Department of Animal Genetics and Breeding,
College of Veterinary Science and Animal Husbandry,
Kamdhenu University,
Rajpur (Nava), Himmatnagar.

About the Department:

The Department of Animal Genetics & Breeding was established since the inception of College of Veterinary Science and Animal Husbandry, Kamdhenu University, Rajpur (Nava), Himmatnagar in the year 2019. The main objective of Department is to provide the quality education to under graduate students. The department is being strengthened for imperative education to UG, PG and Diploma students and to conduct quality research in the field of Animal Genetics & Breeding.

The Department of Animal Genetics & Breeding of this institute has laboratory setup, infrastructure facilities with teaching aids for the students of veterinary stream. For the purpose of easy understanding and quick learning, many educational videos, educational charts are available. The laboratories of the department are equipped for experimental demonstration purposes. For a convenient and interesting presentation, each topic shall be taught through power-point presentations, charts, videos and other audio-visual aids.

List of Faculty Publication:

1. Dadawala, A.I., Makwan, P.P., Bhati, N.B., Kapadiya, F.M., Patel, K.N., and Deshpande, S.B. (2023). Economic Losses due to Important Diseases of Dairy Bovines in Sabarkantha District of Gujarat. *Indian Journal of Veterinary Sciences & Biotechnology*. 19(4): 102–105.
2. N.S. Dangar, G.M. Pandya, U.V. Ramani, V.B. Kharadi and B.P. Brahmkshtri (2022). Association Study of Fecundity Gene BMP 15 with Prolificacyin Surti Goats under Farm and Field Condition of South Gujarat Region. *The Indian Journal of Veterinary Sciences and Biotechnology*. 18(2): 100-104.
3. Patel, K.N., Patel, A.C., Shah, H., Nayee, N.G., & Rank, D.N. (2022). Determination of Genomic Breed Composition using ADMIXTURE Software. *Indian Journal of Veterinary Sciences & Biotechnology*. 18(5): 100–103.
4. N.B. Bhati, P.B. Rathod, F.M. Kapadiya, P.P. Makwana, A.I. Dadawala, L.M. Sorathiya and K.N. Patel. (2021). Milk marketing practices adopted by farmers in Banaskantha district of North Gujarat. *The Pharma Innovation Journal*. SP-10(10):92-94
5. Mamta Janmeda, Gaurav Pandya, Umed Ramani, Nikhil Dangar, Balkrushna Brahmkshtri and Vishnu Kharadi (2020). Stage Specific Expression Profile of Lipogenic Genes in Mammary Epithelial Cells of Surti and Jaffarabadi Buffaloes. *International Journal of Livestock Research*. 10(11): 60-66.
6. Mamta Janmeda, Gaurav Pandya, Umed Ramani, Balkrushna Brahmkshtri, Navin Patel, Vishnu Kharadi (2020). Relative Gene Expression Study on Casein Protein and its Regulatory Genes in Mammary Epithelial Cells of Surti Goat. *The Indian Journal of Veterinary Sciences & Biotechnology*. 16(1): 54-57.

7. Pawar, V., Dangar, N., Pandya, G., Brahmkshtri, B., and Kharadi, V. (2019). Non Genetic Factors Affecting Lactation Length in Surti Buffaloes. *International Journal of Livestock Research*. 9(1): 318-323.

8. Pawar, V., Dangar, N., Pandya, G., Brahmkshtri, B., Kharadi, V. and Bayan, J. (2019). Non Genetic Factors Affecting Calving Interval in Surti Buffaloes. *International Journal of Livestock Research*. 9(5): 144-148.

9. Tyagi K. K., Brahmkshtri B. P., Kharadi V. B., Ramani U. V., Pandya G. M., Janmeda M.and Dangar N. S.(2019). Breeding Policies for Improving Productivity of Indian Buffalo – An Overview. National conference - ISBD on "Enhancing Rural Livelihood through Improved Buffalo Productivity and Health" 17-19 January, 2019 at College of Veterinary Science and Animal Husbandry, Navsari (Gujarat). pp 41-47.

