nekkare for high density plantation to obtain higher yield and net return.

ગુજરાતમાં આંબાની કેસર જાતનું વાવેતર કરતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે સામાન્ય વાવેતર પદ્ધતિ માટે કેનસિંગટન અને વેલ્લાઇકોલમ્બન જાતના મૂળકાંડ તેમજ ઘનિષ્ઠ વાવેતર પદ્ધતિ માટે નિક્કારે જાતના મૂળકાંડ ઉપયોગ કરવાથી વધુ ઉત્પાદન અને નફો મળે છે.

Approved

(Action: Research Scientist, AES, Paria**)**

15.4.1.12 **High density orcharding in different varieties of mango**

Differed as per following suggestion:

Reanalyse the experiment as per long term experimental design and present in next AGRESCO meeting

(Action: Research Scientist, AES, Paria**)**

15.4.1.13 **Effect of mulch on moisture conservation in old ber orchard under Bara track of Gujarat**

Farmers of South Gujarat having ber orchard are advised to use black plastic mulch (25 micron) after cessation of monsoon for getting higher yield with net

	realization. દક્ષિણ ગુજરાતમાં બોરની વાડી ધરાવતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે ચોમાસું પુરૂ થયા બાદ કાળું પ્લાસ્ટીક મલ્ચ (૨૫ માઇક્રોન) પાથરવાથી વધુ ઉત્પાદન અને નફો મળે છે. **Approved** ***(Action:*** ARS Tanchha/Bharuch centre**)**
15.4.1.14	**Effect of foliar fertilization on old ber orchard of Gola variety.** Farmers of South Gujarat having ber orchard of variety Gola are recommended to spray 4% (40 ml/l) Novel organic liquid nutrient at flower initiation, pea and marble stage of fruits for getting higher yield and net realization. દક્ષિણ ગુજરાતમાં બોરની ગોલા જાતનું વાવેતર કરતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે, બોરના ઝાડ ઉપર ૪% (40 મિ.લી./લીટર) નોવેલ ઓર્ગેનિક લિકવિડ ન્યુટ્રીયંટનો છંટકાવ ફુલ અવસ્થા, વટાણા અને લખોટી જેવડા ફળ થાય ત્યારે કરવાથી વધુ ઉત્પાદન અને નફો મળે છે. **Approved** ***(Action:*** ARS Tanchha/Bharuch centre***)***
15.4.1.15	**Performance of cocoa varieties/hybrids for their performance as intercrop in coconut gardens** Farmers of south Gujarat growing coconut cv. WCT at 7.5 x 7.5 m are advised to grow VTLCH-4 cocoa clone as intercrop at intra spacing of 3.75 m under coconut garden for getting higher yield of coconut and cocoa. દક્ષિણ ગુજરાતમાં નાળિયેરીની વેસ્ટકોસ્ટ ટોલ જાત ૭.૫ X ૭.૫ મીટરે ઉગાડતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે નાળિયેરીની અંદર બે હાર વચ્ચે કોકોની વિટીએલસીએચ-૪ જાતનું બે છોડ વચ્ચે ૩.૭૫ મીટરે આંતરપાક તરીકે વાવેતર કરવાથી નાળિયેરી અને કોકોનું વધુ ઉત્પાદન મળે છે. **Approved** ***(Action:*** Research Scientist. RHRS, NAU, Navsari***)***
15.4.1.16	**Effect of IBA and its combinations with NAA on propagation of little gourd in plug trays** Farmers of Gujarat growing little gourd are advised to propagate three bud cuttings of little gourd with quick dip treatment of 500 mg/l IBA in plug tray under naturally ventilated poly house for higher rate of success and survival. **ગુજરાતના ટિંડોળાની ખેતી કરતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે ટિંડોળા ના રોપા કટકાથી તૈયાર કરવા માટે ત્રણ આંખના કટકાઓને ૫૦૦ મીલીગ્રામ/ લિ. આઈ.બી.એ.ના દ્રાવણમાં ત્વરીત બોળીને પ્લગ ટ્રેમાં કુદરતી હવા ઉજાસવાળા પોલીહાઉસમાં રોપવાથી વધારે સફળતા મળે છે.** **Approved** ***(Action:*** Scientist, KVK, Vyara***)***
15.4.1.17	**Standardization of grafting technique in adenium** Nurserymen raising adenium as pot culture are advised to propagate by flat method of grafting using 2 cm length of mature scion on local root stock of one year old adenium under naturally ventilated polyhouse to obtain attractive plants. **કુંડામાં એડેનીયમ ઉગાડતા નર્સરી ધારકો ને ભલામણ કરવામાં આવે છે કે, ૨ સે.મી. ના પરિપકવ ઉપરોપને એક વર્ષ જુના સ્થાનીક મુલકાંડ પર ફ્લેટ ગ્રાફટીંગ પધ્ધતિથી કલમ કુદરતી હવાઉજાસવાળા પોલીહાઉસમાં કરવાથી આકર્ષક છોડ ઉછેરી શકાય છે.** **Approved** ***(Action:*** Associate Professor, FLA, ACHF, NAU, Navsari**)**

15.4.1.18	**Standardization of soilless based growing media for different varieties of potted *Euphorbia milii*** Nurserymen raising *Euphorbia milii* as pot culture under naturally ventilated polyhouse condition are advised to grow in soilless growing media containing cocopeat + coco chips + styrofoam (4:2:1) for better plant growth and good quality flowering. યુફોર્બીયા મીલી ઉગાડતા નર્સરી ધારકોને ભલામણ કરવામાં આવે છે કે, કુંડામાં કોકોપીટ + કોકોચીપ્સ + સ્ટાયરોફોમ (૪:૨:૧) માટીરહિત માધ્યમમાં કુદરતી હવાઉજાસવાળા પોલીહાઉસમાં ઉગાડવાથી છોડની સારી વૃધ્ધિ અને ગુણવતાયુકત ફુલ મળે છે. **Approved** ***(Action:*** Associate Professor, FLA, ACHF, NAU, Navsari**)**
15.4.1.19	**Testing of new genotypes of China aster** Farmers of South Gujarat cultivating China aster are advised to grow variety Arka Archana (white colour) for loose flowers and Phule Ganesh Pink (pink colour) and Phule Ganesh White (white colour) for cut flowers to get higher yield and net realization. દક્ષિણ ગુજરાતમાં ચાઈના એસ્ટર ફુલોની ખેતી કરતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે, અર્કા અર્ચના (સફેદ રંગ) છુટાં ફૂલો માટે તદઉપરાંત દાંડીવાળા ફૂલો માટે ફુલે ગણેશ પિંક (ગુલાબી રંગ) અને ફુલે ગણેશ વ્હાઈટ(સફેદ રંગ) જાતમાં વધુ ઉત્પાદન અને આવક મળે છે. **Approved** ***(Action:*** Associate Professor, FLA, ACHF, NAU, Navsari**)**
15.4.1.20	**Standardization of postharvest treatment using boric acid and sodium benzoate for improving postharvest life of loose flowers of tuberose** Farmers growing tuberose for loose flower production are advised to dip florets for five seconds (quick dip) in 4 *per cent* boric acid (40 g boric acid dissolved in one litre warm water and cool it at ambient temperature) for improving postharvest life up to 24 hrs. ગુલછડીની ખેતી સાથે સંકળાયેલા ખેડુતોને ભલામણ કરવામાં આવે છે કે ગુલછડીના છુટા ફુલોને બોરીક એસિડના ૪% દ્રાવણમાં (૪૦ ગ્રામ બોરીક એસિડ ૧ લિટર ગરમ પાણીમાં ઓગાળી તેને સામાન્ય તાપમાને ઠંડુ કરી) ૫ સેકન્ડની માવજત (ઝડપથી ડુબાડી) આપવાથી ફુલ તોડયા બાદ ૨૪ કલાક સુધી તાજા સાચવી શકાય છે. **Approved** ***(Action:*** Associate Professor, FLA, ACHF, NAU, Navsari**)**
15.4.1.21	**Studies on use of food dyes for tinting in tuberose stems** Farmers and florists are advised to use 4 % (40 g/L) lemon yellow food dye with 1 hour immersion time for obtaining yellow colour in tuberose spikes to get additional income by tinting. Moreover, different food dyes *viz.* kesar yellow, kalakhatta, orange red, rose pink, raspberry red at 4 % concentration with 1 hour immersion time to be used for obtaining desired colour shades by tinting. ખેડુતો અને ફલોરીસ્ટને ભલામણ કરવામાં આવે છે કે ગુલછડીની દાંડીને ૪% (૪૦ ગ્રામ/લિ) લેમન યલો ખાદ્ય રંગના દ્રાવણમાં ૧ કલાક માટે રાખવાથી ગુલછડીની ફુલ દાંડીને પીળો રંગ કરી વધારાની આવક મેળવી શકાય છે. ગુલછડીની દાંડીને કેસર યલો, ઓરેજ રેડ, કાલાખટ્ટા, રાસ્પબરી રેડ, રોઝ પીન્ક જેવા ખાદ્યરંગોના ૪% (૪૦ ગ્રામ/લિ.) દ્રાવણમાં ૧ કલાક માટે રાખી ઈચ્છા મુજબ વિવિધ રંગો મેળવી શકાય છે. **Approved** ***(Action:*** Associate Professor, FLA, ACHF, NAU, Navsari**)**

15.4.1.22	**Standardization of technology for removal of the bitter compound 'aloin' from the *Aloe vera* juice** Recommendation presented in Dairy and Food Tech./Dairy Science and FPT and Bio energy sub committee. ***(Action:*** Associate Professor, PHT, ACHF, NAU, Navsari**)**
15.4.1.23	**Standardization of technology for preparation of *Aloe vera* juice** **Recommendation for the farmers:** Recommendation presented in Dairy and Food Tech./Dairy Science and FPT and Bio energy sub committee. ***(Action:*** Associate Professor, PHT, ACHF, NAU, Navsari**)**
15.4.1.24	**Standardization of formulation for processing of Watermelon [*Citrullus lanatus*] juice** Recommendation presented in Dairy and Food Tech./Dairy Science and FPT and Bio energy sub committee. ***(Action:*** Associate Professor, PHT, ACHF, NAU, Navsari**)**
15.4.1.25	**Standardization of formulation for processing of Watermelon [*Citrullus lanatus*] nectar** Recommendation presented in Dairy and Food Tech./Dairy Science and FPT and Bio energy sub committee. ***(Action:*** Associate Professor, PHT, ACHF, NAU, Navsari**)**
15.4.1.26	**Standardization of process for the preparation of Watermelon [*Citrullus lanatus*] albedo candy** Recommendation presented in Dairy and Food Tech./Dairy Science and FPT and Bio energy sub committee. ***(Action:*** Associate Professor, PHT, ACHF, NAU, Navsari**)**
15.4.1.27	**Development of UV light assisted method for preservation of mango noni nectar** Recommendation presented in Dairy and Food Tech./Dairy Science and FPT and Bio energy sub committee. ***(Action:*** Associate Professor, PHT, ACHF, NAU, Navsari**)**
15.4.1.28	**Preparation and standardized technique of guava (*Psidium guajava* L.) and papaya (*Carica papaya* L.) blended RTS** Recommendation presented in Dairy and Food Tech./Dairy Science and FPT and Bio energy sub committee. ***(Action:*** Department of Horticulture, College of Agriculture, NAU, Bharuch**)**

15.4.1.29	**Performance of cucurbitaceous vegetable crops under Teak based Silvi-Horticultural system in South Gujarat**
	Farmers of south Gujarat growing teak (3 x 2 m spacing) are advised to grow smooth gourd and bottle gourd (cucurbitaceous vegetable crop) as an intercrop in summer season under teak based silvi-horticultural system to get additional income as compared to sole plantation of mature teak crop. દક્ષિણ ગુજરાતમાં સાગની ખેતી (૩ x ૨ મી.) સાથે સંકળાયેલા ખેડુતોને ભલામણ કરવામાં આવે છે કે, સાગ આધારીત સિલ્વી-હોર્ટીકલ્ચરલ પધ્ધતિ અંતર્ગત ઊનાળું ઋતુમાં પરીપક્વ સાગના વૃક્ષોની વચ્ચે આંતરપાક તરીકે ગલકાં તેમજ દુધી (વેલાવાળા શાકભાજી) ને લેવાથી સાગ ઉપરાંત વધારાની આવક મેળવી શકાય છે. **Approved** ***(Action:*** HoD, Dept. of SAF, CoF, NAU, Navsari**)**
15.4.1.30	**Development of volumetric equation for Teak (*Tectona grandis* Linn. f.) in South Gujarat**
	Teak growers and wood merchants are recommended to use volumetric equation, $V= 0.00004D^2H + 0.014$ and local volume table (given below) for estimation of volume of standing teak trees grown under plantation and natural forest of South Gujarat (D = Diameter at breast height; H = Tree height). **સાગની ખેતી કરનાર તથા લાકડાના વેપારીઓને દક્ષિણ ગુજરાતમાં વાવેતરવાળા અને કુદરતી જંગલમાં થતાં સાગના ઉભા (જીવંત) ઝાડ ના કદ ના અંદાજ (આકરણી) માટે કદદર્શક સમીકરણ**, $V= 0.00004D^2H + 0.014$ **અને સ્થાનિક કદદર્શક કોષ્ટકનો ઉપયોગ કરવાની ભલામણ કરવામાં આવે છે** (D = **છાતીની ઉંચાઇ સુધીનો વ્યાસ;** H = **ઝાડની ઊંચાઇ**).

Table showing local volume table developed for teak trees grown in south Gujarat condition

Height (m) — **Volume (m^3)**

Diameter at breast height (cm)	5	8	11	14	17	20	23	26	29	32	35	38	41	42
10	0.055	0.073	0.092	0.111	0.130	0.148								
15	0.094	0.130	0.167	0.204	0.241	0.277								
20		0.206	0.267	0.328	0.389	0.449	0.510							
25		0.301	0.392	0.483	0.574	0.664	0.755	0.846						
30		0.415	0.542	0.669	0.796	0.922	1.049	1.176						
35		0.548	0.717	0.886	1.055	1.223	1.392	1.561	1.730	1.898				
40		0.700	0.917	1.134	1.351	1.567	1.784	2.001	2.218	2.434	2.651			
45			1.142	1.413	1.684	1.954	2.225	2.496	2.767	3.037	3.308			
50			1.392	1.723	2.054	2.384	2.715	3.046	3.377	3.707	4.038	4.369		
55			1.667	2.064	2.461	2.857	3.254	3.651	4.048	4.444	4.841	5.238		
60				2.436	2.905	3.373	3.842	4.311	4.780	5.248	5.717	6.186		
65				2.839	3.386	3.932	4.479	5.026	5.573	6.119	6.666	7.213	7.760	8.306
70					3.904	4.534	5.165	5.796	6.427	7.057	7.688	8.319	8.950	9.580
75					4.459	5.179	5.900	6.621	7.342	8.062	8.783	9.504	10.225	10.945
80							6.684	7.501	8.318	9.134	9.951	10.768	11.585	12.401

Approved

(Action: HoD, Dept. of SAF, CoF, NAU, Navsari***)***

15.4.1.31	**Study of carbon sequestration potential of important tree species**
	Farmers are recommended to grow tree species such as **Casuarina, Eucalyptus and Bijasal** for obtaining higher biomass and carbon sequestration under South Gujarat. દક્ષિણ ગુજરાતમાં ખેડુતોને વધુ બાયોમાસ અને કાર્બન સિક્વેસ્ટ્રેશન મેળવવા માટે શરૂ, નીલગીરી તેમજ બીયો જેવા વૃક્ષ પ્રજાતિઓના વાવેતર કરવાની ભલામણ કરવામાં આવે છે. **Approved** ***(Action:*** HoD, Dept. of SAF, CoF, NAU, Navsari***)***
15.4.1.32	**Effect of gibberellic acid (GA_3) and nitrogen on the growth of *Tectona grandis* Linn.f. for production of stumps for planting**
	The farmers and nursery entrepreneurs of south Gujarat are recommended to apply 100 mg N / kg soil (225 kg N/ ha) in four equal splits *i.e.* at the time of sowing, 60, 120 and 180 days after sowing to produce quality teak seedlings for stump preparation within 7-8 months. દક્ષિણ ગુજરાતના ખેડૂતો અને નર્સરી સાહ્સિકોને ૭ થી ૮ માસમાં વાવેતર લાયક સાગના સ્ટમ્પ તૈયાર કરવા માટે ધરુવાડીયામાં ૧૦૦ મીગ્રા નાઈટ્રોજન/કિલો જમીનમાં (૨૨૫ કિગ્રા નાઈટ્રોજન પ્રતિ હેક્ટર) ૪ સરખા ભાગે અનુક્રમે વાવણી સમયે તેમજ વાવણી પછી ૨, ૪ અને ૬ મહિનાના અંતરે આપવાની ભલામણ કરવામાં આવે છે. **Approved** ***(Action:*** HoD, Dept. of SAF, CoF, NAU, Navsari**)**
15.4.1.33	**Seed germination and seedling emergence study in Dev Shower (*Bombax insigne* Wall.)**
	Farmers, conservationists and nursery entrepreneurs are recommended to treat *Bombax insigne* (Dev shower) seeds with 50 mg/ l. GA_3 for 24 hrs before sowing for better germination. ખેડૂતો, સંરક્ષણવાદીઓ અને નર્સરી ઉધોગસાહસીકોને ભલામણ કરવામાં આવે છે કે બોમ્બેકસ ઈનસિગ્ની (દેવ શાવર) ના બીજને વાવણી કરતા પહેલા ૫૦ મિલીગ્રામ/ લીટર જીબ્રેલિક એસિડમાં ૨૪ કલાક સુધી માવજત આપવાથી સારુ બીજાકુંરણ મળી રહે છે. **Approved** ***(Action:*** HoD, Dept. of SAF, CoF, NAU, Navsari***)***
15.4.1.34	**Documentation of basic density and calorific value of different tree species of South Gujarat**
	Farmers, foresters, plantationers from south Gujarat growing tree crops are recommended to utilize pruned branches rather than stem of **Sharu** (*Casuarina equisetifolia* L.), **Bengali babul** (*Acacia auriculiformis* A. Cunn. ex Benth.), **Rosewood** *(Dalbergia latifolia* Roxb.*),* **Deshi Neem** (*Azadirachta indica* A. Juss.), **Biyo** *(Pterocarpus marsupium* Roxb.*)* and **Haldu** (*Haldina cordifolia* Roxb. Ridsdal) for fuelwood purpose as well as value added products like charcoal and briquettes, as branch wood recorded higher calorific values than stem wood.

	દક્ષિણ ગુજરાતના ખેડુતો, વનપાલકો તેમજ વૃક્ષોના વાવેતર કરતા વ્યક્તિઓને ભલામણ કરવામાં આવે છે કે શરૂ, બંગાળી બાવળ, સીસમ, કડવો લીમડો, બિયો અને હલ્દુ જેવા વૃક્ષો કે જેમની મુખ્ય થડ કરતા તેમની કાપેલ ડાળીઓ વધુ કેલેરી ધરાવતી હોવાથી બળતણ તરીકે તેમજ કોલસો અને બ્રિક્કેટસ જેવી મુલ્યવર્ધિત પેદાશો માટે કરી શકાય. **Approved** ***(Action:*** HoD, Dept. of FPU, CoF, NAU, Navsari**)**

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15.4.1.35	**Effects of different doses of N and K with split application through fertigation system on yield and quality of banana (*Musa paradisiaca* L.) cv. Grand Naine.**
	Banana growers of South Saurashtra are cultivating in paired row system (1.2 x 1.2 x 2.4 m) are advised to apply 150 g each at N & K_2O per plant (325 g urea + 250 g muriate of potash) through fertigation with 30 splits at 7 days interval along with 5 kg FYM as a basal and 90 g/plant phosphorus (560g single super phosphate) in three equal splits at 3rd, 4th and 5th months after planting for getting higher yield and net return. દક્ષિણ સૈરાષ્ટ્રના જોડીયા હાર પધ્ધતિથી (૧.૨ × ૧.૨ × ૨.૪ મી.) કેળાની ખેતી કરતા ખેડુતોને ભલામણ કરવામાં આવે છે કે કેળના પાકમાં નાઈટ્રોજન અને પોટાશ બંન્ને ૧૫૦ ગ્રામ પ્રતિ છોડ (યુરીયા ૩૨૫ ગ્રામ અને મ્યુરેટ ઓફ પોટાશ ૨૫૦ ગ્રામ પ્રતિ છોડ) ટપક સિંચાઈ પધ્ધતિ મારફતેં ૩૦ હપ્તામાં ૭ દીવસના અંતરે તેમજ રોપણી સમયે ૫ કિ.ગ્રા./ છોડ છાણિયું ખાતર અને ૯૦ ગ્રામ ફોસ્ફરસ (૫૬૦ ગ્રામ સિંગલ સુપર ફોસ્ફેટ) એક સરખા ત્રણ હપ્તામાં રોપણી બાદ ત્રીજા, ચોથા અને પાંચમાં મહિને આપવાથી વધુ ઉત્પાદન અને આવક મળે છે. **Approved** **(Action:** Professor and Head, Dept. of Horticulture, JAU, Junagadh)
15.4.1.36	**Effect of polyamines on quality and shelf life of mango (*Mangifera indica* L.) cv. Kesar.**
	Kesar mango traders are advised to dip freshly harvested mango fruit in Putrescine Dihydrochloride 175 mg/l for 5 minute for increasing shelf life and quality up to 12 days storage at room temperature. કેસર કેરીના વેપારીઓને ભલામણ કરવામાં આવે છે કે, તાજા ઉતારેલા કેરીના ફળોને પુટ્રેસીન ડાયહાઈડ્રોકલોરાઈડ ૧૭૫ મીલીગ્રામ પ્રતિ લીટરના દ્રાવણમાં ૫ મીનીટ સુધી બોળી રૂમ તાપમાને ૧૨ દિવસ સુધી સંગ્રહ કરી સારી ગુણવત્તાવાળા ફળો મેળવી શકાય છે. **Approved** **(Action:** Professor and Head, Dept. of Horticulture, JAU, Junagadh)
15.4.1.37	**Effect of boron and NAA on flowering, fruit set and yield of coconut cv. D x T.**
	Farmers of South Saurashtra having mature coconut (cv. D x T) plantation are advised to spray on palm inflorescence with sodium borate (20.50 B) 0.4 % (4g/ litre) at monthly intervals from January to June for getting higher nut yield and net return. દક્ષિણ સૌરાષ્ટ્રના નાળિયેરીનો પુખ્ત બગીચો (ડી × ટી) ધરાવતાં ખેડૂતોને ભલામણ કરવામાં આવે છે કે પુષ્પગુચ્છ ઉપર સોડિયમ બોરેટ (૨૦.૫૦ બી) ૦.૪% (૪ ગ્રામ/ લી.) નો છંટકાવ એક મહિનાના અંતરે જાન્યુઆરી થી જૂન સુધી કરવાથી વધારે ઉત્પાદન અને ચોખ્ખો નફો મળે છે. **Approved** **(Action:** Professor and Head, Dept. of Horticulture, JAU, Junagadh)

15.4.1.38	**Standardization of drying and packing method for ber cv. *Sukavani***
	Presented in Agriculture Engineering and AIT sub committee **(Action:** Professor and Head, Dept. of Horticulture, JAU, Junagadh)
15.4.1.39	**Preparation and storage studies of black jamun juice.**
	Presented in Agriculture Engineering and AIT sub committee **(Action:** Professor and Head, Dept. of Horticulture, JAU, Junagadh)
15.4.1.40	**Standardization of severity of pruning and crop load on yield and quality in pomegranate (*Punica granatum* L.) var. Bhagwa.**
	Farmers of south Saurashtra preferring *hast bahar* in pomegranate are advised to prune branches at 30 cm from top after 45 days of resting from withdrawal of monsoon and retain 50 fruits load per plant for getting higher yield and net return. **દક્ષિણ સૌરાષ્ટ્રનાં ખેડૂતોને ભલામણ કરવામાં આવે છે કે, દાડમમાં હસ્તબહાર પાકમાં વરસાદ પૂર્ણ થયાનાં ૪૫ દિવસ બાદ ડાળીની ટોચ પરથી ૩૦ સે.મી. સુધી છટણી કરવાથી અને છોડ દીઠ ૫૦ ફળ રાખવાથી વધુ ઉત્પાદન અને ચોખ્ખો નફો મળે છે.** **Approved** **(Action:** Professor and Head, Dept. of Horticulture, JAU, Junagadh)
15.4.1.41	**Effect of chemical fertilizer application in split on coconut cv. T x D (Mahuva).**
	Differed with following suggestion**:** Reanalyzed the data and present in next Agresco **(Action:** Research Scientist (Horti.), ARS (FC), JAU, Mahuva)
15.4.1.42	**Integrated nutrient management in gaillardia (*Gaillardia pulchella* Var. *Lorengiana*) cv. Yellow Double under saline water**
	The farmers of south Saurashtra growing gaillardia flower crop under saline irrigation condition up to 14 dSm^{-1} EC are advised to apply 50 % RDF of N: P_2O_5: K_2O as a 25:25:25 kg/ha + 50 % N from castor cake or neem cake (500 kg/ha) for obtaining higher yield and net realization. **દક્ષિણ સૌરાષ્ટ્રનાં ગાદલિયા ફૂલપાકની ખેતી કરતા ખેડૂતોને સલાહ આપવામાં આવે છે કે, ૧૪ ઈ.સી. સુધીના ખારા પાણીવાળા પિયત પરિસ્થિતીમાં ૫૦% ભલામણ કરેલ ખાતર એટલે કે ૨૫:૨૫:૨૫ કિગ્રા./ હેકટર નાઈટ્રોજનઃ ફોસ્ફરસઃ પોટાશ રાસાયણિક ખાતર સાથે ૫૦% નાઈટ્રોજન દિવેલીનો ખોળ અથવા લીમડાનો ખોળ (૫૦૦ કિ.ગ્રા.) ના રૂપમાં આપવાથી વધુ ઉત્પાદન અને વળતર મળે છે.** **Approved** **(Action:** Assistant Research Scientist, Fruit Research Station, JAU, Mangrol)

15.4.1.43	**Effect of different plant spacing on growth and yield of capsicum under open ventilated polyhouse**
	The farmers of middle Gujarat growing capsicum under naturally ventilated poly house are advised to transplant capsicum at 45 × 30 cm spacing in raised beds for getting higher yield and net return. The beds should be prepared 40 cm apart with 90 cm base width, 75 cm top width and 45 cm height. મધ્ય ગુજરાતમાં કુદરતી હવા ઉજાસવાળા પોલીહાઉસમાં કેપ્સિકમની ખેતી કરતા ખેડૂતોને સલાહ આપવામા આવે છે, કે છોડની ફેરરોપણી ૪૫ × ૩૦ સે.મી મુજબ ગાદી કયારામા કરવાથી વધુ ઉત્પાદન અને નફો મળે છે. ગાદી કયારા ૪૦ સે.મી અંતરે ૯૦ સે.મી પાયાની પહોળાઈ ૭૫ સે. મી. ઉપરની પહોળાઈ અને ૪૫ સે.મી ઊંચાઈના બનાવવા. **Approved** **[Action:** Professor and Head, Department of Horticulture, BACA, AAU, Anand**]**
15.4.1.44	**Effect of nitrogen and phosphorus on growth, flowering and yield of gladiolus (*Gladiolus grandiflorus* L.) cv. "American Beauty" under Middle Gujarat Agroclimatic conditions**
	The farmers of middle Gujarat growing gladiolus cv. "American beauty" are advised to apply 250 kg nitrogen /ha in three equal splits each at basal, 30 and 45 days after planting of corms along with 50 kg phosphorus/ha as basal for getting longer spike of gladiolus and net return. Moreover, 10 t FYM/ha as basal and 100 kg potash/ha apply in two equal splits each at basal and 45 days after planting of corms. મધ્ય ગુજરાતમાં ગ્લેડીઓસની અમેરીકન બ્યુટી જાતની ખેતી કરતા ખેડૂતોને સલાહ આપવામાં આવે છે કે ગ્લેડીઓસની વધુ લાંબી દાંડી અને નફો મેળવવા માટે ૨૫૦ કિ.ગ્રા નાઈટ્રોજન/હે. ને ત્રણ સરખા હપ્તામા ગાંઠની રોપણી સમયે પાયામાં, રોપણી બાદ ૩૦ અને ૪૫ દિવસે તથા ૫૦ કિ.ગ્રા ફોસ્ફરસ/હે. ગાંઠની રોપણી સમયે પાયામાં આપવુ. વધુમા, હેકટરે ૧૦ ટન છાણીયુ ખાતર પાયામાં અને ૧૦૦ કિ.ગ્રા/હે. પોટાશ બે સરખા હપ્તામા પાયામાં અને ગાંઠની રોપણી બાદ ૪૫ દિવસે આપવુ. **Approved** **[Action:** Principal, College of Horticulture, AAU, Anand**]**
15.4.1.45	**Performance of different varieties of potato under different spacing for middle Gujarat**
	The farmers of middle Gujarat growing potato are advised to grow Kufri Pukhraj variety at 45 x 20 cm spacing for getting higher yield and net realization. મધ્ય ગુજરાતના બટાટાની ખેતી કરતાં ખેડૂતોને વધુ ઉત્પાદન અને નફો મેળવવા માટે બટાટાની કુફરી પુખરાજ જાતની રોપણી ૪૫ x ૨૦ સેમી ના અંતરે કરવાની સલાહ આપવામાં આવે છે. **Approved** **[Action:** Research Scientist (Vegetable), Main Vegetable Research Station, AAU, Anand**]**

15.4.2 RECOMMENDATION FOR SCIENTIFIC COMMUNITY

SARDARKRUSHINAGAR DANTIWADA AGRICULTURAL UNIVERSITY, SKNAGAR

15.4.2.1	Establishment, survival and growth parameters of medicinal trees under rainfed conditions
	Tree scientists are informed that among different medicinal tree species, Baheda (*Terminelia bellirica)* has been found better with respect to establishment, survival, vegetative growth, carbon storage and carbon sequestration. Further the Baheda is beneficial for improving the soil fertility under rainfed conditions **Approved** **(Action:** Research Scientist, AFRS, Sardarkrushinagar)
15.4.2.2	Studies on litter fall production in olive (*Oleae europaea* L.) and neem (*Azadirachta indica*) under north Gujarat agro climatic zone
	Not approved. Conclude the experiment. (Action: Research Scientist, AFRS, Sardarkrushinagar)

NAVSARI AGRICULTURAL UNIVERSITY, NAVSARI

15.4.2.3	**Effect of environment on behaviors and structures of flowering, pollen and fruit set characters in mango** • Pollen viability was higher in 'Kesar' and 'Alphonso' mango, however, the flowers with germinated pollen in-vivo were very less (20-23%) in field conditions. Pollen germination at 35° C decreased by 3.87 and 5.00 % in Kesar and Alphonso, respectively; when compared with 20° C. • Correlation of weather data with different flowering and fruit-set parameters of 'Kesar' mango indicated that, the number of male flowers per panicle was positively correlated with minimum relative humidity, however, negatively correlated with sunshine hours. Ovule dimension was negatively correlated with minimum temperature and minimum relative humidity whereas positively correlated with sunshine hours. Fruit set at marble stage was negatively correlated with maximum temperature in 'Kesar' variety. • Correlation of weather data with different flowering and fruit-set parameters of 'Alphonso' mango indicated that, the length of panicle was negatively correlated with minimum temperature while width of panicle was negatively correlated with sunshine hours. Style dimension was negatively correlated with maximum temperature. Pollen viability was negatively correlated with minimum relative humidity. **Approved** ***(Action:*** Research Scientist. RHRS, NAU, Navsari***)***
15.4.2.4	**Standardization of protocol for mass multiplication of teak**
	Scientists are informed to surface sterilize the mature nodal buds of teak with mercuric chloride (0.1%) for 8 minutes followed by thorough washing and culturing in MS media supplemented with 1.5 mg/l 6-Benzylaminopurine (BAP) +0.5 mg/l Kinetin for shoot initiation and multiplication. Further, for rooting the micro shoots in ½ MS medium supplemented with 3.0 mg/l Indole-3-butyric acid (IBA) be used

	for micro-propagation of teak. Cocopeat + vermiculite (1:1 v/v) can be used as hardening medium for survival of tissue culture plantlets. **Approved** ***(Action:*** HoD, Dept. of FBT, CoF, NAU, Navsari***)***
15.4.2.5	**Influence of climate on the wood production and anatomical variations in teak trees**
	Teak growing in dry and moist deciduous forests varied in terms of wood production and its quality, which are influenced by radial growth, basic density and anatomical properties *viz.,* fibre length, cell wall thickness, vessel diameter and vessel density. Further, fibre length is positively influenced by rainfall, whereas cell wall thickness positively and vessel density negatively influenced by both rainfall and temperature. However, vessel diameter negatively influenced by temperature and positively influenced by rainfall. **Approved** ***(Action:*** HoD, Dept. of FPU, CoF, NAU, Navsari***)***

JUNAGADH AGRICULTURAL UNIVERSITY, JUNAGADH

- NIL -

ANAND AGRICULTURAL UNIVERSITY, ANAND

- NIL -

15.4.3 NEW TECHNICAL PROGRAMME

S. D. AGRICULTURAL UNIVERSITY, SKNAGAR

Sr. No.	Title/Centre	Suggestions
15.4.3.1	Effect of different growing medias on growth, yield and quality of cucumber under protected condition	Approved with following suggestions 1. Remove observation number 2 to 6 2. Add observation days to flower initiation and no. of flower per vine 3. Mention bag size 2 X 1 ft. 4. Record observation of nematode infestation in pest & disease (**Action:** Principal, COH, Jagudan)
15.4.3.2	Effect of date of sowing and planting distance on growth, yield and quality of Beet root (*Beta vulgaris* L.) under North Gujarat condition.	Approved with following suggestions 1. Mention plot size 2. Add one treatment of 3rd week of September 3. Maintain thinning (Plant distance)at 12-15 cm between plant to plant. (**Action:** Principal, COH, Jagudan)
15.4.3.3	Effect of different times and methods of grafting in Custard apple cv. Sindhan under North Gujarat condition	Approved with following suggestions 1. Add one treatment of 4th week of January 2. Record the graft survival percentage at 120 DAG. (**Action:** Principal, COH, Jagudan)

15.4.3.4	Effect of different times and severity of pruning on growth, yield and quality of Phalsa cv. Local	Approved with following suggestions 1. Recast the treatment of pruning severity as 80 cm, 100 cm & 120 cm 2. Recast the treatment of pruning time as two levels Single pruning (in last week of December) and double pruning (in last week of June and December) 3. Add in observation shelf life (**Action:** Principal, COH, Jagudan)
15.4.3.5	Effect of time of air layering and IBA concentration on the rooting behaviour of pomegranate (*Punica granatumL.*) cv. Bhagwa	Approved with following suggestions 1. Write treatment C0 as C1. 2. Record the survival percentage up to 120 days 3. Add observation on days taken to detachment of layering 4. Use FCRD designed instead of FRBD 5. Keep the 10 nos. of layers/ treatment (**Action:** Principal, COH, Jagudan)
15.4.3.6	Effect of pre-harvest fruit bagging materials on physico-chemical properties of Pomegranate (*Punica granatum*) cv. Bhagwa	Approved with following suggestions 1. Bagging time should be 40 and 60 instead of 20 and 60 2. Add observation of fruit drop 3. Delete M3 and M5 treatment 4. Write non woven bag in treatment instead of poly propylene bag (**Action:** Principal, COH, Jagudan)
15.4.3.7	Effect of integrated nutrient management on growth, yield and quality of papaya (*Carica papaya* L.)	Approved with following suggestions 1. Apply bio fertilizer 10ml/ plant instead of 1 ml/plant (**Action:** Principal, COH, Jagudan)
15.4.3.8	Effect of different spacing on growth, yield and quality of phalsa (*Grewia asiatica* L.)	Approved with following suggestions 1. Remove treatment T6 2. Mention plot size 12 X 12 m and no. of plants in per treatment. 3. Add observation of economics (**Action:** Prof. DOH, Sardarkrushinagar)
15.4.3.9	Effect of various concentration of IBA on cuttings of Guava (*Psidium guajava* L.) cv. L 49	Approved with following suggestions 1. Add observation of fresh and dry weight of root. 2. Remove observations of root length. 3. Mention the season of the experiment. 4. Mention detailed methodology of experiments and mention method as quick dip. 5. Add in title "under control condition" (**Action:** Prof. DOH, Sardarkrushinagar)
15.4.3.10	Effect of rooting media and IBA on rooting of cutting in	1. Not approved

	chrysanthemum under control condition	(**Action:** Prof. DOH, Sardarkrushinagar)
15.4.3.11	Standardization of propagation technique in date palm (*Phoenix dactylifera* L.) through offshoots	Approved as such (**Action:** Res. Sci., DPRS, Mundra)
15.4.3.12	Optimization of number of offshoot to be kept in date palm (*Phoenix dactylifera)* cv. ACE-100 (Sona)	Approved with following suggestions 1. Variety MDP/TC-29 (**Action:** Res. Sci., DPRS, Mundra)
15.4.3.13	Study on fruit drop pattern in date palm (*Phoenix dactylifera)* fruits	Approved with following suggestions 1. Fruit drop pattern, use notation as N1 and N2 instead of T1 and T2 in the formula (**Action:** Res. Sci., DPRS, Mundra)
15.4.3.14	Standardization of fresh dates' RTS	**Remarks:** Suggested to present in Dairy and Food Tech/ Dairy Science and FPT & Bio Engery sub committee. (**Action:** Res. Sci., DPRS, Mundra)
15.4.3.15	Effect of spacing and nitrogen fertilizer on growth, yield and quality of tuberose	Approved with following suggestions 1. Remove observation 2,3,4 and 15 2. Apply fertilizer in six splits at two months interval from June to April. (**Action:** Asstt. Res. Sci., FRS, Dehgam)
15.4.3.16	Effect of different planting distance and levels of nitrogen fertilizer on growth, flower production and quality of spider lily under North Gujarat Agro climatic conditions	Approved with following suggestions 1. Add one treatment of 200kgN/ha 2. Apply fertilizer in six splits at two month interval from June to April. 3. In observation write no. of buds per spike instead of florets (**Action:** Asstt. Res. Sci., FRS, Dehgam)
15.4.3.17	Effect of different organic substances on brinjal seedling production	Approved with following suggestions 1. Use CRD instead of RBD **(Action:** Sci., KVK, Deesa, SDAU)
15.4.3.18	Effect of different organic substances on tomato seedling production	Approved with following suggestions 1. Use CRD instead of RBD **(Action:** Sci., KVK, Deesa, SDAU)
15.4.3.19	Effect of different organic substances on chilli seedling production	Approved with following suggestions 1. Use CRD instead of RBD **(Action:** Sci., KVK, Deesa, SDAU)
15.4.3.20	Effect of micronutrient and organic liquid fertilizers on flowering, fruit yield and quality of pomegranate cv. Bhagwa	Approved with following suggestions 1. Write the word organic nutrient instead of organic fertilizer for novel organic liquid in title, objective & treatments. **(Action:** Sci., KVK, Tharad, SDAU)

15.4.3.21	Impact of different level of sulphur application on growth, yield and quality of onion cv. Agrifound Light Red for North Gujarat	Approved with following suggestions 1. Add observation bolting (%) and double bulb (%) 2. Record the observation of PLW instead of shelf life 3. Add observation of sprouting/ rotting (%) during storage 4. Add quality observation of sulphur content in bulb 5. Mention the source and method of sulphur application 6. Mention net plot size **(Action:** Scientist, KVK, Khedbrahma)
15.4.3.22	Effect of date of sowing and spacing in spine gourd	Approved with following suggestions 1. Write the following objectives i. To find out suitable date ii. To find out suitable spacing iii. To find out interaction if any 2. Use tissue culture plant 3. Write spine gourd instead of kankoda 4. Add observation on number of node at which female flower appears **(Action:** Asso. Res. Sci., Crop Improvement Station, SDAU, S. K. Nagar)
15.4.3.23	Evaluation of Carbon sequestration potential of different Multi purpose species	Approved with following suggestions 1. Write crown diameter instead of collar diameter 2. Biomass (kg/tree) instead of stem volume 3. Soil properties instead of soil health 4. Tree height instead of plant height **(Action:** Asso. Res. Sci., Agroforestry Research Station, SDAU, S. K. Nagar)
Navsari Agricultural University, Navsari		
15.4.3.24	Effect of rootstocks on growth and yield of mango cv. Kesar	Approved with following suggestions: 1. Add incompatibility observation 2. Add pest & disease observation if any **(Action:** Research Scientist, RHRS, NAU, Navsari)
15.4.3.25	Study the effect of seasonal variations on flowering phenology of sapota cv. Kalipatti	Approved as such **(Action:** Research Scientist, RHRS, NAU, Navsari*)*

15.4.3.26	Evaluation of growth, yield and quality of promising half-sib selections from Alphonso	Approved as such **(Action:** Research Scientist, AES, NAU, Paria)
15.4.3.27	Selection of plus trees for regular bearing character in mango var. Langra	Approved with following suggestions: 1. Survey work should be carried out in south Gujarat 2. Add word "Survey" before selection in title 3. Identify at least 10 to 15 plus trees **(Action:** Research Scientist, AES, NAU, Paria)
15.4.3.28	Canopy Management in mango cv. Kesar under high density planting system	Approved with following suggestions: 1. Pruning time should be after harvest 2. Yield should be in t/ha 3. Add pest & disease observation if any **(Action:** Research Scientist, AES, NAU, Paria)
15.4.3.29	Canopy Management in mango cv. Totapuri under high density planting system	Approved with following suggestions: 1. Pruning time should be after harvest 2. Yield should be in t/ha 3. Add pest & disease observation if any **(Action:** Research Scientist, AES, NAU, Paria)
15.4.3.30	Canopy Management in mango cv. Alphanso under high density planting system	Approved with following suggestions: 1. Pruning time should be after harvest 2. Yield should be in t/ha 3. Add pest & disease observation if any **(Action:** Research Scientist, AES, NAU, Paria)
15.4.3.31	Development of parthenocarpic cucumber hybrid (s)	Approved with following suggestions: 1. Present progress report in next Combined AGRESCO **(Action:** Professor, Veg.Sci., ACHF, NAU, Navsari)
15.4.3.32	Bottle gourd IET	**Remarks:** Suggested to present in Crop Improvement Sub-committee **(Action:** Professor, Veg.Sci., ACHF, NAU, Navsari)
15.4.3.33	Bottle gourd AVT-II	**Remarks:** Suggested to present in Crop Improvement Sub-committee **(Action:** Professor, Veg.Sci., ACHF, NAU, Navsari)
15.4.3.34	Pumpkin AVT-II	**Remarks:** Suggested to present in Crop Improvement Sub-committee **(Action:** Professor, Veg.Sci., ACHF, NAU, Navsari)

15.4.3.35	Sponge gourd AVT-II	**Remarks:** Suggested to present in Crop Improvement Sub-committee **(Action:** Professor, Veg.Sci., ACHF, NAU, Navsari)
15.4.3.36	Water melon Hybrid AVT-II	**Remarks:** Suggested to present in Crop Improvement Sub-committee **(Action:** Professor, Veg.Sci., ACHF, NAU, Navsari)
15.4.3.37	Effect of different bio-stimulants on growth, quality and yield of Dendrobium orchid under NVPH	Approved with following suggestions: 1. Write "Novel Organic Liquid Nutrient" instead of "NOVEL" **(Action:** Professor, FLA, ACHF, NAU, Navsari)
15.4.3.38	Standardization of nitrogen and potassium doses under fertigation in rose under naturally ventilated poly house	Approved with following suggestions: 1. Instead of observation on Nutrient content write NPK content 2. Write source of N & K 3. Remove 4th objective 4. Observation should be taken twice in a year (Initial & after 6 months) **(Action:** Professor, FLA, ACHF, NAU, Navsari)
15.4.3.39	Assessing compatibility of different scion to develop multi grafted adenium under soilless growing system	Approved as such **(Action:** Professor, FLA, ACHF, NAU, Navsari)
15.4.3.40	Evaluation of new crosses in Adenium for multipetalous forms	Approved as such **(Action:** Professor, FLA, ACHF, NAU, Navsari)
15.4.3.41	Evaluation of new crosses in Adenium for profuse flowering habit	Approved as such **(Action:** Professor, FLA, ACHF, NAU, Navsari)
15.4.3.42	Studies on phenophase based nutrient scheduling on flower yield and quality in China aster	Approved as such **(Action:** Professor, FLA, ACHF, NAU, Navsari)
15.4.3.43	Collection and evaluation of fillers (asparagus)	Approved as such **(Action:** Professor, FLA, ACHF, NAU, Navsari)
15.4.3.44	Collection and evaluation of fillers (dracaena)	Approved as such **(Action:** Professor, FLA, ACHF, NAU, Navsari)
15.4.3.45	Collection and evaluation of fillers (gypsophila)	Approved as such **(Action:** Professor, FLA, ACHF, NAU, Navsari)
15.4.3.46	Collection and evaluation of fillers (ferns)	Approved as such **(Action:** Professor, FLA, ACHF, NAU, Navsari)

15.4.3.47	The effect of UV light and preservative on quality of fresh-cut cauliflower (*Brassica oleracea* var. botrytis L.)	**Remarks:** Suggested to present in Dairy & Food Technology Sub-committee meeting **(Action:** Professor, PHT, ACHF, NAU, Navsari)
15.4.3.48	Studies on quality evaluation of processed Oyster mushroom (*Pleurotus sp.*) during storage	**Remarks:** Suggested to present in Dairy & Food Technology Sub-committee meeting **(Action:** Professor, PHT, ACHF, NAU, Navsari)
15.4.3.49	Effect of different bamboo species leaf leachate on germination and seedling growth of some vegetable crops	Approved with following suggestion/s 1. Use 'seedling vigour' in place of 'seed vigour' 2. Use plug tray (root trainer) of 40 plugs instead of pots 3. Add 'leachate analysis' in the observation 4. Modify title by adding 'tomato and brinjal' in place of 'some vegetable crops' **(Action:** HoD (SAF), CoF, NAU)
15.4.3.50	Evaluation of nutritive value of leaves of different bamboo species	Approved with following suggestion/s 1. Add 'for fodder purpose' in the end of title **(Action:** HoD (SAF), CoF, NAU)
15.4.3.51	Nutritional evaluation of edible shoots of different bamboo species	Approved as such **(Action:** HoD (SAF), CoF, NAU)
15.4.3.52	Phenological study of lesser known and threatened tree species of South Gujarat	Approved as such **(Action:** HoD (SAF), CoF, NAU)
15.4.3.53	Development of volumetric equation for Eucalyptus (*Eucalyptus* spp.)	Approved as such **(Action:** HoD (SAF), CoF, NAU)
15.4.3.54	Development of local volume table for Saru (*Casuarina equisetifolia* L.)	Approved as such **(Action:** HoD (SAF), CoF, NAU)
15.4.3.55	Growth performance of *Melia dubia* Cav. families in South Gujarat	Approved with following suggestion/s 1. Use 'selections' in the place of 'families' in the title **(Action:** HoD (SAF), CoF, NAU)
15.4.3.56	Effect of different pre-sowing treatments on germination of Red Sanders (*Pterocarpus santalinus* L.f.)	Approved as such **(Action:** HoD (SAF), CoF, NAU)
15.4.3.57	Collection and evaluation of *Casuarina* germplasm for growth and biomass	**Approved as such** **(Action:** HoD (SAF), CoF, NAU)
15.4.3.58	Evaluation of selected plus trees of Teak for drupe traits, germination and early seedling growth from Gujarat	Approved with following suggestion/s 1. Repeat experiment two times **(Action:** HoD (FBT), CoF, NAU)
15.4.3.59	Candidate Plus Tree selection for Behda (*Terminalia bellerica* (Gaertn.) Roxb.) from Gujarat	Approved with following suggestion/s 1. Repeat experiment two times **(Action:** HoD (FBT), CoF, NAU)

15.4.3.60	Within population variation for tree growth and seed oil content of Mahua (*Madhuca longifolia* var. *latifolia* (Roxb.) A. Chev.) in south Gujarat.	Approved as such **(Action:** HoD (FPU), CoF, NAU)
15.4.3.61	Impact of short term water logging on *Ailanthus* species	Approved with following suggestion/s 1. Use 'FCRD' instead of CRD **(Action:** HoD (NRM), CoF, NAU)
15.4.3.62	Impact of tree densities on growth and yield of Ardu (*Ailanthus excelsa* Roxb.)	Approved with following suggestion/s 1. Increase replication level '5' instead of '4' **(Action:** HoD (NRM), CoF, NAU)
15.4.3.63	Tree selection, evaluation and clonal propagation of Ardu (*Ailanthus excelsa* Roxb.) germpalsm	Approved as such **(Action:** HoD (NRM), CoF, NAU)
15.4.3.64	Assessment of different water salinity levels on *Albizia procera* Roxb.	Approved with following suggestion/s 1. Repeat same experiment on *Albizia lebbeck* 2. Record salinity dSm^{-1} for best available water 3. Use 'uprooting' term instead of 'harvesting' in observation **(Action:** HoD (NRM), CoF, NAU)
15.4.3.65	Air pollution tolerance index (APTI) of selected trees species of Navsari	Approved with following suggestion/s 1. Add *Kigelia pinnata* 2. Record observation during 4 to 6 PM 3. Use FCRD instead of CRD **(Action:** HoD (NRM), CoF, NAU)
JUNAGADH AGRICULTURAL UNIVERSITY, JUNAGADH		
15.4.3.66	Effect of integrated nutrient management on growth, yield and quality in rejuvenated guava (*Pisidium guajava*) cv. Bhavnagar Red	Approved with following suggestions 1. Add following observations (i) Length of shoot (cm) (ii) Ascorbic acid (mg/100g) (iii) Fruit fly damage (%) (iv) Soil analysis pH, EC, NPK 2. Change dose of azospirillium as 50 & 100 ml/plant in treatment 3. Add time of application as 4 splits at 2 months interval starting from June **(Action:** Professor and Head, Dept. of Horticulture, JAU, Junagadh)
15.4.3.67	Effect of pinching time on flowering and yield behaviour of Kesar mango under Saurashtra region	Approved with following suggestions 1. Remove observation number 2,4,6 & 8 2. Write 3rd week instead of 1st week in treatment **(Action:** Professor and Head Dept. of

		Horticulture, JAU,Junagadh)
15.4.3.68	Integrated nutrient management in pomegranate (*Punica granatum* L.) cv. Bhagwa	Approved with following suggestions 1.Use organic manure on basis of nutrient analysis 2. Add soil EC, pH in observation 3.Add TSS, Acidity, Sugars and Organoleptic taste in the observations. **(Action:** Professor and Head, Dept. of Horticulture, JAU, Junagadh)
15.4.3.69	Effect of bio stimulants and bio fertilizers on flowering, fruiting, yield and quality of pomegranate (*Punica granatum* L.) cv. Bhagwa	Approved with following suggestions 1. Add pest and disease observations if any. 2. Remove flowering parameters from observation **(Action:** Professor and Head, Dept. of Horticulture, JAU, Junagadh)
15.4.3.70	Effect of pinching methods on different varieties of carnation under protected condition	Approved with following suggestions 1. Approved conditionally with respect to private sector varieties **(Action:** Professor and Head, Dept. of Horticulture, JAU, Junagadh)
15.4.3.71	Integrated pest management in papaya with special reference to viral diseases	**Remarks:** Suggested to present in plant protection group **(Action:** Professor and Head, Dept. of Horticulture, JAU, Junagadh)
15.4.3.72	Effect of pre-sowing treatment on seedling growth of coconut (*Cocous nucifera* L.) T x D hybrid	Approved as such **(Action:** Assistant Research Scientist, FRS, JAU, Mangrol)
Anand Agricultural University, Anand		
15.4.3.73	Effect of transplanting time and spacing on growth and yield of summer African marigold (*Tagets erecta* L.) cv. Punjab Genda 1.	Approved with following suggestions: 1. Change Observation no. 10 as flowering duration (Days) **(Action:** Professor & Head, Dept of Horticulture, BACA, Anand)
15.4.3.74	Standardization of suitable time of softwood grafting in guava cv. Allahabad Safeda	Approved with following suggestions: 1. In all treatments period of grafting take first week instead of third week and add first week of April. 2. Add observation : Record weather parameters-Temperature and Humidity **(Action:** Professor & Head, Dept of Horticulture, BACA, Anand)
15.4.3.75	Effect of spacing and nitrogen on growth, flowering, yield and shelf	Approved with following suggestions: 1. Change title Desi rose instead of Kasmiri

	life of Kashmiri *desi* rose (*Rosa chinensis*).	2. Mention gross and net plot size **(Action:** Principal, College of Horticulture, Anand)
15.4.3.76	Effect of different thickness and levels of IBA on hard wood cutting for multiplication of drumstick	Approved as such **(Action:** Principal, Polytechnic in Horticulture, AAU, Vadodara)
15.4.3.77	Integrated Nutrient management in chilli (*Capsicum annum L.*)	Approved with following suggestions: Approved as such **(Action:** Principal, College of Agriculture, AAU, Jabugam)
15.4.3.78	Effect of planting time and bunch management on yield and economics of banana	Approved as such **(Action:** Principal, College of Agriculture, AAU, Jabugam)
15.4.3.79	Feasibilities of use of Reverse Osmosis (RO) waste water in fruit nursery	Approved with following suggestions: 1. Recast title as "Feasibilities of use of Reverse Osmosis (RO) waste water in custard apple" **(Action:** Professor & Head, Dept of Soil Sci. & Agril. Chem.,BACA, Anand)
15.4.3.80	Feasibility of use of Reverse Osmosis (RO) waste water in Horticulture	Approved with following suggestions: 1. Recast title as "Feasibility of use of Reverse Osmosis (RO) waste water in gaillardia" 2. Record following observations Plant Height at harvest (cm) i. No. of branches per plant ii. Plant spread (cm) NS- EW iii. Days taken to opening of first flower iv. Diameter of flower (cm) v. Average weight of flower (g) vi. Survival percentage of Gaillardia vii. Soil status Initial and at 90 DAS (EC, pH, OC, Av. P, K, Na, S, Ca, Mg &Cl) viii. 9. Water analysis (EC. pH, SAR, RSC) (**Action:** Professor & Head, Dept of Soil Sci. & Agril. Chem., BACA, Anand)

15.5 DAIRY & FOOD TECHNOLOGY / DAIRY SCIENCE, FPT&BE

Chairman	**:**	Dr. J. B. Prajapati, Principal & Dean, SMC College of Dairy Science, AAU, Anand
Co- Chairman	**:**	Dr. R. F. Sutar, Principal & Dean, College of FPT & BE, AAU, Anand
		Dr. D.C. Joshi, Emeritus Scientist & Ret. Dean, AAU, Anand
Rapporteurs	**:**	Dr. A. H. Jana, AAU, Anand
		Dr. A. K. Sharma, AAU, Anand
		Dr. B. G. Patel, SDAU, SKNagar
		Dr. R. V. Prasad, AAU, Anand
		Dr. B. M. Mehta, AAU, Anand
		Dr. Tanmay Hazra, Kamdhenu University, Gandhinagar

SUMMARY FOR 15th MEETING OF COMBINED AGRESCO

University	**Number of Recommendations**				**Number of New Technical Programmes**	
	For Farming Community/ Entrepreneurs		**For Scientific Community**			
	Proposed	Approved	Proposed	Approved	Proposed	Approved
SDAU	**2**	**2**	**1**	**1**	**3**	**3**
NAU	**7**	**5**	**0**	**0**	**2**	**2**
AAU	**19**	**19**	**4**	**4**	**20**	**20**
KU	**0**	**0**	**1**	**1**	**4**	**4**
Other Sub Committee	**0**	**0**	**0**	**0**	**1**	**1**
Total	**28**	**26**	**6**	**6**	**30**	**30**

15.5.1 RECOMMENDATION FOR FARMING COMMUNITY/ ENTREPRENEURS

SARDARKRUSHINAGAR DANTIWADA AGRICULTURAL UNIVERSITY, SKNAGAR

15.5.1.1	**Development and evaluation of cookies made from whole wheat flour enriched with soya flour and rice bran**
	Recommendation for industry and entrepreneurs A technology has been developed for bakery industry and food entrepreneurs, by Sardarkrushinagar Dantiwada Agricultural University, S.K. Nagar for preparation of Biscuit and Nankhatai. It involves use of flour mixture comprising of whole wheat flour (75 per cent), soybean flour (15 per cent) and rice bran flour (10 per cent). The biscuit and Nankhatai prepared using the standardized protocol had higher protein, crude fiber, calcium and iron as compared to conventionally prepared products. **ભલામણ:** બેકરી ઉદ્યોગકારો અને ઉદ્યોગ સાહસિકો માટે સરદારકૃષિનગર દાંતીવાડા કૃષિ યુનિવર્સિટી ધ્વારા વિકસાવાયેલ ઘંઉના લોટ (૭૫ ટકા)ની સાથે સોયાબિનનો લોટ (૧૫ ટકા) અને રાઈસબ્રાનનો લોટ (૧૦ ટકા) ભેળવી બિસ્કિટ તથા નાનખટાઈ બનાવવાની તકનીકનો ઉપયોગ કરવાની ભલામણ છે.આ રીતે બનાવવામાં આવેલ બિસ્કીટ તેમજ નાનખટાઈમાં પરંપરાગત રીતે બનાવેલ બિસ્કીટ તેમજ નાનખટાઈ કરતા પ્રોટીન, રેચક પદાર્થ, કેલ્શીયમ અને લોહતત્વનું પ્રમાણ વધારે માત્રામાં હોય છે.
	Approved
	Action:PI & HOD Food & Nutrition, College of Home Science, SDAU, SKNagar
15.5.1.2	**Development of value added nutritious biscuits by incorporation of *Macerated Ber Fruit***
	Recommendation for industry and entrepreneurs A technology suitable for bakery industry and food entrepreneurs has been developed by Sardarkrushinagar Dantiwada Agricultural University, S.K. Nagar for manufacture of nutritious biscuit by replacing part (20.0 per cent) of refined wheat flour with Macerated Ber Fruit (Umran variety), along with 45.0 per cent vegetable ghee, 30.0 per cent sugar, 5.0 per cent milk powder, 5.0 per cent corn flour and 1.0 per cent baking powder (bakers percentage). These raw materials were bended by creaming method and baked at 165°C for 15 min. The biscuit so produced had higher crude fiber, calcium and iron as compared to conventionally prepared biscuit. Such nutritious biscuits packed in polyethylene pouches had a shelf life of 3 months when stored at ambient (37°C) temperature. **ભલામણ:** સરદારકૃષિનગર દાંતીવાડા કૃષિ યુનિવર્સિટી ધ્વારા બોરના (ઉમરાન વેરાઈટી) માવાનો ઉપયોગ કરી પૌષ્ટિક બિસ્કીટ બનાવવાની ટેકનોલોજી વિકસાવવામાં આવેલ છે. જેમાં મેંદાને બદલે ૨૦.૦ ટકા બોરનો માવો, ૪૫.૦ટકા વેજીટેબલ ઘી, ૩૦.૦ ટકા ખાંડ, ૫.૦ ટકા મિલ્ક પાઉડર, ૫.૦ ટકા કોર્ન ફલોર અને ૧.૦ટકા બેકિંગ પાઉડર(બેકર્સ પર્સન્ટેજ)ને ક્રીમીંગ પધ્ધતિથી મિશ્ર કરી 165°સે.તાપમાને ૧૫ મિનિટ સુધી બેકિંગ કરવામાં આવે છે. આ બિસ્કિટમાં રેચક પદાર્થ, કેલ્શીયમ અને લોહતત્વનું પ્રમાણ સામાન્ય બિસ્કિટ કરતાં વધુ હોય છે. આ બિસ્કિટ પોલીથીલીન પાઉચમાં રૂમ તાપમાને (૩૭°સે.) ૩ મહિના સુધી સંગ્રહી શકાય છે.
	Approved
	Suggestion: Suggestion for minor text changes has been duly incorporated **Action:**PI & HOD Food & Nutrition, College of Home Science, SDAU, SKNagar

<table>
<tr><td>15.5.1.3</td><td>Standardization of technology for removal of the bitter compound ‘aloin’ from the Aloe vera juice</td></tr>
<tr><td></td><td>Recommendation for industry and entrepreneurs
The food processors interested in preparing Aloe vera juice with reduced aloin content are recommended to use the protocol standardized at Navsari Agricultural University, Navsari. The Aloe vera juice can be prepared by giving pre-treatment to Aloe vera gel obtained by peeling the skin with water soaked soybean @ 1.5 per cent for 6 hrs followed by juice extraction and heat processing of the bottled juice at 96±1°C for 30 min. Such treated Aloe vera juice led to significant reduction (69.7 per cent) in aloin content; the juice recovery being 52.94 per cent.
ભલામણ:
કુવારપાઠાના રસમાં અલોઈન તત્વ ઓછુ કરવા ઈચ્છતા પ્રસંસ્કરણ ઉદ્યોગકારોને નવસારી કૃષિ યુનિવર્સિટી, નવસારી દ્વારા વિકસાવેલ પધ્ધતિનો ઉપયોગ કરવા ભલામણ કરવામાં આવે છે. આ ટેક્નોલોજીમાં ૧.૫ ટકા સોયાબીનની લુગદીમાં છાલ કાઢેલ અલોવેરા જેલને છ કલાક સુધી રાખી, તેનો રસ કાઢીને, બોટલમાં ભરીને(૩૦ મિનીટ સુધી ૯૬±૧ °સે.ગરમ કરવામાં આવે છે. ત્યારબાદ તરત જ તેને ઠંડુ કરવામાં આવે છે. આ પધ્ધતિથી બનાવેલ કુવારપાઠાના રસમાં એલોઈનની માત્રામાં ૬૯.૭ ટકા સુધીનો ઘટાડો જોવા મળે છે.જયારે જ્યુસની માત્રા ૫૨.૯૪ ટકા મળે છે.</td></tr>
<tr><td></td><td>Approved</td></tr>
<tr><td></td><td>Suggestions:
1. The word ‘pasteurization’ is to be replaced with ‘in-bottle heat treatment’
2. The reduction in the sensory bitterness is not required to be mentioned in recommendation.
3. Instead of carrying out three replications in three successive years the experiment could have been performed in few months in the same year.
4. Data of TPC should be deleted as it is misleading.
5. Instead of ‘economics’ use the word ‘cost’.
6. Suggestion for minor text changes has been duly incorporated.
Action: PI & HOD, PHT, ACHF, NAU, Navsari</td></tr>
<tr><td>15.5.1.4</td><td>Standardization of technology for preparation of Aloe vera juice</td></tr>
<tr><td></td><td>Recommendation for industry and entrepreneurs
The fruit juice processors interested in preparing sweetened Aloe vera juice are recommended to use the protocol standardized at Navsari Agricultural University, Navsari. The protocol involves adjusting the TSS of unsweetened Aloe vera juice to 12°Brix and 0.25 per cent acidity by use of sugar and citric acid respectively, followed by in-bottle heat treatment (96±1°C for 30 min) and cooling to ambient temperature. Such sweetened Aloe vera juice had shelf life of 6 months at ambient (37°C) temperature.
ભલામણ:
કુવારપાઠાનું ગળ્યું જ્યુસ બનાવવા ઈચ્છતા પ્રસંસ્કરણ ઉદ્યોગકારોને નવસારી કૃષિ યુનિવર્સિટી, નવસારી દ્વારા વિકસાવેલ પધ્ધતિનો ઉપયોગ કરવા ભલામણ કરવામાં આવે છે. આ પધ્ધતિમાં કુવારપાઠાનો રસમાં ૧૨બ્રિકસ ટી.એસ.એસ. અને ૦.૨૫ ટકા</td></tr>
</table>

	એસીડીટી જાળવ્યા બાદ ૯૬±૧સે. ઉષ્ણતાપમાને ૩૦ મિનીટ માટે નીર્જીવીકરણ કરવાથી સ્વીકાર્ય ગુણવતાના માપદંડ ૬ માસ સુધી સામાન્ય તાપમાને(૩૭°સે.) જાળવી શકાય છે.
	Approved
	Suggestions: 1. The word ‘pasteurization’ is to be replaced with ‘in-bottle heat treatment’ 2. Instead of carrying out three replications in three successive years the experiment could have been performed in few months in the same year. 3. Data of TPC should be deleted as it is misleading. 4. Instead of ‘economics’ use the word ‘cost’. 5. Suggestion for minor text changes has been duly incorporated. **Action:** PI & HOD, PHT, ACHF, NAU, Navsari
15.5.1.5	**Standardization of formulation for processing of Watermelon (*Citrullus lanatus*) juice**
	Recommendation for industry and entrepreneurs The fruit juice processors interested in preparing watermelon juice are recommended to use the protocol standardized at Navsari Agricultural University, Navsari. The standardized protocol involves adjusting the TSS and acidity of extracted watermelon juice to 10°Brix and 0.30 per cent acidity through use of sugar and citric acid, respectively. Further, it requires use of 1.0 per cent pectin and 100 ppm of sodium benzoate as food additives before packing the juice in glass bottle and subjecting it to thermal treatment (96±1°C for 5 min.) followed by cooling to ambient temperature. The packaged and heat treated watermelon juice had shelf life of 6 months at ambient temperature (37°C). **ભલામણ:** તરબૂચ ના જ્યુસ બનાવવા ઇચ્છતા ઉદ્યોગકારોને નવસારી કૃષિ યુનિવર્સિટી, નવસારી દ્વારા વિકસાવેલ પધ્ધતિનો ઉપયોગ કરવા ભલામણ કરવામાં આવે છે. તરબુચનું જ્યુસ બનાવવા માટે તરબુચના રસનું ટી.એસ.એસ. ૧૦ બ્રિકસ એસીડીટી, ૦ પેક્તીન,ટકા ૩૦. ૧ટકા ૦. અને સોડીયમ બેન્ઝોએટ ૧૦૦ પી.પી.એમ. જાળવી રાખ્યા બાદ ગ્લાસ બોટલમાં ભરી ૯૬±૧°સે. ઉષ્ણતાપમાને ૫ મિનીટ માટે નીર્જીવીકરણ કરવાથી સ્વીકાર્ય ગુણવતાના માપદંડ ૬ માસ સુધી સામાન્ય તાપમાને (૩૭°સે.) જાળવી શકાય છે.
	Approved
	Suggestions: 1. The word ‘pasteurization’ is to be replaced with ‘in-bottle heat treatment’ 2. Instead of carrying out three replications in three successive years the experiment could have been performed in few months in the same year. 3. Data of TPC should be deleted as it is misleading. 4. Instead of ‘economics’ use the word ‘cost’. 5. Suggestion for minor text changes has been duly incorporated. **Action:** PI & HOD, PHT, ACHF, NAU, Navsari

15.5.1.6 Standardization of formulation for processing of Watermelon (*Citrulluslanatus*) nectar

Recommendation for industry and entrepreneurs

The fruit juice processors interested in preparing watermelon nectar are recommended to use the protocol standardized at Navsari Agricultural University, Navsari. The standardized protocol involves use of 25.0 per cent of watermelon juice and adjusting its TSS and acidity to 16°Brix and 0.30 per cent acidity by use of sugar and citric acid, respectively. Further, it require to use of 1.0 per cent pectin and 100 ppm of sodium benzoate before packaging in glass bottle and subjecting it to thermal treatment (96±1°C for 5 min) followed by cooling to ambient temperature. The packaged and heat treated watermelon nectar had shelf life of 6 months at ambient temperature (37°C).

ભલામણ:

તરબૂચના નેકટર બનાવવા ઇચ્છતા ઉદ્યોગકારોને નવસારી કૃષિ યુનિવર્સિટી, નવસારી દ્વારા વિકસાવેલ પધ્ધતિનો ઉપયોગ કરવા માટેની ભલામણ કરવામાં આવે છે.તરબુચનું નેકટર બનાવવા માટે ૨૫ ટકા તરબુચના રસમાં ખાંડ અને સાઈટ્રીક એસીડ ઉમેરીતેનું ટી.એસ.એસ. ૧૬°બ્રિકસ અને ૦.૩ ટકા એસીડીટી જાળવી રાખ્યા બાદ તેમાં ૧ ટકા પેક્ટીન અને ૧૦૦ પી.પી.એમ.સોડીયમ બેન્ઝોએટ ઉમેરીને તેને કાચની બોટલમાં ભરી ૯૬±૧°સે. ઉષ્ણતાપમાને ૫ મિનીટ માટે નીર્જીવીકરણ કરવાથી સ્વીકાર્ય ગુણવતાના માપદંડ ૬ માસ સુધી સામાન્ય તાપમાને (૩૭°સે.) જાળવી શકાય છે.

Approved

Suggestions:

1. The word ‘pasteurization’ is to be replaced with ‘in-bottle heat treatment’
2. Instead of carrying out three replications in three successive years the experiment could have been performed in few months in the same year.
3. Data of TPC should be deleted as it is misleading.
4. Instead of ‘economics’ use the word ‘cost’.
5. Suggestion for minor text changes has been duly incorporated.

Action: PI & HOD, PHT, ACHF, NAU, Navsari

15.5.1.7 Standardization of process for the preparation of Watermelon (*Citrulluslanatus*) albedo candy

Recommendation for industry and entrepreneurs

The food processors interested in preparing fruit by-product candies are recommended to use the protocol standardized at Navsari Agricultural University, Navsari. The standardized protocol involves mixing of equal parts of sugar and watermelon albedo cubes, to which 0.2 per cent of citric acid and 1500 ppm of potassium metabisulphite is added. Subsequent steps involve raising the TSS of sugar syrup containing watermelon albedo cubes to 70°Brix gradually in 72 hrs followed by washing away adhering sugar syrup and then drying in cabinet dryer (60°C, final moisture ~17.0 per cent). The watermelon albedo candy packed in polypropylene bags (400 gauge) and stored under ambient (37°C) conditions had shelf life of 6 months.

ભલામણ:

ફળના ઉપ-પેદાશોમાંથી બનતી કેન્ડી બનાવવા ઇચ્છતા ઉદ્યોગકારોને નવસારી કૃષિ યુનિવર્સિટી, નવસારી દ્વારા વિકસાવેલ પધ્ધતિનો ઉપયોગ કરવા માટે ભલામણ

	કરવામાં આવે છે.આ ભલામણ મુજબ તરબુચની છાલની ગરમાંથી કેન્ડી બનાવવા માટે પ્રતિ ૧૦૦૦ ગ્રામ છાલની ગરના ટુકડામાં ૧૦૦૦ ગ્રામ ખાંડ, ૦.૨ ટકાસાઈટ્રીક એસીડ અને ૧૫૦૦ પી.પી.એમ. પોટેશિયમ મેટાબાય સલ્ફાઈટ ઉમેરવું. ત્યારબાદ તરબુચની છાલની ગરના ટુકડામાં ચાસણીનું **TSS** ૭૦ °બ્રિકસ થાય ત્યાં સુધી (૭૨ કલાક) મૂકી રાખવું. ત્યારબાદ કેન્ડીને ધોઈને, ૬૦°સે. તાપમાને ૧૭ ટકા ભેજ રહે ત્યાં સુધી સુકવીને ૪૦૦ ગેજની પોલીથીન બેગમાં પેક કરવાથી ૬ માસ સુધી સામાન્ય તાપમાને (૩૭°સે.) જાળવી શકાય છે.
	Approved
	Suggestions: 1. Instead of carrying out six replications in two successive years the experiment could have been performed in few months in the same year. 2. Data of TPC should be deleted as it is misleading. 3. Mention the method and quantity of sugar added to watermelon albedo cubes in how much period (days) to achieve 70°Brix in candy. 4. The interval of storage study should be 15 days/ 1 month duration. 5. The candy product should be analyzed for ‘total solids (TS)’ instead of ‘TSS (°Brix)’ 6. Instead of ‘economics’ use the word ‘cost’. 7. It should be kept in mind that FSSAI does not permit use of KMS preservative in candied or glazed fruit products. 8. Suggestion for minor text changes has been duly incorporated. **Action:** PI & HOD, PHT, ACHF, NAU, Navsari
15.5.1.8	**Development of UV light assisted method for preservation of mango noni nectar**
	Recommendation for industry and entrepreneurs Processors are recommended to prepare mango-noni nectar by blending mango and noni juice at 15:5 ratio by maintaining 20 per cent blended juice, 15°Brix TSS, 0.30 per cent acidity and adding 75 ppm potassium metabisulphite in hot (96°C) nectar followed by packing in glass bottle to treat with UV light up to 30 min for getting acceptable quality attributes up to six months
	Not Approved
	Suggestions: The lacunae were the large distance kept between the UV lamp and the bottled fruit juice nectar, that too in a laminar air flow unit, which is not expected to have any marked effect. The microbial results shown are not reliable, yeast and mould count and Coliform count should have been analyzed. The count should be expressed in log form. The untreated product had no microbial count, which is not possible. The analysis could have been done at shorter interval of time. **Action:** PI & HOD, PHT, ACHF, NAU, Navsari

<table>
<tr><td>15.5.1.9</td><td>Preparation and standardized technique of guava (Psidium guajava L.) and papaya (Carica papaya L.) blended RTS</td></tr>
<tr><td></td><td>Recommendation for industry and entrepreneurs
Processor are recommended to blend guava and papaya pulp at ratio of 75:25 for preparation of guava- papaya blended RTS by using 15.0 per cent blended pulp, maintaining 0.3 per cent acidity, 15°Brix TSS, thermal processing at 96±1°C followed by packing in glass bottle and reprocessing at 96±1°C temperature for 30 min for getting desired sensory quality up to 180 days storage.</td></tr>
<tr><td></td><td>Not Approved</td></tr>
<tr><td></td><td>Suggestions:
The recommendation for industry and entrepreneurs can be brought next year with the following suggested work:
1. The lacunae were the TSS % of the two fruit juices (guava, papaya) and TSS % of the juice blends (25:75, 50:50, 75:25) have not been reported.
2. The microbial results should include yeast and mold count and coliform count; the TPC counts was not analyzed properly. TPC count should be analyzed using the product directly and express the count in log form.
3. It is well known that β-carotene content reduces significantly within few days of ambient temperature storage. The β-carotene content of stored blended RTS beverage shown is doubtful (the content remained similar till 6 months of storage).
4. The interval of storage study should be 1 month duration.
5. The experiment should be conducted for one more year considering the above suggestions.
Action: PI & HOD, PHT, ACHF, NAU, Navsari</td></tr>
</table>

ANAND AGRICULTURAL UNIVERSITY, ANAND

<table>
<tr><td>15.5.1.10</td><td>Technology development for Moraiyo (Panicum miliare) Kheer</td></tr>
<tr><td></td><td>Recommendation for Industry:
A technology developed by Anand Agricultural University, Anand for manufacture of moraiyo kheer involves use of standardized milk (4.5 per cent fat, 8.5 per cent SNF), addition of 3.0 per cent of moraiyo and 6.0 per cent of sugar (w/w of milk), concentrating the milk 2 times and adding 0.05 per cent cardamom powder (w/w of kheer). This method is recommended for dairy/food industry and entrepreneurs. The moraiyo kheer has a shelf-life of 8 days when packed in pre-sterilized polypropylene cups and stored at 7±1°C.
ભલામણ
ડેરી/ફૂડઉદ્યોગ અને ઉદ્યોગસાહસિકોને આણંદ કૃષિ યુનિવર્સિટી, આણંદ દ્વારા વિકસાવેલ મોરૈયાની ખીર બનાવવાની પધ્ધતિની ભલામણ કરવામાં આવે છે. જેમાં સ્ટાન્ડર્ડાઇઝ્ડ દૂધ (૪.૫ ટકા ફેટ અને ૮.૫ ટકા એસએનએફ) માં 3 ટકા મોરૈયો અને ૬ ટકા ખાંડ ઉમેરી તેને બે ઘણું ઘટ્ટ કરી તેમાં 0.0૫ ટકા એલચી પાવડર ઉમેરવામાં આવે છે. મોરૈયાની ખીરને ફ્રીજના તાપમાને (૭±૧°સે.) ૮ દિવસ સુધી પોલીપ્રોપીલીન કપમાં સાચવી શકાય છે.</td></tr>
<tr><td></td><td>Approved</td></tr>
<tr><td></td><td>Suggestions: Nil
Action:PI & HOD, DT, DSC,AAU, Anand</td></tr>
</table>

15.5.1.11	**Technology for manufacture of carrot rabri**
	Recommendation for Industry and Entrepreneurs: A technology developed by Anand Agricultural University, Anand for manufacture of carrot rabri using full cream milk (6.0 per cent fat, 9.0 per cent SNF) added with 8.0 per cent carrot shreds, 7.5 per cent sugar and 0.1 per cent sodium alginate (w/w of milk) and concentrating milk 2 times is recommended for dairy/food industry and entrepreneurs. Carrot rabri prepared using this method contains 0.34 per cent crude fiber and 1.0 mg β-carotene/100g product. The carrot rabri had a shelf-life of 10 days when stored in polypropylene cups at 7±1°C. **ભલામણ:** ફૂડઉદ્યોગ અને ઉદ્યોગસાહસિકોને આણંદ કૃષિ યુનિવર્સિટી, આણંદ દ્વારા ગાજર રબડી બનાવવાની વિકસાવેલ પધ્ધતિનો ઉપયોગ કરવાની ભલામણ કરવામાં આવે છે. જેમા ફુલ ક્રીમ દૂધ (૬.0 ટકા ફેટ અને ૯.0 ટકા એસએનએફ) માં ૮.૦ ટકા ગાજરની છીણ, ૭.૫ ટકા ખાંડ અને ૦.૧ ટકા સોડીયમ આલ્જીનેટ ઉમેરી તેને બે ગણું ઘટ્ટ કરી તૈયાર કરવામાં આવે છે. આ ગાજર રબડીમાં ૦.૩૪ ટકા રેસા તથા ૧.૦ મિગ્રા પ્રતિ ૧૦૦ ગ્રામ β- કેરોટીન હોય છે, તથા તેની ફ્રીજમાં (૭±૧°સે) પોલી પ્રોપીલીનના કપમાં ૧૦ દિવસ સુધી સાચવણી કરી શકાય છે.
	Approved
	Suggestions: Nil **Action:**PI & HOD, DT, DSC, AAU, Anand
15.5.1.12	**Technology for manufacture of extended shelf-life dietetic *Basundi***
	Recommendation for Industry and Entrepreneurs A technology to manufacture of extended shelf-life dietetic Basundi has been developed by Anand Agricultural University, Anand. The standardized process involves vacuum concentration of milk, replacing sucrose with intense sweetener, followed by in-bottle heat processing using rotary sterilizer at 110°C for 15 min. The heat processed Basundi has a shelf life of 90 days when stored at 37±2°C. **ભલામણ:** આણંદ કૃષિ યુનિવર્સીટી, આણંદ દ્વારા લાંબી સંગ્રહ ક્ષમતા ધરાવતી ડાયેટેટીક બાસુંદી બનાવવાની પધ્ધતિ વિકસાવેલ છે. આ પ્રક્રિયામાં શૂન્ય અવકાશમાં દુધને ઘટ્ટ કરી તેમાં મોરસની અવેજીમાં અતિશય ગળ્યો પદાર્થ નાખીને બાસુંદીને બોટલમાં ભરીને રોટરી સ્ટરીલાઈઝરમાં ૧૧૦°સે. તાપમાને ૧૫ મિનીટ સુધી ગરમ કરવામાં આવે છે. ઉપરોક્ત પ્રક્રિયાથી બનાવેલ બાસુંદી ૩૭±૨°સે. તાપમાને ૯૦ દિવસ સુધી સંગ્રહી શકાય છે.
	Approved
	Suggestions: Suggestion for minor text changes has been duly incorporated **Action:**PI & HOD, DT, DSC, AAU, Anand
15.5.1.13	**Application of Infrared spectroscopy in detection of foreign fats and oils in ghee**
	Recommendation for industry and entrepreneurs FT NIR spectroscopy based method coupled with chemometrics is developed by Anand Agricultural University, Anand for detection and identification of common foreign oils and fats mixed in ghee. The limit of detection is 2% for oils/fats, while the minimum limit of identification varies from 5 to 10% depending on type of oil/fat mixed in ghee. The developed method is simple, convenient and efficient analytical tool to solve the problems in detection of adulterations in ghee.

	ભલામણ: આણંદ કૃષિ યુનિવર્સીટી, આણંદ દ્વારાઘીમાં કરવામાં આવતી વિવિધ વનસ્પતીજન્ય તેલ અને પ્રાણીજન્ય ચરબીની ભેળસેળ અને તેની ઓળખની ચકાસણી માટે એફટી એનઆઇઆર (FT NIR) સ્પેક્ટ્રોકોપી નો કેમોમેટ્રીકસ (chemometrics)સાથે ઉપયોગ પર આધારીત પદ્ધતિ વિકસાવવામાં આવેલ છે. ઘીના ભેળસેળમાં વપરાયેલ તેલ/ ચરબીની ચકાસણીની માત્રા ૨ % સુધીની છે. જ્યારે, તેની ઓળખ કરવાની લઘુત્તમ મર્યાદા ૫ થી ૧૦ % ની છે. આ પૃથ્થકરણ માટે વિકસાવેલ પદ્ધતિ સરળ, સુગમ અને કાર્યક્ષમ છે, જે ઘીમાં થતી ભેળસેળની ચકાસણી ની સમસ્યાઓનું નિરાકરણ કરવામાં મદદરૂપ થઇ શકે તેમ છે.
	Approved
	Suggestions: Nil **Action:**PI & HOD, DC, DSC, AAU, Anand
15.5.1.14	**Development of probiotic smoothie enriched with finger millet (*Eleusine coracana*)**
	Recommendation for Entrepreneurs and Industry A method for preparing Finger millet (*Eleusine coracana*) smoothie enriched with probiotic has been standardized at Anand Agricultural University, Anand. The product is made using toned milk, malted ragi flour and fermented with *Streptococcus thermophilus* MTCC 5460 and probiotic *Lactobacillus helveticus* MTCC 5463 and subsequently incorporated with strawberry crush. The product has a shelf life of 20 days, when packaged in pre-sterilized PET bottles and stored at 7±1ºC. The probiotic count in the product was more than 9 log cfu/g at the end of shelf life. **ભલામણ:** આણંદ કૃષિ યુનીવર્સિટી, આણંદ ખાતે ફિંગર મિલેટ (એલ્યુસિન કોર્કેના) યુક્ત પ્રોબાયોટિક સ્મૂથી બનાવવા માટેની રીત વિકસાવવામાં આવી છે. સદર સ્મૂથી બનાવવા ટોન્ડ દૂધ અને મોલ્ટેડ રાગી લોટના મિશ્રણ ને *સ્ટ્રેપ્ટોકોક્સ થર્મોફિલસ* **MTCC** 5460 અને પ્રોબાયોટિક *લેક્ટોબાસિલસ હેલ્વેટિકસ* **MTCC** 5463 ના મેળવણ કર્યા બાદ સ્ટ્રોબેરી ક્રશ ઉમેરીને બનાવવામાં આવે છે. સદર સ્મૂથી પ્રી-સ્ટરીલાઈઝ્ડ પીઇટી બોટલમાં પેક કરી ૭°**C ± ૧°C** પર ૨૦ દિવસ સુધી સંગ્રહિ શકાય છે, જેમાં ૯ લોગ સિફયુ /ગ્રામ કરતા વધુ પ્રોબાયોટિક બેક્ટેરિયા જીવંત રહેછે.
	Approved
	Suggestions: Nil **Action:**PI & HOD, DM, DSC,AAU, Anand
15.5.1.15	**Development of Greek yoghurt type probiotic fermented milk**
	Recommendation for industry and entrepreneurs A method is developed by Anand Agricultural University, Anand for manufacturing Greek yoghurt type probiotic fermented product using indigenous cultures. The product can be made using standardized milk, fermentation by indigenous cultures (*Streptococcus thermophilus* MTCC 5460 + *Lactobacillus delbreuckii* subsp. *bulgaricus* NCIM 2358+ *Lactobacillus helveticus* MTCC 5463), straining of curd and addition of pickle masala. The product has a shelf life of 21 days in polypropylene cups when stored at 7±1°C. Probiotic count in the product at the end of shelf life was more than 9 log cfu/g. ભલામણ: આણંદ કૃષિ યુનિવર્સિટી, આણંદ દ્વારા પ્રોબાયોટીક ગ્રીક યોગર્ટ બનાવવાની રીત

<table>
<tr><td></td><td>વિકસવવામાં આવેલ છે. સદર યોગર્ટ સ્ટાડર્ડાઈજ્ડ દુધ, સ્વદેશી બેક્ટેરિયા (સ્ટ્રેપ્ટોકોક્કસ થર્મોફિલસ MTCC ૫૪૬૦, લેક્ટોબોસિલીસ ડેલબૃકાય સબસ્પીસીસ બલ્ગેરિકસ NCIM ૨૩૫૮, પ્રોબાયોટીક લેક્ટોબોસિલીસ હેલવેટીકસ MTCC ૫૪૬૩) દ્વારા આથવણ, દહીં નું સ્ટ્રેનીંગતથા અથાણાનો મસાલો ઉમેરીને બનાવવામાં આવ્યુ. પોલીપ્રોપયલીન કપમા પેક કરેલ આ યોગર્ટ ૭°C ± ૧°C તાપમાને ૨૧ દિવસ સુધી બગડતુ નથી. ૨૧મા દિવસે પ્રોબયોટીક બેક્ટેરિયાની સંખ્યા ૯ લોગ સીએફયુ/ગ્રામ કરતા પણ વધારે મળેલ છે.</td></tr>
<tr><td></td><td>Approved</td></tr>
<tr><td></td><td>Suggestions: Nil
Action:PI & HOD, DM, DSC,AAU, Anand</td></tr>
<tr><td>15.5.1.16</td><td>Application of solar energy in unit operations for milk and milk product processing</td></tr>
<tr><td></td><td>Recommendation for industry and entrepreneurs
Anand Agricultural University, Anand recommends Dairy entrepreneurs to utilise the solar power generated through solar photo voltaic (PV) panel system of 1KW capacity, to carryout various unit operations for milk processing like, chilling of milk, manufacture of khoa and manufacture of ice cream using equipment having less than 1KW power requirement. The power generated from the solar photo voltaic system helps for sustainable processing with reduction in cost of processing.
ભલામણ:
આણંદ કૃષિ યુનિવર્સિટી દ્વારા ડેરી ઉદ્યોગસાહસિકોને ૧ કિલો વોટ ક્ષમતાની સૌર ફોટો વોલ્ટેઇક (PV) પેનલ સિસ્ટમ દ્વારા પેદા થતી સૌર વીજળી નો ઉપયોગ કરી, ૧ કિલો વોટની આવશ્યકતા હોય તેવા સાધનોનો ઉપયોગ કરીને વિવિધ દૂધની પ્રક્રિયાઓ દૂધની ચિલિંગ, માવાના ઉત્પાદન અને આઈસ્ક્રીમનું નિર્માણ કરવા માટે 1 કેડબલ્યુની ક્ષમતાના સોલાર પીવી પેનલ સિસ્ટમ દ્વારા થતી સૌર વીજળીનો ઉપયોગ કરવાની ભલામણ કરવામાં આવે છે. સૌર ફોટો વોલ્ટેઇક સિસ્ટમમાંથી પેદા થતી સૌર વીજળીથી પ્રક્રિયાના ખર્ચમાં ઘટાડો સાથે ટકાઉ પ્રક્રિયા માટે મદદ કરે છે.</td></tr>
<tr><td></td><td>Approved</td></tr>
<tr><td></td><td>Suggestions: Nil
Action:PI & HOD, DE, DSC, AAU, Anand</td></tr>
<tr><td>15.5.1.17</td><td>Design, development and performance evaluation of a solar thermal system assisted double pipe heat exchanger for heating of milk for preparation of paneer</td></tr>
<tr><td></td><td>Recommendation for industry and entrepreneurs
Double pipe four pass heat exchanger equipped with helical coil in the annular space and assisted by Evacuated Tube Collector (ETC) solar thermal water heating system as heating source and PNG water heating system for backup heating is designed and developed at Anand Agricultural University, Anand is recommended for small scale dairy entrepreneur/industry for heating of milk for the preparation of the paneer. The energy saving for heating of milk was found in the range of 62.0 to 96.0 per cent with counter current flow pattern and 20 liters per minute hot water flow rate and 1 liter per minute chilled milk flow rate during January to April by this heat exchanger.
ભલામણ:</td></tr>
</table>