10. Dangar N. S., Pandya G. M. Ramani U. V., Brahmkshtri B. P., Kharadi V. B. Janmeda M. and Tyagi K. K. Scope of Genomic Selection to Improve Buffalo Productivity in India.National conference - ISBD on "Enhancing Rural Livelihood through Improved Buffalo Productivity and Health" 17-19 January, 2019 at College of Veterinary Science and Animal Husbandry, Navsari (Gujarat). Pp: 48-54.

11. Janmeda M., Pandya G. M., Ramani U. V., Dangar N. S., Tyagi K. K.Brahmkshtri B. P and Kharadi V. B. Gene Expression of Major Lipogenic Genes during Lactogenesis in Buffaloes. National conference - ISBD on "Enhancing Rural Livelihood through Improved Buffalo Productivity and Health" 17-19 January, 2019.at College of Veterinary Science and Animal Husbandry, Navsari (Gujarat). pp 80-86.

12. Pawar, V., Brahmkshtri, B., Pandya, G., Janmeda, M., Dangar, N., Bayan, J. and Tyagi K. (2018). Non genetic factors affecting lactation milk yield and estimation of genetic, environmental and phenotypic trends in Surti buffalo. *Indian J. Dairy Sci.* 71(5): 491-495.

13. G.M. Pandya, U.V. Ramani, M. Janmeda, K.K. Tyagi, B.P. Brahmkshtri and V.B. Kharadi (2018). Relative gene expression analysis of β-casein gene and its transcription regulatory genes in primary buffalo mammary epithelial cells of Surti and Jaffarabadi buffalo. *International Journal of Animal Sciences*. 88(3): 59-61.

14. G.M. Pandya, U.V. Ramani, M. Janmeda, V.B. Kharadi, B.P. Brahmkshtri and K. Tyagi. (2018). Relative gene expression analysis of βcasein milk protein and its transcription regulatory genes in Surti buffalo. *International Journal of Livestock Research.* 8(4):121–127.

15. Pawar, V., Dangar, N., Ramani, U., Pandya, G., Kharadi, V., and Brahmkshtri, B. (2018). Non Genetic Factors Affecting Age at First Calving in Surti Buffaloes. *International Journal of Livestock Research*. 8(1): 43-48.

16. Jyotishree Bayan, V.B. Kharadi, U.V. Ramani, M. Janmeda, Pawar V. and B.P. Brahmkshtri. (2018). Polymorphism of Exon 2-3 of Growth Hormone Gene in Surti and Mehsani Goats by PCR-RFLP. *International Journal of livestock Research.* 8(11): 49–57.

17. Gadhvi, Y.G., Kharadi, V.B., Ramani, U.V., Pandya, G.P., Dangar, N.S., Brahmkshtri, B.P., and Pawar, V.D. (2017). Study on DGAT1 Gene Polymorphism in Surti and Banni Buffaloes by PCR-RFLP. *The Indian Journal of Veterinary Sciences and Biotechnology*. 13(2): 77-82.

18. G.M. Pandya, U.V. Ramani, Mamta Janmeda, K.K. Tyagi, V.B. Kharadi, N.S. Dangar, P.U. Gajbhiye, and B.P. Brahmkshtri. (2017). Variability in test day milk yield and milk composition at day 15 and 60 of lactation in Surti and Jaffarabadi buffaloes. *Indian J Dairy Sci.* 70(6):763-766.

19. Mamta Janmeda, Ramani, U.V., Pandya, G.M., Tyagi, K., Kharadi, V.B., Brahmkshtri, B.P., Jyotishree Bayan and Pawar, V.D. (2017). Epigenetics: Regulation of Gene expression. *International Journal of Science, Environment and Technology* 6(2): 1390 – 1396.