	નાના ડેરી ઉદ્યોગસાહસિકોને આણદ કૃષિ યુનિવર્સિટી દ્વારા ડિઝાઇન કરેલ અને વિકસાવવામાં આવેલ ડબલ પાઈપ ચાર પાસ હીટ એક્સ્ચેન્જરનો પનીર બનાવવા માટે દૂધ ગરમ કરવા માટે ઉપયોગ કરવાની ભલામણ કરવામાં આવે છે, જે જેકેટમાં હેલિકલ કોઇલથી સજ્જ છે અને ઇવેક્યુએટેડ ટ્યૂબ કલેક્ટર (ઇટીસી) સોલર થર્મલ વૉટર હીટિંગ સિસ્ટમ દ્વારા સહાય કરે છે, બેક-અપ હીટીંગ માટે પી.એન.જી. વોટર હીટિંગ સિસ્ટમનો ઉપયોગ કરવામાં આવે છે. આ હીટ એક્સ્ચેન્જર દ્વારા જાન્યુઆરીથી એપ્રિલ દરમિયાન દૂધને ગરમ કરવા માટે ૬૨ થી ૯૬ ટકાની વચ્ચે ઊર્જા બચત, કાઉન્ટર કરંટ પ્રવાહ પેટર્ન અને ૨૦ લીટર પ્રતિ મિનીટ ગરમ પાણી પ્રવાહ દર અને ૧ લીટર પ્રતિ મિનીટ ઠંડુ દૂધ પ્રવાહ દર સાથે મળી હતી.
	Approved
	Suggestions: Nil **Action:**PI & HOD, DE, DSC,AAU, Anand
15.5.1.18	**Production of premium quality powder with maximum retention of essential oil using cryogenic grinding of carom (ajwain) and black pepper**
	Recommendation for Farmers, Entrepreneurs, Agro-processing units Entrepreneurs and agro-processing units involved in grinding of spices are advised to use the technology of cryogenic grinding developed by AAU for high quality ajwain and black pepper powder with higher retention of volatile oil content of 74.36 and 71.31 per cent respectively. For higher retention of volatile oil, the cryogenic grinding of ajwain seeds at temperature of -60°C, sieve size of 0.8 mm and feed rate of 8 kg/h and for black pepper at temperature of -60°C, sieve size of 1.5 mm and feed rate of 10 kg/h is recommended. The processing cost of the optimized operating conditions for cryogenic grinding of ajwain and black pepper is ₹33.00 and ₹25.00 per kg respectively. ભલામણ: અજમા અને કાળા મરીના પાવડરનું ઉત્પાદન કરતા ઉદ્યોગસાહસિકો તથા ઉદ્યોગકારોને ઉત્તમ ગુણવત્તાવાળા પાવડરનું ઉત્પાદન કરવા માટે આણંદ કૃષિ યુનિવર્સિટી, આણંદ દ્વારા વિકસાવવામાં આવેલ ક્રાયોજેનિક ગ્રાઇન્ડીંગની તકનીકનો ઉપયોગ કરવાની ભલામણ કરવામાં આવે છે. ક્રાયોજેનિક ગ્રાઇન્ડીંગ તકનીકથી દળેલ અજમા અને કાળા મરીના પાવડરમાં તૈલીય તત્વની મહત્તમ માત્રા, અનુક્રમે ૭૪.૩૬ અને ૭૧.૩૧ ટકા જળવાઇ રહે છે. અજમા અને કાળી મારીના પાવડરમાં મહત્તમ તૈલીય તત્વ (બાષ્પશીલતેલ)ને જાળવી રાખવા માટે -60°સે. તાપમાને, અજમાને ૦.૮ મીલી મીટરની ચાળણીનો ઉપયોગ કરી ૮ કિલોગ્રામ પ્રતિ કલાકના દરે તથા કાળા મરીને ૧.૫ મીલી મીટરની ચાળણીનો ઉપયોગ કરી ૧૦ કિ.ગ્રા પ્રતિ કલાકના દરે દળવાની ભલામણ કરવામાં આવે છે. વિકસિત પધ્ધતિ દ્વારા અજમા અને કાળા મરીને દળવા માટેનો ખર્ચ અનુક્રમે ₹ ૩૩.૦૦ અને ₹ ૨૫.૦૦ પ્રતિ કિ.ગ્રા. થાય છે.
	Approved
	Suggestions: Suggestion for minor text changes has been duly incorporated. **Action:**PI & HOD, PHET,FPT, AAU, Anand
15.5.1.19	**To formulate and standardize the process of micronutrient rich powder for women**
	Recommendation for entrepreneurs and food processors: The entrepreneurs and food processors interested in manufacture of nutraceutical food products are advised to adopt the production technology of Micronutrient rich malted food developed by AAU, Anand. The technology

	involves malting of mothbean and ragi grains for 48 h and 36 h respectively and sand roasting at 150˚C and 160˚C respectively for 60 seconds. The moth bean malt flour (22 per cent) and ragi malt flour (19.5 per cent) are mixed in skim milk (38.5 per cent) and barley malt extract (20 per cent) and cooked for 5 minutes. The mixture is then dried under vacuum and milled. This product provides 16.75 per cent protein, 5.7 mg/100g iron, 285.0 mg/100g calcium and 1.8 mg/100g zinc. The product can be stored for 6 months at ambient temperature. **ભલામણ:** પોષણક્ષમ ખાદ્ય પદાર્થોના નિર્માણમાં રસ ધરાવતા ઉદ્યોગસાહસિકો અને ફૂડ પ્રોસેસર્સને, આણંદ કૃષિ યુનિવર્સિટી, આણંદ દ્વારા વિકસિત સુક્ષ્મ તત્વોથી સમૃદ્ધ માલ્ટેડ પાવડરની ઉત્પાદન તકનીક અપનાવવાની ભલામણ કરવામાં આવે છે. આ તકનીકીમાં મઠ અને રાગીને અનુક્રમે 48 અને 36 કલાક સુધી ફણગાવ્યા બાદ, અનુક્રમે ૧૫૦˚ સે. અને ૧૬૦˚ સે. તાપમાને ૬૦ સેકન્ડ માટે શેકીને દળવામાં આવે છે. આ પધ્ધતિમાં મઠનો માલ્ટ (૨૨ ટકા), રાગીનો માલ્ટ (૧૯.૫ ટકા), સ્કીમ દૂધ (૩૮.૫ ટકા) અને પ્રવાહી જવનો માલ્ટ (૨૦ ટકા) ભેળવી તેને ૫ મિનિટ માટે રાંધી, તેને સુકવીને દળવામાં આવે છે. આ રીતે તૈયાર કરેલ પાવડર (૧૦૦ ગ્રામ)માં ૧૬.૭૫ ગ્રામપ્રોટીન, ૫.૭ મી.ગ્રા. લોહતત્વ, ૨૮૫ મી.ગ્રા. કેલ્શિયમ, અને ૧.૮ મી.ગ્રા. જસત હોય છે. આ પાવડરને ૬ માસ સુધી સામાન્ય તાપમાને સંગ્રહિત કરી શકાય છે.
	Approved
	Suggestions: Suggestion for minor text changes has been duly incorporated. **Action:**PI & HOD, FPT, AAU, Anand
15.5.1.20	**Extension of shelf life of bread using suitable ingredients**
	Recommendation for entrepreneurs and industry: The entrepreneurs and bakery industry interested in manufacture of extended shelf life bread are advised to use the technology developed by Anand Agricultural University, Anand. It involves addition of 1.0 per cent xanthan gum, 1.0 per cent potato peel fiber and 7.0 per cent soy flour in the bread recipe and coating of the bread loaf at the rate of 4.35 mg natamycin/kg of bread. The bread duly packed in polyethylene package can be safely stored up to 7 days at ambient temperature. **ભલામણ:** બ્રેડની સંગ્રહ શક્તિ વધારવા ઈચ્છતા બેકરી વાનગીઓના ઉત્પાદકો અને ઉદ્યોગસાહસિકોને આણંદ કૃષિ યુનિવર્સિટી, આણંદ ધ્વારા વિકસીત તકનીકનો ઉપયોગ કરવા ભલામણ કરવામાં આવે છે. આ પ્રકારની બ્રેડ બનાવવા માટે ૧.૦ ટકા ઝેન્થાનગમ, ૧.૦ ટકા બટાટાની છાલના ફાઇબર અને ૭.૦ ટકા સોયાબિનનો લોટનો ઉપયોગ થાય છે તથા બનાવેલી બ્રેડ ઉપર ૪.૩૫ મિ.ગ્રા. નેટામાયસીન દ્રાવણનો છંટકાવ કરી તેને પોલીથીન બેગમાં ૭ દિવસ સુધી રૂમ તાપમાને સંગહ કરી શકાય છે.
	Approved
	Suggestions: Nil **Action:**PI & HOD, FPT, AAU, Anand
15.5.1.21	**Development of functional low calorie muffins**
	Recommendationfor entrepreneurs and industry Bakery entrepreneurs interested in production of muffins are advised to use the technology developed by Anand Agricultural University, Anand. The technology involves incorporation of 15.0 per cent of erythritol and 7.5 per cent of orange peel powder in the formulation of muffins. The muffin packed in polypropylene bags had

	21 days shelf life at ambient temperature. There is reduction in calorific value by 10.12 per cent as compared to traditional muffin. **ભલામણ:** મફિનના ઉત્પાદનમાં રસ ધરાવતા બેકરી ઉદ્યોગસાહસિકોને આણંદ કૃષિ યુનિવર્સિટી, આણંદ દ્વારા વિકસિત તકનીકનો ઉપયોગ કરવાની સલાહ આપવામાં આવે છે.આ તકનીક દ્વારા મફીન બનાવવા માટે ૧૫.0 ટકા એરિથ્રિટોલ અને ૭.૫ ટકાના રંગી છાલ પાવડર ઉમેરવામાં આવે છે. પોલિપ્રોપિલિન બેગમાં પેક થયેલ મફિનને ૨૧ દિવસ સુધી રૂમ તાપમાને સાચવી શકાય છે. પરંપરાગત મફિનની તુલનાએ આ મફીનની ઉર્જાશક્તિમાં ૧૦.૧૨ ટકા ઘટાડો થાય છે.
	Approved
	Suggestions: Nil **Action:**PI & HOD, FPT, AAU, Anand
15.5.1.22	**Technology for development of Ready-to-Rehydrate type of rice and pulses (Sub-title: Technology for development of Ready-to-Rehydrate type of rice)**
	Recommendation for entrepreneurs and food processors: The entrepreneurs and food processors interested in manufacture of ready-to-rehydrate rice (RTRR) are advised to adopt the technology developed by Anand Agricultural University, Anand. The technology involves various processing operations including soaking, cooking and dehydration under specific conditions. The final product is a pre-cooked and dried rice, which can be easily rehydrated within 6 min with addition of hot (90°C) water (1:2.5 w/v, RTRR:Water). **ભલામણ:** રેડી ટુ રીહાયડ્રેટ ચોખા (RTRR) ના ઉત્પાદનમાં રસ ધરાવતા ઉદ્યોગસાહસિકો અને ખાદ્ય પ્રોસેસરોને આણંદ કૃષિ યુનિવર્સિટી, આણંદ દ્વારા વિકસિત રેડી ટુ રીહાયડ્રેટ ચોખા ઉત્પાદન માટેની ટેકનોલોજીનો ઉપયોગ કરવાની ભલામણ કરવામાં આવે છે. રેડી ટુ રીહાયડ્રેટ ચોખા બનવાની પદ્ધતિમાં પલાળવું, રાંધવું અને સૂકવવું જેવી પ્રક્રિયાઓનો સમાવેશ થાય છે. આ પદ્ધતિ દ્વારા તૈયાર કરેલા ચોખાને ગરમ પાણી (૯૦°સે.) (પ્રમાણ ૧:૨.૫ w/v ચોખા:પાણી)માં રાખવાની ૬ મિનિટમાં જ ભાત બને છે.
	Approved
	Suggestions: Suggestion for minor text changes has been duly incorporated **Action:**PI & HOD, FPT, AAU, Anand
15.5.1.23	**Super critical extraction of essential oil from Ajwain (Carom seed) and Black pepper**
	Recommendation for Entrepreneurs and Industry ▪ Entrepreneurs and Agro-processing units involved in production of superior quality pepper essential oil are advised to use the supercritical fluid extraction technology developed by Anand Agricultural University, Anand. This technology involves use of carbon dioxide supercritical fluid extraction at controlled pressure of 245 bar and temperature of 47^0C which yields 5.6per cent pepper essential oil. The essential oil had 1.3 per cent piperine. ▪ Entrepreneurs and Agro-processing units involved in production of superior quality ajwain essential oil are advised to use the supercritical fluid extraction technology developed by Anand Agricultural University, Anand. This technology involves use of carbon dioxide supercritical fluid extraction at controlled pressure of 300 bar and temperature of 35°C which yielded 3.9 per

	cent ajwain essential oil. The essential oil had 60.8 per cent thymol. **ભલામણ:** ▪ મરીના આવશ્યક તેલના ઉત્પાદનમાં સંકળાયેલા ઉદ્યોગસાહસિકો અને એગ્રો-પ્રોસેસિંગ એકમોને આણંદ કૃષિ યુનિવર્સિટી, આણંદ દ્વારા વિકસાવેલ સુપર ક્રિટિકલ પ્રવાહી નિષ્કર્ષણ તકનીકનો ઉપયોગ કરવાની ભલામણ આપવામાં આવે છે. આ તકનીકમાં, ૨૪૫ બારના નિયંત્રિત દબાણે અને ૪૭^{0}સે. તાપમાને કાર્બન ડાયોક્સાઈડના ઉપયોગ દ્વારા ૫.૬ ટકા જેટલું મરીનું આવશ્યક તેલ પેદા કરી શકાય છે. આ આવશ્યક તેલમાં, ૧.૩ ટકા જેટલું પીપેરિન હોય છે. ▪ અજમાના આવશ્યક તેલના ઉત્પાદનમાં સંકળાયેલા ઉદ્યોગસાહસિકો અને એગ્રો-પ્રોસેસિંગ એકમોને આણંદ કૃષિ યુનિવર્સિટી, આણંદ દ્વારા વિક્સાવેલ સુપર ક્રિટિકલ પ્રવાહી નિષ્કર્ષણ તકનીકનો ઉપયોગ કરવાની ભલામણ આપવામાં આવે છે. આ ટેકનોલોજીમાં, ૩૦૦ બારના નિયંત્રિત દબાણે અને ૩૫^{0}સે. તાપમાને કાર્બન ડાયોક્સાઈડના ઉપયોગ દ્વારા ૩.૯ ટકા જેટલું અજમાનું આવશ્યક તેલ પેદા કરી શકાય છે. આ આવશ્યક તેલમાં ૬૦.૮ ટકા જેટલું થાયમોલ હોય છે.
	Approved
	Suggestions: Nil **Action:**PI & HOD, FPT, AAU, Anand
15.5.1.24	**Production technologies for value added products from pumpkin seeds**
	Recommendation for Entrepreneurs and Food processors The entrepreneurs and food processors interested in manufacture of roasted salted pumpkin seed snacks are advised to adopt the production technology of roasting of pumpkin seed developed by Anand Agricultural University, Anand. The technology involves dehulling of whole pumpkin seed, conditioning to moisture content of 12.0 per cent using 20.0 per cent salt solution, roasting the pumpkin seed in halogen roaster at 190°C for 6 min. The product prepared was highly acceptable, possessing adequate hardness, fracturability and had reasonable (up to 90 days) keeping quality. **ભલામણ:** મીઠાવાળા શેકેલા કોળાના બીજ બનાવવા ઇચ્છતા ઉદ્યોગસાહસિકો અને ઉદ્યોગકારોને આણંદ કૃષિ યુનિવર્સિટી દ્વારા વિકસાવવામાં આવેલ તકનીકના ઉપાયોગની ભલામણ કરવામાં આવે છે. આ તકનીકમાં કોળાના બીજની છાલ કાઢી, તેને ૨૦.૦ ટકા મીઠાના પાણીમાં ૧૨.૦ ટકા ભેજ આવે ત્યાં સુધી પલાળી હેલોજેન રોસ્ટરમાં ૧૯૦^{o}સે. તાપમાને 6 મિનિટ સુધી શેકવામાં આવે છે. આ રીતે તૈયાર કરેલ કોળાના બીજ સ્વાદિષ્ટ હોય છે તેમજ ૯૦ દિવસ સુધી સંગ્રહ કરી શકાય છે.
	Approved
	Suggestions: Nil **Action:**PI & HOD, FQA, FPT, AAU, Anand
15.5.1.25	**Evaluation of combined effect of gamma irradiation and edible coating on shelf-life of sapota fruit (Sub-title: Evaluation of independent effect of gamma irradiation and edible coating on shelf-life of sapota fruit)**
	Recommendations for Entrepreneurs and Food processors I. Entrepreneurs interested in enhancement of shelf-life of sapota fruit cv. Kalipatti are advised to use the edible coating (blend of pectin, polyvinyl alcohol and glycerol) technology developed by Anand Agricultural University, Anand. The shelf life of coated sapota fruit was 11 days at ambient temperature, with minimal physiological weight loss (18.51 per cent) and retaining the firmness (0.16 N) of fruit.

	ભલામણ: ૧. ચીકુની લાંબા સમય સુધી જાળવણી માટે રસ ધરાવતા ઉદ્યોગસાહસિકોને આણંદ કૃષિ યુનિવર્સિટી, આણંદ દ્વારા વિકસાવેલ તકનીકનો ઉપયોગ કરવાની ભલામણ કરવામાં આવે છે. આ તકનીકમાં ચીકુને પેક્ટીન, પોલીવીનાઈલ આલ્કોહોલ અને ગ્લીસરોલના મિશ્રણનું પડ ચડાવી તેને ૧૧ દિવસ સુધી સારી રીતે જાળવી શકાય છે. II.Entrepreneurs interested in enhancement of shelf-life of sapota fruit cv. Kalipatti are advised to use gamma irradiation (0.3 kGy) technology developed by Anand Agricultural University, Anand. The shelf life of irradiated sapota fruit was 10 days with minimal physiological weight loss (15.60 per cent) and retaining the firmness (0.19 N) of fruit. ભલામણ: ૨.ચીકુની લાંબા સમય સુધી જાળવણી માટે રસ ધરાવતા ઉદ્યોગસાહસિકોને આણંદ કૃષિ યુનિવર્સિટી, આણંદ દ્વારા વિકસાવેલ ગામા ઇરેડિયેશન તકનીક (૦.૩ કી.ગ્રે. ડોઝ) વાપરવાની ભલામણ કરવામાં આવે છે. આ તકનીક દ્વારા ચીકુને ૧૦ દિવસ સુધી સારી રીતે જાળવી શકાય છે.
	Approved
	Suggestions: Suggestion for minor text changes has been duly incorporated **Action:**PI & HOD, FQA, FPT,AAU, Anand
15.5.1.26	**Study on energy assessment in selected food processing plants**
	Recommendation for entrepreneurs and industry: The units manufacturing food products are advised to carry out energy audit of their plants periodically to conserve electrical energy. Plant producing bakery (2800MT/year) and chocolates (12000MT/year) products showed average specific electrical energy consumption of 121 kWh/MT and 310 kWh/MT respectively. Energy conservation measures have shown potential in saving electrical energy by about 36.0 per cent. ભલામણ: વિદ્યુત ઊર્જાની બચત કરવા માટે, ખાદ્ય પદાર્થોનું ઉત્પાદન કરતા એકમોને તેમની ઉર્જા ઓડિટ કરવા માટેની સલાહ છે. બેકરી પદાર્થોનું (૨૮૦૦ મેટ્રીક ટન/વર્ષ) તેમજ ચોકલેટનું(૧૨૦૦૦ મેટ્રીક ટન/ વર્ષ) ઉત્પાદન કરતા પ્લાન્ટમાં પ્રતિ મેટ્રીક ટન ઉત્પાદને સરેરાશ ૧૨૧ કિલોવોટ અને ૩૧૦ કિલોવોટ વિદ્યુત ઊર્જાનો વપરાશ થતો હોય છે. આ એકમોનું ઉર્જા ઓડિટ કરવાથી આશરે ૩૬ ટકા જેટલી વિદ્યુત ઊર્જાની બચત થવાનો સારો અવકાશ રહેલ છે.
	Approved
	Suggestions: Suggestion for minor text changes has been duly incorporated **Action:**PI & HOD, FE, FPT,AAU, Anand
15.5.1.27	**Development of irradiation technology for agricultural, animal, dairy and food products. (Sub-title: Effect of gamma radiation on peanut storage and its oil quality)**
	Recommendation for Entrepreneurs and Food Processers Entrepreneurs and oilseed processers are advised to use gamma irradiation technology developed by Anand Agricultural University, Anand for microbial decontamination and insect disinfestation of peanut. The technology results in safe storage of packaged (polypropylene, 55 µm) and irradiated (2.5 kGy) peanut kernels in ambient condition for up to 6 months. ભલામણ:

	ઉધોગસાહસિકો અને તેલીબિયાનું પ્રોસેસીંગ કરતા વ્યવસાયિકોને મગફળીના દાણાને સુક્ષ્મજીવોથી થતો બગાડ અટકાવવા તેમજ જીવજતુંથી મુકત કરવા આણંદ કૃષિ યુનિવર્સીટી, આણંદ દ્વારા વિકસાવેલ ગામા ઈરેડીએશન તાંત્રિકતાનો ઉપયોગ કરવા માટે ભલામણ કરવામા આવે છે. આ તાંત્રિકતામાં પેક કરેલ (55 માઈક્રોન પોલીપ્રોપિલીન) સીંગદાણાને ઈરેડીએશન (૨.૫ કી. ગ્રે.) નો ડોઝ આપવાથી સામાન્ય વાતાવરણમાં ૬ મહિના સુધી તેનો સલામત સંગ્રહ કરી શકાય છે.
	Approved
	Suggestions: Nil **Action:**PI & HOD, FE, FPT, AAU, Anand
15.5.1.28	**Development of antidiabetic and antioxidant rich cookies and health drink using Garden Cress Seed (*Lepidium Sativum* L.)**
	Recommendation for Entrepreneurs: The bakery industry and entrepreneurs interested in production of cookies with higher antioxidant and antidiabetic activities are recommended to use the formulation developed by Anand Agricultural University, Anand. The formulation involves use of garden cress seed powder to replace 10.0 per cent of refined wheat flour. The resultant cookies had 112.0 and 147.0 per cent increase in antioxidant (FRAP, per cent inhibition) and antidiabetic (NGH, per cent inhibition) activities respectively over conventionally prepared cookies. The cookies packed in aluminum foil had ambient storage life of up to 2 months. **ભલામણ:** બેકરી વાનગીઓના ઉત્પાદકો અને ઉદ્યોગસાહસિકોને આણંદ કૃષિ યુનિવર્સીટી, આણંદ દ્વારા વિકસાવેલ અસાળીયાની કુકીઝ બનાવવાની તકનીકનો ઉપયોગ કરવાની ભલામણ કરવામાં આવે છે. આ તકનીકમાં મેંદાના ૧૦ ટકા અસાળીયાનો પાવડર ઉમેરી બનાવેલ કૂકીઝનમાં અનુક્રમે ૧૧૨ ટકા અને ૧૪૭ ટકા વધુ એન્ટીઓક્ષીડન્ટ અને એન્ટીડાયાબીટીક અસર જોવા મળે છે. આ કૂકીઝ સામાન્ય વાતાવરણમાં એલ્યુમિનિયમ ફોઇલમાં ૨ મહિના સુધી સંગ્રહી શકાય છે.
	Approved
	Suggestions: Suggestion for minor text changes has been duly incorporated **Action:**PI & HOD, Polytechnic College in Food Science & Nutrition, AAU, Anand

15.5.2 RECOMMENDATION FOR SCIENTIFIC COMMUNITY

SARDARKRUSHINAGAR DANTIWADA AGRICULTURAL UNIVERSITY, S.K. NAGAR

15.5.2.1	**Development and evaluation of multigrain flour for traditional recipes**
	A technology has been developed by Sardarkrushinagar Dantiwada Agricultural University, S.K. Nagar for preparation of composite multigrain flour to tackle malnutrition at household level. The formulation for preparing composite multigrain flour includes ingredients such as refined wheat flour (65.0 per cent), blackgram dhal flour (10.0 per cent), along with blend of bajara, amaranth, oat, soybean and ragi flours (each flour being 5.0 per cent by weight). The composite flour had higher nutritional value (protein, carbohydrates and minerals) and the resultant dough had superior extensibility. Such multigrain flour can be used for the preparation of puri, paratha and chapati with enhanced taste and nutritive value. Multigrain composite flour packed in polyethylene pouches had shelf life of about 3 months.
	Approved

	Action:PI & HOD Food & Nutrition, College of Home Science, SDAU, SKNagar

ANAND AGRICULTURAL UNIVERSITY, ANAND

15.5.2.2	**Purification and characterization of ACE-inhibitory peptides derived from fermented Camel milk**
	A protocol is developed by Anand Agricultural University, Anand for the production of antihypertensive peptides i.e. GPPYQPLVPR, CISSSTPPYDLNRFK, VCNYVSWIK and MDTIEPVSVACIS from camel milk by fermenting it using selected *Lactobacillus* cultures (*L. acidophilus* NCDC015, *L. fermentum* LBF, *L. rhamnosus* NS4 and *L. delbreuckii* subsp. *bulgaricus* 09) added at 2.0 per cent and incubating at 37ºC for 12h.
	Approved
	Suggestions: Nil **Action:**PI & HOD,DM, DSC, AAU,Anand
15.5.2.3	**Study on decontamination of pesticides in selected Spices, vegetable and fruits using γ-irradiation, UV radiation and Ozonation Techniques** (Sub Title: Degradation of pesticide in red chili powder using gamma irradiation)
	Gamma irradiation of red chilly did not showany effect onthe degradation of pesticides such as for chlorpyriphos, ethion, triazophos, trifloxystrobin, azoxystrobin, cypermethrin, acetamiprid, carbendazim, imidacloprid, thiacloprid, chlorantraniliprol, fipronil, fipronil-sulfone, profenophos and flubendamide.
	Approved
	Suggestions: Suggestion for minor text changes has been duly incorporated **Action:**PI & HOD,FQA, FPT,AAU,Anand
15.5.2.4	**Bio-chemical characterization of *Moringa oleifera* leaves and pods**
	▪ Biochemical characterization of tender moringa leaves was evaluated in two seasons i.e. Nov. –May and June – October. The biochemical characterization of tender moringa pod was evaluated in Nov. -May. ▪ GCMS analysis of moringa leaves led to identification of four compounds *viz.*, phytol acetate, 2,4-Di-tert-butylphenol, 1-Tetradecanol and Neophytadiene ▪ GCMSQTOF analysis of moringa pods showed presence of fifteen compounds *viz.*, 2,4-Di-tert-butylphenol; 1-Undecanol; 1-Hexadecanol; 1-Hexadecanol; bis-4,4'-(1-methylethylidene) Phenol; Nonacos-1-ene; 2-Dodecylcyclohexanone; Glycidyl palmitate; (Z)-9,17-Octadecadienal; N-heptafluorobutyryl-1,2,3,4-Tetrahydro-1-naphthylamine; L-Norvaline, N-decyloxycarbonyl-, undecyl ester; Dodecanoic acid, 2,4,6-trimethyl-, methyl ester; Glycidyl palmitate; Octadecanoic acid 2,3-dihydroxypropyl ester; Glycidyl oleate and Glycidyl palmitate ▪ LCMSQTOF analysis of moringa pods showed presence of thirty five compounds *viz.*, (S)-Angelicain; trans-Zeatin; N-stearoyl tryptophan; Citpressine I; Trp-Ala-Pro; Trp-Ser-Pro; His-HoPhe-OH; His-Ser-OH; His-TyrMe-OH; Lactococcin; 4-Fluoro-L-threonine; Cinncassiol D4; Lys-Trp-OH; Avenanthramide 1s; PE-Cer(d14:1(4E)/21:0); 2-glyceryl-PGE2; Caohuoside D; Ambofuracin; Caohuoside D; Evasterioside D; TyrMe-Phe-OH; 15-

	Acetoxyscirpene-3,4-diol 4-O-a-D-glucopyranoside; D-Glucosaminide; (+)-Syringaresinol O-beta-D-glucoside; Trypanothione disulfide; Tyr-Gly-OH; Theobromine; Ile Asn-Phe; 4(Hydroxymethyl)benzenediazonium(1+); (+)-Mayurone; Asp-Asp-His; and 2E,6E-Octadienal
	Approved
	Suggestions: Nil **Action:**PI & HOD,FQA, FPT,AAU,Anand
15.5.2.5	**Evaluation of purity of silver foil used on sweets in rural area**
	▪ 50 silver foil coated sweet samples from unorganized sector were analyzed for silver and aluminum content. None of the samples contained pure silver. ▪ Analysis of few samples for presence of heavy metals and other elements revealed that cadmium, cobalt, chromium, lead, nickel, iron, copper, manganese, phosphorus and zinc were present in samples as undesirable elements.
	Approved
	Suggestions: Nil **Action:**PI & HOD,FQA, FPT,AAU,Anand

KAMDHENU UNIVERSITY, AMRELI

15.5.2.6	**Detection of oil adulteration in milk by chromatographic methods in-tandem with chromogenic methods**
	A GLC based method has been developed by Kamdhenu University, Amreli to detect adulteration of milk with vegetable oil with LOD of 1.0 per cent and is recommended as it detects increase in summation value of long chain triglycerides (C50, C52 and C54). However this methodology is not able to ascertain the type oil added in the milk.
	Approved
	Suggestion: Suggestion for minor text changes has been duly incorporated. **Action:**PI & HOD,DC, Kamdhenu University, Amreli

15.5.3 NEW TECHNICAL PROGRAMMES

SARDARKRUSHINAGAR DANTIWADA AGRICULTURAL UNIVERSITY, SKNAGAR

Project Code	Project Title
15.5.3.1	Development and evaluation of antioxidant potential of protein enriched whey-fruit beverage
	Approved with following suggestions: 1. Write the rate of addition of WPC instead of protein content (%) 2. Methods of antioxidant should be studied by four different methods(DPPH,FRAP,ABTS & Total Phenol) 3. Storage study should be carried out in PET bottle. 4. Use only Jamun and Bel as fruit (specify fruit variety as well) 5. Storage study at 37°C at the interval of 3 days and 7°C at the interval of 10 days 6. Remove study of all pathogenic count in regular study. However for the

	optimized product analysis should be carried out for all pathogens as per the requirement of FSSAI.
	Action:PI & HOD, DDC, CDT, SDAU, Sardarkrushinagar
15.5.3.2	Development of Lassi incorporated with Noni juice
	Approved with following suggestions: 1. Analysis of raw material (noni) is required 2. Study 3 levels of noni juice incorporation after taking preliminary trials. 3. Toned milk should be used for making dahi using yoghurt culture. 4. Study three different levels of sugar and noni juice (based on preliminary trials) 5. Shelf life study to be carried out for the optimized sample
	Action:PI & HOD, DDT, CDT, SDAU, Sardarkrushinagar
15.5.3.3	Process standardization for encapsulation of *Moringa oleifera* leaves powder and its extract
	Approved with suggestion that RH of the drying air should be one of the variables in the study
	Action: PI & Principal, RE&EE, SDAU, Sardarkrushinagar

NAVSARI AGRICULTURAL UNIVERSITY, NAVSARI

Project Code	Project Title
15.5.3.4	The effect of UV light and preservative on quality of fresh-cut cauliflower
	Approved with following suggestions: 1. Include surface area & distance of the product from UV source. 2. Coliform, Yeast and Mould and Total Plate count to be studied in microbiological parameter. 3. Physical weight loss, Vitamin C &browning to be studied in physico-chemical parameters. 4. Include 9 point hedonic scale in sensory parameter 5. Average piece size of florets (in cm) to be noted.
	Action: PI & HOD, PHT, ACHF, NAU, Navsari
15.5.3.5	Studies on quality evaluation of processed Oyster Mushroom during storage
	Approved with following suggestions: 1. Title should be revised as "Studies on quality of thermally processed Oyster Mushroom during storage". 2. In objective 1 write as "To find out the suitable packaging material and retorting condition for extending shelf life of packaged Oyster Mushroom" 3. Coliform, Yeast and Mould, total plate count to be studied in microbiological parameter. 4. Remove ash parameter during storage. 5. Analysis of reducing sugar to be added.
	Action: PI &HOD, PHT, ACHF, NAU, Navsari

ANAND AGRICULTURAL UNIVERSITY, ANAND

Project Code	Project Title
15.5.3.6	Technology for Development of Fermented Milk Powder
	Approved **Suggestion/s: Nil**
	Action:PI, HOD, DDPO, DSC, AAU, Anand
15.5.3.7	Developments of Methods for Detection of Adulterants in Milk and Milk Products
	Approved

	Suggestion/s: Nil
	Action:PI, HOD, DC, DSC, AAU, Anand
15.5.3.8	Development of dairy starter cultures and value added dairy products (**Sub-project:** Evaluation of antiobesity effect of Probiotic Fermented Milk enriched with Finger Millet)
	Approved **Suggestion/s: Nil**
	Action:PI, HOD, DM, DSC, AAU, Anand
15.5.3.9	Plasmid profile of Lactic Acid Bacteria and their use as bio-medical agents (**Sub-project:** Evaluation of Antimicrobial Activity of Lactic Acid Bacteria Strains against Mastitic Milk Isolates of Staphylococcus aureus and Escherichia coli)
	Approved **Suggestion/s: Nil**
	Action:PI, HOD, DM, DSC, AAU, Anand
15.5.3.10	Development of dairy starter cultures and value added dairy products (**Sub-project:** Evaluation of Lactic Acid Bacteria for β-galactosidase activity and its use in preparation of lactose hydrolysed milk)
	Approved **Suggestion/s: Nil**
	Action:PI, HOD, DM, DSC, AAU, Anand
15.5.3.11	Plasmid profile of Lactic Acid Bacteria and their use as bio-medical agents (**Sub-project:** *In-Vitro* Evaluation of selected probiotics cultures for oral health benefits)
	Approved **Suggestion/s: Nil**
	Action:PI, HOD, DM, DSC, AAU, Anand
15.5.3.12	Design and Development of a Solar based incubation room
	Approved **Suggestion/s: Nil**
	Action:PI, HOD, DE, DSC, AAU, Anand
15.5.3.13	Energy Saving potential through Partial homogenization of milk over conventional milk homogenization
	Approved **Suggestion/s: Nil**
	Action:PI, HOD, DE, DSC, AAU, Anand
15.5.3.14	Effect of different pretreatments on mature banana
	Approved with Suggestion/s: Title should be modified as"Effect of different pretreatments on mature banana for increasing the shelf life".
	Action: PI, Prof & Head, Dept of PHET, FPTBE, AAU, Anand
15.5.3.15	Process development of cereals based galactogogue product enriched with garden cress for lactating women
	Approved with Suggestion/s: Title should be modified to **"**Process development of cereals based product enriched with garden cress for lactating women"
	Action:PI,Prof & Head, Dept of FPT, FPTBE, AAU, Anand
15.5.3.16	Standardization of *moringa* pulping technique using brush type pulper
	Approved **Suggestion/s: Nil**
	Action: Prof & Head, Dept of FPT, FPTBE, AAU, Anand
15.5.3.17	Technology for production of superior quality of cinnamon essential oil using super critical fluid extraction

	Approved **Suggestion/s: Nil**
	Action:PI,Prof & Head, Dept of FQA, FPTBE, AAU, Anand
15.5.3.18	Decontamination effect of Dielectric Barrier Discharge plasma and UV-C on selected microorganisms
	Approved **Suggestion/s: Nil**
	Action:PI,Prof & Head, Dept of FQA, FPTBE, AAU, Anand
15.5.3.19	Technology for Extraction of Carvone and Limonene rich Essential Oil from Dill Seed
	Approved with Suggestion/s: Particle size to be included in plan of work.
	Action:PI,Prof & Head, Dept of FQA, FPTBE, AAU, Anand
15.5.3.20	Super Critical Fluid Extraction of Essential Oil from Fennel Seed
	Approved with Suggestion/s: Particle size to be included in plan of work.
	Action:PI,Prof & Head, Dept of FQA, FPTBE, AAU, Anand
15.5.3.21	Development of irradiation technology for agricultural, animal, dairy and food products. **(SubTitle**: Technology for continuous microwave drying of *Moringa oliefera* leaves)
	Approved with Suggestion/s:Protocol of pretreatment of leaves should be standardized
	Action:PI, Prof & Head, Dept of FE, FPTBE, AAU, Anand
15.5.3.22	Study of air temperature and velocity distribution in the heat pump assisted dryer by Computational Fluid Dynamics
	Approved **Suggestion/s: Nil**
	Action:PI, Prof & Head, Dept of FE, FPTBE, AAU, Anand
15.5.3.23	Study on performance of grid connected 20 kW solar Photo-Voltaic system
	Approved **Suggestion/s: Nil**
	Action:PI, Prof & Head, Dept of FE, FPTBE, AAU, Anand
15.5.3.24	Development of fuzzy logic controller for effective garden irrigation
	Approved with Suggestion/s: Performance in field need to be evaluated for the developed system
	Action:PI, Prof & Head, Dept of FE
15.5.3.25	Osmotic drying of Ultrasonic pretreated Sapota
	Approved with Suggestion/s: Modify first objective as "To optimize the parameters of ultrasonic pretreatments for production of acceptable quality osmotically dehydrated sapota"
	Action:PI, Prof & Head, FPC, Dept. of Horticulture, BACA

KAMDHENU UNIVERSITY, GANDHINAGAR

Project Code	Project Title
15.5.3.26	Quality assessment of market samples of Paneer sold in Amreli District
	Approved with suggestion Survey to be carried out to find the effects of different seasons/ festivals on quality of Paneer
	Action:PI & HOD DC, KU, Amreli
15.5.3.27	Development of Carrot juice based reduced sugar milk drink
	Approved with following suggestions:

	1. Mention the variety of carrot. 2. Conditions for storage study and parameters to be analysed should be included. 3. Sample size for consumer survey should be atleast 100
	Action:PI & HOD DT, KU, Amreli
15.5.3.28	Physico-chemical and sensory characteristics of market samples of Peda sold in Saurashtra region of Gujarat State
	Approved with following suggestions: 1. Title : Physico-chemical, textural and sensory characteristics of market samples of Peda sold in Saurashtra region of Gujarat State 2. Record supplementary data like sampling date, type of package, packaging material, date of manufacture, best before date, etc for the samples.
	Action:PI & HOD DE, KU, Amreli
15.5.3.29	Study on process standardization and optimization of reduced sugar fennel based Lassi
	Approved with following suggestions: 1. Sample size for consumer survey should be atleast 100 2. Shelf life parameters and periods to be included
	Action:PI & HOD DT, KU, Amreli

OTHER SUB-COMMITTEE (HORTICULTURE AND AGROFORESTRY)

Project Code	Project Title
15.5.3.30	Standardization of fresh date RTS
	Approved with following suggestions: 1. Optimize the juice extraction process 2. To adjust TSS, pre-determined level of sugar and water are to be added 3. Pasteurization temperature should be 85°C/ 20 minutes. However exact temperature can be fixed based on preliminary trials. 4. Analyse for Coliform count,TPC and Yeast and Moulds in microbiological analysis. 5. Shelf life study should be included at refrigerated and room temperature. Frequency of sampling during storage and parameter to judge the shelf life (sensory, chemical and microbiological) should be indicated.
	Action: Research Scientist, Date Palm Research Station, SDAU, Mundra

15.6 AGRICULTURAL ENGINEERING AND AGRICULTURAL INFORMATION TECHNOLOGY

Chairman	**Dr. N C Patel, VC, AAU**
Co-Chairman	**Dr. N K Gontia, Dean, AET, JAU** **Dr. D R Kathiriya, Dean, AIT, AAU**
Rapporteurs	**Dr. Y R Ghodasara, AAU** **Dr. H D Rank, JAU** **Er. P S Pandit, NAU** **Dr. M L Gaur, AAU** **Dr. R S Parmar, AAU** **Dr. N K Dhamsaniya, JAU**

Presentation of Recommendations and New Technical Programmes by Conveners of SAUs

1	**Dr. R Swarnkar**	**Anand Agricultural University, Anand**
2	**Dr. P M Chauhan**	**Junagadh Agricultural University, Junagadh**
3	**Dr. P K Srivastava**	**Navsari Agricultural University, Navsari**
4	**Dr. R N Singh**	**Sardarkrushinagar Dantiwada Agri. Uni., SK Nagar**

Summary

Name of University	**No. of Recommendations**				**No. of New Technical Programmes**	
	Farming Community		**Scientific Community**			
	Proposed	**Approved**	**Proposed**	**Approved**	**Proposed**	**Approved**
SDAU	**0**	**0**	**0**	**0**	**5**	**5**
NAU	**6**	**3**	**1**	**1**	**10**	**9**
JAU	**6**	**6**	**2**	**1**	**18**	**18**
AAU	**0**	**0**	**2**	**1**	**12**	**12**
Total	**12**	**9**	**5**	**3**	**45**	**44**

15.6.1 RECOMMENDATION FOR FARMING COMMUNITY

NAVSARI AGRICULTURAL UNIVERSITY, NAVSARI

15.6.1.1	**Comparative Studies on the different drying methods on ber (*Ziziphusmauritiana*).**
	House differed the recommendation with following suggestions. 1. Present two years results with proper statistical analysis. 2. Also include economics data. *(**Action:** Head, Dept. of PFE, CAET, NAU, Dediapada)*
15.6.1.2	**Effect of different colour shade nets on biomass and quality of leafy vegetables (fenugreek, coriander and garlic)**
	House differed the recommendation with following suggestions.

	1. Revise statistical analysis. *(**Action:** Research Scientist, SWMRU, NAU, Navsari)*
15.6.1.3	**Study on subsurface lateral having inline dripper of varying discharge rate and spacing in sugarcane.**
	The farmers' of South Gujarat heavy rainfall zone cultivating sugarcane in paired row (60:120 cm) under drip irrigation are recommended to adopt subsurface inline lateral at 1.80 m with 16 mm X 4 lph X 60 cmto reduce dripper clogging and lateral damage for getting higher returns. દક્ષિણ ગુજરાતનાં ભારે વરસાદીય વિસ્તારમાં શેરડીની જોડીયા હારમાં(૬૦:૧૨૦સે.મી.) ટપક પિયતથી ખેતી કરતા ખેડુતોને ભલામણ કરવામાં આવે છે કે ૧૬મીમી X ૪લિટર/કલાક X ૬૦સે.મી. ની ઈનલાઈન લેટરલ જમીનમાં બેહાર વચ્ચે ૧.૮૦મી. અંતરે રાખી શેરડીનાં પાકમાં પિયત આપવાથી ડ્રીપર જામ થવા તથા લેટરલ લાઇનને થતા નુકસાનમાં ઘટાડા સાથે વધુ નફો મળે છે. **Approved** *(**Action:** Research Scientist, SWMRU, NAU, Navsari)*
15.6.1.4	**Packaging Studies of freshly roasted immature sorghum '*Sorghum Bicolor*' seed (*Pauk*).**
	House suggested to present the experiment results and proposed recommendation para after patent registration. *(**Action:** Asst. Prof., PHTC, NAU, Navsari)*
15.6.1.5	**Standardization of solvent for extraction of oil and colour matter from orange peel and seed.**
	Food processors are recommended to grind the dried orange peel and seed in pulveriser with 0.10 mm diameter sieve followed by extraction of maximum oil recovery and d-limonene content in solvent extraction method using n-hexane as solvent with 1:4 dry matters to solvent ratio for period of 98 mins. Powder of Dried orange seed and peel ↓ Extraction of oil using n-Hexan (Solute – Solvent Ratio at 1:4) ↓ Packing in glass bottles ↓ Storage ખાદ્ય પ્રસંસ્કરણકારો ને ભલામણ કરવામાં આવે છે કે નારંગીની સુકવણી કરેલ છાલ અને બીયા ને ઘંટીમાં ૦.૧૦ મીમી ના વ્યાસ વાળી જાળીનો ઉપયોગથી દળ્યા બાદ એન હેગઝેન નો ૧:૪ ના ગુણોત્તર પ્રમાણે સુકવેલ દ્રવ્ય અને દ્રાવક તરીકે ઉપયોગકરી દ્રાવક નિષ્કર્ષણની પ્રક્રિયા ૭૪ મિનિટ કરવાથી વધુ પ્રમાણમાં તેલ અને ડી-લીમોનીન કાઢી શકાય છે. નારંગીના સુકવેલ બીજ અને છાલનો પાવડર ↓ એન હેગઝેન નો ઉપયોગ કરી તેલ કાઢવું (૧:૪ ના ગુણોત્તર પ્રમાણે સુકવેલ દ્રવ્ય અને દ્રાવક લેવુ) ↓

	કાચની બાટલી માં પેક કરો ↓ સંગ્રહ કરો **Approved** ***(Action:** Asst. Prof., PHTC, NAU, Navsari)*
15.6.1.6	**Development and quality evaluation of jackfruit seed flour and soy flour fortified pasta.**
	The food processors are recommended to prepare pasta by dry mixing of refined wheat flour, jack fruit seed flour and soy flour at 70, 20 and 10%, respectively with addition of 30% water to prepare dough and then passed through pasta machine. The raw pasta is dried in a tray dryer at a temperature of 60±2° C till final moisture content of 3±1 % and packed in 500 gauge air tight polyethylene pouch for storage upto 60 days at ambient temperature without deterioration in quality. Take refined wheat flour, soya flour and jack fruit seed flour ↓ Mixing of refined wheat flour, jack fruit seed flour and soy flour at 70, 20 and 10% respectively ↓ Addition of 30% water to prepare dough ↓ Prepare raw pasta by cutting the extruded dough from machine ↓ Dry raw pasta in tray dryer at 60±2°C till final moisture content of 3±1 % ↓ Packed pasta in 500 gauge polyethylene pouches ↓ Stored upto 60 days at ambient condition ખાદ્ય પ્રસંસ્કરણકારોને ભલામણ કરવામાં આવે છે કે કરેલ પાસ્તા બનાવવા માટે મેદાનો લોટ, ફણસના બીજનો લોટ અને સોયાબીનનો લોટ અનુક્રમે ૭૦, ૨૦ અને ૧૦ ટકાના પ્રમાણમા ભેળવી,તે વજનના ૩૦ટકા પાણી વાપરી, બાંધેલા લોટમાંથી પાસ્તા મશીનમાં પાસ્તા પાડવા જોઇએ. આ પાસ્તાને ૬૦±૨° સેઈ તાપમાન ટ્રેડ્રાયરની અંદર પાસ્તાનો ભેજ ૩±૧ટકા થાય ત્યા સુધી સુકવી અને ૫૦૦ ગેઈજ પોલીથીન પાઉચની અંદર હવા ચુસ્ત રીતે બંધ કરી સામાન્ય તાપમાને સંગ્રહ કરવવાથી, ૬૦ દિવસ સુધી ગુણવત્તામાં ઘટાડો થતો નથી. મેદાનો લોટ, ફણસના બીજનો લોટ અને સોયાબીનનો લોટ ↓ મેદાનો લોટ, ફણસ ના બીજનો લોટ અને સોયાબીનનો લોટ અનુક્રમે ૭૦,૨૦ અને૧૦ ટકાનાપ્રમાણમા ભેળવો ↓ કણક બાંધવા૩૦ ટકાપાણી ઉમેરો ↓ કાચા પાસ્તા બનાવવા મશીનની બહાર નીકળતી કણકને કાપો ↓ કાચા પાસ્તાને ૬૦±૨°સે. ટ્રે ડ્રાયરમાં અંતિમ ભેજ ૩±૧% થાય ત્યાં સુધી સુકવો ↓

	પાસ્તાને ૫૦૦ ગેજની પોલિથીન પાઉચમાં પેક કરો ↓ ૬૦ દીવસ સુધી સામાન્ય સ્થીતીમાં સંગ્રહ કરો **Approved** ***(Action:*** *Asst. Prof., PHTC, NAU, Navsari)*

JUNAGADH AGRICULTURAL UNIVERSITY, JUNAGADH

15.6.1.7	**Optimum water management for off-season okra cultivation under protected environment**
	The farmers of South Saurashtra Agro climatic Zone are recommended to use net-cum-polyhouse without ridge vent with silver black plastic mulch (20 μm) for cultivation of okra during winter season (off season). This net-cum-polyhouse without ridge vent increase water productivity and water saving as well as controls weeds.

Details of mulching technology :	
1.	Mulch film: 20 μm silver black plastic
2.	Bed size: (a) Top width : 60 cm, (b) Bottom width : 75 cm, (c) Height : 20 cm
3.	Spacing: (a) Bed spacing : 100 cm, (b) Plant spacing on bed : 35 cm x 35 cm
4.	No. of row per bed: 2

આથી દક્ષિણ સૌરાષ્ટ્ર કૃષિ આબોહવાકીય વિસ્તારના ખેડૂતોને શિયાળામા ભીંડાના ઓફ સીઝન ઉત્પાદન માટે રીઝવેન્ટ વગરના નેટ-કમ-પોલી હાઉસ સાથે ૨૦ માઈક્રોન જાડાઈની સિલ્વર બ્લેક કલરની પ્લાસ્ટીક મલ્ચનો ઉપયોગ કરવાની ભલામણ કરવામાં આવે છે, આ પધ્ધતિથી પાણીની ઉત્પાદકતા અને બચત વધે છે, તેમજ નિંદામણ નું નિયત્રણ થાય છે.

મલ્ચીંગ ટેકનોલોજી અંગેની માહિતી :	
૧.	પ્લાસ્ટીક ફિલ્મઃ ૨૦ માઈક્રોમીટર સીલ્વર બ્લેક
૨.	બેડનુંમાપઃ અ. ઉપરની પહોળાઈ: ૬૦ સે.મી., બ. નીચેની પહોળાઈ: ૭૫ સે.મી., ક. ઉચાઈ: ૨૦ સે.મી.
૩.	અંતરઃ અ. બેડનું અંતરઃ ૧૦૦ સે.મી., બ. બેડ ઉપર છોડનું અંતરઃ ૩૫ સે.મી. x ૩૫ સે.મી
૪.	પ્રતિ બેડ હારની સંખ્યાઃ ૨

Approved

(Action: Prof. & Head, REE Dept, CAET, JAU, Junagadh**)**

15.6.1.8	**Coriander crop response to deficit soil moisture in various growth stages under drip irrigation system**
	The farmers of South Saurastra Agro-climatic zone growing coriander crop (variety:.GC-2) are advised to irrigate the crop using drip irrigation having following system details and time of operation to get maximum net return and water saving upto 17.6 %. They are also advised to consider flowering stage as

most sensitive to deficit irrigation followed by vegetative stage and seed development/setting.

Drip system details	Stage (Duration, DAS)	Irrigation time	Irrigation interval
Lateral size: 16 mm Lateral spacing :0.9 m Dripper spacing : 0.5 m Dripper discharge: 4 lph	Vegetative stage (0 to 55)	55 min	Alternate day
	Flowering stage (56 to 80)	63 min	
	Seed development/ setting stage (81 to 100)	77 min	

દક્ષિણ સૌરાષ્ટ્ર ખેત આબોહવાકિય વિસ્તારમાં ધાણા (ગુ-.૨) ની ખેતી કરતા ખેડૂતોને ધાણાના પાકમાં નીચે પ્રમાણેની વિગતે ટપક પિયત પદ્ધિતીથી પિયત આપવાની ભલામણ કરવામાં આવે છે .જેનાથી કયારા પિયત પદ્ધિતીની સરખામણીએ ચોખ્ખી આવકમાં વધારા ઉપરાંત ૧૭.૬ % સુધી પાણીની બચત થાય છે. આ ઉપરાંત ખેડૂતોને ભલામણ કરવામાં આવે છે કે ધાણાના પાકમાં પિયત માટે સંવેદનશીલતા માટે સૌથી વધુ સંવેદનશીલ ફૂલ અવસ્થા તેમજ ત્યારબાદ અનુક્રમે વિકાસ અવસ્થા અને દાણાના વિકાસની અવસ્થાને ધ્યાનમાં લેવી .

ટપક પદ્ધિતીની વિગત	અવસ્થાનો સમયગાળો (વાવેતર પછીના દિવસો)	પિયત નોસમય	પિયત અંતરાલ
લેટરલ વ્યાસ :૧૬ મીમી લેટરલ વચ્ચેનું અંતર: ૦.૯ મીટર બે ડ્રીપર વચ્ચેનું અંતર: ૦.૫ મીટર ડ્રીપર પ્રવાહ: ૪ લી / કલાક	વિકાસ અવસ્થા (૦-૫૫ દિવસ)	૫૫ મિનીટ	એકાંતર દિવસે
	ફુલ અવસ્થા (૫૬-૮૦ દિવસ)	૬૩ મિનીટ	
	દાણા વિકાસની અવસ્થા (૮૧-૧૦૦દિવસ)	૭૭ મિનીટ	

Approved.

(Action: Prof. & Head, SWCE Dept., CAET, JAU, Junagadh**)**

15.6.1.9 Evaluation of well recharge techniques for Junagadh region

It is recommended to the farmers, Govt. departments and NGOs that the open well technique is effective for recharging shallow aquifer in Junagadh region which may recharge 103cu.m groundwater per sq.m of bottom area of open well with recharge cost of Rs 1.94 per cum.

The tube well is effective for deep aquifer recharge, which may recharge 44473 cu.m groundwater per year with recharge cost of Rs.0.45 & 0.28 per cum including and excluding tube well cost respectively.

આથી જુનાગઢ વિસ્તાર માટે ખેડુતો ,સરકારના વિભાગો અને સ્વૈચ્છિક સંસ્થાઓને ભલામણ કરવામા આવે છે કે ખુલ્લા કુવા રીચાર્જ ટેકનીક ઉપલા ભુગર્ભ જળસ્તર ને રીચાર્જ કરવા માટે અસરકારક છે જેનાથી વાર્ષિક ૧૦૩ ઘ.મી .ભુગર્ભ જળ રીચાર્જ પ્રતિ ચો.મી .કુવાના તળીયાના

વિસ્તાર પ્રમાણે થાય છે અને રૂ.૧.૯૪ પ્રતિ ઘનમીટર ભુગર્ભ જળ રીચાર્જ માટે ખર્ચ થાય છે,

જ્યારે ટ્યુબવેલ રીચાર્જ ટેકનીક ઊંડા ભુગર્ભજળ સ્તરને રીચાર્જ કરવા માટે અસરકારક ટેકનીક છે ,જેનાથી વાર્ષિક ૪૪૪૭૩ ઘ.મી, ભુગર્ભજળ રીચાર્જ થાય છે અને રૂ.૦.૪૫ અને ૦.૨૮ પ્રતિ ઘન મીટર ભુગર્ભજળ રીચાર્જ માટે અનુક્રમેં ટ્યુબવેલ ખર્ચ સાથે અને ટ્યુબવેલ ખર્ચ વગર થાય છે.

Approved.

(Action: Prof. & Head, SWCE Dept., CAET, JAU, Junagadh**)**

15.6.1.10 To study the effect of different packing materials against Groundnut Bruchid (*Caryedon serratus* Olivier.) during storage

Farmers storing groundnut are advised to store the well dried (8.0%MC) groundnut pods in Purdue Improved Crop Storage (PICS) bag or Closely woven net bag for effective and economical management of *bruchid* pest up to six months.

આથી મગફળી નો સંગ્રહ કરતાં ખેડૂતોને ભલામણ કરવામાં આવે છે કે સારી રીતે સુકવેલ (૦.૮ટકા ભેજ) મગફળી ડોડવાને પરડીયુ ઈમ્પ્રુવડ ક્રોપ સ્ટોરેજ બેગ **(PICS)** અથવા ક્લોજલી વુવન નેટ (જીણી ગૂંથાયેલ જાળી વાળી) બેગમાં સંગ્રહ કરવાથી છ માસ સુધી ભોટવાનું અસરકારક અને અર્થક્ષમ વ્યવસ્થાપન કરી શકાય છે.

Approved.

(Action: Prof. & Head, PFE Dept, CAET, JAU, Junagadh**)**

15.6.1.11 Enzymatic Pre-treatment in the Processing of Pigeonpea.

The pulse processing entrepreneurs are recommended to give enzymatic pretreatment at specific enzyme concentration, incubation time, incubation temperature and tempering water pH as given below in Table 1 for different varieties of pigeon pea to get higher recovery, to reduce the dhal making time and to get more protein content as compared to traditional method as Table 2.

Table 1: Optimization of enzymatic pretreatment parameters for seven varieties.

Variety	Optimized value			
	Enzyme concentration (mg/100 g dry matter)	Incubation time (hr)	Incubation temperature (^oC)	pH
BDN-2	31.34	8.72	43.47	5.99
GJP1	28.79	7.46	44.97	4.96
Vaishali	27.64	8.05	45.04	5.31
ICP2043	32.36	8.19	40.00	5.50
BSMR736	31.62	7.34	44.70	5.34
ICPL87119	28.64	7.62	43.00	5.50
Pinku	30.86	7.84	43.58	5.62

Table 2: Results of different treatment for seven varieties of pigeon pea.

Variety	Traditional method			Optimized value			Actual value		
	Hulling efficiency (%)	Cooking time (min)	Protein (%)	Hulling efficiency (%)	Cooking time (min)	Protein (%)	Hulling efficiency (%)	Cooking time (min)	Protein (%)
BDN2	78.30	14.50	19.80	84.35	13.06	22.60	80.74	12.80	25.30
GJP1	76.63	16.92	19.80	84.24	15.51	24.64	82.8	15.10	23.43
Vaishali	75.66	13.23	20.89	83.71	13.51	23.16	78.30	13.14	23.28
ICP2043	72.16	14.97	21.81	80.47	13.63	23.26	77.6	13.01	20.70
BSMR736	66.00	18.00	18.74	80.95	14.64	21.42	76.90	13.50	21.53
ICPL87119	69.12	16.24	18.89	84.44	13.59	22.68	82.52	13.12	22.15
Pinku	72.62	13.45	19.63	75.27	12.35	20.96	76.54	12.42	22.16

આથી તુવેરના પ્રોસેસિંગ સાથે સંકળાયેલ ઉદ્યોગકારોને તુવેરની દાળ બનાવવા તુવેરને ઉત્સેચકોની પ્રક્રિયા, ચોકકસ ઉત્સેચક સાંદ્રતા, નિર્ધારિત સમય, તાપમાન અને પી.એચ (કોષ્ટક ૧) સાથે આપવાની ભલામણ કરવામાં આવે છે. આ પ્રક્રિયાથી દાળની રીકવરી વધારે મળે છે, દાળ બનાવવાના સમયમાં યોગ્ય ઘટાડો થાય છે તથા વધુ પ્રોટીન (કોષ્ટક ૨) મળે છે.

કોષ્ટક ૧: તુવેરની સાત જાતો માટે ઉત્સેચક પ્રાથમીક સારવાર પરિમાણોનો શ્રેષ્ઠ પરિમાણો

તુવેરની જાતો	**શ્રેષ્ઠ મૂલ્ય**			
	ઉત્સેચક સાંદ્રતા (મિગ્રા/ ૧૦૦ ગ્રામ ડ્રાયમેટર)	સેવન સમય (કલાક)	સેવન તાપમાન (^{o}સે)	પી.એચ.
બીડીએનર	૩૧.૩૪	૮.૭૨	૪૩.૪૭	૫.૯૯
જીજેપી૧	૨૮.૭૯	૭.૪૬	૪૪.૯૭	૪.૯૬
વૈશાલી	૨૭.૬૪	૮.૦૫	૪૫.૦૪	૫.૩૧
આઈસીપી૨૦૪૩	૩૨.૩૬	૮.૧૯	૪૦.૦૦	૫.૫૦
બીએસએમઆર૭૩૬	૩૧.૬૨	૭.૩૪	૪૪.૭૦	૫.૩૪
આઈસીપીએલ૮૭૧૧૯	૨૮.૬૪	૭.૬૨	૪૩.૦૦	૫.૫૦
પીંકુ	૩૦.૮૬	૭.૮૪	૪૩.૫૮	૫.૬૨

કોષ્ટક ૨: તુવેરની સાત જાતો માટે વિવિધ પધ્ધતિના પરિણામો.

તુવેરનીજાતો	પરંપરાગત પદ્ધતિ			શ્રેષ્ઠ મૂલ્ય			વાસ્તવિક મૂલ્ય		
	ફોતરી ઉતારવાની કાર્યક્ષમતા **(%)**	દાળ બાફવામાં લાગતો સમય **(**મિનિટ)	પ્રોટીન (%)	ફોતરી ઉતારવાની કાર્યક્ષમતા **(%)**	દાળ બાફવામાં લાગતોસમય **(**મિનિટ)	પ્રોટીન (%)	ફોતરી ઉતારવાની કાર્યક્ષમતા **(%)**	દાળ બાફવામાં લાગતો સમય **(**મિનિટ)	પ્રોટીન (%)
બીડીએનર	૭૮.૩૦	૧૪.૫૦	૧૯.૮	૮૪.૩૫	૧૩.૦૬	૨૨.૬	૮૦.૭૪	૧૨.૮૦	૨૫.૩૦
જીજેપી૧	૭૬.૬૩	૧૬.૯૨	૧૯.૮	૮૪.૨૪	૧૫.૫૧	૨૪.૬	૮૨.૮૦	૧૫.૧૦	૨૩.૪૩
વૈશાલી	૭૫.૬૬	૧૩.૨૩	૨૦.૮૯	૮૩.૭૧	૧૩.૫૧	૨૩.૧૬	૭૮.૩૦	૧૩.૧૪	૨૩.૨૮
આઈસીપીર ૦૪૩	૭૨.૧૬	૧૪.૯૭	૨૧.૮	૮૦.૪૭	૧૩.૬૩	૨૩.૨૬	૭૭.૬૦	૧૩.૦૧	૨૦.૭૦
બીએસએમ આર ૭૩૬	૬૬.૦૦	૧૮.૦૦	૧૮.૭૪	૮૦.૯૫	૧૪.૬૪	૨૧.૪૩	૭૬.૯૦	૧૩.૫૦	૨૧.૫૩
આઈસીપી એલ ૮૭૧૧૯	૬૯.૧૨	૧૬.૨૪	૧૮.૮૯	૮૪.૪૪	૧૩.૫૯	૨૨.૬૮	૮૨.૫૨	૧૩.૧૨	૨૨.૧૫
પીંકુ	૭૨.૬૨	૧૩.૪૫	૧૯.૬૩	૭૫.૨૭	૧૨.૩૫	૨૦.૯૬	૭૬.૫૪	૧૨.૪૨	૨૨.૧૬

Approved.

(Action: Prof. & Head, PFE Dept, CAET, JAU, Junagadh**)**

15.6.1.12	**Impact of irrigation frequency and regimes on the economic productivity of drip irrigated fennel.**
	Farmers' of South Saurashtra Agroclimatic Zone growing fennel are advised to adopt drip irrigation for acquiring higher yield(59%), water saving (69%) and higher net return over control.

Details of drip system	Irrigation scheduling
Lateral spacing : 75 cm Dripper spacing: 40 cm Dripper discharge: 2 lph	At 3 days interval with 0.8 IW/ETc or a) November-December: 1h and 15min to 1h and 30min b) January: 2 h and 20 min c) February-March: 3 h to 3 h and 20 min d) April: 2h and 20min

દક્ષિણ સૌરાષ્ટ્ર ખેત આબોહવા વિસ્તારમાં વરીયાળીનું વાવેતર કરતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે, વરીયાળીના પાકમાં ટપક પિયત પધ્ધતિથી પિયત આપવાથી વધારે ઉત્પાદન (૫૯ %) પાણીની બચત (૬૯ %) તેમજ આવક મેળવી શકાય છે.

ટપક પધ્ધતિ અંગેની માહિતી	ડ્રીપ ચલાવવાનો સમય
લેટરલનું અંતર: ૭૫ સેમી. ડ્રીપરનું અંતર: ૪૦ સેમી. ડ્રીપરનો પ્રવાહ દર: ૨ લી / કલાક	ત્રણ દિવસના અંતરાલે ૦.૮ ઈ.ટી.સી. લેવલે અથવા અ. નવેમ્બર-ડીસેમ્બર: ૧ કલાક ૧૫ મિનીટ થી ૧ કલાક ૩૦ મિનીટ બ. જાન્યુઆરી: ૨ કલાક ૨૦ મિનીટ ક. ફેબ્રુઆરી–માર્ચ: ૩ કલાક થી ૩ કલાક ૨૦ મિનીટ ડ. એપ્રીલ : ૨ કલાક ૨૦ મિનિટ

Approved.

(Action: Res. Sci. (Agril. Engg.), RTTC, JAU, Junagadh**)**

15.6.2 RECOMMENDATION FOR SCIENTIFIC COMMUNITY

NAVSARI AGRICULTURAL UNIVERSITY, NAVSARI

15.6.2.1	**Quantitative Determination of Soil Erosion and Prioritization of Micro-watersheds using Remote Sensing and GIS**
	Quantitative determination of soil erosion in micro-watersheds of 'Ambika' watershed indicated that out of 64 micro-watersheds, 50 are falling under moderately high to very high category (soil erosion >15 t $ha^{-1}yr^{-1}$). The use of contour bunds and terraces as soil conservation measure in 'Ambika' watershed can reduce the annual average soil erosion from 22.41 $tha^{-1}yr^{-1}$ to 17 $tha^{-1}yr^{-1}$. Therefore, to reduce soil erosion, these conservation measures can be effectively applied in 'Ambika' watershed of Dang district and in watersheds with similar geomorphology. Hence, it is informed to prefer remote sensing and GIS technology as an alternative to conventional methods for soil erosion estimation and subsequent prioritization of micro watersheds for implementing soil

	conservation practices. **Approved.** **(Action:** Dean, COA, NAU,Waghai**)**

JUNAGADH AGRICULTURAL UNIVERSITY, JUNAGADH

15.6.2.2	**Evaluation of well recharge techniques for Junagadh region.**
	House differed the recommendation with following suggestions/reasons. 1. **The proposed model is site specific, hence limited scalability.** **(Action:** Prof. & Head, SWCE Dept, CAET, JAU, Junagadh**)**
15.6.2.3	**Assessment of potential water resources of Aji river basin using SWAT Model**

The scientific Community/ Policy makers working for Aji River Basin are informed as below.

1. Warming trend

- The day maximum temperature may increase by 3.31 ^oC, 1.46 ^oC and 2.52 ^oC up to end of 2070 over the present 34.51 ^oC, 38.65 ^oC, 36.01 ^oC and minimum temperature by 3.35 ^oC, 5.80 ^oC and 3.07 ^oC up to end of 2070 over the present 14.83 ^oC, 26.38 ^oC and 22.37 ^oC in winter, summer and monsoon season respectively.
- The adoptions of heat resistant crop varieties with frequent irrigations of smaller depth through MIS particularly during summer season should be promoted to lessen the adverse effects of higher temperature.
- The following mathematical models may be used to predict the day maximum and day minimum temperature for the period up to 2070.

Period/ Season	Day maximum temperature (^oC)		Day minimum temperature (^oC)	
	Model	R^2	Model	R^2
Annual	T_{max} = 0.0462 x Year - 56.927	0.90	T_{min} = 0.081 x Year - 141.62	0.98
Winter	T_{max} = 0.0625 x Year - 91.552	0.86	T_{min} = 0.0632 x Year - 112.64	0.98
Summer	T_{max} = 0.0276 x Year - 17.023	0.90	T_{min} = 0.1094 x Year - 194.28	0.98
Monsoon	T_{max} = 0.0476 x Year - 59.997	0.87	T_{min} = 0.0579 x Year - 94.417	0.88

2. Surface water

- The crop water requirements during winter, summer and monsoon season may change by the tune of 6.4 %, - 0.3 % and 1.5 % respectively in future up to 2070 as compared to the past, due to global warming. On an average, the water balance components like rain fall and runoff may be decreased by 26 %, and 29 % in future up to 2070 as compared to past. The monsoon seasonal rainfall and runoff will be decreased up to 2070 but the extreme event (100 years return period) will be increased by tune of 39 % and 87.5 % respectively due to climate change impacts. Therefore, the following empirical probability distributions should be used for the rainwater management planning.

Hydrological Parameter	**Probability distribution**	**Empirical cumulative probability function**

Monsoon Rainfall(mm)	Frechet type (Fisher-Tippett 2)	$P(x \geq X) = 1 - e^{\frac{-[\frac{(x-(-58))}{-10.5627}]^{-1.88227}}{e^{-1.88227}}}$
Monsoon runoff(mm)	Log-logistic	$P(x \geq X) = 1 - \frac{1}{1 + e^{(-1.20156 \ln(x) + 5.00776)}}$

3. Ground water

- The groundwater recharge may be decreased by 51 % up to 2070 as compared to past due to the climate change impacts. Therefore, the water harvesting-cum-groundwater recharge structures as well as artificial groundwater recharge through open/tube well should be planned for the groundwater sustainability.

Approved.

(Action: Prof. & Head, SWCE Dept., CAET, JAU, Junagadh)

ANAND AGRICULTURAL UNIVERSITY, ANAND

15.6.2.4	**Student Information Management System(SIMS) for School of Bakery**
	A web-app "SIMS" is recommended for short term course of Bakery offered by Polytechnic in Food Science and Home Economics, AAU, ANAND to record details of admission, fees, attendance and result. It generates reports like Attendance, Fee Receipt, Deposit, Stipend, Result, Mark sheet and Certificate. **Approved.** **(Action:** Prof. and Head, AIT,CAIT,Anand**)**
15.6.2.5	**Development of rapid measurement system for angle of repose of grains.**
	House suggested to present the experiment results and proposed recommendation para after patent registration. **(Action:** Prof. and Head, APE, CAET, Godhra**)**

15.6.3 NEW TECHNICAL PROGRAMME

SARDAR KRUSHINAGAR DANTIVADA AGRICULTURAL UNIVERSITY, SKNAGAR

15.6.3.1	Rainfall-runoff modeling in Banas basin using Artificial Neural Network Technique	Accepted with following suggestions : 1. Change the title as "Water harverting plan for Banas basin using artificial neural network technique". 2. Add the objective as "to prepare regional water harveting plan based on discharge". [**Action:** Concerned PI via HOD / Principal]
15.6.3.2	Development of solar powered winnowing fan	Accepted with following suggestions : 1. Change objective No. 1 as "to

		design and develop a solar assisted winnowing fan". 2. Climatic parameters should be recorded. 3. Fan performance should be evaluated. 4. Solar panel size and output should be recorded. [**Action:** Concerned PI via HOD / Principal]
15.6.3.3	Effect of lateral spacing and irrigation interval on productivity of drip irrigated wheat under North Gujarat conditions	Accepted with following suggestions : 1. 4 lph inline dripline should be used. 2. Irrigation intervals should be varied as 1-2-3 days. 3. One more objective should be added "to evaluate hydraulic parameters". [**Action:** Concerned PI via HOD/ Principal]
15.6.3.4	Estimation of Reference Evapotranspiration using Artificial Neural Networks for S.K. Nagar	Accepted with following suggestions : 1. AIC-BIC-D index may be used for the evaluation [**Action:** Concerned PI via HOD/ Principal]
15.6.3.5	Detection of hydrological trends and variability for S.K. Nagar	Accepted with following suggestions : 1. Change the title as "Evaluation of rainfall and temperature variation for rainwater and crop management of Sardar Krushinagar". 2. Change the objective as (i) to identify regional rainfall and temperature variations, and (ii) to suggest optimum crop sowing plan for the region. [**Action:** Concerned PI via HOD/ Principal]

NAVSARI AGRICULTURAL UNIVERSITY, NAVSARI

15.6.3.6	Design and development of manual harvester	Accepted with following suggestions :

		1. Title should be modified as "Design and development of economical manual harvesting tool". 2. Objective should be kept as (i) To design and develop ergonomically suitable manual harvesting tool, (ii) To evaluate performance of the developed harvesting tool, and (iii) To compare developed tool with conventional system. 3. All ergonomical observations may be recorded besides heart beat rate. (**Action:** Head, FMP, CAET, NAU, Dediapada)
15.6.3.7	Design and development of portable solar energy unit for on farm power utilization	Not- Accepted due to following reason : 1. Mobility of the plant is difficult and it is not economically viable. (**Action:** Head, FMP, CAET, NAU, Dediapada)
15.6.3.8	Development and performance evaluation of SPV powered refrigerator	Accepted with following suggestions : 1. "Perishable food products" word should be added in the title. 2. 'refrigerator' word should be replaced by 'refrigerating system'. 3. Storage capacity should be kept approx 300 liters. 4. Thermal observations should be recorded. 5. Panel output should be recorded. (**Action :** Head, FMP, CAET, NAU, Dediapada)
15.6.3.9	Efficacy of Drip irrigation on Melia composita wild (Malabar Neem)	Accepted with following suggestion : 1. Ring basin irrigation need to be designed. (**Action :** Head, SWCE,

		CAET, NAU, Dediapada)
15.6.3.10	Evaluation of mini tractor operated seed cum fertilizer drill under different sowing systems of green gram crop in Vertisol soil	Accepted with following suggestion : 1. Title should be kept as "Evaluation of tillage practices for green gram" (**Action :** Head, Agric. Engg., NMCA, NAU, Navsari)
15.6.3.11	Effect of different conservation practices on yield and water use efficiency of linseed	Accepted with following suggestion : 1. In title "Effect" should be replaced by "Studies on". (**Action :** Head, CoE on PHT, ACHF, NAU, Navsari)
15.6.3.12	Standardization of processing technology for dried Broccoli (Brassica oleracea var. italic)	Accepted with following suggestions : 1. In experiment – I, tray load should be selected as 1.5, 2.0 and 2.5 kg/m^2. 2. In experiment – II, multi-layer pouch should be added in the packaging material, hence, number of treatments will be three and repetitions may be kept as eight. Accordingly Statistical design should be used for data analysis. (**Action :** Head, CoE on PHT, ACHF, NAU, Navsari)
15.6.3.13	Development of Sapota chips chocolate bar	Accepted with following suggestion : 1. In experiment design 'CRD' should be replaced by 'CCRD'. (**Action :** Head, CoE on PHT, ACHF, NAU, Navsari)
15.6.3.14	Development of Sapota chips mixed frozen desert	Accepted (**Action :** Head, CoE on PHT, ACHF, NAU, Navsari)
15.6.3.15	Demonstration of site specific water conservation technologies for improving soil and water quality	Accepted (**Action :** Principal, COF,

	in coastal South Gujarat	ACHF, NAU, Navsari)

JUNAGADH AGRICULTURAL UNIVERSITY, JUNAGADH

15.6.3.16	Design, development and performance evaluation of battery operated pruner for horticultural crops (AICRP on FIM).	Accepted (**Action:** Prof. & Head, Dept. of FMPE, CAET, JAU, Junagadh)
15.6.3.17	Development of cattle dung collecting device from cattle shed (AICRP on FIM)	Accepted with following suggestion : 1. Drop the name of Agril. Assistant from the project team. (**Action:** Prof. & Head, Dept. of FMPE, CAET, JAU, Junagadh)
15.6.3.18	Development and performance evaluation of mini tractor operated multi crop weeder.	Accepted with following suggestion : 1. Draft and power requirement should be recorded. (**Action:** Prof. & Head, Farm Engg., CoA, JAU, Junagadh)
15.6.3.19	Cotton Crop Response to Drip Fertigation (AICRP on IWM).	Accepted (**Action:** Prof. & Head, Dept. of SWCE, CAET, JAU, Junagadh)
15.6.3.20	Response of fertigation under different irrigation systems on sweet corn.	Accepted (**Action:** Res. Sci. (Agril. Engg.), RTTC, JAU, Junagadh)
15.6.3.21	Impact of irrigation regimes and fertigation scheduling on brinjal crop.	Accepted with following suggestion : 1. Three replications should be taken. (**Action:** Res. Sci. (Agril. Engg.), RTTC, JAU, Junagadh)
15.6.3.22	Techno-economic performance of solar pump on brinjal.	Accepted (**Action:** Res. Sci. (Agril. Engg.), RTTC, JAU, Junagadh)
15.6.3.23	Response of mulching under different irrigation regimes on coconut	Accepted (**Action:** Res. Sci. (Agril. Engg.), RTTC, JAU, Junagadh)
15.6.3.24	In-situ soil moisture conservation: Utilization and management of rainwater for groundnut production.	Accepted with following suggestion : 1. Drop name of Agril. Officer from project team. (Action: Res. Sci. (Dry

		Farming), MDFRS, JAU, Targhadia)
15.6.3.25	Response of tillage and in situ moisture conservation on alteration of soil in cotton crop.	Accepted with following suggestion : 1. Drop name of Agril. Officer from project team. (Action: Res. Sci. (Dry Farming), MDFRS, JAU, Targhadia)
15.6.3.26	Development of biodegradable packaging film based on whey protein isolate.	Accepted (Action: Prof. & Head, Dept. of PFE, CAET, JAU, Junagadh)
15.6.3.27	Design and Development of Gel Expulsion Machine for Aloe vera leaves.	Accepted (Action: Prof. & Head, Dept. of PFE, CAET, JAU, Junagadh)
15.6.3.28	Development of high protein extruded product using defatted peanut flour (AICRP on PHET).	Accepted (Action: Prof. & Head, Dept. of PFE, CAET, JAU, Junagadh)
15.6.3.29	Design and development of grain treater for enzymatic Pre-treatment to pigeon pea grains (AICRP on PHET).	Accepted (Action: Prof. & Head, Dept. of PFE, CAET, JAU, Junagadh)
15.6.3.30	Effect of protected structures and mulching on cauliflower cultivation during rainy season (AICRP on PET).	Accepted with following suggestions : 1. Drop the name of Tech. Asstt. from the project team. 2. Year of completion may be 2021-22. (Action: Prof. & Head, Dept. of REE, CAET, JAU, Junagadh)
15.6.3.31	Detection and classification of the major nocturnal flying insect using deep learning.	Accepted with following suggestion : 1. Year of completion may be 2021-22. (Action: Director. IT Cell, JAU, Junagadh)
15.6.3.32	Online university student fees receipt system.	Accepted with following suggestion : 1. Drop the Computer Programmer from the list of investigators (Project team) (Action: Director, IT Cell, JAU, Junagadh)
15.6.3.33	Development of online salary bill management for JAU, Junagadh.	Accepted with following suggestion :

		1. Drop the Computer Programmer from the list of investigators (Project team) (Action: Director, IT Cell, JAU, Junagadh)

ANAND AGRICULTURAL UNIVERSITY, ANAND

15.6.3.34	Interface Module for Inversion of Canopy Radiative Transfer Model PROSAIL (CAIT, Anand)	Accepted [Action: Concerned PI via HOD/Principal]
15.6.3.35	Web based Climate Data Processing and Analysis Tools (CAIT, Anand)	Accepted [Action: Concerned PI via HOD/Principal]
15.6.3.36	Atmospheric Correction Module with Standalone Interface for GeoTIFF Imagery Using SixS(6S) Model (CAIT, Anand)	Accepted [Action: Concerned PI via HOD/Principal]
15.6.3.37	Transformation of Information Through Multimedia Based Interactive Media for Castor Crop (CAIT, Anand)	Accepted [Action: Concerned PI via HOD/Principal]
15.6.3.38	Transformation of Information Through Multimedia Based Interactive Media for Organic Farming (CAIT, Anand)	Accepted [Action: Concerned PI via HOD/Principal]
15.6.3.39	Breeder Seed Management System for Government of Gujarat (DIT, Anand)	Accepted [Action: Concerned PI via DIT]
15.6.3.40	Online Repository and Analysis of Fall Armyworm(FAW) for Government of Gujarat (DIT, Anand)	Accepted [Action: Concerned PI via DIT]
15.6.3.41	Modification of Bullock Drawn Indigenous Wooden Plough For Tribal Region of Middle Gujarat (CAET, Godhra)	Accepted [Action: Concerned PI via HOD/Principal]
15.6.3.42	Design and development of mini tractor drawn two row automatic potato planter cum fertilizer applicator (CAET, Godhra)	Accepted [Action: Concerned PI via HOD/Principal]
15.6.3.43	Development of perforated storage bin for garlic	Accepted with following suggestion : 1. Minimum capacity may be kept at least 50 kg. [Action: Concerned PI via HOD/Principal]
15.6.3.44	Optimization of process parameters for protein fortified Kesar Mango Leather.	Accepted with following suggestion : 1. Temperature should be

		selected as 50, 55, 60 and 65 ^{0}C. [Action: Concerned PI via HOD/Principal]
15.6.3.45	Remote sensing and GIS based approach for identifying prospective water harvesting sites in the Panam sub-watershed of Mahi River Basin, India (College of Agriculture, Vaso)	Accepted [Action: Concerned PI via HOD/Principal]

15.7 SOCIAL SCIENCE

Chairman	Prof. (Dr.) Ashok Patel, VC, SDAU
Co-Chairmen	Dr. Arun Patel, DEE, AAU Dr. K. A. Khunt, JAU
Rapporteurs	Dr. C. P. Desai, AAU Dr. R. D. Pandya, NAU Dr. J. J. Mistry, SDAU
Statistician	Dr. A. N. Khokhar, AAU

Presentation of recommendation and technical programmes by Conveners of SAUs

Sr. No.	Name	Designation & University
1.	**Dr. V. T. Patel**	**Convener, Social Science, SDAU, Sardarkrushinagar**
2.	**Dr. Ruchira Shukla**	**Convener, Social Science, NAU, Navsari**
3.	**Dr. C. D. Lakhlani**	**Convener, Social Science, JAU, Junagadh**
4	**Dr. R. S. Pundir**	**Convener, Social Science, AAU, Anand**

Summary

Name of University	No. of Recommendations				No. of New Technical Programmes	
	Farming Community		Scientific Community			
	Proposed	Approved	Proposed	Approved	Proposed	Approved
SDAU	00	00	02	02	41	41
NAU	00	00	03	03	18	18
JAU	00	00	03	03	22	22
AAU	01	01	04	04	47	46
Total	**01**	**01**	**12**	**12**	**128**	**127**

15.7.1 RECOMMENDATIONS FOR FARMING COMMUNITY

S. D. AGRICULTURAL UNIVERSITY, SKNAGAR: NIL

NAVSARI AGRICULTURAL UNIVERSITY, NAVSARI: NIL

JUNAGADH AGRICULTURAL UNIVERSITY, JUNAGADH: NIL

ANAND AGRICULTURAL UNIVERSITY, ANAND

15.7.1.1	**Title:** Impact assessment of drip irrigation technology in banana in middle Gujarat
	Recommendation for farming community In middle Gujarat, drip cultivated banana is about 38 per cent more profitable than traditional grown banana by receiving 19 per cent higher production. The banana productivity could be increased by about 20 per cent if the farmers switch over

from traditional method to drip method with the same level of resource use.

ખેડૂતઉપયોગી ભલામણ:

મધ્ય ગુજરાતમાં કેળાની ખેતીમાં ટપક પિયત પધ્ધતિના ઉપયોગથી પરંપરાગત પિયત પધ્ધતિ કરતાં ૩૮ ટકા વધુ નફો અને ૧૯ ટકા વધારે ઉત્પાદન મળે છે. તેમજ એકસમાન સંશાધનોના ઉપયોગથી ટપક પિયત પધ્ધતિથી ઉગાડાતા કેળાના પાકમાં પરંપરાગત પિયત પધ્ધતિ કરતાં ૨૦ ટકા વધુ ઉત્પાદકતા મળે છે.

The recommendation is accepted

(**Action:** I/C Professor and Head, Department of Agri. Economics, BACA, AAU, Anand)

15.7.2 RECOMMENDATIONS FOR SCIENTIFIC COMMUNITY

S. D. AGRICULTURAL UNIVERSITY, SARDARKRUSHINAGAR

15.7.2.1 Title : **Attitude of farmers towards Soil Health Card Programme**

Recommendation:

A scale developed to measure the attitude of the farmers towards Soil Health Card (SHC) programme. The scale consists of 14 statements. This scale is recommended for the use of scientific community of the state and country for measuring the attitude of farmers toward Soil Health Card Programme.