20. Janmeda M., Kharadi V., Pandya G., Brahmkshtri B., Ramani U. and Tyagi K. (2017) Relative gene expression of fatty acid synthesis genes at 60 days postpartum in bovine mammary epithelial cells of Surti and Jafarabadi buffaloes *Veterinary World*. 10(5):467-476.

21. Mamta Janmeda, Vishnu Kharadi, Gaurav Pandya, Balkrushna Brahmkshtri, Umed Ramaniand Kuldeep Tyagi (2017). Variation in Test Day Milk Yield and Composition at Day 15 and 60 Postpartum in Surti and Jafarabadi Buffaloes. *Journal of Animal Research*. 7(3): 451-458.

22. Pandya, G.P, Dangar, N.S., Janmeda, M., Gadhavi, Y.G., Brahmkshtri, B.P. and Kharadi, V.B. (2016). Standard Karyotype of Surti Buffalo from an Organized Farm. *International Journal of Science, Environment and Technology*. 5(3): 1108-1115.

23. Tyagi K.K., Brahmkshtri B.P., Ramani U.V., Kharadi V.B., Pandaya G.M., Janmeda M., Ankuya K.J., Patel M.D., Sorathiya L.M. (2016). Test day variability in yield and composition of Surti and Mehsani buffaloes milk at day 15 and 60 postpartum. *Veterinary World*. 9(6): 595-600.

24. Mahajan Atul, Kumar Parveen, Atole Sachin, Brahmkshtri B.P., Tajane K.R., De Sachinandan, Datta Kumar Tirtha, Goswami L. S. (2016). Kit Ligand Expression in granulosa cells during follicular culture and associated maturation rate of oocytes in buffalo (Bubalus bubalis). *Indian Journal of Animal Research*. 50(1): 14-18.

25. Mamta Janmeda, Pandya, G. M., Ramani, U. V., Kharadi, V. B., Tyagi, K. K. and Brahmkshtri, B. P. (2016). Copy Number Variations in Livestock: An Overview. *International Journal of Science, Environment and Technology*. 5(5):3494-3505.

26. Yadav, B.L., Ramani, U., Pandya, G., Brahmkshtri, B. (2015). Study of leptin gene polymorphism in Surti and Jaffarabadi buffaloes by PCR-RFLP. *Current Trends in Biotechnology and Pharmacy*. 9(2). 151-156.

27. Mamta Janmeda, Pandya, G. M., Ramani, U. V., Dangar, N. S., Kharadi, V. B. and Brahmkshtri, B. P. (2014). Dairy Animal Breeding Policy and Programme. National conference of Indian Association of Women Veterinarians. pp 35-39.

28. Pandya, G.P. Ramani, U.V., Janmeda, M., Dangar, N.S., Tyagi, K.K., Brahmkshtri, B.P. and Kharadi, V.B. (2014). piRNA: Basics and their Association with PIWI proteins. *Current Trends in Biotechnology and Pharmacy*. 8(3): 303-308.

29. Sacravarty, G., Vadodaria, V. P., Rank, D. N., Brahmkshtri, B. P. and Vataliya, P. H., (2013). Study of prolactin gene using PCR-RFLP and PCR-SSCP in Mehsani buffaloes. *Buffalo Journal*. 29 (1): 105-111.

30. Pipalia, D.L., Joshi, C.G., Khanna, K., Rank, D.N., Thakkar, K.M., Brahmkshtri, B.P. and Solanki, J.V. (2006). RAPD profiling of Bantam, White Leghorn and Bantamised White Leghorn birds. *Indian Journal of Poultry Science*. 41 (2), 111-114.

31. Pipalia, D.L., Joshi, C.G., Rank, D.N., Brahmkshtri, B.P.& Solanki, J.V. (2004). PCRSSCP typing of MHC in cattle and buffaloes. *Indian Journal of Animal Sciences*. 74: 637- 639.

32. Ladani, D.D, Pipalia, D.L., Brahmkshtri, B.P., Rank, D.N., Joshi, C.G. & Vataliya, P.H. (2003). Prolactin genotyping of Indian buffalo breeds using PCR-RFLP. *Buffalo Journal*. 19(2): 203-208.