Scale for measuring the attitude of farmers towards soil health card programme

Sr.	Statements	SA	A	UN	DA	SDA
1	SHC helps to increase net profit of farmers (+)	5	4	3	2	1
2	SHC is not useful for illiterate farmers (-)	1	2	3	4	5
3	SHC has not created impact on crop production (-)	1	2	3	4	5
4	It is very essential to check soil health through SHC programme (+)	5	4	3	2	1
5	SHC is a useful programme for farmers (+)	5	4	3	2	1
6	Farmers are not getting SHC timely (-)	1	2	3	4	5
7	SHC promotes scientific and technology based farming (+)	5	4	3	2	1
8	Follow-up is lacking after distribution of SHC (-)	1	2	3	4	5
9	I doubt the method of taking sample for SHC is proper (-)	1	2	3	4	5
10	It is easy to adopt the recommendations made in SHC (+)	5	4	3	2	1
11	Too much time is wasted between soil sample collection and reporting (-)	1	2	3	4	5
12	Soil testing done under SHC is not reliable (-)	1	2	3	4	5
13	Testing soil samples under SHC is only wastage of resources (-)	1	2	3	4	5
14	SHC has created awareness among farmers about soil health (+)	5	4	3	2	1

	The recommendation is accepted (**Action:** Department of Extension Education, CPCA,SDAU, Sardarkrushinagar)
15.7.2.2	**Title:** Status of Dairy Sector in Gujarat
	Recommendation South Gujarat's contribution in state milk production is only 11.32 per cent whereas milk production trend shows that three districts namely Banaskantha (13.87%), Sabarkantha (8.84%) and Mehsana (6.45%) alone share nearly 30 per cent in state milk production. South Gujarat's low contribution in state milk production is mainly attributed by the negative growth in population of indigenous cow even though indigenous cow milk productivity growth is higher as compared to crossbred cow and buffalo in the South region. Therefore, there is a need to reintroduce the indigenous cow especially in South Gujarat region with improved milk productivity. Overall milk production in Gujarat is increased by the combined effect of population (59.62 %) and yield effects (39.14 %) where population effect led milk production is more in cross bred cow (92.05 %) and yield effect led milk production is mainly observed in indigenous cow (44.67 %) and buffalo (35.99 %). For productivity led growth instead of population led growth in milk production, there is an absolute need to promote the indigenous cow and buffalo. The income from dairy farming increased higher (1.40 times over the decade) as compared to other income activities (crop production, off-farm business, wages and salaries) and has an equalising effect on the distribution of farm income. Contribution of dairy income in farm income is higher especially in case of marginal (37.97 %) and small (31.01 %) land owning farm households. At the same time income of dairy farmers is higher compared to non-dairy farmers. Therefore, government should give more focus on promotion of dairy farming in the programmes designated for enhancing farmer's income and in reducing income inequalities. **The recommendation is accepted** (**Action:** Department of Agril. Economics, CPCA, SDAU, Sardarkrushinagar)

NAVSARI AGRICULTURAL UNIVERSITY, NAVSARI

15.7.2.3	**Title:** Perception and Attitude of Younger farm women towards animal Husbandry as Occupation
	Message for Extension workers: Extension workers of Navsari district of South Gujarat should select young farm women who are educated, regularly use mass media (SMS, Whatsapp) and wish to participate in training to enhance their perception and attitude towards animal husbandry as main occupation. **<u>વિસ્તરણ કાર્યકરો માટે સંદેશ</u>** દક્ષિણ ગુજરાતનાં નવસારી જિલ્લાના વિસ્તરણ કાર્યકરોએ ભણેલી ,સમૂહ માધ્યમ (એસ. એમ. એસ.,વોટ્સેપ) ઉપયોગ કરતી અને તાલીમમાં સહભાગી થવા તત્પર એવી યુવા ખેડુતમહિલાઓની પસંદગી કરવી જેથી તેઓની પશુપાલનને મુખ્ય વ્યવસાય તરીકે અપનાવવાની સમજ અને વલણ વધારી શકાય. **The message is accepted**

	(**Action:** Principal & Assoc. Professor (Ext.), Poly. in Agri., CoA, NAU, Bharuch)
15.7.2.4	**Title :** Assessment of vulnerability to poverty among the farmers in Gujarat
	Policy message: Cultivation and livestock enterprises can be instrumental as primary source of income as compared to non-agricultural activity in rural areas. Moreover, there is crucial role of size of land holding in reducing vulnerability to poverty. Therefore, poverty prevention as well as alleviation policies should be implemented intensively for the betterment of marginal and small land holders. **The message is accepted** (**Action:** Asst. Professor (Agril.Econ.), CoA, NAU, Waghai)
15.7.2.5	**Title :**Construction of selection indices to select optimum selection index in MungbeanVignaradiata (L.) R. Wilczek
	Recommendation: Broad sense heritability, genotypic coefficient of variation weight and phenotypic coefficient of variation weight methods manifested more or less same results. Selection index (I_{2346}) depicted higher per cent relative efficiency among all the selection indices excluding grain yield per plant. Therefore selection index (I_{2346}) with combinations of plant height, number of primary branches, days to flowering and clusters per plant is suggested for selection of mungbean genotypes for breeding improvement programme where one of the parents is Meha or GM-4 or Pusa Vishal. **The recommendation is accepted** (**Action:** Prof. & Head, Dept. of Agricultural Statistics, NMCA, NAU, Navsari)

JUNAGADH AGRICULTURAL UNIVERSITY, JUNAGADH

15.7.2.6	**Title: Performance and price discovery of Cotton in spot and futures markets in India**
	Recommendation: The efficiency of futures markets of cotton and cotton oilseed cake can be improved by increasing the participation of various stakeholders including farmers. This can be tackled with the help of a three pronged strategy: (i) Creating large scale awareness among various stakeholders, including farmers by focusing on market oriented extension services. (ii) Mobilizing farmers under groups to pool their resources. (iii) Decreasing the current lot size of cotton based future contract which is a prime reason behind nonparticipation of farmers. **The recommendation is accepted** (**Action:** Professor & Head, Dept. of Agril. Economics, COA, Junagadh**)**
15.7.2.7	**Title: Comparison of various methods of stability analysis to identify stable genotypes in Sesame**

	Recommendation: The Desirability Index (D_i) of parametric method and Mean of absolute Rank Difference of genotype over environments ($Si^{(3)}$), Variance among the ranks over environments ($Si^{(6)}$)of non-parametric methods found useful for stability analysis of genotypes in sesame. These non-parametric methods need not require to fulfill strong assumptions as in case of Eberhurt & Russel. **The recommendation is accepted** **(Action:** Professor & Head, Dept. of Agril. Statistics, CoA, JAU, Junagadh**)**
15.7.2.8	**Scope and opportunities of Agro-tourism in Saurashtra region**
	Recommendation: There is an ample potential for development of agro-tourism in four identified routes; route-I (Junagadh- Amreli- SasanGir- Junagadh), II (Junagadh-Jamnagar– Porbandar– Junagadh), III (Junagadh– Rajkot-Surendranagar- Junagadh) and route-IV (Junagadh- Veravel – Junagadh) of Saurashtra region. **The recommendation is accepted** **(Action:** Principal & Dean, PG Institute of ABM, JAU, Junagadh**)**

ANAND AGRICULTURAL UNIVERSITY, ANAND

15.7.2.9	**Title:** Study on variability and development of yardstick for reliability of the experimental results of sugarcane crop
	Recommendation: The yard stick of CV% for accepting the results of agronomy experiments for sugarcane crop conducted in south Gujarat region is 12 per cent for yield character. **The recommendation is accepted** **(Action :** Professor and Head, Department of Agri. Statistics, BACA, AAU, Anand**)**
15.7.2.10	**Title:** Study on variability and development of yardstick for reliability of the experimental results of sugarcane crop
	Recommendation: The yard stick of CV% for accepting the results of Plant Breeding experiments for Sugarcane crop conducted in south Gujarat region is 10 per cent for yield character. **The recommendation is accepted** **(Action :** Professor and Head, Department of Agri. Statistics, BACA, AAU, Anand**)**
15.7.2.11	**Title:** Prediction of Monthly rainfall from June to September by Double Fourier Series and Artificial Neural Networks
	Recommendation: To predict the monthly rainfall with greater accuracy from June to September in middle Gujarat using 55 years of weather data in two non linear models. It is recommended to use Double Fourier series with two inputs monthly mean Maximum air temperature and relative humidity whereas four inputs namely, Maximum air temperature of May, monthly mean Relative humidity, monthly rainfall and monthly wind speed of previous year in Artificial Neural Network

The recommendation is accepted

(Action: Professor & Head, Deptt. of Agril. Meteorology, BACA, AAU, Anand)

15.7.2.12

Title: Development and standardization of scale to measure the attitude towards Yoga as a tool of human resource development

Recommendation:

A scale was developed to measure the attitude towards Yoga as a tool of human resource development. The scale consists of twelve statements. This, scale is recommended for Scientific community of the state and country for measuring the attitude towards Yoga as a tool of human resource development.

Final selected statements to measure attitude towards yoga as a tool of human resource development

No	Statements	SA	A	UD	DA	S
1	Yoga is an original tool of meditation to develop human as resource (+) યોગ માનવીને સંશાધન તરીકે વિકસાવવાની મૌલિક પદ્ધતિ છે.	5	4	3	2	
2	I doubt that Yoga develops intelligence of human being (-) યોગ દ્વારા બુદ્ધિમાં વૃદ્ધિ થાય એવા તમાંમને શંકા છે.	1	2	3	4	
3	I think yoga enhances the efficiency of internal glands of body (+) હું માનું છું કે યોગ દ્વારા શરીરની આંતરિક ગ્રંથિઓનીકાર્યક્ષમતા વધે છે.	5	4	3	2	
4	I feel that practicing Yoga is wastage of time(-) હું માનુ છુ કે યોગ કરવા એ સમયનો વ્યય છે	1	2	3	4	
5	I believe that Yoga refreshes mind(+) હું માનું છું કે યોગ મનને તાજગી આપે છે	5	4	3	2	
6	I feel that Yoga is impractical to develop human employability(-) મને લાગે છે કે યોગ વ્યક્તીમા રોજગાર લક્ષી કુશળતા વિકસાવવા અવ્યવહારુ છે	1	2	3	4	
7	I am convinced that the Yoga helps in reviving human power (+) મને લાગે છે કે યોગ માનવશક્તીને પુનર્જીવિત કરવામા મદદરુપ બને છે.	5	4	3	2	
8	I feel that Yoga is useless in developing managerial ability of human(-) મને લાગે છે કે માનવીની વ્યવસ્થાપકીય ક્ષમતાના વિકાસાવવા યોગ બિનઉપયોગી છે	1	2	3	4	
9	I believe exercising yoga helps in staying lively(+)મારા માનવા મુજબ યોગ કરવાથી સ્ફૂર્તિ મળે છે	5	4	3	2	
10	I think that yoga increases instability of human mind(-)મને લાગે છે કે યોગક્રિયા માનવ મનની અસ્થિરતા વધારે છે	1	2	3	4	
11	I understand that Yoga provides the strength to the human heart(+) યોગાસન હૃદયને બળ પુરુ પાડે છે તેમ હું સમજુ છું	5	4	3	2	

	12	I believe that Yoga makes total development of human(+) માનવનો સંપૂર્ણ વિકાસ યોગ દ્વારા શક્ય છે તેમ હુ માનુ છુ	5	4	3	2	1
	The recommendation is accepted **(Action:** Professor and Head, Deptt. of Agril. Extn. and Communication, BACA, Anand)						

15.7.2 NEW TECHNICAL PROGRAMMES

Chairman	**Prof. (Dr.) Ashok Patel, VC, SDAU, Sardarkrushinagar**
Co-chairmen	**Dr. G. R. Patel, DEE, NAU, Navsari**
	Dr. Y. C. Zala, Principal & Dean, IABMI, AAU, Anand
Rapporteurs	**Dr. Sunil R. Patel, AAU, Anand**
	Dr. M. G. Dhandhalya, JAU, Junagadh
	Dr. V. M. Thumar, NAU, Navsari
Statistician	**Dr. A.N. Khokhar, AAU, Anand**

S. D. AGRICULTURAL UNIVERSITY, SKNAGAR

	Title	**Suggestion/s of the house**	**Remarks**
15.7.3.1	Awareness and Adoption of Animal Husbandry Related Drudgery Reducing Technologies among Rural Women (Centre: Home Science Extension and Communication Management, ASPEE College of Home Science & Nutrition, SDAU)	Accepted with following suggestions 1. Study is confined to one year only (**Action:** Professor & Head, Home Science Extension and Communication Management, ASPEE College of Home Science & Nutrition, SDAU)	Accepted with suggestion
15.7.3.2	Meta Cognitive Skills affecting academic achievements amongst students of SDAU (Centre : Department of Home Science Extension and Communication Management ASPEE College of Home Science & Nutrition, SDAU)	Accepted (**Action:** Professor & Head, Department of Home Science Extension and Communication Management ASPEE College of Home Science & Nutrition, SDAU)	Accepted
15.7.3.3	Assessment of Adolescent Habits amongst students of SDAU (Centre : Department of Human Development and Family Studies, ASPEE College of Home Science & Nutrition, SDAU)	Accepted (**Action:** Professor & Head, Department of Human Development and Family Studies, ASPEE College of Home Science & Nutrition, SDAU)	Accepted
15.7.3.4	Assessment of Green Consumer	Accepted	Accepted

	Behaviour of SDAU employees (Centre : Department of Family Resource Management, ASPEE College of Home Science & Nutrition, SDAU)	(**Action:** Professor & Head, Department of Family Resource Management, ASPEE College of Home Science & Nutrition, SDAU)	
15.7.3.5	Assessment of Parental Attitude towards Pre-school Education (Centre: Department of Family Resource Management, ASPEE College of Home Science & Nutrition, SDAU)	Accepted with following suggestions 1. Modify the title as " A case study - Parental Attitude towards Pre-school Education at Neha Balmandir 2. Study is confined to one year only (**Action:** Professor & Head, Department of Family Resource Management, ASPEE College of Home Science & Nutrition, SDAU)	Accepted with suggestions
15.7.3.6	Assessment of anaemia prevalence among tribal school going adolescent girls (Centre : Department of Food Sci. and Nutrition ASPEE College of Home Science & Nutrition, SDAU)	Accepted (**Action:** Professor & Head, Department of Food Sci. and Nutrition ASPEE College of Home Science & Nutrition, SDAU)	Accepted
15.7.3.7	Awareness and Consumption Pattern of Junk Food Amongst Students (Centre: KVK, Khedbrahma, SDAU)	Accepted with following suggestions 1. Modify the title as "Awareness and Consumption Pattern of Junk Food Amongst Polytechnic in Agriculture, Khedbrahma Students" 2. Study is confined to one year only (**Action:** Senior Scientist & Head, KVK, Khedbrahma, SDAU)	Accepted with suggestions
15.7.3.8	Awareness About Lifestyle Diseases and Dietary Management Amongst Farmers (Centre: KVK, Khedbrahma, SDAU)	Accepted with following suggestions 1. Modify the title as "Awareness About Lifestyle Diseases and Dietary Management Amongst Farmers of Khedbrahma taluka" (**Action:** Senior Scientist & Head, KVK, Khedbrahma, SDAU)	Accepted with suggestion
15.7.3.9	Role of Media on Health and Nutritional Awareness of	Accepted with following suggestions	Accepted with

	Farmers (Centre: KVK, Khedbrahma, SDAU)	1. Modify the title as "Role of Media on Health and Nutritional Awareness of Farmers of Khedbrahma taluka" (**Action:** Senior Scientist & Head, KVK, Khedbrahma, SDAU)	suggestion
15.7.3.10	Opinion of the farmers regarding performance of Bio-fungicide (*Tricoderma viride*) (Centre: KVK, Deesa)	Accepted with following suggestions 1. Modify the title as "Opinion of the farmers regarding performance of Bio-fungicide (*Tricoderma viride*) of Banaskantha district" 2. Remove the word "personal" from 1st objective (**Action:** Senior Scientist & Head, KVK, Deesa)	Accepted with suggestions
15.7.3.11	Functioning of Farmers Interest Groups in Sabarkantha district (Centre: SDAU, S K Nagar)	Accepted with following suggestions 1. Modify the title as "Functioning of Farmers Interest Groups of ATMA in Sabarkantha district" 2. Add the objective as " To study the functioning of FIGs of ATMA (**Action:** Director of Extension Education, SDAU, S K Nagar)	Accepted with suggestions
15.7.3.12	Training need of farmers in relation to post harvest technology in green gram in Kutch district (Centre: DEE, SDAU, S K Nagar)	Accepted with following suggestions 1. Remove the word "Crop" from title (**Action:** Director of Extension Education, SDAU, S K Nagar)	Accepted with suggestion
15.7.3.13	Knowledge gained and retained by input dealers in training organized by SDAU (Centre: DEE, SDAU, S K Nagar)	Accepted (**Action:** Director of Extension Education, SDAU, S K Nagar)	Accepted
15.7.3.14	Perception of farmers about the major traits of Castor cultivar Gujarat Castor Hybrid-8 (Centre: DEE, SDAU, S K Nagar)	Accepted (**Action:** Director of Extension Education, SDAU, S K Nagar)	Accepted

15.7.3.15	Technological gap in recommended mustard cultivation practices among farmers of Banaskantha district (Centre: DEE, SDAU, SKNagar)	Accepted (**Action:** Director of Extension Education, SDAU, S K Nagar)	Accepted
15.7.3.16	Evaluation of Frontline demonstrations of cotton variety GTHH-49 under High Density Planting System (Centre: Deptt. of Extension Education, CPCA, SDAU, Sardarkrushinagar)	Accepted (**Action:** Professor & Head, Deptt. of Extension Education, CPCA, SDAU, Sardarkrushinagar)	Accepted
15.7.3.17	Awareness and utilization of agricultural applications available on mobile phone among farmers of Banaskantha district (Centre: Deptt. of Ext. Edu, CPCA, SDAU, Sardarkrushinagar)	Accepted (**Action:** Professor & Head, Deptt. of Ext. Edu, CPCA, SDAU, Sardarkrushinagar)	Accepted
15.7.3.18	Knowledge and adoption of Bt Cotton growers about management practices of pink boll warm (Centre: Deptt. of Extension Education, CPCA, SDAU, Sardarkrushinagar)	Accepted (**Action:** Professor & Head, Deptt. of Extension Education, CPCA, SDAU, Sardarkrushinagar)	Accepted
15.7.3.19	Information seeking behaviour of pomegranate growers in Banaskantha district (Centre: Dept. of Extension Education, CPCA, SDAU, Sardarkrushinagar)	Accepted (**Action:** Professor & Head, Dept. of Extension Education, CPCA, SDAU, Sardarkrushinagar)	Accepted
15.7.3.20	Adoption of recommended amaranthus cultivation practices by the farmers in Banaskantha district (Centre: Polytechnic in Agriculture, Deesa)	Accepted with following suggestions 1. Remove the word “crop” from each objective (**Action:** Principal, Polytechnic in Agriculture, Deesa)	Accepted with suggestion
15.7.3.21	Constraints faced by tribal farmers in Bt Cotton seed production in Sabarkantha district	Accepted (**Action:** Principal, Polytechnic in	Accepted

	(Centre: Polytechnic in Agriculture, Khedbrahma)	Agriculture, Khedbrahma)	
15.7.3.22	Adoption of vegetable Indian bean cultivation technology by the farmers of Sabarkantha district (Centre: Polytechnic in Agriculture, Khedbrahma)	Accepted with following suggestions 1. Delete the 2nd objective (**Action:** Principal, Polytechnic in Agriculture, Khedbrahma)	Accepted with suggestion
15.7.3.23	Knowledge level of farmers regarding organic farming practices in vegetable crops (Centre: Polytechnic in Agriculture, Amirgadh)	Accepted with following suggestions 1. Change the second objective as "To explore the knowledge of the vegetable cultivators regarding existing practical organic farming practices" (**Action:** Principal, Polytechnic in Agriculture, Amirgadh)	Accepted with suggestion
15.7.3.24	Adoption of Plant Protection Measures by Vegetable growers (Centre: Polytechnic in Agriculture, Amirgadh)	Accepted with following suggestions 1. Modify the title as "Adoption of Plant Protection Measures by Vegetable growers of Banaskantha district" (**Action:** Principal, Polytechnic in Agriculture, Amirgadh)	Accepted with suggestion
15.7.3.25	Attitude of dairy farmers towards indigenous and exotic dairy breeds of cattle (Centre: Polytechnic in Animal Husbandry, SDAU, Sardarkrushinagar)	Accepted with following suggestions 1. Modify the title as "Attitude of dairy farmers towards indigenous and exotic dairy breeds of cattle of Banaskantha district" (**Action:** Principal , Polytechnic in Animal Husbandry, SDAU, Sardarkrushinagar)	Accepted with suggestion
15.7.3.26	Clean milk production practices followed by dairy farmers of North Gujarat (Centre: College of Veterinary science & A.H, SDAU, S K Nagar)	Accepted with following suggestions 1. Delete objective number three. (**Action:** Professor(Extension), College of Veterinary science & A.H, SDAU, S K Nagar)	Accepted with suggestion
15.7.3.27	Factors affecting marketability of Fresh dates in Kachchh district (Centre: Date palm Research Station, SDAU, Mundra, Kachchh)	Accepted with following suggestions 1. Detele word "palm" from objective fourth (**Action:** Date palm Research Station, SDAU, Mundra, Kachchh)	Accepted with suggestion

15.7.3.28	Factors associated with Kankrej cow rearing in North Gujarat (Centre: Pulse Research Station, SKNagar)	Accepted with following suggestions 1. Replace the word "Kankrej" by " Kankrej Cow" in all objectives of study. 2. Replace the second objective with "To study the factors associated with Kankrej cow rearing" (**Action:** Research Scientist, Pulse Research Station, SKNagar)	Accepted with suggestions
15.7.3.29	Knowledge of Vermicompost technology among farmers (Centre: College of Horticulture, SDAU, Jagudan)	Accepted with following suggestions 1. Modify the title as "Knowledge of Vermicompost technology among farmers in North Gujarat" (**Action:** Principal, College of Horticulture, SDAU, Jagudan)	Accepted with suggestion
15.7.3.30	Rural livelihood sustainability and diversification in Kutch, Gujarat (Centre: Deptt. of Agril. Economics, CPCA, SDAU, Sardarkrushinagar)	Accepted (**Action:** Professor & Head, Deptt. of Agril. Economics, CPCA, SDAU, Sardarkrushinagar)	Accepted
15.7.3.31	Performance of organized dairy industry in Gujarat (Centre: Deptt. of Agril. Economics, CPCA, SDAU, S K Nagar)	Accepted (**Action:** Professor & Head, Deptt. of Agril. Economics, CPCA, SDAU, S K Nagar)	Accepted
15.7.3.32	Economic analysis of contract farming in potato in North Gujarat (Centre: Deptt. of Agril. Economics, CPCA, SDAU, Sardarkrushinagar)	Accepted with following suggestions 1. Modify the title as "Comparative economic analysis of contract farming vis-à-vis non-contact farming of potato in North Gujarat" (**Action:** Professor & Head, Deptt. of Agril. Economics, CPCA, SDAU, Sardarkrushinagar)	Accepted with suggestion
15.7.3.33	Marketing of GI products to unlock their commercial potential: Case of Gir Kesar mango versus Kutchi Kesar mango	Accepted	Accepted

	(Centre: Deptt. of Agril. Economics, CPCA, SDAU, Sardarkrushinagar)	(**Action:** Professor & Head, Deptt. of Agril. Economics, CPCA, SDAU, Sardarkrushinagar)	
15.7.3.34	Economic analysis of production and marketing of Rajagira (*Amaranthus Paniculatus*) in North Gujarat (Centre: Deptt. of Agril. Economics, CPCA, SDAU, Sardarkrushinagar)	Accepted (**Action:** Professor & Head, Deptt. of Agril. Economics, CPCA, SDAU, Sardarkrushinagar)	Accepted
15.7.3.35	Marketing of Chiku in Mehsana district of Gujarat State (Centre: Deptt. of Agril. Economics, CPCA, SDAU, Sardarkrushinagar)	Accepted with following suggestions 1. Change the word "Chiku" with "Sapota" (**Action:** Professor & Head, Deptt. of Agril. Economics, CPCA, SDAU, Sardarkrushinagar)	Accepted with suggestion
15.7.3.36	Analyis of area, production and productivity of kharif groundnut (*Arachishypogaea* L.) in Banaskantha district (Centre: Deptt. of Agril. Stat, CPCA, SDAU, Sardarkrushinagar)	Accepted with following suggestions 1. Modify the title as "Identification of suitable model for prediction of area, production and productivity of kharif groundnut (*Arachishypogaea* L.) in Banaskantha district (**Action:** Professor & Head, Deptt. of Agril. Stat, CPCA, SDAU, Sardarkrushinagar)	Accepted with suggestion
15.7.3.37	Adoption of optimum plot size recommended for field experiments in wheat and cumin crops by SDAU research stations (Centre: Department of Social Science, College of Horticulture, Jagudan)	Accepted (**Action:** Professor & Head, Department of Social Science, College of Horticulture, Jagudan)	Accepted
15.7.3.38	Selection index study in Pigeon pea crop (Centre: Polytechnic in Agriculture, Khedbrahma)	Accepted (**Action:** Principal, Polytechnic in Agriculture, Khedbrahma)	Accepted
15.7.3.39	Cause and effect analysis for selection of genotypes in mustard (*Brassica juncea* L.)	Accepted (**Action:** Professor & Head, Dept.	Accepted

	(Centre: Dept. of Agril. Statistics, CPCA, SDAU, S K Nagar)	of Agril. Statistics, CPCA, SDAU, S K Nagar)	
New Technical programs shifted from AGRESCO Sub-committee of animal health, animal production and animal science & fisheries science			
15.7.3.40	Kankrej calf rearing practices adopted by dairy farmers in the operational area of KVK Banaskantha-II (Centre: KVK, Tharad)	Accepted with following suggestions 1. Remove the word "Banaskantha" from objective one (**Action:** Senior Scientist & Head, KVK, Tharad)	Accepted with suggestion
15.7.3.41	Constraints perceived by the tribal goat keepers of Banaskantha district (Centre: KVK, Deesa)	Accepted with following suggestions 1. Remove the word "Banaskantha" from objective one (**Action:** Senior Scientist & Head, KVK, Deesa)	Accepted with suggestion

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Sr. No.	Title/Centre	Suggestions	Remarks
15.7.3.42	Impact of training and extension activities in adopted villages of KVK-Dang (Centre: KVK, NAU, Waghai, Dang)	Accepted with the following suggestion/s 1. Title to be revised as "Impact of training in adopted villages of KVK-Dang 2. PRA method should be used. 3. Delete third objective from the study 4. Study should be completed in one year. (**Action:** Senior Scientist & Head, KVK, NAU, Waghai, Dang)	Accepted with suggestions
15.7.3.43	Use of Information Communication Technologies (ICTs) by Sugarcane growers of Tapi District (Centre: Polytechnic in Agriculture, NAU, Vyara)	Accepted (**Action:** Principal, Polytechnic in Agriculture, NAU, Vyara)	Accepted
15.7.3.44	Adoption of recommended production technology of Green Gram by Tribal Farmers in Navsari District of Gujarat State (Centre: KVK, NAU, Navsari)	Accepted (**Action:** Senior Scientist & Head, KVK, NAU, Navsari)	Accepted

15.7.3.45	Nutritional Knowledge of SHGs Women in Navsari District (Centre: KVK, NAU, Navsari)	Accepted (**Action:** Senior Scientist & Head, KVK, NAU, Navsari)	Accepted
15.7.3.46	Technological Gap in Wheat production technology in Surat District (Centre: WRS, NAU, Bardoli)	Accepted (**Action:** Assistant Research Scientist ,WRS, NAU, Bardoli)	Accepted
15.7.3.47	Knowledge level of Tribal Farmers about cultivation practices of Ragi in Dang District (Centre: Polytechnic in Agriculture, NAU, Waghai)	Accepted with the following suggestion/s 1. Change title as "Knowledge level of Tribal Farmers about recommended cultivation practices of Ragi in Dang District" (**Action:** Principal, Polytechnic in Agriculture, NAU, Waghai)	Accepted with suggestion
15.7.3.48	Awareness and adoption of home based gardening by the urban people of Surat city (Centre: KVK, NAU, Surat)	Accepted with the following suggestion/s 1. Change title as "Awareness and adoption of Kitchen gardening by the urban people of Surat city." (**Action:** Senior Scientist & Head, KVK, NAU, Surat)	Accepted with suggestion
15.7.3.49	Level of Knowledge regarding nutrition among farm women in Mandvi and Umarpada Talukas of Surat District (Centre: KVK, NAU, Surat)	Accepted with the following suggestion/s 1. Sample size should be 100 farmers. (**Action:** Senior Scientist & Head, KVK, NAU, Surat)	Accepted with suggestion
15.7.3.50	Economics of production of Soybean in Tapi district of Gujarat (Centre: Dept. of Agril. Economics, NMCA, NAU, Navsari)	Accepted with the following suggestion/s 1. Replace the word 'analyse' with ' estimate' in first objective. 2. Third objective should be "To identify the constraints in production and marketing of soybean cultivation" 3. Remove the fourth objective (**Action:** Professor & Head, Dept. of Agril. Economics, NMCA, NAU, Navsari)	Accepted with suggestions

15.7.3.51	Yield gap and resource use efficiency of okra cultivation in Tapi district of Gujarat (Centre: Polytechnic in Agriculture, NAU, Vyara)	Accepted with the following suggestion/s 1. Use tabular analysis instead of' two sample t test for yield gap analysis. (**Action:** Asst. Professor (Agril. Econ.), Polytechnic in Agriculture, NAU, Vyara)	Accepted with suggestion
15.7.3.52	Temporal Change and Pattern in the flow of fund for Research on Major Crops of South Gujarat (Centre: Directorate of Research, NAU, Navsari)	Accepted (**Action:** Planning officer and Assoc. Professor (Agril. Econ.), Directorate of Research, NAU, Navsari)	Accepted
15.7.3.53	Consumers' Perception towards Service Quality of the Quick Service Restaurants (Centre: AABMI, NAU, Navsari)	Accepted with following suggestion/s 1. Title should be modified as ' Consumers' Perception towards Service Quality of the Quick Food Service Providers' (**Action:** Principal, AABMI, NAU, Navsari)	Accepted with suggestion
15.7.3.54	Marketing behavior, Perception and Problems of Organic Producers in South Gujarat (Centre: AABMI, NAU, Navsari)	Accepted (**Action:** Principal, AABMI, NAU, Navsari)	Accepted
15.7.3.55	Measuring Technical Efficiency of Cotton for India (Centre: AABMI, NAU, Navsari)	Accepted with the following suggestion/s 1. Title should be revised as 'Measuring Technical Efficiency of Paddy in South Gujarat' 2. Study should be carried out based on primary data instead of secondary data . 3. Appropriate methodology should be used accordingly. (**Action:** Principal, AABMI, NAU, Navsari)	Accepted with suggestions
15.7.3.56	Awareness, Habit and Influencing Factors for Internet Usage by Navsari Agricultural University Students (Centre: AABMI, NAU, Navsari)	Accepted (**Action:** Principal, AABMI, NAU, Navsari)	Accepted

15.7.3.57	Achievement Motivation among the Students of Navsari Agricultural University, Navsari for Entrepreneurship (Centre: AABMI, NAU, Navsari)	Accepted with the following suggestion/s 1. Title should be revised as 'Entrepreneurial Motivation among the Students of Navsari Agricultural University" 2. First objective should be revised accordingly. (**Action:** Principal, AABMI, NAU, Navsari)	Accepted with suggestions
15.7.3.58	Awareness and Perception of Farmers towards Agri-Tourism in South Gujarat (Centre: AABMI, NAU, Navsari)	Accepted (**Action:** Principal, AABMI, NAU, Navsari)	Accepted
15.7.3.59	Pre-harvest forecast of *Kharif* rice yield based on weather parameters in Tapi district (Centre: Dept. of Agril. Stat., NMCA, NAU, Navsari)	Accepted (**Action:** Prof. & Head, Dept. of Agril. Stat., NMCA, NAU, Navsari)	Accepted

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Sr. No.	Title/Centre	Suggestions	Remarks
15.7.3.60	Economics of selected *kharif* vegetable crops grown in Saurashtra Region of Gujarat (Centre: Department of Agricultural Economics, COA, JAU, Junagadh	Accepted (**Action:** Prof & Head Department of Agricultural Economics, COA, JAU, Junagadh	Accepted
15.7.3.61	Spatial and temporal integration analysis and price discovery mechanism of major potato wholesale markets in Gujarat (Centre: Department of Agricultural Economics, COA, JAU, Junagadh)	Accepted (**Action**: Prof & Head, Department of Agricultural Economics, COA, JAU, Junagadh)	Accepted
15.7.3.62	"મગફળી સહાયક" - An ICT based Auto Advisory Service for Groundnut Growers of the Saurashtra Region	1. Titled should recast as " development of auto advisory service for groundnut growers" 2. Change the objectives as per new title	Accepted with suggestions

	(Centre: Department of Agricultural Statistics, COA, JAU, Junagadh)	3. The number of Investigators should be as per requirement of the study. (**Action** : Prof & Head, Department of Agricultural Statistics, COA, JAU, Junagadh)	
15.7.3.63	A Comparative Study on Groundnut Yield Forecasting Models for Junagadh District (Centre: Department of Agricultural Statistics, COA, JAU, Junagadh)	1. Objective no 1 should be deleted 2. Add ARCH/GARCH model in 2nd objective. (**Action** : Prof & Head, Department of Agricultural Statistics, COA, JAU, Junagadh)	Accepted with suggestions
15.7.3.64	Livelihood impacts of micro irrigation system in Saurashtra region. (Centre: PG Institute of ABM, JAU, Junagadh)	1. Recast the title as " Effect of micro irrigation system on livelihood in Saurashtra region" 2. In objective 1st delete word 'determinants' use 'factors of adoption of MIS'. 3. Season should be summer for groundnut crop (**Action** : Principal & Dean, PG Institute of ABM, JAU, Junagadh)	Accepted with suggestions
15.7.3.65	Export cost estimation and mileage of major commodities of Saurashtra (Centre: PG Institute of ABM, JAU, Junagadh)	1. Delete 1st objective (**Action** : Principal & Dean, PG Institute of ABM, JAU, Junagadh)	Accepted with suggestion
15.7.3.66	A study of management status and business activities of farmer producer organization of Saurashtra Region (Centre: PG Institute of ABM, JAU, Junagadh)	1. Recast the title as "Business Performance Analysis of Farmer Producer Organization of Saurashtra Region" (**Action** : Principal & Dean, PG Institute of ABM, JAU, Junagadh)	Accepted with suggestion
15.7.3.67	Women empowerment through milk producers' cooperative societies in Saurashtra region. (Centre: PG Institute of ABM, JAU, Junagadh)	1. Delete 3rd objective (**Action** : Principal & Dean, PG Institute of ABM, JAU, Junagadh)	Accepted with suggestion

15.7.3.68	Financial Inclusion of Farmers in Saurashtra Region (Centre: PG Institute of ABM, JAU, Junagadh)	Accepted (**Action** : Principal & Dean, PG Institute of ABM, JAU, Junagadh)	Accepted
15.7.3.69	Determinants of Farmers towards Abandoning their Agriculture (Centre: Department of Agricultural Extension, COA, JAU, Junagadh)	1. Recast the title as "Factors affecting discontinuing agriculture as a profession" (**Action:** Prof & Head, Department of Agricultural Extension, CoA, JAU, Junagadh)	Accepted with suggestion
15.7.3.70	Adoption of Improved Technology for Effective Control of White Grub in Groundnut (Centre: Department of Agricultural Extension, COA, JAU, Khapat	1. In Objective 2nd use 'recommended' instead of "enhanced'. (**Action:** Prof & Head, Department of Agricultural Extension, CoA, JAU, Khapat	Accepted with suggestion
15.7.3.71	Training Needs of Farmers with respect to Scientific Cultivation of Cumin Crop in Porbandar District (Centre: Department of Agricultural Extension, COA, JAU, Khapat)	Accepted (**Action:** Prof & Head, Department of Agricultural Extension,CoA, JAU, Khapat)	Accepted
15.7.3.72	Knowledge of eco-friendly farming practices followed by farmers in Jamnagar District (Centre: Krishi Vigyan Kendra, JAU, Jamnagar)	1. In title instead of word 'Knowledge' use 'Adoption' 2. The 3rd objective should be 1st. (**Action:** Sr. Scientist & Head, Krishi Vigyan Kendra, JAU, Jamnagar)	Accepted with suggestions
15.7.3.73	Knowledge of human nutritional practices among the farm women of Jamnagar District (Centre: Krishi Vigyan Kendra, JAU, Jamnagar)	1. Recast the title "Knowledge of farm women about human nutritional practices in Jamnagar district" (**Action:** Sr. Scientist & Head, Krishi Vigyan Kendra, JAU, Jamnagar)	Accepted with suggestion
15.7.3.74	Knowledge of dairy farmers about recommended dairy husbandry practices in Rajkot district of Saurashtra region	1. Recast title as " Knowledge of dairy farmers about recommended animal husbandry practices in Rajkot districts of Saurashtra "	Accepted with suggestion

	(Centre: Krishi Vigyan Kendra, JAU, Pipliya)	(**Action:** Sr. Scientist & Head, Krishi Vigyan Kendra, JAU, Pipalia)	
15.7.3.75	Image and impact of KVK Amreli (Centre: Krishi Vigyan Kendra, JAU, Amreli)	Accepted (**Action:** Sr. Scientist & Head, Krishi Vigyan Kendra, JAU, Amreli)	Accepted
15.7.3.76	Training needs of rural women in home science related activities (Centre: Krishi Vigyan Kendra, JAU, Amreli)	Accepted (**Action:** Sr. Scientist & Head, Krishi Vigyan Kendra, JAU, Amreli)	Accepted
15.7.3.77	Assessment of Occupational Health Hazards among Agricultural Workers (Centre: Polytechnic in Home Science, JAU, Amreli)	1. The word 'Workers' in title should be replaced by 'Labourers' (**Action:** Principal, Polytechnic in Home Science, JAU, Amreli)	Accepted with suggestion
15.7.3.78	Assessment of Traditional Wisdom on Medicinal Plants used by Rural Families of Amreli Taluka (Centre: Polytechnic in Home Science, JAU, Amreli)	1. Objective 1st is to be deleted (**Action** : Principal, Polytechnic in Home Science, JAU, Amreli**)**	Accepted with suggestion
15.7.3.79	To Study the Knowledge Attitude and Practices Regarding Iron Deficiency Anemia in Adolescence Girls of Amreli City (Centre: Polytechnic in Home Science, JAU, Amreli)	1. Recast the title as "Practices followed by adolescent girls to overcome iron deficiency in Amreli city" 2. Replace the word 'Adolescence' with 'Adolescent' in objective. (**Action**: Principal, Polytechnic in Home Science, JAU, Amreli)	Accepted with suggestions
15.7.3.80	Technological needs of farm women in processing and preservation of fruits (Centre: Polytechnic in Home Science, JAU, Amreli)	Accepted (**Action**: Principal, Polytechnic in Home Science, JAU, Amreli)	Accepted
New Technical program transfer from AGRESCO Sub-committee of animal health, animal production and animal science & fisheries science			

15.7.3.81	Adoption of scientific dairy husbandry (housing, feeding, milking, breeding and health care management practices by farmers in Amreli districts) (Centre: Bull Mother Farm, JAU, Amreli)	1. Remove content in bracket from the title 2. Objective 1st delete word demography 3. In objective 3rd correct as to know the level of knowledge 4. Remove the word "Amreli" from objectives (**Centre:** Research Scientist, Bull Mother Farm, JAU, Amreli)	Accepted with suggestions

ANAND AGRICULTURAL UNIVERSITY

Sr. No.	Title /Centre	Suggestions	Remarks
15.7.3.82	An economic An An Economic Evaluation of Cabbage Cultivation in Anand District (Centre: Department of Agril. Econ., BACA, AAU, Anand)	Accepted (**Action:** Professor and Head, Deptt. of Agril. Econ., BACA, AAU, Anand)	Accepted
15.7.3.83	**2.** Growth and prospects of export of dairy products from India (Centre: Department of Agril. Econ., BACA, AAU, Anand)	Accepted (**Action:** (Action: Professor and Head, Deptt. of Agril. Econ., BACA, AAU, Anand)	Accepted
15.7.3.84	Econometric Inve An Econometric Investigation on Paddy Market Integration in Middle Gujarat (Centre: Department of Agril. Econ., BACA, AAU, Anand)	Accepted (**Action:** (Action: Professor and Head, Deptt. of Agril. Econ., BACA, AAU, Anand)	Accepted
15.7.3.85	An Economic Analysis of Production of Spine Gourd (Centre: Department of Agril. Economics, College of Agriculture, AAU, Jabugam)	Accepted with following suggestions 1. Split the second objective in to two as follow: (1) To identify the constraints in production of spine gourd (2) To identify the constraints in marketing of spine gourd (**Action:** Principal, College of Agriculture, AAU, Jabugam)	Accepted with suggestion
15.7.3.86	Economic Analysis and Water Productivity of Oil Palm Cultivation in Central Gujarat	Accepted with following suggestions	Accepted with suggestions

	(Centre: IABMI, AAU, Anand	1. Change the title as "Economic Analysis and Water Productivity of Oil Palm Cultivation in Gujarat" 2. Take the sample of 60 oil palm farmers from central and south Gujarat. (**Action:** Principal & Dean, IABMI, AAU, Anand)	
15.7.3.87	Current Status, Prospects and Problems of Papad Industry in Gujarat (Centre: IABMI, AAU, Anand)	Accepted with following suggestions 1. Change the title as "Current Status, Prospects and Problems of Papad Industry in Central Gujarat". (**Action:** Principal & Dean, IABMI, AAU, Anand)	Accepted with suggestion
15.7.3.88	Study of Cash Flow Analysis of Food Processing Companies in India (Centre: IABMI, AAU, Anand)	Accepted (**Action:** Principal & Dean, IABMI, AAU, Anand)	Accepted
15.7.3.89	Status of Pashuhaat in Middle Gujarat (Centre: IABMI, AAU, Anand)	Accepted with following suggestions 1. Modify second objective as "To identify different factors affecting livestock trading". (**Action:** Principal & Dean, IABMI, AAU, Anand)	Accepted with suggestion
15.7.3.90	Economics of Ankleshwar Chicken Rearing in Bharuch District of Gujarat (Centre: IABMI, AAU, Anand)	Accepted (**Action:** Principal & Dean, IABMI, AAU, Anand)	Accepted
15.7.3.91	AICT awareness among the participants of training programme of RBRU, AAU, Anand (Centre: Department of DBM, Dairy Sci. College, AAU, Anand)	Accepted with following suggestions 1. Put the full form of RBRU in the title. 2. Remove fourth objective. (**Action:** Professor and Head, DoDBM, Dairy Sci. College, AAU, Anand)	

15.7.3.92	A study of performance of Small, Medium, and Large size Cooperative Dairies of Gujarat state (Centre: Department of DBM, Dairy Sci. College, AAU, Anand)	Accepted (**Action:** Professor and Head, DoDBM, Dairy Sci. College, AAU, Anand)	Accepted
15.7.3.93	Assessing the consumers' perception towards street foods in Anand – Vidhyanagar (Centre: Department of DBM, Dairy Sci. College, AAU, Anand)	Accepted (**Action:** HoD, Dairy Business Management, Dairy Sci.College, AAU, Anand)	Accepted
15.7.3.94	Evaluation and revalidation of recommendations for the yardstick of CV % for field experiments conducted at AAU research stations on different crops (Centre: Department of Agricultural Statistics, BACA, AAU, Anand)	Accepted (**Action:** Professor and Head, Agricultural Statistics, BACA, AAU, Anand)	Accepted
15.7.3.95	Modelling and forecasting of area, production productivity of major oilseed crops (Groundnut, Cotton, Castor, Mustard and Sesame) in Gujarat using structural time series model (Centre: Department of Agricultural Statistics, BACA, AAU, Anand)	Accepted (**Action:** HoD, Agricultural Statistics, BACA, AAU, Anand)	Accepted
15.7.3.96	Modelling and forecasting of area, production and productivity of major fruit crops in Gujarat - An application of Artificial Neural Network (Centre: Department of Agril. Statistics, College of Horticulture, AAU, Anand)	Accepted (**Action:** Professor and Head, Dept. of Agril. State., BACA, AAU, Anand)	Accepted
15.7.3.97	Comparison of different weather based fuzzy regression model with other techniques for prediction of rice yield in middle Gujarat (Centre: Department of Basic	Accepted (**Action:** Professor and Head, Dept. of Basic Science and	Accepted

	Science and Humanities, BACA, AAU, Anand)	Humanities, BACA, AAU, Anand)	
15.7.3.98	Development and standardization of a test to measure knowledge about Terrace Gardening (Centre: Department of Agril. Extension and Communication, BACA, AAU)	Accepted (**Action:** Professor and Head, Deptt. of Agril. Extension and Communication, BACA, AAU)	Accepted
15.7.3.99	Adaptation Strategies of Climate-smart agriculture technologies followed by the farmers in Anand District of Gujarat State (Centre: Department of Agril. Extension and Communication, BACA, AAU)	Accepted with following suggestions 1. Take the random sample of 240 farmers (irrespective of adoption of climate smart agricultural technologies) . (**Action:** Professor and Head, Deptt. of Agril. Extension and Communication, BACA, AAU)	Accepted with suggestions
15.7.3.100	Development and standardization of scale to measure the self-confidence of rural youth to work in agriculture (Centre: Department of Agril. Extension and Communication, BACA, AAU)	Accepted with following suggestions 1. Change the title as "Development and standardization of scale to measure the self-confidence of rural youth to work in farming". (**Action:** Professor and Head, Deptt. of Agril. Extension and Communication, BACA, AAU)	Accepted with suggestions
15.7.3.101	Technical capability of veterinary field officers (Centre: EEI, AAU, Anand)	Accepted with following suggestions 1. Change the title as "Soft skills of field veterinary officers". (**Action:** Director, Extension Education, EEI, AAU, Anand)	Accepted with suggestions
15.7.3.102	Training needs of ATMA personnel	Accepted with following suggestions 1. Take the sample of 100 ATMA personnel from central Gujarat only instead of whole Gujarat state. 2. ATMA personnel at all levels i.e. PD, DPD, BTM and ATM should be included in the sample.	Accepted with suggestions

	(Centre: EEI, AAU, Anand)	(**Action:** Director, Extension Education, EEI, AAU, Anand)	
15.7.3.103	Study on assessment of training needs of the state officials of agriculture and allied departments of Western India (Centre: EEI, AAU, Anand)	Accepted (**Action:** Director, Extension Education, EEI, AAU, Anand)	Accepted
15.7.3.104	Effectiveness of training for promoting quality seed production (Centre: EEI, AAU, Anand)	Accepted (**Action:** Director, EEI, AAU, Anand)	Accepted
15.7.3.105	Usefulness of Sardar Patel Agricultural Educational Museum, as perceived by farmer visitors (Centre: DoEE, AAU, Anand)	Accepted (**Action:** Director, EEI, AAU, Anand)	Accepted
15.7.3.106	Effectiveness of training for promoting cultivation of medicinal and aromatic plants (Centre: DoEE, AAU, Anand)	Accepted (**Action:** Director, Extension Education, AAU, Anand)	Accepted
15.7.3.107	Information needs of maize growers of Chhotaudepur district (Centre: Department of Extension Education, College of Agriculture & Training Centre, Jabugam)	Accepted (**Action:** Principal, College of Agriculture, AAU, Jabugam)	Accepted
15.7.3.108	Awareness of buffalo owners about causes of infertility in buffalo in Panchmahals district (Centre: Department of Extension Education, College of Veterinary Science, AAU, Anand)	Accepted (**Action:** Professor and Head, Deptt. of Veterinary Extension, College of Veterinary Science, AAU, Anand)	Accepted
15.7.3.109	Study of knowledge level of dairy animal breeding practices of farm women in Vasotaluka of Kheda district (Centre: Agriculture College, AAU, Vaso)	Accepted (**Action:** Principal, Agriculture College, AAU, Vaso)	Accepted
15.7.3.110	Entrepreneurial ability of youth farmers of Kheda district	Accepted	Accepted

	(Centre: Agriculture College, AAU, Vaso)	(**Action:** Principal, Agriculture College, AAU, Vaso)	
15.7.3.111	Adoption dynamics of farm women with special reference to health and nutritional management practices (Centre: Polytechnic in Food Science & Home Economics, AAU, Anand)	Accepted with following suggestions 1. Change the title as "Adoption dynamics of farm woman labourers with special reference to health and nutritional management practices". 2. According to the title the wording of all objectives should be changed. (**Action:** Principal, Polytechnic in Food Science & Home Economics, AAU, Anand)	Accepted with suggestions
15.7.3.112	Goat rearing management practices followed by goat keepers of Vadodara district (Centre:Polytechnic in Horticulture, AAU, Vadodara)	Accepted (**Action:** Principal,Polytechnic in Horticulture, AAU, Vadodara)	Accepted
15.7.3.113	Knowledge and adoption of farmers about pest management in maize crop in Panchmahals district (Centre: Agril. Research Station, AAU, Derol)	Accepted (**Action:** Associate Research Scientist, Agril. Research Station, AAU, Derol)	Accepted
15.7.3.114	Knowledge and adoption of Maize recommendations of maize cultivation of trained farmers (Centre: Main Maize Research Station, AAU, Godhra)	Accepted with following suggestions 1. Change the title as "Knowledge and adoption of trained maize farmers about recommended maize production technology". (**Action:** Research Scientist, Main Maize Research Station, AAU, Godhra)	Accepted with suggestions
15.7.3.115	Horizontal Impact of Frontline Demonstration of Kharif maize on the maize growers of Panchmahals District	Accepted with following suggestions 1. Change the title as "Effect of Frontline Demonstration of Kharif maize on the maize growers of Panchmahals District". 2. Use the word "effect" in place	Accepted with suggestions

	(Centre: Main Maize Research Station, AAU, Godhra)	of horizontal impact in the second objective. (**Action:** Research Scientist, Main Maize Research Station, AAU, Godhra)	
15.7.3.116	An Economic performance of dairy farmers in irrigated and non-irrigated area of Ahmedabad district of Gujarat state (Centre: KVK, AAU, Arnej)	Accepted (**Action:** Senior Scientist cum Head, KVK, AAU, Arnej)	Accepted
15.7.3.117	Study on adoption of scientific practices of livestock rearing by the dairy farmers (Centre: KVK, AAU, Devataj)	Accepted with following suggestions 1. Change the title as "Study on adoption of scientific practices of cattle rearing by the cattle owners". 2. Modify the objectives as (1) To study the profile of cattle owners (2) To study adoption of scientific practices in cattle rearing. (**Action:** Senior Scientist cum Head, KVK, AAU, Devataj)	Accepted with suggestions
15.7.3.118	Perception of gobar gas owners about its usefulness (Centre: KVK, AAU, Devataj)	Accepted with following suggestions 1. Correct the second objective by replacing the words "solar plant owners" with "gobar gas owners". 2. PI may be asked to give clarification for negligence in writing objective. (**Action:** Senior Scientist cum Head, KVK, AAU, Devataj)	Accepted with suggestions
15.7.3.119	Perception of farmers about usefulness of solar energy (Centre: KVK, AAU, Devataj)	Accepted (**Action:** Sr. Scientist cum Head, KVK, AAU, Devataj)	Accepted
15.7.3.120	Horizontal Impact of Front Line Demonstrations on adoption of supplementary feeding of mineral mixture to milking animals by the farmers of Chhotaudepur District, Gujarat	Accepted with following suggestions 1. Change the title as "Effect of Front Line Demonstrations on adoption of supplementary feeding of mineral mixture to milking animals in Chhotaudepur	Accepted with suggestions

	(Centre:KVK, Mangalbharti, Vadodara)	District, Gujarat". (**Action:** Senior Scientist cum Head, KVK, MangalBharti, Vadodara)	
15.7.3.121	Horizontal impact of F.L.D. of Black gram on farmers of Kheda district (Centre: KVK, Gujarat Vidhyapith, Dethali)	Accepted with following suggestions 1. Change the title as "Effect of Front Line Demonstrations of Black gram on farmers of Kheda district". (**Action:** Sr. Scientist cum Head, KVK, Gujarat Vidhyapith, Dethali)	Accepted with suggestions
15.7.3.122	Perception of the farmers of Dahod district about backyard poultry farming (Centre: KVK, AAU, Dahod)	Accepted (**Action:** Sr. Scientist cum Head, KVK, AAU, Dahod)	Accepted
15.7.3.123	Knowledge of dairy farmers about clean milk production in operational area of Pashu Vigyan Kendra (Centre: Pashu Vigyan Kendra, AAU, Devgadhbaria)	Accepted (**Action:** Head, Pashu Vigyan Kendra, AAU, Devgadhbaria)	Accepted
15.7.3.124	Training needs of livestock keepers in goat farming in operational area of PashuVigyan Kendra (Centre: Pashu Vigyan Kendra, AAU, Devgadhbaria)	Accepted (**Action:** Head, Pashu Vigyan Kendra, AAU, Devgadhbaria)	Accepted
15.7.3.125	Knowledge of dairy farmers about bovine ectoparasites in operational area of Dairy Vigyan Kendra, Vejalpur (Centre: Dairy Vigyan Kendra, AAU, Vejalpur)	Accepted (**Action:** Head, Dairy Vigyan Kendra, AAU, Vejalpur)	Accepted
15.7.3.126	Constraints experienced by vegetable growers in commercial cultivation of vegetables (Centre: Farm Technology Training Centre, Nenpur-Sansoli)	Accepted (**Action:** Head, Farm Technology Training Centre, Nenpur-Sansoli)	Accepted
15.7.3.127	A Study on Knowledge of Nutritional Practices among the Asha Workers of Dahod District	The house suggested to drop the technical programme	Dropped

	(Centre: TRTC & TFWTC, AAU, Devgadhbaria)	(**Action:** Head, TRTC & TFWTC, AAU, Devgadhbaria)	
15.7.3.128	Horizontal Impact of Front Line Demonstration of Soyabean on Soyabean Growers of Dahod District (Centre: TRTC & TFWTC,AAU, Devgadhbaria)	Accepted with following suggestions 1. Change the title as "Effect of Front Line Demonstrations of Soyabean on Soyabean Growers of Dahod District". 2. Change the wording of second objective according to modified title. (**Action:** Head, TRTC & TFWTC, AAU, Devgadhbaria)	Accepted with suggestions

*General suggestion: It was suggested by house that study on 'Entrepreneurial Motivation among the Students of Agricultural University' should be carried out in rest of the three universities.

(Action: DEE , JAU, AAU and SDAU)

15.8 BASIC SCIENCES AND HUMANITIES

Chairman	**Dr. S. R. Vyas, Dean, SDAU**
Co-Chairman	**Dr. B. A. Golakiya, Prof. & Head, JAU**
	Dr. Y. M. Shukla, Principal, AAU
Rapporteurs	**Dr. H. P. Gajera, Associate Professor, JAU**
	Dr. G. B. Patil, Assistant Professor, AAU
	Dr. J. J. Dhruv, Research Scientist & Head (I/C), AAU

University	**No. of Recommendations**					
	Farming Community		**Scientific Community**		**Total**	
	Proposed	**Approved**	**Proposed**	**Approved**	**Proposed**	**Approved**
SDAU, SK Nagar	04	01	02	02 + 03*	06	06
NAU, Navsari	01	00	03	03+01*	04	04
JAU, Junagadh	02	02	01	01	03	03
AAU, Anand	00	00	01	01	01	01
Total	**07**	**03**	**07**	**11**	**14**	**14**

***Approved as scientific instead of farmers recommendation**
(Total 7 recommendations proposed for farming community out of which 3 were approved as Farmers recommendations and remaining 4 approved as Scientific recommendation)

15.8.1 RECOMMENDATION FOR FARMING COMMUNITY

SARDARKRUSHINAGAR DANTIWADA AGRICULTURAL UNIVERSITY, SKNAGAR

15.8.1.1	**Effect of harvesting of recemes at different maturity stages on yield performance in castor**
	House approved the farmer recommendation after recasting as follows: The castor growing farmers of North Gujarat Agro Climatic Zone are advised to harvest castor racemes at physiological maturity (yellowing capsules) up to 25 per cent dry capsules on racemes for reduced dropping losses, increased number of effective racemes and for getting higher seed yield and net return. ઉત્તર ગુજરાત ખેત આબોહવાકિય વિસ્તારમાં દિવેલાની ખેતી કરતા ખેડૂતોને દિવેલાની માળો પીળી થાય ત્યારથી માંડીને માળમાં ૨૫ ટકા ગોગડા/ગાંગડા સુકાઈ જાય ત્યાં સુધીમાં માળો કાપવાની ભલામણ કરવામાં આવે છે કે જેથી નવી માંળોની સંખ્યા વધુ મળે અને ગોગડા/ગાંગડા ખરી પડવાનું પ્રમાણ ઘટવાથી વધુ ઉત્પાદન અને વધુ ચોખ્ખું વળતર મળે છે. ***(Action :** Dean, CBSH, SDAU, Sardarkrushinagar**)***

NAVSARI AGRICULTURAL UNIVERSITY, NAVSARI

NIL

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<tr>
<td>15.8.1.2</td>
<td>Influence of weather parameters on cotton (Gossypium hirsutum L.) phenology and seed cotton yield.

House approved the recommendation for farmer community as follows:

The farmers of South Saurashtra Agro Climatic Zone sowing early (31st May) and late (10th July) Bt cotton hybrids under irrigated condition are advised to sow cotton crop timely (20th June) for increasing chlorophyll content, leaf area, specific leaf weight, higher heat use efficiency, reduce pink bollworm damage, higher seed cotton yield and net return. Farmers preferring early sowing (31st May) are also advised to sow G.Cot. Hy-8 for higher seed cotton yield and net return.

દક્ષિણ સૌરાષ્ટ્ર ખેત આબોહવાકિય વિસ્તારમાં પિયત બીટી કપાસની સંકર જાતોનું આગોતરુ (૩૧ મે) અને મોડું (૧૦ જુલાઈ) વાવેત્તર કરતા ખેડૂતોને છોડનાં પાનમાં વધારે હરિતદ્રવ્ય, પર્ણ વિસ્તાર, પર્ણ વજન તથા ઉષ્માનો વધુ ઉપયોગ, ગુલાબી ઈયળનું ઓછું નુકશાન, વધારે ઉત્પાદન અને ચોખ્ખું વળતર મેળવવા માટે કપાસનું વાવેત્તર સમયસર (૨૦ જૂને) કરવાની ભલામણ કરવામાં આવે છે. કપાસનુ આગોતરુ (૩૧ મે) વાવેત્તર કરતાં ખેડૂતોને વધુ ઉત્પાદન અને ચોખ્ખું વળતર મેળવવા માટે ગુ. કપાસ સંકર-8નું વાવેત્તર કરવાની ભલામણ કરવામાં આવે છે.

(Action: Research Scientist (Cotton), Cotton Research Station, JAU, Junagadh)</td>
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<tr>
<td>15.8.1.3</td>
<td>Manipulation of source-sink relationship in pearl millet through growth retardants.

House approved the farmer recommendation after recasting as follows:

The farmers of North Saurashtra Agro Climatic Zone growing kharif pearl millet are advised to apply foliar spray of CCC (chloromequet chloride, 99 %) @ 250 ppm (2.5 ml/ 10 liter water) at tillering and post-anthesis stage to get higher grain yield and net return.

ઉત્તર સૌરાષ્ટ્ર ખેત આબોહવાકિય વિસ્તારના ચોમાસુ ઋતુમાં બાજરી ઉગાડતા ખેડૂતોને વધુ ઉત્પાદન અને વધુ ચોખ્ખું વળતર મેળવવા માટે બાજરીના પાકમાં સીસીસી (ક્લોરમેકવેટ ક્લોરાઈડ, ૯૯% શુધ્ધતા) ૨૫૦ પી.પી.એમ. (૨.૫ મી.લી./૧૦ લીટર પાણીમાં) દ્રાવણનો ફુટ અવસ્થાએ અને ડુંડા અવસ્થાએ એમ બે છંટકાવ કરવાની ભલામણ કરવામાં આવે છે.
(Action: Research Scientist (Pearl millet), Main Pearl Millet Research Station, JAU, Jamnagar)</td>
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ANAND AGRICULTURAL UNIVERSITY, ANAND

Nil

15.8.2 RECOMMENDATION FOR SCIENTIFIC COMMUNITY

SARDARKRUSHINAGAR DANTIWADA AGRICULTURAL UNIVERSITY, SKNAGAR

15.8.2.1	**Improvement of Storage Stability of Pearl Millet Flour by Microwave Treatment**
	House approved the recommendation for scientific community: It is informed to scientific community that flour prepared from treated pearl millet grains in microwave oven (900W, 2450Hz) for 100 seconds that improve storage stability of flour for longer period of time (15 days) without bad flavor. ***(Action :*** Principal (CBSH)., SDAU, Sardarkrushinagar***)***
15.8.2.2	**Effect of physico-chemical treatments on germination of cumin seed**
	House approved the recommendation for scientific community: It is informed to scientific community that to obtain faster and higher seed germination, cumin seed should be pre-soaked with potable water for one hour followed by drain off water, seed treated with 0.3% Mancozeb powder and full air dried in shade condition. It gives 22.9% faster germination and improves seed germination by 10.0%. ***(Action :*** *I/C CIL-CBR, SDAU, Sardarkrushinagar****)***
15.8.2.3	**Estimation of dithiocarbamate residues in cumin seed during storage period**
	House approved the recommendation for scientific community: It is informed to scientific community that dithiocarbamate (Mancozeb) residues level in cumin seed reduce significantly with time interval of storage at ambient condition and residues level become safer (Below MRL value) within 30 to 150 days of storage (1 to 5 months) depending on initial concentrations (15 to 50 ppm) . ***(Action :*** *I/C CIL-CBR, SDAU, Sardarkrushinagar****)***
15.8.2.4	**Evaluation of physical quality of castor seed, oil content and ricinoleic acid along with soil properties in farmers' field of Gujarat**
	House approved the recommendation after recasting as follows: It is informed to scientific community that the quality of castor oil varied among the castor growing districts. The seed oil content is significantly positively correlated with soil pH, organic carbon and available sulphur. While the ricinoleic acid was significantly positively correlated with soil pH, available sulphur and 100 seed weight. The yield of ricinoleic acid was significantly positive correlated with soil pH, available sulphur, 100 seed weight, oil content and ricinoleic acid content. ***(Action :*** *RS (C&M), SDAU, Sardarkrushinagar****)***
15.8.2.5	**Isolation and identification of bacterial cultures against castor wilt pathogen *Fusarium oxysporum* F. sp. *ricini*** **House approved the recommendation after recasting as follows:**

	It is informed to scientific community that potential bacterial isolate with promising antifungal activity against castor wilt pathogen *Fusarium oxysporum* F. sp. *ricini* was confirmed as *Bacillus paralicheniformis* YPAB-2 (GenBank accession no. MK511846). ***(Action:** Principal (CBSH)., SDAU, Sardarkrushinagar**)***

NAVSARI AGRICULTURAL UNIVERSITY, NAVSARI

15.8.2.6	**Delaying of the browning of sugarcane juice by various treatments**
	House approved the recommendation for scientific community after recasting as follows: It is informed to scientific community that to retain natural taste and color of sugarcane juice up to three hours should add 0.5 g/litre of citric acid immediately after extraction of juice. ***(Action:** HoD, Food Quality Testing Laboratory, NMCA, NAU, Navsari**)***
15.8.2.7	**Nutritional and antinutritional profiling of different Kabuli chick pea *(Cicer arietinum L.)* genotypes**
	House approved the recommendation for scientific community after recasting as follows: It is informed to the scientific community that genotype NGK-1707 had the highest amount of total protein (25.58%), Ca (6.20 g/Kg) and K (10.25 g/Kg). However, NGK-1708 contains highest amount of methionine (0.92 g/16g N) in protein. NG-477 had the lowest anti-nutritional factor like trypsin inhibitors (6.78 TIU/g) which can be used for future breeding programme. ***(Action:** HoD, Dept. of Soil Science & Agri. Chemistry, NMCA, NAU, Navsari**)***
15.8.2.8	**Characterization of bacteriocin produced by isolated lactic acid bacteria**
	House approved the recommendation for scientific community: It is informed to scientific community that *Enterococcus faecium* produces bacteriocin which can be used *in vitro* to inhibit the growth of *Staphylococcus aureus*, *Enterococcus faecalis*, *Serratia marcescens*, *Micrococcus luteus* and *Listeria monocytogenes*. ***(Action:** HoD, Food Quality Testing Laboratory, NMCA, NAU, Navsari**)***
15.8.2.9	**Genetic diversity analysis among promising *Nagli* (*Eleusine coracana* L.) genotypes**
	House approved the recommendation after recasting as follows: It is informed to scientific community that ISSR markers are more reliable than RAPD for genetic diversity analysis. The ISSR markers UBC 841, UBC 857 and UBC 863 are most diverse for polymorphism and genetic diversity analysis in *Nagli* genotypes. Among 25 genotypes, GN-4 and GPU-48 & GPU-28 are genetically diverse genotypes and observed in different clusters in PCA analysis that can be used in future breeding program. ***(Action:** HoD, Dept. of Plant Molecular Biology & Biotech, ACHF, NAU, Navsari**)***

JUNAGADH AGRICULTURAL UNIVERSITY, JUNAGADH

15.8.2.10 **Draft genome sequencing and analysis of fungal phytopathogen *Sclerotium rolfsii* to reveal insight into its genetic structure.**

House approved the recommendation after recasting as follows:

It is recommended to the scientific community involved in Groundnut improvement that the sequencing of plant pathogenic fungi *Sclerotium* (*Athelia*) *rolfsii showed* the size of genome is 73 Mb. The draft genome having 8919 contings, 16830 genes and 11171 SSR present in the genome. In genome 3507 and 261 genes involve in Transporter and catalytic function respectively, 1531 genes involve in cellular component and 709 of genes involve in biological process. Pathogenicity related genes identified in this study have high relevance in future fungicide designing and following primers can be used for the specific identification of pathogenic fungi *Sclerotium* (*Athelia*) *rolfsii.*

Name	Primer 3'-5'	Product length	GC %	Tm
JAUSRF 1	GAAGAGTTTGCGTCGAGTCC	250	55	59.85
JAUSR R1	GCTGTCAGAGAAACCGAAG A		50	59.84
JAUSRF 2	ACGAACTCGATCCCAGCATC	170	50	60.47
JAUSR R2	TCGATTATGAGGGTTTCCTC		50	60.05
JAUSRF 3	CGGACTAATAATCGACCCTA	230	50	60.07
JAUSR R3	ATAAAGGTGCGTTGACGTTT		45	60.17

(Action:** Prof. & Head, Department of Biochemistry and Biotechnology, JAU, Junagadh**)

ANAND AGRICULTURAL UNIVERSITY, ANAND

15.8.2.11 **Development of tissue culture protocol for mass multiplication of seedless Lemon**

House approved the recommendation after recasting as follows:

Micro-propagation protocol for seedless lemon variety Konkan Lemon involves *in vitro* multiplication of cultures obtained on Murashige and Skoog (1962) (MS) medium supplemented with BA (0.2 mgl^{-1}) , Kn (1.0 mgl^{-1}) and IBA(0.5 mgl^{-1}) with the highest number of multiple shoots (4.20) which was found to be consistent for four sub-culturing on same medium. *In vitro* rooting was found maximum in MS medium supplied with auxins IBA (1.0 mgl^{-1}) and NAA (0.2 mgl^{-1}) inducing highest rooting (100 %) and number of roots (2.69). Primary hardening was achieved when Cocopeat alone used as substrate leading to least mortality (3.12 %) and better growth characteristics.

(Action: Assistant Research Scientist, Tissue culture AAU, Anand***)***

15.8.3 NEW TECHNICAL PROGRAMMES

Chairman	**Dr. S. R. Vyas, Dean, Basic Sciences, SDAU**
Co-Chairman	**Dr. B. A. Golakiya, Prof. & Head, Dept. of Biotech., JAU**
	Dr. Y. M. Shukla, Principal, COA, Vaso, AAU
Rapporteurs	**Dr. S. B. Gondaliya, CIL, SDAU**
	Dr. Akarsh Parihar, I/c. Unit Officer, Dept. of Agril. Biotech., AAU
	Dr. Trupti Vyas, Assistant Professor, FQTL, NAU

University	**No. of New Technical Programmes**	
	Proposed	**Approved**
NAU, Navsari	17	17
SDAU, Sardarkrushinagar	08	08
JAU, Junagadh	03	03
AAU, Anand	05	05
Total	**33**	**33**

SARDARKRUSHINAGAR DANTIWADA AGRICULTURAL UNIVERSITY, SKNAGAR

Sr. No.	**Title /centre**	**Suggestions**
15.8.3.1	Effect of different concentrations of Pendimethalin and Metsulfuron-methyl on beneficial soil bacterial population in wheat	**Accepted with following suggestions** 1. Observation should be recorded on 0, 10, 20 and 120 days. 2. Dose of the herbicide should be finalized in consultation with Agronomist. 3. Observation also to be recorded for siderophore producing organism. (**Action:** HOD, Dept of Microbiology, CPCA, SDAU, Sardarkrushinagar)
15.8.3.2	Biochemical evaluation of Grain *Amaranthus* species.	**Accepted with following suggestions** 1. At least 20 genotypes should be tested. 2. Lysine content in protein should be expressed. (**Action:** Principal, CBSH, SDAU, Sardarkrushinagar)
15.8.3.3	Characterization of Colostrum Fat Globule Membrane (CFGM) from Kankrej cow	**Accepted with following suggestions** 1. Colostrum sampling should be done up to three days or upto initiation of milking. (**Action:** Principal, CBSH, SDAU, Sardarkrushinagar)
15.8.3.4	Degradation of chlorpyrifos pesticide residues in soil	**Accepted with following suggestions** 1. Absolute control with sterilized soil with bacteria and without bacteria to be incorporated. 2. Observations to be recorded at every week up to one month. 3. Measure the CFU count of soil along with pesticide residue. (**Action:** I/c CIL, SDAU, Sardarkrushinagar)
15.8.3.5	Enhancement of seed germination through priming	**Accepted with following suggestions** 1. Recast the title as "Effect of priming on seed germination in various crops". 2. In methodology, the priming should be

		done as per the prescribed procedure. 3. Drying of seed “up to initial weight” should be done. (**Action:** Prof & Head, GPB, COA, SDAU, Sardarkrushinagar)
15.8.3.6	Evaluation of nutritional value of Date fruits and its dry powder **(*Phoenix dactylifera* L.)**	**Accepted with following suggestions** 1. Total soluble sugar content should be estimated. (**Action:** Principal, CBSH, SDAU, Sardarkrushinagar)
15.8.3.7	Effect of foliar application of zinc and iron fertilizer on grain quality of mung bean (*Vigna radiata* L.)	**Accepted with following suggestions** **1.** Recast the title as “Effect of foliar application of zinc and iron fertilizer on grain quality and yield of mung bean (*Vigna radiata* L.) (**Action:** Principal, CBSH, SDAU, Sardarkrushinagar)
15.8.3.8	Effect of soil application of zinc and iron fertilizer on grain quality of mung bean (*Vigna radiata* L.)	**Accepted with following suggestions** 1. Recast the title as **“** Effect of soil application of zinc and iron fertilizer on grain quality and yield of mung bean (*Vigna radiata* L.) (**Action:** Principal, CBSH, SDAU, Sardarkrushinagar)

NAVSARI, AGRICULTURAL UNIVERSITY, NAVSARI

Sr. No.	Title/Centre:	Suggestions
15.8.3.9	Nutritional analysis of mango seed kernel	**Accepted with following suggestion/s** 1. The number of genotypes / varieties should be atleast 15. 2. Moisture content should be observed immediately after the collection. 3. Tannin, Mangiferin, Phospholipid, Vitamin B_{12} and TSS should be estimated. (**Action:** Principal, ASBI, NAU, Surat)
15.8.3.10	Optimization of genetic transformation of pigeonpea (*Cajanus cajan* L.) var GT-104	**Accepted with following suggestion/s** 1. Approval from IBSC of NAU must be taken before initiation of experiment. (**Action:** Principal, ASBI, NAU, Surat)
15.8.3.11	*In silico* characterization of different banana bunchy top virus (BBTV)	**Accepted with following suggestion/s** **New observations was added which are as follows,** 1. Identification of each coat protein binding with receptor of plant cell in known data base or any literature to be incorporated. 2. Molecular modeling for binding of receptor with surface protein should be carried out.

		3. Homology modeling for binding receptor and viral coat protein should be done. 4. Prediction of antigenic mutagenecity for respective viral coat protein with *In silico* analysis should be performed. 5. Recast title of experiment is missing in this suggestion. (**Action:** Principal, ASBI, NAU, Surat)
15.8.3.12	Response of different chemicals under rainfed conditions in cotton	**Accepted with following suggestion/s** 1. New treatment consisting of glycine betaine, brassino steroid, jasmonic acid, L-proline, tryptophane, salicylic acid should be added. 2. Replication should be 4. (**Action:** Res. Sci., MCRS, NAU, Surat)
15.8.3.13	Effect of fertilizer and growth regulator on physiology of cotton under HDPS	**Accepted with following suggestion/s** 1. Add one more variety. 2. Write full form of HDPS in title of experiment. (**Action:** Res. Sci., MCRS, NAU, Surat)
15.8.3.14	Study of starch quality in greater yam (*Dioscorea alata*)	**Accepted with following suggestion/**s 1. Write Amylose content in place of Amylase content in observation. 2. Amylose : amylopectin ratio should be studied. (**Action:** HoD, Dept. of SS&AC, NMCA, NAU, Navsari)
15.8.3.15	Diazotropic bacterial population and other associated microbes on the phyllosphere of sugarcane	**Approved** (**Action:** HoD, Dept. of Plant Pathology, NMCA, NAU, Navsari)
15.8.3.16	Optimization of micropropagation protocol for banana	**Accepted with following suggestion/s** 1. Recast the title as "Optimization of micropropagation protocol for different genotypes of banana. (**Action:** HoD, Dept. of GPB (Plant Physiology), NMCA, NAU, Navsari)
15.8.3.17	Effect of cold stress on seed germination of rice genotypes	**Accepted with following suggestion/s** 1. Add one more treatment at 8^0C. 2. Incubation period for T_1, T_2, T_3 should be 7 days. (**Action:** HoD, Dept. of GPB (Plant Physiology), NMCA, NAU, Navsari)
15.8.3.18	A GIS based approach for carbon sink and stock values in South Gujarat forest region	**Accepted with following suggestion/s** 1. Title should be recast as "A GIS based approach for carbon sink and stock values in forest region of Dang district. (**Action:** HoD, Dept. of GPB (Plant Physiology), NMCA, NAU, Navsari)
15.8.3.19	Evaluation of different methods for manure preparation from straw and	**Accepted with following suggestion/s** 1. Add estimation of cellulose content at every time of interval.

	threshing waste of rice	(**Action:** HoD, Food Quality Testing Laboratory, NMCA, NAU, Navsari)
15.8.3.20	Exploring actinomycetes for their cellulolytic and lignolytic activity	**Approved** (**Action:** HoD, Food Quality Testing Laboratory, NMCA, NAU, Navsari)
15.8.3.21	Biochemical analysis of finger millet flour for storage quality	**Accepted with following suggestion/s** 1. Recast the title as "Comparative biochemical appraisal of fingermillet and other cereals for storage quality". 2. Remove word "control" from T_6 treatment. 3. Observations should be recorded on weekly basis. 4. Remove organoleptic test from observations. 5. Only three anti-nutritional factors viz. phytic acid, tannin and Oxalate should be analysed. 6. Add estimation of Ca, P, Zn and Fe. 7. Nutritional analysis should be done only for carbohydrate, protein and fiber parameters, rest of the parameters should be deleted. (**Action:** HoD, Dept. of Plant Molecular Biology & Biotech, ACHF, NAU, Navsari)
15.8.3.22	Cell suspension culture and plant regeneration in Banana cv. Grand Naine	**Accepted with following suggestion/s** 1. Add observation on Pack Cell volume (PCV). (**Action:** HoD, Dept. of Plant Molecular Biology & Biotech, ACHF, NAU, Navsari)
15.8.3.23	Effect of liquid culture media in micropropagation of banana cv. Grand Naine	**Accepted with following suggestion/s** 1. Add 2 more culture system of Flask culture and simple bioreactor. (**Action:** HoD, Dept. of Plant Molecular Biology & Biotech, ACHF, NAU, Navsari)
15.8.3.24	Optimization of hardening process of banana cv. Grand Naine for cost effectiveness	**Accepted with following suggestion/s** 1. Add one more treatment of ready to use hardening bags containing cocopeat and peat moss. (**Action:** HoD, Dept. of Plant Molecular Biology & Biotech, ACHF, NAU, Navsari)
15.8.3.25	DNA barcoding of different bamboo and ficus species	**Approved** (**Action:** HoD, Dept. of Basic Science & Humanities, CoF, ACHF, NAU, Navsari)

JUNAGADH AGRICULTURAL UNIVERSITY, JUNAGADH

Sr. No.	Title / center	Suggestions
15.8.3.26	Development of nanoparticles labeled immuno-strip for rapid detection of aflatoxin in groundnut.	**Approved.** (**Action :** Professor & Head, Department of Biochemistry and Biotechnology, CoA, JAU, Junagadh)

15.8.3.27	QTL mapping and identification of markers linked to salinity tolerance in chickpea (*Cicer arietinum* L.)	**Accepted with following suggestions** 1. Mention about the development of mapping population. (**Action:** Professor & Head, Department of Biochemistry and Biotechnology, CoA, JAU, Junagadh)
15.8.3.28	Canopy management in HDPS cotton under high fertility condition (AICCIP Trial)	**Approved** (**Action:** Research Scientist (Cotton), Cotton Research Station, JAU, Junagadh)

ANAND AGRICULTURAL UNIVERSITY, ANAND

Sr. No.	Title / center	Suggestions
15.8.3.29	Biochemical changes associated with induction of silicic acid in leaf and fruit of Okra	**Accepted with following suggestions** 1. Percent disease incidence at flowering stage to be recorded. (**Action :** Professor & Head, Department of Biochemistry BACA, AAU, Anand)
15.8.3.30	QTL mapping for wilt resistance in castor	**Approved** (**Action:** Research Scientist, Department of Agril. (Biotechnology AAU, Anand)
15.8.3.31	Molecular markers based characterization of diverse germplasm of*Gossypium herbaceum*	**Approved** (**Action:** Research Scientist, Department of Agril. Biotechnology AAU, Anand)
15.8.3.32	Optimization of tissue culture protocol in Oil palm (*Elaeis guineensis*)	**Accepted with following suggestions** 1. Mention the type of the media and growth hormones to be used. (**Action :** Centre for Advanced Research in Plant Tissue Culture, AAU, Anand)
15.8.3.33	Development of micropropagation protocol for large scale multiplication of guava (*Psidium guajava* L.)	**Approved** (**Action :** Centre for Advanced Research in Plant Tissue Culture, AAU, Anand)

15.9 Animal Health, Animal Production & Animal Science, Fisheries

Chairman :- **Dr. N. H. Kelawala, Hon'ble VC , KU and Dr. D. B. Patil, DR, KU**
Co- chairman:- **Dr. A. M. Thakar, Dean, AAU and Dr. S. R. Chaudhary, DR, NAU**
Rapporteurs :- **Dr. K. N. Wadhwani, AAU, Dr A. R. Ahlawat, JAU and Dr. H. H. Panchasara, SDAU**
Statistician :- **Dr. H. R. Pandya, NAU**

Session-I Presentation of recommendations by Conveners of SAUs

Sr. No	Name	Designation and university
1	Dr R. M. Patel	Professor & Head, Dept. of Vet Medicine , CVSc. & AH, SDAU, Sardarkrushinagar
2	Dr. A. P. Chaudhary	Professor & Head, Dept. of LPM, CVSc. & AH, SDAU, Sardarkrushinagar
3	Dr. C. V. Savalia	Prof. & Head, Dept. of Vet. Public health & Epidemiology , CVSc. & AH, NAU, Navsari
4	Dr. B. P. Brahmkshtri	Prof. & Head, Dept. of ILFC, CVSc. & AH, NAU, Navsari
5	Dr. U. D. Patel	Assoc prof & Head ,Dept of Vet Pharmacology & Toxicology JAU, Junagadh
6	Dr. D. J. Ghodasara	Professor& Head , Dept. of Vet. Pathology, CVSc. & AH, AAU, Anand
7	Dr. R. S. Joshi	Professor, Dept. of AGB, CVSc. & AH, AAU, Anand

Animal Production and Fisheries

University Name	Farmers Community		Scientific Community	
	Proposed	Approved	Proposed	Approved
SDAU, SKNagar	3	2	2	2
NAU, Navsari	4	4	7	6
AAU, Anand	7	7	6	6
KU, Gandhinagar	-	-	-	-
Total	**14**	**13**	**15**	**14**

Animal Health

University Name	For Farmers Community		For Scientific Community	
	Proposed	Approved	Proposed	Approved
SDAU, SKNagar	-	-	7	7
NAU, Navsari	3	3	7	5
AAU, Anand	1	1	4	4
KU, Gandhinagar	-	-	-	-
JAU, Junagadh*	5	4	9	9
Total	**9**	**8**	**27**	**25**

*= combined

For farmers community

A total (Animal Health and Animal Production) of **twenty three** recommendations were presented for the farmers community out of which **twenty one** recommendations were approved by the house and two recommendations were deferred.

For scientific community

A total (animal health and animal production) of **forty two** recommendations were presented for the scientific community out of which **thirty nine** recommendations were approved by the house and three recommendations were deferred.

15.9.1 RECOMMENDATION FOR FARMING COMMUNITY

SARDARKRUSHINAGAR DANTIWADA AGRICULTURAL UNIVERSITY, SKNAGAR

Animal production and Fisheries	
15.9.1.1	**Calculating Feed Efficiency in lactating Kankrej cattle at Livestock Research Station**
	Farmers are recommended to rear Kankrej breed of cattle because of its high Feed Conversion Ratio by feeding of 1 Kg dry matter yielding 1.48 kg energy corrected milk. કાંકરેજ ઓલાદની ગાયોમાં ખોરાકનું દૂધમાં રુપાંતર કરવાની ક્ષમતા વધુ એટલે કે ખોરાકના ૧ કિલો શુષ્ક પદાર્થ સામે ૧.૪૮ કિલો ઉર્જા સંતુલીત દૂધ ઉત્પાદન હોવાથી પશુપાલકોને કાંકરેજ ઓલાદની ગાયો પાળવાની ભલામણ કરવામાં આવે છે. **Proposal was accepted by the house with following suggestions.** **Suggestions : Approved with recasting** **[Action:** Research Scientist, LRS, Sardarkrushinagar**]**
15.9.1.2	**Death pattern in Mehsana buffalo calves**
	In Mehsana buffalo calves death due to pneumonia and enteritis is higher till one month of age, as compared to second month to one year. Therefore farmers are recommended to take special care of the calves up to one month of age. મહેસાણી ભેંસના એક માસની ઉમર સુધીના બચ્ચાઓમાં બીજા માસથી એક વર્ષ સુધીની ઉમરના બચ્ચાઓુની સરખામણીમા ઝાડા અને ન્યુમોનિયાથી થતા મૃત્યુનું પ્રમાણં વધુ હોવાથી પશુપાલકોએ એક માસની ઉમર સુધીના બચ્ચાઓની વિશેષ કાળજી રાખવાની ભલામણ કરવામાં આવે છે. **Proposal was accepted by the house with following suggestions.** **Suggestions: Differed** **[Action:** Research Scientist, LRS, Sardarkrushinagar**]**
15.9.1.3	**Relationship and prediction of body weight using morphometric traits in goats**
	Mehsana goat keepers of North Gujarat are recommended that the prediction of live body weight (LBW) from heart girth can be done using formula, LBW (Kg) = 1.151 heart girth (cm) – 50.32. મહેસાણા ઓલાદની બકરીઓનું અંદાજીત વજન કિલોગ્રામમાં નક્કી કરવા માટે છાતીનો ઘેરાવો સેન્ટીમીટરમાં લઇ ૧.૧૫૧ વડે ગુણી તેમાંથી ૫૦.૩૨ બાદ કરી જાણી શકાય. **Proposal was accepted by the house with following suggestion.** **Suggestions: Approved** **[Action:** Head, AGB, Sardarkrushinagar**]**

Animal Production and Fisheries Science

15.9.1.4 Bio-safety evaluation of Oxytetracycline (OTC) as feed additive in *Cirrhinus mrigala* advance fingerlings

The freshwater fish farmers of Gujarat are recommended to use Oxytetracycline at a concentration of 80 mg/kg of fish biomass as feed additive for a period of 7 days to the advance fingerlings of Mrigal.

ગુજરાતના મીઠાપાણીમાં મત્સ્યપાલન કરતાં ખેડૂતોને ભલામણ કરવામાં આવે છે કે ૮૦ મીલીગ્રામ/કિગ્રા મત્સ્ય જથ્થા પ્રમાણે ઓકસીટેટ્રાસાયકલીન પૂરકઆહાર તરીકે ૭ દિવસના સમય સુધી મ્રિગલ માછલીના એડવાન્સ ફીંગરલીંગને આપી શકાય.

Proposal was accepted by the house with following suggestions.
Suggestions: Approved

(Action: Nodal Officer and Dean, College of Fisheries Science, NAU, Navsari**)**

15.9.1.5 Withdrawal period evaluation of Oxytertacycline (OTC) as feed additive for *Cirrhinus mrigala* advance fingerling

The freshwater fish farmers of Gujarat to avoid residual problem are recommended to observe a withdrawal period of 27 days after use of feed additive Oxytetracycline at a concentration of 80 mg/kg of fish biomass for a period of 7 days to the advance fingerlings of Mrigal.

Recommendation as per CIBRC format

Year	Species	Condition	Antibio-tic name	Doses			With drawal period (Days)
				Quantity of Antib-iotic	Duration of feeding	Quantity of Binder	
2018	*Cirrhinus mrigala*	Bacterial infections	Oxytet-racycline	80 mg/kg of fish biomass	7 days	10-15 ml/ kg feed	27

MRL (Maximum residual limit) 100 µg/kg of fish (EU regulation 37/2010)

ગુજરાતના મીઠાપાણીમાં મત્સ્યપાલન કરતાં ખેડૂતોને ભલામણ કરવામાં આવે છે કે ૮૦ મીલીગ્રામ/કિગ્રા મત્સ્ય જથ્થા પ્રમાણે ઓકસીટેટ્રાસાયકલીન પૂરકઆહાર તરીકે / દિવસના સમય સુધી મ્રિગલ માછલીના એડવાન્સ ફીંગરલીંગને ૭ દિવસના આપ્યાબાદ અવશેષ નિવારણ માટે ૨૭ દિવસનો સમયગાળો રાખવો.

સીઆઇબીઆરસીના ફોર્મેટ મુજબની ભલામણ

વર્ષ	પ્રજાતિ	સ્થિતિ	એંટીબા-યોટીક નું નામ	માત્રા			અવશેષ નિવારણ સમય (દિવસ)
				એંટીબાયોટીકનું પ્રમાણ	ખોરાક આપવાની સમયમર્યાદા	બાંઇડરની માત્રા (મી.લિ)	
૨૦૧૮	મ્રિગલ	જીવાણું જન્ય રોગ	ઓકસી ટેટ્રાસા-યકલીન	૮૦ મીગ્રા / કિગ્રા મત્સ્યજથ્થો	૭ દિવસ	૧૦ થી ૧૫ મી.લિ / કિગ્રા ખોરાક	૨૭

એમ.આર.એલ.(મહતમ અવશેષ પ્રમાણ) ૧૦૦ માઈક્રોગ્રામ/કિગ્રા મત્સ્ય ઈયુ નિયમ ૩૭/૨૦૧૦)

Proposal was accepted by the house with following suggestions.
Suggestions: Approved with recasting.

(Action: Nodal Officer and Dean, College of Fisheries Science, NAU, Navsari**)**

15.9.1.6 Bio-safety evaluation of Emamectin Benzoate (EB) as feed additive for *Cirrhinus mrigala* (advance fingerling).

The freshwater fish farmers of Gujarat are recommended to use Emamectin Benzoate at 50 µg/kg of fish biomass as feed additive for a period of 7 days to the advance fingerlings of Mrigal.

ગુજરાતના મીઠાપાણીમાં મત્સ્યપાલન કરતાં ખેડ્રૂતોને ભલામણ કરવામાં આવે છે કે ૫૦ માઈક્રોગ્રામ/કિગ્રા મત્સ્ય જથ્થા પ્રમાણે ઇમામેકટીન બેનઝોયેટ પૂરકઆહાર તરીકે ૭ દિવસના સમય સુધી મ્રિગલ માછલીના એડવાન્સ ફીંગરલીંગને આપી શકાય.

Proposal was accepted by the house with following suggestions.
Suggestions: Approved

(Action: Nodal Officer and Dean, College of Fisheries Science, NAU, Navsari**)**

15.9.1.7 Withdrawal period evaluation of Emamectin Benzoate (EB) as feed additive for *Cirrhinus mrigala a*dvance fingerlings.

The freshwater fish farmers of Gujarat are recommended that no withdrawal period is required after use of Emamectin Benzoate at 50 µg/kg of fish biomass as feed additive for a period of 7 days to the advance fingerlings of Mrigal.

Recommendation as per CIBRC format

Year	Species	Condition	Anti-parasitic drug name	Doses			Withd-rawal period (Days)
				Quantity of Antiparasitic drug	Duration of feeding	Quantity of Binder	
2018	*Cirrhinus mrigala*	Parasitic infections	Emamectin Benzoate	50 µg/kg of fish biomass	7 days	10-15 ml/ kg feed	-

MRL (Maximum residual limit) 100 µg/kg of fish (EU regulation 37/2010)

ગુજરાતના મીઠાપાણીમાં મત્સ્યપાલન કરતાં ખેડ્રૂતોને ભલામણ કરવામાં આવે છે કે ઇમામેકટીન બેનઝોયેટને ૫૦ માઈક્રોગ્રામ/કિગ્રા મત્સ્ય જથ્થા પ્રમાણે પૂરક આહાર તરીકે ૭ દિવસના સમય સુધી મ્રિગલ માછલીના એડવાન્સ ફીંગરલીંગને આપ્યાબાદ અવશેષ નિવારણ માટે સમયગાળો રાખવાની જરૂરીયાત રહેતી નથી.