33. Ladani, D.D., Pipalia, D.L., Brahmkshtri, B.P., Rank, D.N., Joshi, C.G. and Vataliya, P.H. (2003). PCR-RFLP polymorphism at prolactin locus in buffaloes. *Buffalo Journal*. 19(2): 237-242.

34. Pipalia, D.L., Joshi, C.G., Khanna, K., Rank, D.N., Thakkar, K.M. and Brahmkshtri, B.P. (2003). Growth hormone gene polymorphism in Bantam, White Leghorn and Bantamised White Leghorn. *Indian Journal of Poultry Science*. 38(3): 206-211.

35. Rank, D.N., Joshi, C.G., Tank, P.H., Brahmkshtri, B.P., Vataliya, P.H. & Solanki, J.V. (2003). Chromosomal aberration in a donkey (E. asinus). *Indian Veterinary Journal*. 80: 83-84.

36. Acharya, C.P., Pipalia, D.L., Rank, D.N., Joshi, C.G., Brahmkshtri, B.P. and Solanki, J.V. (2002). BoLA-DRB3 gene polymorphism in Jaffarabadi and Mehsani buffaloes as revealed by PCR-RFLP. *Indian Veterinary Journal*. 79: 652-656.

37. Joshi, C.G., Rank, D.N., Jani, R.G., Tank, P.H., Brahmkshtri, B.P. and Vataliya, P.H. (2001). A case of E. asinus x E. heminous khur hybrid. *Indian Veterinary Journal*. 78(6): 549-550

Academics:

Undergraduate (UG)

Theory and Practical (as per VCI MSVE, 2016)

Animal Genetics & Breeding (Credit: 3+1 = 4)	
	Theory
1	Unit 1: Biostatistics and computer application
2	Unit 2: Principle of Animal and Population Genetics
3	Unit 2: Principal of Animal Breeding
	Practical
1	Unit 1: Biostatistics and computer application
2	Unit 2: Principle of Animal and Population Genetics
3	Unit 2: Principal of Animal Breeding

Post Graduate Programme (PG)			
Sr. No.	**Course no**	**Course Title**	**Credit**
1	AGB-601	Animal Cytogenetics and Immunogenetics	2+1=3
2.	AGB-602	Molecular Genetics in Animal Breeding	2+1=3
3.	AGB-603	Population and Quantitative Genetics in Animal Breeding	2+1=3
4.	AGB-604	Selection Methods and Breeding System	3+1=4
5.	AGB-605	Biometrical Techniques in Animal Breeding	3+1=4
6.	AGB-606	Conservation of Animal Genetics Resources	2+0=2
7.	AGB-607	Cattle and Buffalo Breeding	2+1=3
8.	AGB-608	Small Farm Animal Breeding (sheep, goat, swine and rabbit)	2+0=2
9.	AGB-609	Poultry Breeding	2+1=3
10.	AGB-610	Laboratory Animal Breeding	1+0=1
11.	AGB-691	Master's seminar	1+0=1
12.	AGB-699	Master's research	20

Ph.D. Programme:

Sr. No.	Course no	Course Title	Credit
1	AGB-701	Recent advances in animal genetics	2+0=2
2.	AGB-702	Recent Trends in Animal Breeding	2+0=2
3.	AGB-703	Advances in Biometric Genetics	2+1=3
4.	AGB-704	Advances in Selection Methodology	2+1=3
5.	AGB-705	Bioinformatics in Animal Genetics and Breeding	2+0=2
6.	AGB-706	Advances in molecular cytogenetics	2+0=2
7.	AGB-707	Utilization of non-addictive genetics variants in farm	2+1=3
8.	AGB-791	Doctoral Seminar-1	1+0=1
9.	AGB-792	Doctoral Seminar-2	1+0=1
10.	AGB-799	Doctoral Research	45

Laboratory Facilities