સીઆઇબીઆરસીના ફોર્મટ મુજબની ભલામણ

વર્ષ	પ્રજાતિ	સ્થિતિ	કૃમિનાશક દવાનું નામ	માત્રા			અવશેષ નિવારણ સમય (દિવસ)
				કૃમિનાશક દવાનું પ્રમાણ	ખોરાક આપવાની સમયમર્યાદા	બાંઇડરની (મી.લિ)	
૨૦૧૮	મ્રિગલ	કૃમિરોગ	ઇમામેકટીન બેનઝોયેટ	૫૦ માઈક્રોગ્રામ/ કિગ્રા મત્સ્ય જથ્થો	૭ દિવસ	૧૦ થી ૧૫ મી.લિ/ કિગ્રા ખોરાક	-

એમ.આર.એલ.(મહતમ અવશેષ પ્રમાણ) ૧૦૦ માઈક્રોગ્રામ/કિગ્રા મત્સ્ય (ઈયુ નિયમ ૩૭/૨૦૧૦)

Suggestions: Approved

(Action: Nodal Officer and Dean, College of Fisheries Science, NAU, Navsari)

ANIMAL HEALTH	
15.9.1.8	**Management of traumatic reticulopericarditis (TRP) in bovines.** ગાયો-ભેંસોમાં જોવા મળતા છાતી અને ગળાની શીરાના સોજા સાથેના રોગીષ્ટ પશુઓને તાત્કાલીક સારવાર માટે રજૂ કરવા પશુપાલકોને ભલામણ કરવામાં આવે છે. Dairy farmers are advised to present their cattle and buffaloes with brisket oedema and engorged jugular vein at the earliest for the treatment. **Suggestions : Approved with recasting** **(Action:** PI & Professor and Head, Dept. of Vet. Surgery & Radiology**)**
15.9.1.9	**Clinical efficacy of different drug regimen for the treatment of non dilatation of cervix in goat.** બકરાપાલકોને ભલામણ કરવામાં આવે છે કે, કઠીન પ્રસવવાળી બકરીઓને તાત્કાલીક પશુચિકિત્સક પાસે લઈ જવાથી, દવાના ઉપયોગથી કુદરતી માર્ગે જીવિત બચ્ચા આવવાની શકયતા વધારે રહેલી છે. Goat owners are advised to present their goats suffering from dystocia at the earliest to veterinarians in order to increase the probability of per-vaginal delivery of live kids by medication. **Suggestions : Approved** **(Action:** PI & Professor and Head, Dept. of Vet. Gynaecology & Obstetrics**)**
15.9.1.10	**Detection of Classical Enterotoxigenic coagulase positive *Staphylococcus aureus* in bovine raw milk, Dairy food products and Handlers' hand swabs.** ગાય અને ભેંસ ના કાચા દૂધ, દૂધ ની બનાવટો અને દૂધની હેરફેર કરતા માણસો ના હાથ દ્વારા બહુવિધ એન્ટીબાયોટિક્સ પ્રતિરોધકતા ધરાવતાં સ્ટેફાઇલોકોકસ ઓરીયસ જીવાણુનું સંભવિત જોખમ પોતાને તેમજ ઉપભોક્તાને રહે છે. તેથી દૂધની હેરફેર તથા દૂધની બનાવટો બનાવવાના વિવિધ સ્તરે સ્વચ્છતા જાળવણી માટે પશુપાલકોને ભલામણ કરવામાં આવે છે. Bovine raw milk, dairy products and handler's hand can serve as possible risk of multiple antibiotic resistant *Staphylococcus aureus* to handlers and the consumers warranting maintenance of hygiene during milk collection, handling and processing. **Suggestions : Approved with recasting** **(Action:** PI & Professor and Head, Dept. of Vet. Public Health & Epidemiology**)**

JUNAGADH AGRICULTURAL UNIVERSITY, JUNAGADH

Animal Science and fisheries science	
15.9.1.11	**Ecological studies of *Staphylococccus aureus* isolates from poultry meat and associated environment in and around Junagadh district**
	Poultry meat handlers need awareness for hygienic production of poultry meat to reduce possible food infection caused by *Staphylococccus aureus* in Junagadh District. જુનાગઢ જિલ્લાના મરઘાપાલન સાથે સંકળાયેલ લોકોમાં સ્ટેફાઈલોકોક્કસ ઓરિએસ બેક્ટેરિયાથી થતા સંક્રમણને ઘટાડવા માટે મરઘાંના માંસની સ્વચ્છતા જળવાઈ રહે તે હેતુથી જાગૃતિની જરૂર છે.

	Suggestions : Approved with recasting. **(Action:** PI/Head, Dept. of Vet. Public Health & Epidemiology, Vet. College JAU, Junagadh)
15.9.1.12	**Etiological and Therapeutic studies on Canine Dermatoses in and around Junagadh**
	Dog owners are advised for periodic prophylactic dermatosis check-up as it is more prevalent in Pug, Labrador and Doberman ageing 4 - 5 years during summer and monsoon. શ્વાન પાલકોએ ચર્મરોગના અટકાવ/ રોકથામ માટે સમયાંતરે નિયમિત ચર્મરોગ ચકાસણી કરાવવી જોઈએ કારણ કે ૪ થી ૫ વર્ષના પગ, લાબ્રાડોર અને ડોબરમેન શ્વાનોમાં ઉનાળા અને ચોમાસા દરમ્યાન ચર્મરોગનો ઉપદ્રવ વધુ જોવા મળે છે. **Suggestions: <u>Deferred</u>** **(Action:** Professor & Head, Dept. of Teaching Vet. Clinical Complex, Vet. College., JAU, Junagadh)
15.9.1.13	**Phenotypic and Molecular characterization of extended-spectrum β-lactamase (ESBL) producing *Escherichia coli* from poultry in Junagadh, Gujarat**
	The presence of *E. coli* is confirmed in poultry in and around Junagadh, hence poultry farmers are advised to use antibiotics in the treatment of poultry diseases under the guidance of registered veterinary practitioners and strictly follow prescribed antibiotic regimens to avoid anti microbial resistance. જુનાગઢ અને તેની આસપાસમાં મરઘાપાલકોને જાણ કરવામાં આવે છે કે, મરઘાઓની અંદર *E. Coli* જીવાણું જોવા મળેલ હોય મરઘાંમાં રોગ માટે ઉપયોગમાં લેવાતી એન્ટીબાયોટીક દવાઓનો ઉપયોગ માન્યતા પ્રાપ્ત પશુચિકિત્સકની સલાહ સુચન મુજબ કરવા તથા એન્ટીબાયોટીક દવાઓ આપવાની પદ્ધતિનો ચુસ્તપણે પાલન કરવા આથી ભલામણ કરવામાં આવે છે. જેથી જીવાણુમાં એન્ટિબાયોટિક પ્રતિકારક ક્ષમતા નિવારી શકાય **Suggestions : Approved with recasting.** (**Action**: Professor & Head, Dept. of Livestock Product Technology, Vet. College, JAU, Junagadh)
15.9.1.14	**Studies on nutritive value and feeding varying levels of Marvel (*Dicanthium annulatum*) grass on milk production and milk composition in lactating Gir cows**
	Dairy farmers are recommended to feed 18 kg/day green Marvel/Jinjavo grass equivalent to 50 % Crude protein replacement to Gir cows (470 kg body weight and 7.6 litres milk/day) to enhance milk production by 6.81 % and profit (return over feed cost) by 41.08 %. Marvel/Jinjavo grass should be harvested at 40-45 days interval. પશુપાલકોને ભલામણ કરવામાં આવે છે કે ગીર ગાય માં) ૪૭૦ કિલોગ્રામ શારીરિક વજન અને ૭.૬ લિટર દૈનિક દૂધ ઉત્પાદન ધરાવતી (તેની કુલ જરુરીયાત ના ૫૦ % પ્રોટીન પૂરું પાડવા માટે દૈનિક ૧૮ કિલોગ્રામ લીલો મારવેલ/જીંજવો ઘાસ આપવામાં આવે તો દૂધ ઉત્પાદન માં ૬.૮૧ % નો નોંધપાત્ર વધારો તેમજ ખોરાકીય ખર્ચ ની સાપેક્ષ માં ૪૧.૦૮ % જેટલો વધુ નફો થાય છે. મારવેલ/જીંજવો ઘાસ ની કાપણી દર ૪૦-૪૫ દિવસ ના અંતરે કરવી જોઈએ. **Suggestions: Approved with recasting.** (**Action**: Research Scientist (AGB), Cattle Breeding Farm, JAU, Junagadh)

15.9.1.15	**Utilization of duckweed (*Lemna minor)* meal as partial supplementation in the diet of *Catla catla* fry**
	Fish Farmers are recommended to incorporate 15 % of duckweed (*Lemna minor*) leaf meal in the feed of *Catla catla* to obtain better growth rate, survival rate and economic return in freshwater rearing pond. મત્સ્ય ખેડૂતોને ભલામણ કરવામાં આવે છે કે, મીઠાંપાણીના તળાવમાં ઉછેરવામાં આવતી કટલા કટલા પ્રજાતિની માછલીને આપવામાં આવતા ખોરાકમાં ૧૫ % ડકવીડ) લેમ્ના માયનોર (પાવડર ઉમેરવાથી માછલીનો ઉત્તમ વૃધ્ધીદર, જીવંતદર અને વધુ આર્થિક લાભ મેળવી શકાય છે. **Suggestions: Approved** **(Action:** Principal & Dean, College of Fisheries Science, JAU, Veraval)

ANAND AGRICULTURAL UNIVERSITY, ANAND

Animal Production and Fisheries	
15.9.1.16	**Effect of tannin as phytonutrient on growth performance and health of Surti kids** (AP/ANRS/2018/03)
	The goat keepers are advised to feed total mixed ration containing 18% babul pods to growing Surti male kids during 7-12 months of age to improve body weight gain and feed conversion efficiency with 23.7% reduction in feed cost per kg gain. બકરાપાલકોને ભલામણ કરવામાં આવે છે કે, સુરતી નર લવારાઓને સાત માસથી એક વર્ષની ઉંમર સુધી ૧૮ ટકા દેશી બાવળની શીંગોનો ભરડો ધરાવતો કુલમિશ્રિત પશુઆહાર આપવાથી તેમના વૃધ્ધિદર તેમજ ખોરાક રૂપાંતરણ ક્ષમતામાં વધારો થાય છે અને પ્રતિ કિ.ગ્રા. વજન વધારવા માટે થતા ખોરાકીય ખર્ચમાં ૨૩.૭ ટકાનો ઘટાડો થાય છે. **Suggestions: Approved** **(Action:** Research Scientist & Head, Animal Nutrition Research Station, Veterinary College, AAU, Anand)
15.9.1.17	**Effect of tannin as phytonutrient on growth performance and health of Surti kids** (AP/ANRS/2018/03)
	The goat keepers are advised to feed total mixed ration containing 18% babul pods to growing Surti male kids during 7-12 months of age to improve general health and reduce parasitic load. બકરાપાલકોને ભલામણ કરવામાં આવે છે કે, સુરતી નર લવારાઓને સાત માસથી એક વર્ષની ઉંમર સુધી દેશી બાવળની શીંગોના ભરડાને ૧૮ ટકા પ્રમાણમાં ભેળવી બનાવેલ કુલમિશ્રિત પશુ આહાર ખવડાવવાથી પરોપજીવીઓનું નોંધપાત્ર પ્રમાણ ઘટે છે અને સ્વાસ્થ્ય સુધરે છે. **Suggestions: Approved with recasting** **(Action:** Research Scientist & Head, Animal Nutrition Research Station, Veterinary College, AAU, Anand)
15.9.1.18	**Methane mitigation in calves through dietary interventions and its effect of performance of animals** (AP/ANRS/2018/04)
	Feeding of Total Mix Ration containing 15% Babul pods with roughage to concentrate ratio 50:50 increases growth rate by 17.68% and decreases daily methane emission by 16.22% in crossbred calves.

	ઉછરતા સંકર વાછરડા/વાછરડીઓ ને ૧૫% દેશી બાવળની શીંગો નો ભરડો ધરાવતો કુલ મિશ્રિત પશુ આહાર (૫૦% ખાણદાણ અને ૫૦% ઘઉંનું કુંવળ) ખવડાવવાથી તેમના વૃધ્ધિદરમાં ૧૭.૬૮% નો વધારો થાય છે અને જઠરમાં બનતા દૈનિક મીથેન વાયુના ઉત્સર્જનમાં ૧૬.૨૨ % નો ઘટાડો થાય છે. **Suggestions: Approved** **(Action:** Research Scientist & Head, Animal Nutrition Research Station, Veterinary College, AAU, Anand)
15.9.1.19	**Methane mitigation in calves through dietary interventions and its effect of performance of animals** (AP/ANRS/2018/04)
	Feeding of Total Mix Ration (25% pigeon pea straw, 25% wheat straw and 50% concentrates) increases growth rate by 32.59 % and decreases daily methane emission by 10.53% in crossbred calves. ઉછરતા સંકર વાછરડા/વાછરડીઓને ૫૦% ખાણદાણ , ૨૫% તુવેર ગોતર તથા ૨૫% ઘઉંનું કુંવળ લઈને બનાવેલ કુલ મિશ્રિત પશુ આહાર ખવડાવવાથી તેમના વૃધ્ધિદરમાં ૩૨.૫૯% નો વધારો થાય છે અને જઠરમાં બનતા દૈનિક મીથેન વાયુના ઉત્સર્જનમાં ૧૦.૫૩% નો ઘટાડો થાય છે. **Suggestions: Approved** **(Action:** Research Scientist & Head, Animal Nutrition Research Station, Veterinary College, AAU, Anand)
15.9.1.20	**Performance of Indigenous Goats and Sheep of Gujarat State under different Watering frequencies** (AP/LPM/2017/02 and AP/LPM/2018/01)
	The sheep and goat keepers of water scarcity areas of middle Gujarat maintaining animals under intensive production system are advised to give *ad lib* water to their animals at an interval of less than 12 hrs in order to increase feed and nutrients intake. મધ્ય ગુજરાતના પાણી અછત ગ્રસ્ત વિસ્તારનાં ઘેટા બકરા પાલકોને ભલામણ કરવામાં આવે છે કે, ઘનિષ્ઠ પદ્ધતિથી નિભાવાતા ઘેટા બકરાઓને ૧૨ કલાકથી ઓછા સમયગાળના અંતરે પુરતુ પાણી આપવાથી તેમના ખોરાક અને પોષકતત્વોના ગ્રહણમાં વધારો થાય છે. **Suggestions: Approved with recasting.** **(Action:** Professor & Head, Dept. of Livestock Production and Management, Veterinary College, AAU, Anand)
15.9.1.21	**Study on performance of Holstein Friesian x Kankrej (HF X K) crossbred cows under intensive production system** (AP/LPM/2018/02)
	The HF x K (50%) crossbred cows performed better under intensive production system. However, production and reproduction performance declined in *inter se* as compared to half bred HF x K (50%). શંકર ગાયો (એચ એફ × કાંકરેજ ૫૦%) ઘનિષ્ઠ ઉત્પાદન વ્યવસ્થામાં સારૂ ઉત્પાદન આપે છે, પરંતુ પ્રથમ પેઢીની શંકર ગાયોની (એચ એફ × કાંકરેજ ૫૦%) સરખામણીમાં તેના પછીની ઉતરતી પેઢીની શંકર ગાયોના ઉત્પાદન અને પ્રજનનમાં ઘટાડો થાય છે. **Suggestions: Approved with recasting.** **(Action:** Professor & Head, Dept. of Livestock Production and Management, Veterinary College, AAU, Anand)
15.9.1.22	**Development of area-specific mineral mixture formulations for Chhotaudepur district** (AP/ANRS/2018/02)
	Based on the prioritization of limiting minerals in Chhotaudepur district,

the following area specific mineral mixture is formulated to make up the deficiency when fed @ 30g/head/day to cattle & buffalo in addition to the current feeding practices.

Sr. No.	Mineral element	Requirement (%)
1	Calcium	20.000
2	Phosphorus	12.00
3	Magnesium	5.00
4	Sulphur	1.80-3.00
5	Copper	0.10
6	Zinc	1.41
7	Manganese	0.12
8	Iron	0.40
9	Cobalt	0.012
10	Iodine	0.026

છોટા ઉદેપુર જીલ્લામાં પશુપોષણ મોજણી દ્વારા જાણવા મળેલ મર્યાદિત ક્ષારોની અગત્યતાને આધારે નીચે મુજબના ખનિજ તત્વો મળી રહે તે મુજબ વિસ્તાર આધારિત ક્ષાર મિશ્રણની ભલામણ કરવામાં આવેછે. જે પશુઓને વર્તમાન આહારની સાથે ૩૦ ગ્રામ/પશુ/દિવસ આપવાથી મર્યાદિત ક્ષારોની ઉણપ નિવારી શકાય છે.

અ. નં	ખનીજ તત્વ	જરૂરીયાત (%)
૧	કેલ્શિયમ	૨૦.00
૨	ફોસ્ફરસ	૧૨.00
૩	મેગ્નેશિયમ	૫.00
૪	સલ્ફર	૧.૮૦-3.00
૫	કોપર	૦.૧૦
૬	ઝીંક	૧.૪૧
૭	મેંગેનીઝ	૦.૧૨
૮	આયર્ન	૦.૪૦
૯	કોબાલ્ટ	૦.૦૧૨
૧૦	આયોડીન	૦.૦૨૬

Suggestions: Approved

(Action: Research Scientist & Head, Animal Nutrition Research Station, Veterinary College, AAU, Anand)

Animal Health

15.9.1.23 **Effect of Peripartum Nutritional (multi-minerals and bypass fat) Supplementation on Uterine Involution, Postpartum Fertility and Reproductive Peridata in Jaffarabadi Buffaloes** (AH/Gynaecology & Obstetrics/2016/05)

Jaffarabadi buffalo owners are recommended to provide additional nutrients supplementation over routine feeding during transitional period from 45 days prepartum till 60 days postpartum (50 g chelated ASMM and 150-200 g bypass fat daily) to improve the postpartum fertility and reduce calving interval for better economic return.

જાફરાબાદી ભેંસપાલકોને ભલામણ કરવામાં આવે છે, કે આ ભેંસોમાં વિયાણ બાદની

	ફળદ્રુપતા નોંધપાત્ર વધારવા તથા બે વિયાણ વચ્ચેનો ગાળો ઘટાડવા અને સારૂ આર્થિક વળતર મેળવવા માટે, રોજિંદા ઘરગથ્થું ખાણ-દાણ ઉપરાંત વધારાનું દૈનિક ૫૦ ગ્રામ એરીયા સ્પેસિફીક ચીલેટેડ મિનરલ મિક્સ્ચર અને ૧૫૦-૨૦૦ ગ્રામ બાયપાસ ફેટ, વિયાણ અગાઉના ૪૫ દિવસથી શરૂ કરીને વિયાણ બાદના દોઢ થી બે માસ સુધી આપવું. **Suggestions : Approved with recasting**. **(Action:** Professor and Head, Department of Veterinary Gynaecology and Obstetrics, Veterinary College, AAU, Anand)

15.9.2 RECOMMENDATION FOR SCIENTIFIC COMMUNITY

SARDARKRUSHINAGAR DANTIWADA AGRICULTURAL UNIVERSITY, SKNAGAR

Animal production and Fisheries	
15.9.2.1	**Determination of suckling allowance in Kankrej cattle**
	In Kankrej cattle, based on suckling allowance total lactation yield is calculated by adding 725.9 Liter milk to the milk collected in pail. **Proposal was accepted by the house with following suggestions.** **Suggestions : Approved with recasting** **[Action:** Research Scientist, LRS, Sardarkrushinagar**]**
15.9.2.2	It is recommended that the prediction of live body weight (LBW, in kg) from tail length (TL, in cm), paunch girth (PG, in cm) and heart girth (HG, in cm) in Mehsana goats under field conditions can be done using formula LBW (kg) = 0.29 TL + 0.29 PG +0.74 HG – 50.02 with 75% accuracy **Proposal was accepted by the house with following suggestions.** **Suggestions: Approved** **[Action:** Head, AGB, Sardarkrushinagar**]**
Animal Health	
15.9.2.3	**Development of new combination of antimicrobials (roxithromycin and ciprofloxacin) based on pharmacokinetic investigations in poultry.**
	Roxithromycin at oral dosage of 20 mg/Kg body weight once a day, is recommended to treat bacterial pathogens in broiler chicken **Suggestions: Approved with recasting** **(Action:** Prof. & Head, Dept. of Veterinary Pharmacology & Toxicology**)**
15.9.2.4	**Development of new combination of antimicrobials (roxithromycin and ciprofloxacin) based on pharmacokinetic investigations in poultry.**
	Oral administration of combined roxithromycin (20 mg/kg body weight) and ciprofloxacin (10 mg/kg body weight) at 12 hours interval is recommended to treat infection of Mycoplasma sp. And E. coli in broiler chickens. **Suggestions: Approved with recasting** **(Action:** Prof. & Head, Dept. of Veterinary Pharmacology & Toxicology**)**
15.9.2.5	**Safety analysis of multiple dose of combination of roxithromycin and ciprofloxacin based on haemato-biochemical parameters in broiler.**
	Oral administration of roxithromycin, at 20 mg/Kg body weight every 12 hours for 5 days is safe in broiler chickens based on haemato-biochemical evaluations. **Suggestions: Approved with recasting.** **(Action:** Prof. & Head, Dept. of Veterinary Pharmacology & Toxicology **)**

15.9.2.6	**Optimization of diagnostic techniques for detection and confirmation of rabies virus from suspected field cases.**
	RTq-PCR is better than FAT for ante-mortem diagnosis of rabies from saliva of suspected animals. **Suggestions : Approved with recasting.** **(Action:** Prof. & Head, Dept. of Veterinary Microbiology**)**
15.9.2.7	**Optimization of diagnostic techniques for detection and confirmation of rabies virus from suspected field cases.**
	Immuno histochemical technique (IHC) provides reliable rabies virus detection in formalin fixed paraffin embedded tissues with equal sensitivity and is safer than that of Fluorescent Antibody Test (FAT). **Suggestions: Approved with recasting.** **(Action:** Prof. & Head, Dept. of Veterinary Microbiology**)**
15.9.2.8	**Optimization of diagnostic techniques for detection and confirmation of rabies virus from suspected field cases.**
	Based on complete gene sequencing of nucleoprotein (N) and glycoprotein (G) gene sequencing, the rabies virus isolates are closely related on spatial (geography) basis rather than host species. **Suggestions: Approved with recasting** **(Action:** Prof. & Head, Dept. of Veterinary Microbiology**)**
15.9.2.9	**Optimization of diagnostic techniques for detection and confirmation of rabies virus from suspected field cases.**
	Rabies virus diagnosed for the first time in Asiatic Lion and Sloth Bear, is indicative of species spill over. **Suggestions: Approved with recasting** **(Action:** Prof. & Head, Dept. of Veterinary Microbiology**)**

NAVSARI AGRICULTURAL UNIVERSITY, NAVSARI

Animal production and Fisheries	
15.9.2.10	**Effect of supplementary cooling on body temperature, behaviour, milk composition and haemato-biochemical changes in hot dry and hot humid season in lactating Surti buffaloes.**
	Tympanic temperature is a non invasive and sensitive parameter that can be used for measurement of body temperature during heat stress in Surti buffaloes. **Suggestions: Approved with recasting** **(Action:** Professor and Head, Veterinary Physiology and Biochemistry, Vet. College, NAU, Navsari**)**
15.9.2.11	**Effect of supplementary cooling on body temperature, behaviour, milk composition and haemato-biochemical changes in hot dry and hot humid season in lactating Surti buffaloes**
	Tumor necrosis factor-α can be used as an additional bio-marker of heat stress in Surti buffaloes. **Suggestions: Approved with recasting** **(Action:** Professor and Head, Veterinary Physiology and Biochemistry, Vet. College, NAU, Navsari**)**
15.9.2.12	**To study the genetic polymorphism in prolificacy related genes and its association with prolificacy data in Surti goats.**

	Female Surti Goats with AB Genotype (575 bp, 500 bp and 75 bp) is found highly prolific as compared to AA (575 bp) and AC (575 bp, 400 bp and 175 bp) genotypes when Exon-2 region of BMP15 gene amplified with forward primer 5'-TCCCTAAAGGCCTGAAAGAGT-3' and reverse primer 5'-GCTGAAGGCAAGGAATAGAATC-3' and digested using *BssSI* enzyme. **Suggestions: Deferred** **(Action:** Professor and Head, Instructional Livestock Farm Complex, Vet. College, NAU, Navsari**)**
15.9.2.13	**To study the genetic polymorphism in prolificacy related genes and its association with prolificacy data in Surti goats.**
	Exon-6 region of BMPR1B gene amplified using forward primer 5'-CCAGAGGACAATAGCAAAGCAAA – 3' and reverse primer 5'-CAAGATGTTTTCATGCCTCATCAACACGGTC- 3' reveals monomorphic pattern after digestion using *AvaII* enzyme in female Surti goat. **Suggestions: Approved** **(Action:** Professor and Head, Instructional Livestock Farm Complex, Vet. College, NAU, Navsari**)**
15.9.2.14	**To study the genetic polymorphism in prolificacy related genes and its association with prolificacy data in Surti goats.**
	Exon-2 region of GDF9 gene amplified using forward primer 5'-CCACACAAATACAACCCTCGATAC-3' and reverse primer 5'-AGGCTCGATGGCCAAAACACT-3' reveals monomorphic pattern after digestion using *MspI* enzyme in female Surti goat. **Suggestions: Approved** **(Action:** Professor and Head, Instructional Livestock Farm Complex, Vet. College, NAU, Navsari**)**
15.9.2.15	**Identification of prolific Surti goats on the basis of body linear traits and temperaments.**
	Use of added measurements in body linear traits like heart girth (74.36 vs.70.30 cm), height at wither (72.16 vs. 69.30 cm), height at croup (62.50 vs. 58.45 cm), tuber coxae distance (14.22 vs. 13.66 cm), clearance at udder (14.91 vs.12.12 cm) and clearance at sternum (9.81 vs. 8.57 cm) for selecting prolific Surti goats as compared to singlet bearing goats. **Suggestions: Approved** **(Action:** Professor and Head, Livestock Production Management, Vet. College, NAU, Navsari**)**
15.9.2.16	**An investigation on skin temperature differentials in relation to estrus in Surti goats by infrared thermography.**
	Thermal images of the vulvar and anal surfaces can be used as a non-invasive tool for detecting estrus in Surti goats. **Suggestions: Approved with recasting** **(Action:** Professor and Head, Department: Livestock Production Management, Vet. College, NAU, Navsari**)**

ANIMAL HEALTH	
15.9.2.17	**Prenatal age related changes in gross and histomorphology of the spleen of Surti goat (*Capra hircus*).** Spleen length can be used as one of the reliable predictor to assess gestational age of Surti goat foetus by using following prediction equation: Y = a + b X Where, Y = Age of foetus in days a = 44.696 b = 2.972, and X = length of spleen in mm R^2 = 0.97 **Suggestions: Approved** **(Action:** PI & Professor and Head, Dept. of Vet. Anatomy**)**
15.9.2.18	**Prenatal age related changes in gross and histomorphology of the spleen of Surti goat (*Capra hircus*).** Histogenesis of red and white pulp differentiation in spleen of Surti goat foetus is continuous extending upto 144 days of gestation. **Suggestions: Approved** **(Action:** PI & Professor and Head, Dept. of Vet. Anatomy**)**
15.9.2.19	**Survey of gastro-intestinal parasites in captive animals at Surat Municipal corporation zoo.** Zoo veterinarians are advised to carry out faecal examination of the captive wild life at regular intervals, and with use of albendazole- ivermectin-mebendazole- fenbendazole on rotational base. **Suggestions: Deferred** **(Action:** *PI & Professor and Head, Dept. of Vet. Parasitology***)**
15.9.2.20	**Management of traumatic reticulo-pericarditis (TRP) in bovines.** Ultrasonography is the most significant tool for confirmation of Traumatic Reticulo Pericarditis (TRP) in bovines showing clinical signs *viz.,* brisket oedema, distension of the jugular veins, tachycardia and muffled heart sound. **Suggestions : Deferred** **(Action:** *PI & Professor and Head, Dept. Of Vet. Surgery & Radiology***)**
15.9.2.21	**Evaluation of anaesthetic regimens of butorphanol, diazepam or midazolam as preanaesthetic, propofol as induction and maintenance anaesthesia in canines.** Following balanced anaesthetic protocol can be used safely in canine practice : Butorphanol (0.2 mg/kg IM) + diazepam (1 mg/kg IV)/midazolam (0.4 mg/kg IV) + 1% Propofol IV (till effect for induction and @ 0.5 mg/kg/min for maintenance) **Suggestions: Approved** **(Action:** PI & Professor and Head, Dept. of Vet. Surgery & Radiology**)**
15.9.2.22	**Clinical efficacy of different drug regimen for the treatment of non dilatation of cervix in goat.**

	Use of Inj. Valethamate bromide @ 20 mg in combination with Inj. Cloprostenol sodium @ 250 µg by intramuscular route is recommended over Inj. Valethamate bromide alone or with Inj. Dexamethasone @ 08 mg, intramuscularly in dystocia cases of goats with partial / non dilated cervix for better efficacy. **Suggestions: Approved with recasting** **(Action:** *PI & Professor and Head, Dept. of Vet. Gynaecology & Obstetrics***)**
15.9.2.23	**Detection of Classical Enterotoxigenic coagulase positive *Staphylococcus aureus* in bovine raw milk, Dairy food products and Handlers' hand swabs.** Bovine raw milk and dairy products contained 3.0 x 10^4 - 4.8 x 10^7 CFU/ml (gm) coagulase positive *Staphylococcus aureus* is widely prevalent in the handlers hand. Milk, its products and handlers hand serve as possible source of health hazards of methicillin resistant *Staphylococcus aureus* and staphylococcal enterotoxins. **Suggestions: Approved** **(Action:** *PI & Professor and Head, Dept. of Vet. Public Health & Epidemiology***)**

JUNAGADH AGRICULTURAL UNIVERSITY, JUNAGADH

Animal Science and fisheries science subcommittee	
15.9.2.24	**Ecological studies of *Staphylococccus aureus* isolates from poultry meat and associated environment in and around Junagadh district**
	A total of 27(13.5 %) isolates of *Staphylococcus aureus* were recovered from samples collected from poultry raw meat, knife and hands of poultry meat handlers in and around Junagadh district. Among isolates, 19 (70.37 %) and 17 (62.96 %) were resistant to tetracycline and ampicillin, respectively. **Suggestions: Approved with recasting.** **(Action:** Professor &Head, Dept. of Vet. Public Health and Epidemiology, Vet. College JAU, Junagadh)
15.9.2.25	**Title: Etiological and Therapeutic studies on Canine Dermatoses in and around Junagadh**
	Higher prevalence of dermatoses are seen in Pug, Labrador and Doberman in the age group of 4 -5 years during summer and monsoon seasons with higher Staphylococcal infection (80.33 %) followed by *Streptococcus* Spp. (11.48 %) and *Micrococcus* Spp. (8.2 %) which favourably responded to Amoxicillin - Sulbactum or Cefaperazone - Sulbactum antibiotics. **Suggestions: Approved with recasting.** **(Action:** Professor & Head, Dept. of Teaching Vet. Clinical Complex, Vet. College, JAU, Junagadh)
15.9.2.26	**Evaluation of an antioxidant effect of poly-herbal mixture against cadmium induced oxidative stress in chickens**
	Addition of poly-herbal mixture (2 %) comprising of powders of fruits of *Opuntia elatior* Mill. (Hathlo thor) *and Sphaeranthus indicus* (L.) (Gorakh Mundi); leaves of *Peltophorum pterocarpum* (DC) Baker ex DC, (Pilo Gulmohar), *Syzygium cuminii* (L.) Skeels (Kala Jambu) and *Cressa cretica* (L.)

	(Rudravanti); aerial part of *Withania somnifera* (L.) Dunal (Ashwagandha) *and Solanum xanthocarpum* Schrad. & Wendl (Bhoi ringani) at equal proportions in feed ameliorates the cadmium chloride induced oxidative damage in chickens. **Suggestions. Approved** **(Action:** Professor & Head, Dept. of Vet. Pharmacology & Toxicology, Vet. College, JAU, Junagadh)
15.9.2.27	**Title: Principal component analysis to predict the herd life using first lactation traits in Gir cattle.**
	The first lactation records *viz.*, AFC, FLL and DP can be used to predict herd life up to five lactations using MLR equation HLFL= 608.64 + (1.18×AFC) + (2.08×LL) + (1.33×DP) explaining 70 % of underlying variance (Adjusted R^2=0.694). The explained variance (R^2=0.687) for estimating herd life up to five lactations using PCA can be invariably be used using regression equation HLFL=3422.69 + (468.15 × FAC1) + (127.63×FAC2) with added advantage of nullifying collinearly among independent variables. **Suggestions: Approved** **(Action:** Professor & Head, Dept. of Animal Genetics and Breeding, Vet. College, JAU, Junagadh)
15.9.2.28	**Molecular characterization of BoLA-DRB3 gene in Gir cattle**
	Partial exon II of DRB 3 gene amplified with reported HL 030 (5'-ATCCTCTCTCTGCAGCACATTTCC-3') and HL 031 (5'-TTTAATTCGCGCTCACCTCGCCGCT-3') primers showed high variation (~22%) and polymorphism in sampled Gir cattle population. *Pst I*, *EcoR V* and *Sal I* restriction enzymes showed their restriction sites in analyzed sequences which can be further used for genotyping and association studies. **Suggestions: Approved** **(Action:** Professor & Head, Dept. of Animal Genetics and Breeding, Vet. College, JAU, Junagadh
15.9.2.29	**Studies on nutritive value and feeding varying levels of Marvel (*Dicanthium annulatum*) grass on milk production and milk composition in lactating Gir cows**
	Marvel/Jinjavo *(Dicanthium annulatum)* grass has 8.65 % Digestible Crude Protein (DCP) and 61.83 % Total Digestible Nutrients (TDN). Chemical composition of Marvel/Jinjavo grass: Crude protein-13.4 %, Crude fibre-32.8 %, Crude fat-2.1 %, DCP-8.65 % and TDN-61.83 %. **Suggestions: Approved** **(Action:** Research Scientist (AGB), Cattle Breeding Farm, JAU, Junagadh)
15.9.2.30	**Study of copepod diversity in coastal region of Okhamandal and its culture potential as live feed**
	Nineteen copepod species were recorded from coastal areas of Okhamandal, i.e. eight species of calanoid copepods mainly *Eucalanus elongatus, Calanus minor* and *Paracalanus parvus;* five species of harpacticoid copepods mainly *Longipedia weberi, Microsetella norvegica* and six species of cyclopoid copepods mainly *Oncea venusta* and *Oithona similis* were recorded. Higher

	copepod diversity was found in Okha area followed by Mithapur and Dwarka, higher diversity during monsoon season followed by winter and least in summer. *Macrosetella gracilis* and *Oithana brevicornis* have culture potential. **Suggestions: Approved with recasting.** **(Action**: Research Officer, Fisheries Research Station, JAU, Okha)
15.9.2.31	**Estimation of agar and alginicacid from the seaweeds available at coast of Okha**
	The highest % agar yield 17.98 $\pm$ 1.87 was observed in *Gracilaria corticata* among the Rhodophyceae species available at Okha coast. The highest gel strength (63.46 $\pm$ 2.66 g/cm^2) of agar was observed in *Gracilaria corticata* among Rhodophyceae species available at Okha coast. At Okha coast, higher % of agar yield 17.98 $\pm$ 1.87 was observed in *Gracilaria corticata* among the Rhodophyceae species. The higher gel strength (63.46 $\pm$ 2.66 g/cm^2) of agar was observed in *Gracilaria verucosa* among Rhodophyceae species. Among the phaeophycean species available, higher percent (40.21 $\pm$ 1.95) alginic acid content was observed in *Sargassum wightii*. **Suggestions:. Approved with recasting.** **(Action:** Research Officer, Fisheries Research Station, JAU, Okha)
15.9.2.32	**Estimation of *in vitro* antioxidant potential of the seaweeds available at coast of Okha**
	Amongst the seaweeds available at Okha coast, the highest *in vitro* antioxidant potential was observed in *Sargassum johnstonii* with the value of1.72 $\pm$ 0.22 DPPH (2, 2, Diphenyl-1-Picrylhydrazy) activity Eq. mM Ascorbic acid/g FW. **Suggestions: Approved** **(Action:** Research Officer, Fisheries Research Station, JAU, Okha)

ANAND AGRICULTURAL UNIVERSITY, ANAND

Animal Production and Fisheries	
15.9.2.33	**Effect of SSF biomass supplementation of growth performance of crossbred calves** (AP/ANRS/2018/01)
	Supplementation of Solid State Fermentation Biomass (SSF) @ 3% in the wheat straw based TMR (50% roughage: 50% concentrate) significantly improves growth rate by 23.68%, reduces daily methane emission by 7.08%, dietary energy loss through methane by 13.72 % and increases microbial proteins synthesis by 29.03% in crossbred calves. **Suggestions : Approved** **(Action:** Research Scientist & Head, Animal Nutrition Research Station, Veterinary College, AAU, Anand)
15.9.2.34	**Effect of tannin as phytonutrient on growth performance and health of Surti kids** (AP/ANRS/2018/03)
	Surti male kids during growing stage of 7-12 months of age, when fed total mixed ration containing 3.06% tannin (18% babul pods) resulted in significant increase in average daily gain by 27.7%, feed efficiency in terms of DM, CP, DCP and TDN by 18.35, 18.12, 17.78 and 19.71 %, respectively.

	Suggestions : Approved **(Action:** Research Scientist & Head, Animal Nutrition Research Station, Veterinary College, AAU, Anand)
15.9.2.35	**Effect of tannin as phytonutrient on growth performance and health of Surti kids** (AP/ANRS/2018/03)
	Surti male kids during growing stage of 7-12 months of age fed with total mixed ration containing 3.06% tannin (18% babul pods) resulted in lower nematode (*Trichostrongylid* group and *Trichuris* Spp.) ova count, oocysts of coccidia and plasma A:G ratio by 73.69, 43.68 and 31 percents, respectively, and increased plasma total protein, globulin, Catalase activity and SOD activity by 15.33, 38.14, 16.34 and 300 percents, respectively reflecting healthy status of kids . **Suggestions: Approved** **(Action:** Research Scientist & Head, Animal Nutrition Research Station, Veterinary College, AAU, Anand)
15.9.2.36	**Methane mitigation in calves through dietary interventions and its effect of performance of animals** (AP/ANRS/2018/04)
	Feeding of Total Mixed Ration containing 15% Babul pods with roughage to concentrate ratio 50:50 increases growth rate by 17.68%, rumen microbial protein synthesis by 42.28 %, while decreases methane emission (g/kg DDMI) by 10.10 % and reduces dietary energy loss through methane as % of MEI (Mcal/d) by 10.55%. The loss of dietary energy saved through methane mitigation was utilized by the calves for weight gain. **Suggestions: Approved** **(Action:** Research Scientist & Head, Animal Nutrition Research Station, Veterinary College, AAU, Anand)
15.9.2.37	**Methane mitigation in calves through dietary interventions and its effect of performance of animals** (AP/ANRS/2018/04)
	Feeding of Total Mixed Ration containing 25% pigeon pea straw, 25% wheat straw and 50% concentrate to crossbred calves increases growth rate by 32.59 %, rumen microbial protein synthesis by 37.44 %, while decreases methane emission (g/kg DDMI) by 16.12 % and reduces dietary energy loss through methane as % of MEI (Mcal/d) by 16.46 %. The loss of dietary energy saved through methane mitigation was utilized by the calves for weight gain. **Suggestions: Approved** **(Action:** Research Scientist & Head, Animal Nutrition Research Station, Veterinary College, AAU, Anand)
15.9.2.38	**Effect of supplementing Fenugreek (*Trigonella foenum graecum*) seeds in the ration of crossbred cows on nutrient utilization and milk production** (AP/ANRS/2016/02)
	Supplementation of fenugreek seeds @ 1 % in the ration of lactating crossbred cows increases the digestibility of crude protein, crude fibre and feed efficiency with respect to DCP intake by 14.54% with reduction in number of services per conception.

	Suggestions: Approved **(Action:** Research Scientist & Head, Animal Nutrition Research Station, Veterinary College, AAU, Anand)
Animal Health	
15.9.2.39	**Effect of Piperine Pre-treatment on Pharmacokinetics of Gemifloxacin in Layer Birds** (AH/Pharmacology & Toxicology/2018/02)
	Simultaneous single oral administration of piperine and gemifloxacin (each at 10 mg/kg) enhances oral bioavailability of gemifloxacin (F: 25.79%) as compared to gemifloxacin given alone (F: 15.50%) in layer birds. **Suggestions: Approved** (**Action:** Professor and Head, Department of Pharmacology and Toxicology, Veterinary College, AAU, Anand)
15.9.2.40	**Studies on Renoprotective Effect of Aqueous and Alcoholic Biherbal Extracts of *Vigna Unguiculata* and *Hordeum Vulgare* in Wistar Rats** (As per ICAR mandate)
	The herbal alcoholic extract of Horse gram and Barley (1:1(at the dose rate of 300mg/kg body weight orally once in a day for five weeks has nephroprotective effect on 0.75% v/v ethylene glycol and 2 % w/v ammonium chloride induced urolithiasis in wistar rats. **Suggestions: Approved** **(Action:** Professor and Head, Department of Veterinary Medicine, Veterinary College, AAU, Anand)
15.9.2.41	**Effect of Peripartum Nutritional (multi-minerals and bypass fat) Supplementation on Uterine Involution, Postpartum Fertility and Reproductive Peridata in Jaffarabadi Buffaloes** (AH/Gynaecology & Obstetrics/2016/05)
	Jaffarabadi buffaloes supplemented with area specific chelated mineral mixture (50 g/h/d) and bypass fat (150-200 g/h/d) over routine farm feeding during from 45 days prepartum till 60 days postpartum, together with intramuscular injection of micro-minerals, 5 ml (Se 25 mg, Zn 200 mg, Cu 75 mg and Mn 50 mg) around 45 days prepartum and again on the day of calving optimized the plasma metabolites, minerals and hormonal profile, and reduced the period of placental expulsion time, enhance uterine involution and service period/ calving interval with improved postpartum fertility status **Suggestions : Approved with recasting.** **(Action:** Professor and Head, Department of Veterinary Gynaecology and Obstetrics, Veterinary College, AAU, Anand)
15.9.2.42	**Evaluation of Reproductive Metabiota in Various Patho-Physiological Conditions in Dairy Animals** (AH/Gynaecology & Obstetrics/2017/01)
	Metagenomically, the genital microbiota first ever explored in HF crossbred cows of different reproductive status revealed dynamic and a rich bacterial diversity comprising 21 *Phyla*, 543 *Genera* and 1720 *Species.* The most abundant phyla were *Firmicutes, Bacteroidetes Fusobacteria* and *Actinobacteria* and genera *Peptoniphilus Porphyromonas*, *Arcanobacterium,* and *Bacteroides* in higher frequency in cyclic and endometritic cows than the pregnant and acyclic

	ones. *Pseudomonas* was higher in acyclic cattle. Plasma progesterone favoured Phylum *Acidobacteria* (r= 0.83) and Genus *Clostridium and Corynebacterium* (r=0.79, 0.74), while estrogen Phylum *Nitrospirae* in the vaginal micobiota of crossbreds. **Suggestions : Approved** **(Action:** Professor & Head, Department of Veterinary Gynaecology and Obstetrics, Veterinary College, AAU, Anand)

15.9.3 NEW TECHNICAL PROGRAMMES

Chairman :- Dr. D. B. Patil, DR, KU
Co- chairman :- Dr. P. H. Vataliya, DEE, KU and Dr. P. H. Tank, Dean, JAU
Rapporteurs :- Dr. D. N. Rank, AAU, Dr K. S. Murthy, JAU and Dr. H. G. Solanki, NAU
Statistician :- Dr. H. R. Pandya, NAU

Session-I Presentation of recommendations by Conveners of SAUs

Sr. No	Name	Designation and university
1	Dr R. M. Patel	Professor & Head, Dept. of Clinics, CVSc. & AH, SDAU, Sardarkrushinagar
2	Dr. A. P. Chaudhary	Professor & Head, Dept. of LPM, CVSc. & AH, SDAU, Sardarkrushinagar
3	Dr. C. V. Savalia	Prof. & Head, Dept. of Vet. Public health & Epidemiology , CVSc. & AH, NAU, Navsari
4	Dr. B. P. Brahmkshtri	Prof. & Head, Dept. of ILFC, CVSc. & AH, NAU, Navsari
5	Dr. U. D. Patel	Assoc prof & Head ,Dept of Vet Pharmacology & Toxicology JAU, Junagadh
6	Dr. D. J. Ghodasara	Professor& Head , Dept. of Vet. Pathology, CVSc. & AH, AAU, Anand
7	Dr. R. S. Joshi	Professor, Dept. of AGB, CVSc. & AH, AAU, Anand
8	Dr. R. G. Shah	Asso. Director Res., KU, Gandhinagar

Animal Health and Animal Production & Fisheries

University Name	Farmers Community		Scientific Community		New Technical Programme	
	Proposed	Approved	Proposed	Approved	Proposed	Approved
SDAU, SKNagar	3	2	9	9	37	29
NAU, Navsari	7	7	14	11	11	11
JAU, Junagadh	5	4	9	9	17	16
AAU, Anand	8	8	10	10	27	27
KU, Gandhinagar	--	--	--	--	6	6
Total	23	21	42	39	98	89

SARDARKRUSHINAGAR DANTIWADA AGRICULTURAL UNIVERSITY, SKNAGAR

Animal Health			
Sr.No.	**Title/Centre**	**Suggestions**	**Remarks**
15.9.3.1	Green biosynthesis of gold nanoparticles using plant leaf extract (olive, Aloe vera) and its antimicrobial activity. (Dept. of Animal Biotechnology)	Approved with following suggestion/s: Approved (**Action** : Head, Dept. of Animal Biotechnology)	Approved.
15.9.3.2	Clean milk production practices followed by dairy farmers of North Gujarat. (Dept. of Vet. & Animal Husbandry Ext. Education)	Approved with following suggestion/s: (**Action :** Dept. of Vet. & Animal Husbandry Ext. Education)	Refer to be included in Social Science group.
15.9.3.3	Molecular and serological diagnosis of Infectious Bovine Rhinotracheitis in bovines. (Dept. of Microbiology)	Accepted with following suggestion/s: 1. No. of investigators to be restricted to 1 +3. (**Action**: Dept. of Microbiology)	Approved.
15.9.3.4	Molecular characterization of virulence and AMR genes of bacterial isolates from bovine mastitis. (Dept. of Microbiology)	Accepted with following suggestion/s: 1. No. of investigators to be restricted to 1 +3. 2. Chloramphenicol to be excluded and antibiotics and its combinations approved for usage to be included in list of antibiotics. (**Action**: Dept. of Microbiology)	Approved
15.9.3.5	Study on efficacy of entomopathogenic nematode against ticks. (Dept. of Parasitology)	Accepted with following suggestion/s: 1. Title to be modified as “Efficacy of entomopathogenic nematode against ticks” (**Action**: Dept. of Parasitology)	Approved
15.9.3.6	Detection of adenoviruses by immunohistochemistry in animal neoplasms. (Dept. of Pathology)	Approved with following suggestion/s: Approved (**Action** :Dept. of Pathology)	Approved
15.9.3.7	Detection of herpesvirus by immunohistochemistry in animal neoplasms. (Dept. of Pathology)	Approved with following suggestion/s: Approved (**Action** :Dept. of Pathology)	Approved
15.9.3.8	Evaluation of erythrocytes, leukocyte and platelet morphology associated with diseases of bovines. (Dept. of Pathology)	Accepted with following suggestion/s: 1. Delete the name of student from list of Co-PI (**Action**: Dept. of Pathology)	Approved
15.9.3.9	Oral toxicity and efficacy study of *Prosopis Juliflora* seed pods on induced osteoarthritis in rats. (Dept. of Pathology)	Accepted with following suggestion/s: 1. Delete the name of student from list of Co-PI (**Action**: Dept. of Pathology)	Approved

15.9.3.10	90 days toxicity study of Thallium (I) sulfate administered in drinking water to Wistar rats. (Dept. of Pathology)	Accepted with following suggestion/s: 1. Title to be modified as "Subchronic (90 days) toxicity study of Thallium (I) sulfate administered in drinking water to Wistar rats". (**Action**: Dept. of Pathology)	Approved
15.9.3.11	Effect of bio-enhancer trikatu on oral pharmacokinetics of marbofloxacin in rabbits. (Dept. of Pharmacology & Toxicology)	Accepted with following suggestion/s: 1. Title to be modified as "Bio-enhancing effect of trikatu on oral pharmacokinetics of marbofloxacin in rabbits". (**Action**: Dept. of Pharmacology & Toxicology)	Approved
15.9.3.12	Pharmacoepidemiological study of antimicrobials drugs used in Gujarat for the treatment of infectious diseases of animals. (Dept. of Pharmacology & Toxicology)	Accepted with following suggestion/s: 1. To replace "usage practices" with "Therapeutic usage" in Objective 2. Delete Objective 2. (**Action**: Dept. of Pharmacology & Toxicology)	Approved
15.9.3.13	Ultrasonographic evaluation of uterine torsion in buffaloes. (Dept. of Gynaecology & Obstetrics)	Accepted with following suggestion/s: 1. Cases to be study : minimum 40. (**Action**: Dept. of Gynaecology & Obstetrics)	Approved
15.9.3.14	Transcriptome profile of certain receptors in bovine with incomplete dilated cervix during parturition. (Dept. of Gynaecology & Obstetrics)	Accepted with following suggestion/s: 1. Title to be modified at "Gene expression profiling in bovine with incomplete dilated cervix during parturition". 2. To include non-dilated, incomplete dilated and dilated cervix as study groups. (**Action**: Dept. of Gynaecology & Obstetrics)	Approved
15.9.3.15	Phytotherapeutic management of anoestrus in bovines. (Dept. of Gynaecology & Obstetrics)	Accepted with following suggestion/s: 1. Title to be modified as "Effect of Kurrypatta (*Murraya koenigii*) and Bili (*Aegle marmelos*) in management of anoestrus bovines" (**Action**: Dept. of Gynaecology & Obstetrics)	Approved
15.9.3.16	Diagnostic accuracy of Cuboni test at different stages of gestation in mares. (Dept. of Gynaecology & Obstetrics)	Accepted with following suggestion/s: Dropped (**Action**: Dept. of Gynaecology & Obstetrics)	Dropped

15.9.3.17	Clinical evaluation of empty rectum syndrome in bovines. (Dept. of Surgery & Radiology)	Accepted with following suggestion/s: 1. No. of cases to be investigated – Minimum 50 for each diseases. 2. No grouping of animals. 3. No of investigators to be restricted to 1+3. (**Action**: Dept. of Surgery & Radiology)	Approved
15.9.3.18	Clinical Studies on brisket tumor in Mahesana buffaloes. (Dept. of Surgery & Radiology)	Accepted with following suggestion/s: Dropped (**Action**: Dept. of Surgery & Radiology)	Dropped
15.9.3.19	Clinical management of diaphyseal long bone fracture in bovine. (Dept. of Clinics, Deesa)	Accepted with following suggestion/s: 1. Duration of experiments : 03 years 2. Include as many cases as possible. (**Action**: Dept. of Clinics, Deesa)	Approved
15.9.3.20	Ultrasonic and radiographic assessment of dystocia in non-descript goats. (Dept. of Clinics, Deesa)	Accepted with following suggestion/s: 1. Title to be modified as "Ultrasonographic and radiographic assessment of dystocia in non-descript goat" 2. No. of cases to be investigated : Minimum 30 3. Exclude 'pelvimetry study' and include 'clinical output' in objectives. (**Action**: Dept. of Clinics, Deesa)	Approved
15.9.3.21	Oxidative stress, hematobiochemical and trace element status in canine skin disorders/diseases. (Dept. of Clinics, Sardarkrushinagar)	Accepted with following suggestion/s: 1. Title to be modified as "To study the efficacy of herbal preparations of *Ficus religiosa, Punica Granatum* and *Aloe Vera* in canine skin disorders" (**Action**: Dept. of Clinics, Sardarkrushinagar)	Approved
Animal Production			
15.9.3.22	Effect of Indian classical music on milk production of lactating Kankrej cattle at LRS.	Approved with following suggestions: Dropped	Dropped.
15.9.3.23	Study on the linear type and performance traits of Kankrej cattle. [LRS, SDAU, Sardarkrushinagar]	Approved with following suggestions : 1. Delete 3rd objectives. [**Action**: Research Scientist, LRS, SDAU, Sardarkrushinagar]	Approved.

15.9.3.24	Effect of Intensive and Semi-Intensive rearing system on Growth, Reproduction and Production performance of Mehsana Goat.	Approved with following suggestion/s: Approved	Approved.
15.9.3.25	Effect of Continuous Buck Exposure on Postpartum Oestrus induction in Mehsana Does	Approved with following suggestion/s: Approved	Approved.
15.9.3.26	Study of dairy character of Mehsani buffaloes on the basis of body parts measurements.	Approved with following suggestion/s: Dropped.	Dropped.
15.9.3.27	Effect of Fennel (*Foeniculum Vulgare Mill.*) seed powder as a feed additive on the growth performance of commercial broilers in summer season /under heat Stress [Head, LPM, Sardarkrushinagar]	Approved with following suggestions: 1. Statistical design: CRD with 6 birds x 5 replicates per treatment to be followed. [**Action**: Head, LPM, Sardarkrushinagar]	Approved.
15.9.3.28	Performance of broiler chickens fed on *Moringa oleifera* (Drumstick-સરગવો) leaf meal supplemented poultry feed	Approved with following suggestion/s: Approved	Approved.
15.9.3.29	Study on breeding management practices for buffaloes in Banaskantha district.	Dropped	Dropped.
15.9.3.30	Kankrej calf rearing practices adopted by dairy farmers in the operational area of KVK Banaskantha-II	Approved with following suggestion/s: -	Refer to social science group
15.9.3.31	Effect of zinc propionic supplementation on semen quality in Kankrej bulls.	Approved with following suggestion/s: Approved	Approved
15.9.3.32	Effect of rumen protected choline supplementation on production performance of Kankrej cows.	Approved with following suggestion/s: Approved	Approved
15.9.3.33	Effect of chromium propionic supplementation on production performance of Mehsana buffaloes.	Approved with following suggestion/s: Approved	Approved
15.9.3.34	To study the feeding practices and nutritional status of lactating Mehsani buffaloes in Banaskantha district [Head, KVK, Deesa]	Approved with following suggestions: 1. Title to be modified as "Nutritional status of lactating Mehsani buffaloes in Banaskantha district" [**Action**: Head, KVK, Deesa]	Approved.
15.9.3.35	Constraints perceived by the tribal goat keepers of	Approved with following suggestion/s:	Refer to social

	Banaskantha district	-	science group
15.9.3.36	Comparison of Efficiency of Genetic Evaluation of Mehsana Buffalo Bulls under progeny testing on the Basis of variation in number of progeny per sire. [Head, AGB, Sardarkrushinagar]	Approved with following suggestions: 1. Title to be modified as "Genetic Evaluation of Mehsana Buffalo Bulls under progeny testing on the basis of variation in number of progeny per sire" [**Action**: Head, AGB, Sardarkrushinagar]	Approved
15.9.3.37	Characterization of camel breeding practices in North Gujarat Region. [Head, AGB, Sardarkrushinagar]	Approved with following suggestions: 1. Title to be modified as "Characterization of production and reproduction parameters in relation to feeding practices in camels of North Gujarat region" [**Action**: Head, AGB, Sardarkrushinagar]	Approved

NAVSARI AGRICULTURAL UNIVERSITY, NAVSARI

Animal Health			
Sr. No.	**Title/Centre**	**Suggestions**	**Remarks**
15.9.3.38	Postnatal gross-morphometrical and histomorphological studies on the spleen of goat (*Capra hircus*). (Dept. of Vet. Anatomy, Veterinary College, NAU, Navsari)	Approved with following suggestion/s: Approved (**Action :** Dept. of Vet. Anatomy, Veterinary College, NAU, Navsari)	Approved
15.9.3.39	Evaluation of *in vivo* anti-inflammatory and antibacterial activities of Ellagic acid following intramuscular administration in albino rats. (Dept. of Pharmacology and Toxicology, Veterinary College, NAU, Navsari)	Approved with following suggestion/s: Approved (**Action :** Dept. of Pharmacology and Toxicology, Veterinary College, NAU, Navsari)	Approved
15.9.3.40	Sero-surveillance and molecular detection of Brucella organism from cattle and buffaloes of the organized and unorganized farm located in South Gujarat. (Dept. of Veterinary Microbiology, Veterinary College, NAU, Navsari)	Accepted with following Suggestion/s 1. Sampling map to be incorporated. (**Action**: PI & Associate Professor and Head, Dept. of Vet. Microbiology)	Approved
15.9.3.41	Molecular detection of theileriosis and anaplasmosis in bovine. (Dept. of Veterinary	Accepted with following Suggestion/s 1. Number of samples to be investigated : Minimum 50	Approved

	Parasitology, Veterinary College, NAU, Navsari)	(**Action**: PI & Professor and Head, Dept. of Vet. Parasitology)	
15.9.3.42	Molecular characterization of Nocardia species in bovine raw milk and oral lavage of immunocompromised human cases. (Dept. of Veterinary Public Health & Epidemiology, Veterinary College, NAU, Navsari)	Accepted with following suggestions 1. Title to be modified as "Molecular detection of *Nocardia* species in bovine raw milk and oral lavage of immunocompromised human cases". 2. Replace word "characterisation" with "detection" in objective. (**Action** : Dept. of Veterinary Public Health & Epidemiology, Veterinary College, NAU, Navsari)	Approved
Animal Production			
15.9.3.43	Working time analysis of labours at livestock research station, Navsari. (Livestock Research Station, NAU, Navsari)	Accepted with following suggestions: 1. Title to be modified as "Time motion study at organised farm. 2. Observations to be recorded fortnightly. (**Action**: Research Scientist, Livestock Research Station, NAU, Navsari)	Approved
15.9.3.44	Effect of heat ameliorative measures during dry period on haemato-biochemical, behaviour and thermographic changes and production performance in subsequent lactation in Surti buffaloes. (Veterinary Physiology and Biochemistry, Veterinary College, NAU, Navsari)	Accepted with following suggestions: 1. Title to be modified as "Effect of heat ameliorative measures during dry period on production performance in subsequent lactation in Surti buffaloes" (**Action**: Professor & Head, Veterinary Physiology and Biochemistry, Veterinary College, NAU, Navsari)	Approved
15.9.3.45	Study of gut microbiota and expression of inflammatory genes in broiler fed with high fat diet and Quercetin. (Animal Biotechnology, Veterinary College, NAU, Navsari)	Approved with following suggestion/s: Approved (**Action :** Animal Biotechnology, Veterinary College, NAU, Navsari)	Approved
15.9.3.46	Study on genetic polymorphism of litter size and foetal growth related genes using PCR-RFLP and its association with litter size and foetal growth in Surti goats.	Accepted with following suggestions: 1. Title to be modified as "Study on genetic polymorphism in genes related to prolificacy and foetal growth using PCR-RFLP in Surti goats".	Approved

	(Instructional Livestock Farm Complex, Veterinary College, NAU, Navsari)	(**Action**: Professor & Head, Instructional Livestock Farm Complex, Veterinary College, NAU, Navsari)	
15.9.3.47	Nutrient composition, *In vitro* feed degradation and microbial biomass yield estimation of unconventional feed resources for ruminants in South Gujarat. (Animal Nutrition, Veterinary College, NAU, Navsari)	Approved with following suggestion/s: Approved (**Action** : Professor & Head, Animal Nutrition, Veterinary College, NAU, Navsari)	Approved
15.9.3.48	Assessment of feeding practices nutritional status and gap for lactating buffaloes in Tapi district. (Animal Nutrition, Veterinary College, NAU, Navsari)	Approved with following suggestion/s: Approved (**Action** : Professor & Head, Animal Nutrition, Veterinary College, NAU, Navsari)	Approved

JUNAGADH AGRICULTURAL UNIVERSITY, JUNAGADH

Animal Health, Animal Production and Fisheries Science			
Sr. No.	**Title/Centre**	**Suggestions**	**Remark**
15.9.3.49	Clinical study on ultrasonographic morphology of healthy udder and teat in *Gir* cattle (Dept. of TVCC, Vet. College, JAU, Junagadh)	Accepted with following suggestions: 1. Title to be modified as "Studies on ultrasonographic morphology of healthy udder and teat in Gir cattle" (**Action**: Professor &Head, Dept. of TVCC, Vet. College, JAU, Junagadh)	Approved
15.9.3.50	Efficacy of ultrasonography, uterine swab culture and endometrial cytology for diagnosis of equine endometritis (Dept. Vet. Gynaecology& Obstetrics, Vet. College, JAU, Junagadh)	Accepted with following suggestions: 1. Title to be modified as "Ultrasonography, uterine swab culture and endometrial cytology for diagnosis of equine endometritis" (**Action**: Professor &Head, Dept. Vet. Gynaecology& Obstetrics, Vet. College, JAU, Junagadh)	Approved
15.9.3.51	Evaluation of an immunomodulatory effect of *Abrus precatorius* in mice (**Action**: Professor & Head, Dept. of Pharmecology & Toxicology, Vet. College, JAU, Junagadh)	Approved with following suggestion/s: Approved (**Action**: Professor & Head, Dept. of Pharmecology & Toxicology, Vet. College, JAU, Junagadh)	Approved
15.9.3.52	Development of new inexpensive and fast blood processing method for the	Accepted with following suggestions: 1. Title to be modified as	Approved

	detection of haemoprotozoan parasites through polymerase chain reaction (PCR) (Dept. of Vet. Parasitology, Vet. College, JAU, Junagadh)	"Development of rapid blood processing method for the detection of haemoprotozoan parasites through polymerase chain reaction ((PCR)" (**Action**: Professor & Head, Dept. of Vet. Parasitology, Vet. College, JAU, Junagadh)	
15.9.3.53	Isolation and identification of active ingredients of selected medicinal plants and evaluation of *in-vitro* antioxidant and antidiabetic effects Dept. of Pharmecology & Toxicology, Vet. College, JAU, Junagadh)	Approved with following suggestion/s: Approved (**Action**: Professor & Head, Dept. of Pharmecology & Toxicology, Vet. College, JAU, Junagadh)	Approved
15.9.3.54	Evaluation of antioxidant potential of *Cassia absus* in cadmium-induced oxidative stress model of Zebrafish (*Danio rerio*) (Hamilton, 1822) (Dept. of Vet. Pharmacology & Toxicology, Vet. College, JAU, Junagadh)	Accepted with following suggestions: 1. To include Dr. Kailash Vadher as Co-PI as a fisheries expert. (**Action**: Professor & Head, Dept. of Vet. Pharmacology & Toxicology, Vet. College, JAU, Junagadh)	Approved
15.9.3.55	Clinical studies on balanced anaesthesia using different anaesthetic protocols in horses (Dept. of TVCC, Vet. College, JAU, Junagadh)	Approved with following suggestion/s: Approved (**Action**: Professor & Head, Dept. of TVCC, Vet. College, JAU, Junagadh)	Approved
15.9.3.56	Assessment of blood gas, acid-base and electrolyte alterations to formulate suitable fluid therapy for diaphragmatic hernia in buffaloes (Dept. of Vet. Medicine, Vet. College, JAU, Junagadh)	Accepted with following suggestions: 1. Modify title as "Assessment of blood gas, acid-base and electrolyte alterations during diaphragmatic herniorrhaphy in buffaloes". 2. Delete objective -3. (**Action**: Professor & Head, Dept. of Vet. Medicine, Vet. College, JAU, Junagadh)	Approved
15.9.3.57	Clinical studies on physical, ultrasonographic and radiographic assessment of suspected cases of diaphragmatic hernia in buffaloes (Dept. of TVCC, Vet. College, JAU, Junagadh)	Approved with following suggestion/s: Approved (**Action**: Professor & Head, Dept. of TVCC, Vet. College, JAU, Junagadh)	Approved

15.9.3.58	Effects of supplementation of Anionic Mineral mixture during puerperium in Gir heifers (Cattle Breeding Farm, Junagadh)	Accepted with following suggestions: 1. Modify title as "Effects of supplementation of Anionic Mineral mixture in advanced prepartum Gir heifers". (**Action**: Res. Scientist (AGB), CBF, Junagadh)	Approved
15.9.3.59	Studies on nutritive value and feeding varying levels of Hedge Lucerne (*Desmanthus Virgatus*) on milk production and milk composition in Gir Cattle (Cattle Breeding Farm, Junagadh)	Accepted with following suggestions: 1. Modify title as "Studies on nutritive value and feeding levels of Hedge Lucerne (*Desmanthus virgatus*) on milk production and composition in Gir Cattle". (**Action**: Res. Scientist (AGB), Cattle Breeding Farm, Junagadh)	Approved
15.9.3.60	Study of Growth and lactation performance traits of Gir cattle and Jaffrabadi buffalo at B. M. F., JAU, Amreli. (B. M. F., JAU, Amreli)	Approved with following suggestion/s: Approved (Action : Res. Scientist, Bull Mother Farm, JAU, Amreli)	Approved
15.9.3.61	Test-day recordings as tool to predict lactation milk yield in Gir cows and Jaffrabadi buffaloes (B. M. F., JAU, Amreli)	Approved with following suggestion/s: Approved (**Action** : Res. Scientist, Bull Mother Farm, JAU, Amreli)	Approved
15.9.3.62	Adoption of scientific dairy husbandry (housing, feeding, milking, breeding and health care management) practices by farmers in Amreli District (B. M. F., JAU, Amreli)	Approved with following suggestion/s: (**Action:** Res. Scientist, Bull Mother Farm, JAU, Amreli)	Refer to be included in Social Science group.
15.9.3.63	Effect of probiotic *Lactobacillus plantarum* on growth, survival, disease resistance and stress tolerance of *Litopenaeus vannamei* juveniles (Fisheries Research Station, JAU, Okha)	Accepted with following suggestions: 1. Title to be modified as "Effect of oral administration of probiotic *Lactobacillus plantarum* on growth, survival, disease resistance and stress tolerance of *Litopenaeus vannamei* juveniles". 2. Club objective 1, 2, and 3. (**Action**: Research Officer, Fisheries Research Station, JAU, Okha)	Approved
15.9.3.64	Effect of dressing on quality parameters of dry salted croaker (*Otolithes cuvieri*) during storage	Accepted with following suggestions: 1. To correct the fish species name as *Otolithoides cuvieri*.	Approved

	(Fisheries Research Station, JAU, Okha)	(**Action**: Research Officer, Fisheries Research Station, JAU, Okha)	
15.9.3.65	Title: Breeding and culture of sea urchin (*Salmaci sbicolor*) (Fisheries Research Station, JAU, Sikka)	Accepted with following suggestions: 1. Objective 1 to be deleted. (**Action**: Research Officer, Fisheries Research Station, Sikka)	Approved

ANAND AGRICULTURAL UNIVERSITY, ANAND

Animal Health			
Sr. No.	**Title / Centre**	**Suggestions**	**Remarks**
15.9.3.66	Evaluation of *in vitro* antibacterial activity of clove oil (*Syzygium aromaticum*) and lemon grass oil (*Cymbopogon flexuosus*) (Dept. of Pharmacology and Toxicology, Veterinary College, AAU, Anand)	Approved with following suggestion/s: Approved (**Action** : Dept. of Pharmacology and Toxicology, Veterinary College, AAU, Anand)	Approved
15.9.3.67	Studies on sub-acute toxicity of clove oil (*Syzygium aromaticum*) in rats (Dept. of Pharmacology and Toxicology, Veterinary College, AAU, Anand)	Approved with following suggestion/s: Approved (**Action** : Dept. of Pharmacology and Toxicology, Veterinary College, AAU, Anand)	Approved
15.9.3.68	Prevalence and Haemato-Biochemical studies of *Toxocara canis* infection in dogs (Dept. of Veterinary Parasitology, Veterinary College, AAU, Anand)	Approved with following suggestion/s: Approved (**Action :** Dept. of Veterinary Parasitology, Veterinary College, AAU, Anand)	Approved
15.9.3.69	Studies on the Gastrointestinal Helminth Parasites of Buffaloes in Anand Taluka (Dept. of Veterinary Parasitology, Veterinary College, AAU, Anand)	Approved with following suggestion/s: Approved (**Action :** Dept. of Veterinary Parasitology, Veterinary College, AAU, Anand)	Approved
15.9.3.70	Experimental study on protective efficacy of immune complex vaccine and intermediate plus vaccine against field IBD virus in broiler chicks (Dept. of Veterinary Pathology, Veterinary College, AAU, Anand)	Approved with following suggestion/s: Approved (**Action :** Dept. of Veterinary Parasitology, Veterinary College, AAU, Anand)	Approved
15.9.3.71	Determination of *in vitro* antibacterial activity of lactic	Approved with following suggestion/s:	Approved

	acid producing bacteria (LAB) against *E. coli* isolates of poultry origin (Dept. of Veterinary Microbiology, Veterinary College, AAU, Anand)	Approved (**Action :** Dept. of Veterinary Microbiology, Veterinary College, AAU, Anand)	
15.9.3.72	Understanding Breeding in Pet Canine Females (Dept. of Veterinary Gynaecology and Obstetrics, Veterinary College, AAU, Anand)	Approved with following suggestion/s: Approved (**Action :** Dept. of Veterinary Gynaecology and Obstetrics, Veterinary College, AAU, Anand)	Approved
15.9.3.73	Validation of Polyherbal Ethno-Veterinary Formulation in Treatment of Infertility in Dairy Bovines (Dept. of Veterinary Gynaecology and Obstetrics, Veterinary College, AAU, Anand)	Approved with following suggestion/s: Approved (**Action :** Dept. of Veterinary Gynaecology and Obstetrics, Veterinary College, AAU, Anand)	Approved
15.9.3.74	Isolation, identification and molecular characterization of ESBL producing *Escherichia coli* from raw milk samples (Dept. of Veterinary Public Health, Veterinary College, AAU, Anand	Approved with following suggestion/s: Approved (**Action :** Dept. of Veterinary Public Health, Veterinary College, AAU, Anand)	Approved
15.9.3.75	Isolation and Characterization of *Bacillus cereus* from poultry meat (Dept. of Veterinary Public Health, Veterinary College, AAU, Anand)	Approved with following suggestion/s: Approved (**Action :** Dept. of Veterinary Public Health, Veterinary College, AAU, Anand)	Approved
15.9.3.76	Detection of *Salmonella* spp. in Poultry meat by loop-mediated isothermal amplification (LAMP) assay (Dept. of Veterinary Public Health, Veterinary College, AAU, Anand)	Approved with following suggestion/s: Approved (**Action :** Dept. of Veterinary Public Health, Veterinary College, AAU, Anand)	Approved
15.9.3.77	Clinico-diagnosis and Surgico-therapeutic Management of Lower Urinary Tract Affections in Dogs (Dept. of Veterinary Surgery & Radiology, Veterinary College, AAU, Anand)	Approved with following suggestion/s: Approved (**Action :** Dept. of Veterinary Surgery & Radiology, Veterinary College, AAU, Anand)	Approved
Animal Production and Fisheries			
15.9.3.78	Effect of feeding bypass fat on reproductive and productive	Approved with following suggestion/s:	Approved

	performance of Surti buffaloes (Reproductive Biology Research Unit, Veterinary College, AAU, Anand)	Approved (**Action :** Reproductive Biology Research Unit, Veterinary College, AAU, Anand)	
15.9.3.79	Phenotypic characterization of native chicken of North Gujarat (Poultry Research Station, Vet. College, AAU, Anand)	Approved with following suggestion/s: Approved (**Action :** Poultry Research Station, Vet. College, AAU, Anand)	Approved
15.9.3.80	Evaluation of physical and economical characteristics of Inbred stock of native chicken (Poultry Research Station, Vet. College, AAU, Anand)	Approved with following suggestion/s: Approved (**Action :** Poultry Research Station, Vet. College, AAU, Anand)	Approved
15.9.3.81	Supplementation of bypass fat for fattening of Surti male goats (Animal Nutrition Research Station, Vet. College, AAU, Anand)	Approved with following suggestion/s: Approved (**Action :** Animal Nutrition Research Station, Vet. College, AAU, Anand)	Approved
15.9.3.82	*In-vitro* evaluation of different variety of paddy straw of Main Rice Research Station, Nawagam (Animal Nutrition Research Station, Vet. College, AAU, Anand)	Approved with following suggestion/s: Approved (**Action :** Animal Nutrition Research Station, Vet. College, AAU, Anand)	Approved
15.9.3.83	Evaluation of different variety of paddy straw grown under control condition (Animal Nutrition Research Station, Vet. College, AAU, Anand)	Approved with following suggestion/s: Approved (**Action :** Animal Nutrition Research Station, Vet. College, AAU, Anand)	Approved
15.9.3.84	Dietary interventions for designer milk production in dairy cattle (Animal Nutrition Research Station, Vet. College, AAU, Anand)	Approved with following suggestion/s: Approved (**Action :** Animal Nutrition Research Station, Vet. College, AAU, Anand)	Approved
15.9.3.85	Effect of betaine supplementation on milk production and heat stress in crossbred cows (Animal Nutrition Research Station, Vet. College, AAU, Anand)	Approved with following suggestion/s: Approved (**Action :** Animal Nutrition Research Station, Vet. College, AAU, Anand)	Approved
15.9.3.86	Methane mitigation in crossbred cows under different feeding regimes	Approved with following suggestion/s: Approved	Approved

	(Animal Nutrition Research Station, Vet. College, AAU, Anand)	(**Action :** Animal Nutrition Research Station, Vet. College, AAU, Anand)	
15.9.3.87	Methane mitigation in crossbred bullocks by dietary interventions (Animal Nutrition Research Station, Veterinary College, AAU, Anand)	Approved with following suggestion/s: Approved (**Action :** Animal Nutrition Research Station, Vet. College, AAU, Anand)	Approved
15.9.3.88	Assessment of nutritive value of Cactus (*Opuntia ficus indica*) (Animal Nutrition Research Station, Vet. College, AAU, Anand)	Approved with following suggestion/s: Approved (**Action :** Animal Nutrition Research Station, Vet. College, AAU, Anand)	Approved
15.9.3.89	Microsatellite and SNP Genotyping of elite Gir animals of Gujarat (Animal Biotechnology, Vet. College, AAU, Anand)	Approved with following suggestion/s: Approved (**Action :** Animal Biotechnology, Vet. College, AAU, Anand)	Approved
15.9.3.90	Evaluation of quality and milk yield performance traits of Dagri cattle (Dept. of Animal Genetics & Breeding, Vet. College, AAU, Anand)	Accepted with following suggestions: 1. Title to be modified as "Evaluation of milk quality and yield performance traits of Dagri cattle" (**Action**: Professor & Head, Dept. of Animal Genetics & Breeding, Vet. College, AAU, Anand)	Approved
15.9.3.91	Performance of sheared and non-sheared sheep under asbestos roof (Dept. of Livestock Production and Management, Vet. College, AAU, Anand)	Accepted with following suggestions: 1. Title to be modified as "Performance of sheared and non-sheared sheep under green net roof" (**Action**: Professor & Head, Dept. of Livestock Production and Management, Vet. College, AAU, Anand)	Approved
15.9.3.92	Effect of feeding maize on growth and coloration of Molly fish, *Poecilia sphenops* (Krishi Vigynan Kendra, AAU, Anand)	Approved with following suggestion/s: Approved (**Action :** Krishi Vigynan Kendra, AAU, Anand)	Approved

KAMDHENU UNIVERSITY, GANDHINAGAR

Veterinary and Fisheries Faculty			
Sr. No.	**Title/ Centre**	**Suggestions**	**Remarks**
15.9.3.93	Prevalence of Diseases of Animals and Birds at Veterinary Hospital of Kamdhenu University (Dr. Chirag M. Bhadesiya, PI)	Accepted with following suggestion/s : 1. Descriptive statistical methods to be mentioned (**Action:** ADR, KU, Gandhinagar)	Approved
15.9.3.94	Comparative morphological study of hair of different animals (Dr. Chirag M. Bhadesiya, PI)	Accepted with following suggestion/s : (**Action:** ADR, KU, Gandhinagar)	Approved
15.9.3.95	Evaluate electronic cow-side test for diagnosis of subclinical ketosis (Dr. Vishal Suthar, PI)	Accepted with following suggestion/s 1. Title to be modified as "Evaluate electronic farm-side test for diagnosis of subclinical ketosis" (**Action:** ADR, KU, Gandhinagar)	Approved
15.9.3.96	Shotgum metagenomics of shrimp pond sediment for in depth antibiotic resistance gene screening and simultaneous characterization of bacterial community. (Dr. Sujit Kumar, PI)	Accepted with following suggestion/s 1. Title to be modified as "Metagenomics of shrimp pond sediment for in depth antibiotic resistance gene screening and simultaneous characterization of bacterial community" 2. Amplicon sequencing using 16s r RNA sequencing is to be carried out instead of shotgun sequencing to assess the microbial diversity. 3. Standard sampling and collection methods to be followed. Sampling should be done DOC40 onward. (**Action :** ADR, KU, Gandhinagar)	Approved
15.9.3.97	Mapping of Endo- and ectoparasites in some freshwater fishes along reservoirs of Sabarkantha District, Gujarat (Dr. Smit Lene, PI)	Accepted with following suggestion/s 1. 'Few sample' to be replaced with "Samples to be collected from reservoirs". 2. Name of reservoirs to be survey needs to be mentioned. (**Action:** ADR, KU, Gandhinagar)	Approved
15.9.3.98	A pilot project on the feasibility of Inland Saline Aquaculture at Bhamsara.	Accepted with following suggestion/s 1. Title to be modified as	Approved

	(Dr. Vivek Shrivastava, PI)	"Study the feasibility of Inland Saline Aquaculture at Bhamsara, Ahmedabad". 2. Sampling of water for Ca, Mg, K, Na. 3. Standard sampling and collection methods to be followed. (**Action:** ADR, KU, Gandhinagar)	

Proceeding of 15th Combined AGRESCO meeting of SAUs and Kamdhenu University held at Anand Agricultural University (AAU), Anand during April 29 to May 1, 2019

PLENARY SESSION

Venue: BACA Auditorium **Date: 01.05.2019**

Time: 09:00 to 13:00

Plenary session of 15th Combined AGRESCO meeting of SAUs and Kamdhenu University was chaired by Dr. N. C. Patel, Hon. Vice Chancellor of AAU, Anand and Co-chaired by Dr. A. R. Pathak, Hon. Vice Chancellor, JAU, Junagadh; Dr. C. J. Dangaria, Hon. Vice Chancellor, NAU, Navsari; Prof (Dr.) Ashok A. Patel, Hon. Vice Chancellor, SDAU, S. K. Nagar and Dr. N. H. Kelawala, Hon. Vice Chancellor, KU, Gandhinagar. Dr. K. B. Kathiria, Director of Research, AAU, Anand; Dr. V. P. Chovatia, Director of Research, JAU, Junagadh; Dr. S. R. Chuadhary, Director of Research, NAU, Navsari; Dr. R. N. Singh, Director of Research, SDAU, S. K. Nagar and Dr. D. B. Patil, Director of Research, KU, Gandhinagar; as well as Shri B. M. Modi, Director of Agriculture; Dr. P. M. Vaghasiya, Director of Horticulture and Dr. A. J. Kachhiapatel, Director of Animal Husbandry, Government of Gujarat also graced the dais. After the formal welcome by Dr. K. B. Kathiria, Director of Research, AAU, Anand, the session began with the presentation of proceedings of all the sub-committees by the respective conveners, where in recommendations and new technical programmes of different sub-committees were discussed and approved as in Annexure-I. Dr. V. P. Ramani, ADR, AAU, Anand; Dr. P. Mohnot, ADR, JAU, Junagadh; Dr. K. A. Patel, ADR, NAU, Navsari and Dr. P. P. Chaudhari, Asso. Res. Sci., SDAU, S. K. Nagar were the rapporteurs for this session.

Dr. H. L. Dhaduk, Convener, Crop Improvement AGRESCO sub-committee, AAU, Anand presented release proposals of varieties and recommendations of Crop Improvement AGRESCO sub-committee. Out of 36 release proposals of improved crop varieties/hybrids, 29 entailing 07, 09, 06 and 07 from SDAU, NAU, JAU, and AAU were approved. One recommendation for farmers from JAU, Junagadh was also approved.

(Action: Concerned Director of Research and Scientist of SAUs)

Dr. J. D. Thanki, Convener, Crop Production / Natural Resource Management sub-committee of NAU, Navsari presented the proceeding of Crop Production and Natural Resource Management sub-committee report. Fifty two farming community

recommendations, of which 09, 19, 13 and 11 from SDAU, NAU, JAU and AAU were approved with minor modifications in Gujarati write-up as suggested by Prof (Dr.) Ashok A. Patel, Hon. Vice Chancellor, SDAU, S. K. Nagar. Further, 19 scientific recommendations and 104 new technical programmes were also approved.

(Action: Concerned Director of Research and Scientist of SAUs)

Dr. L. F. Akbari, Convener, Plant Protection AGRESCO sub-committee, JAU, Junagadh presented proceeding of the Plant Protection / Crop Protection AGRESCO sub-committee. In all, 30 recommendations were approved for farming community besides 3 Ad-hoc recommendations on Fall army worms in maize by AAU (01) and JAU (02), which were also approved in the immediate interest of the farming community to control the crop damage. Eighteen recommendations were approved as scientific information and 110 technical programmes entailing 22, 20, 29 and 39 from SDAU, NAU, JAU and AAU respectively were also approved.

(Action: Concerned Director of Research and Scientist of SAUs)

Dr. D. R. Bhanderi, Convener, Horticulture AGRESCO sub-committee, NAU, Navsari presented proceeding of the Horticulture and Agro-forestry AGRESCO sub-committee of SAUs. The House approved 32 recommendations for farmers, 04 for scientific community and 69 new technical programmes with one conditionally approved programme of JAU, Junagadh. The House suggested that in multidisciplinary trials, suggestions of related AGRESCO sub-committees must be incorporated while preparing final proceeding. It was also decided that the recommendations from such trials must be presented in the original sub-committee where new technical programmes were approved with suggestions of related committee.

(Action: Concerned Director of Research and Scientist of SAUs)

Dr. A. K. Makwana, Convener, Dairy Science and Food Processing Technology & Bio energy AGRESCO sub-committee, AAU, Anand presented recommendations and new technical programmes of the sub-committee. Twenty six recommendations for farming community or entrepreneurs and 06 for scientific community were approved with the suggestion to verify english and gujarati version of the text. Thirty new technical programmes were also approved.

(Action: Concerned Director of Research and Scientist of SAUs)

Dr. Dr. R Swarnkar, Convener, Agricultural Engineering and Agricultural Information Technology AGRESCO sub-committee, AAU, Anand presented recommendations and new technical programmes of the sub-committee. Nine recommendations for farming community and three for scientific community were approved. Forty four new technical programmes were also approved.

(Action: Concerned Director of Research and Scientist of SAUs)

Dr. V. T. Patel, Convener, Social Science AGRESCO sub-committee, SDAU, Sardarkrushinagar presented the proceeding. Twelve recommendations for scientific community and one recommendation for farming community from AAU as well as 127 new technical programmes were approved.

(Action: Concerned Director of Research and Scientist of SAUs)

Dr. B. A. Golakia, JAU, Junagadh presented the proceeding of Basic Science & Humanity, Plant Physiology, Biochemistry & Biotechnology AGRESCO sub-committee. Three recommendations for farming community and 11 for scientific community were approved. Thirty three (33) new technical programmes were also approved.

(Action: Concerned Director of Research and Scientist of SAUs)

Dr. R. M. Patel, Convener, Animal Health and Animal Production & Fisheries sub-committee, SDAU, S. K. Nagar presented proceeding of Animal Health and Animal Production & Fisheries Science AGRESCO sub-committee. In Animal Production & Fisheries group, 13 recommendations for farming community and 14 recommendations for scientific community were approved. In case of Animal Health group, 8 and 25 recommendations were approved for farming and scientific community, respectively. Total 89 new technical programmes for Animal Production & Fisheries and Animal Health group were also approved by the House.

(Action: Concerned Director of Research and Scientist of SAUs)

GENERAL POINTS:

1. The sub-committee where in the New Technical Programme was approved is authorized for recommendation approval. However, inputs / suggestions of the related respective committees should be included before the final approval.
2. Dr. K. B. Kathiria, Director of Research, AAU, Anand emphasized to attach a copy of DNA finger printing with variety release proposal. Further, he informed that as per the suggestion during last combined AGRESCO, AAU is not including the names of RA/SRF in New Technical Programmes.

3. Dr. S. R. Chuadhary, Director of Research, NAU, Navsari opined that there should be restriction for PI and Co-PIs in new technical programmes. Maximum two Co-PIs are acceptable; however, more Co-PIs are admissible in case of multi-disciplinary research. In this context, Director of Research, AAU, Anand informed the house that AAU follows one PI and maximum two Co-PIs pattern.
4. All five Directors of Research of SAUs and KU will deliberate and decide the modality of inter sub-committee research presentation in case of multi-disciplinary trials.
5. There was a voice from the House to support the scientists for publication fees by the university. In response to this, Dr. K. B. Kathiria told that such provision is made and is in practice at AAU. Further, he also mentioned that, as a part of training and for scientific exposure to young scientists/faculty, AAU has permitted few young scientists to participate in respective AGRESCO sub-committees.

CONCLUDING REMARKS:

Dr. A. R. Pathak, Hon. Vice Chancellor, JAU, Junagadh congratulated all the scientists who have released new varieties or passed recommendations for farming community, entrepreneurs, government personnel and/or for scientific community. He emphasized for multi-disciplinary research within the university and also with other institutes as per the requirement.

Dr. N. C. Patel, Hon. Vice Chancellor, AAU, Anand and Chairman of the session, congratulated the scientists for bringing out large number of useful recommendations and also for finalizing new technical programmes. He emphasized that the research work should be as per the demand of the farmers and other stake holders to increase its acceptance by the users. He was also of the opinion that the patenting of novel technology is very important not only for improving the visibility of the research undertaken, but also for authenticating contribution of the scientists and the university.

The session ended with Vote of Thanks by D. V. P. Ramani, Associate Director of Research, AAU, Anand.

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SUMMARY : Farmer Recommendations / Scientific Recommendations / New Technological Programmes of SAUs and KU

Name of University	Crop Improvement	Crop Production/ Natural Resource Management	Plant Protection/ Crop Protection	Horticulture & Agro Forestry	Dairy & Food Tech./ Dairy Science and FPT&BE	Agriculture Engineering and AIT	Social Science	Basic Science & Humanities	Animal Health, Animal Production and Animal Science & Fisheries Science	Total
Varieties and Farmer Recommendations-										
SDAU, SKNagar	07*	09	06	05	02	-	-	01	02	07*+25
NAU, Navsari	09*	19	03	19	05	03	-	-	07	09*+56
JAU, Junagadh	06*+01	13	18	05	-	06	-	02	04	06*+49
AAU, Anand	07*	11	06	03	19	-	01	-	08	07*+48
Total	**29*+01**	**52**	**33**	**32**	**26**	**09**	**01**	**03**	**21**	**29*+178**
Scientific Recommendations										
SDAU, SKNagar	-	02	03	01	01	-	02	05	09	**23**
NAU, Navsari	-	04	03	03	-	01	03	04	11	**29**
JAU, Junagadh	-	10	05	-	-	01	03	01	09	**29**
AAU, Anand	-	03	07	-	04	01	04	01	10	**30**
KU, Gandhinagar	-	-	-	-	01	-	-	-	-	**01**
Total	**-**	**19**	**18**	**04**	**06**	**03**	**12**	**11**	**39**	**112**
New Technical Programmes										
SDAU, SKNagar	03	34	22	21	04	05	41	17	29	**176**
NAU, Navsari	-	20	20	35	02	09	18	08	11	**123**
JAU, Junagadh	06	31	29	06	-	18	22	03	16	**131**
AAU, Anand	04	19	39	08	20	12	46	05	27	**180**
KU, Gandhinagar	-	-	-	-	04	-	-	-	06	**10**
Total	**13**	**104**	**110**	**70**	**30**	**44**	**127**	**33**	**89**	**620**

* Indicate Variety