Department of Veterinary Physiology and Biochemistry

Faculties:

Sr. No.	Name	Designation	Mail id	Phone	Joining year	Qualification	Experience	No. of Publications
1	Dr. S.P. Madhira	Assistant Professor & Head	spmadhira@aau.in	9227420829		Ph.D	26	
2	Dr. M.M. Pathan	Assistant Professor	drmohsinvets@aau.in	7878392773	2015	Ph.D	9	54

Profile:

The department was established in 1964 and now renamed as Department of Veterinary Physiology and Biochemistry. The department offers three different courses at undergraduate level (Veterinary Physiology, Veterinary Biochemistry and Veterinary Clinical Practices - II). The department offers M. V. Sc. in Veterinary Physiology with 11different courses and Ph.D. with 14 different courses. The department also offers M. V. Sc. in Veterinary Biochemistry with 14 different courses and Ph.D. with 16 different courses. So far 12 M.V. Sc. and 3 Ph. D. students have earned their degrees.

Academics

A. UG Courses

(a) Veterinary Physiology

Sr. No.	Name of Course	Course No.	Credits
1	Veterinary Physiology - I	--	4+1

(b) Veterinary Biochemistry

Sr. No.	Name of Course	Course No.	Credits
1	Veterinary Biochemistry	--	2+1

(c)

Sr. No.	Name of Course	Course No.	Credits
1	Veterinary Clinical Practice - II	--	0+6

The course is in collaboration with department of Veterinary Pathology.

B. PG Courses

(a) Veterinary Physiology

Sr. No.	Name of Course	Course No.	Credits
	For M. V. Sc.		
1	Physiology of Digestion	VPY - 601	2+1
2	Cardiovascular and Respiratory Physiology	VPY -602	2+1
3	Renal Physiology and Body fluid dynamics	VPY -603	2+1
4	Haematology	VPY -604	2+1
5	Vitamins and Minerals in Animal Physiology	VPY -605	2+0
6	Physiology of Animal Reproduction	VPY -606	2+1
7	Clinical Physiology	VPY -607	2+1
8	Neuromuscular Physiology	VPY -608	2+1
9	Chemical Bioregulation in Physiological Functions	VPY -609	3+0
10	Research Techniques in Veterinary Physiology	VPY -610	0+2
11	Master's seminar	VPY -691	1+0
12	Master's research	VPY -699	20
	For Ph. D.		
1	Applied Physiology of Body fluids and Electrolytes	VPY -701	2+1
2	Physiology of Animal Behaviour	VPY -702	2+0
3	Comparative Physiology of Ruminant Digestion	VPY -703	2+1
4	Advances in Neuroendocrinology	VPY -704	2+1
5	Myophysiology and Kinesiology	VPY -705	2+1
6	Avian Physiology	VPY -706	2+1
7	Physiology of Lactation	VPY -707	2+1
8	Advances in Environmental Physiology and Growth	VPY -708	2+1
9	Advances in Rumen Microbiology and Metabolism	VPY -709	2+1

10	Advances in Immunophysiology	VPY -710	2+1
11	Physiology of Stress	VPY -711	2+1
12	Special Problem	VPY -790	0+2
13	Doctoral Seminar – I	VPY -791	1+0
14	Doctoral Seminar – II	VPY -792	1+0
15	Doctoral Research	VPY -799	45

(b) Veterinary Biochemistry

Sr. No.	Name of Course	Course No.	Credits
	For M. V. Sc.		
1.	Chemistry of Animal cell	VBC - 601	2+0
2.	Techniques in Biochemistry	VBC -602	0+2
3.	Application of Genomics and Proteomics in Molecular Biology	VBC -603	2+0
4.	Biochemistry of Biomolecules: Carbohydrates, Lipids and Membrane Structure	VBC -604	2+0
5.	Enzyme Catalysis, Kinetics, Inhibition and Bioregulation	VBC -605	2+0
6.	Metabolism – I : Carbohydrate and Lipids	VBC -606	2+0
7.	Metabolism – II : Nucleic acids and Amino acids	VBC -607	2+0
8.	Metabolism – III : Integration and Regulation	VBC -608	2+0
9.	Central Dogma and Protein Function	VBC -609	2+0
10.	Clinical Biochemistry of Animals	VBC -610	2+1
11.	Biochemical Basis of Diseases of Domestic animals	VBC -611	2+0
12.	Endocrinology and Reproductive Biochemistry	VBC -612	2+0
13.	Biochemical Basis of Animal Reproduction	VBC -613	2+1
14.	Master's seminar	VBC -691	1+0
15.	Master's research	VBC -699	20
	For Ph. D.		
1.	Advances in Biochemistry of Ruminant Disorders	VBC -701	2+0
2.	Advances in Enzymology	VBC -702	2+0
3.	Advances in Clinical Biochemistry	VBC -703	0+2
4.	Membrane Dynamics and Signal Transduction in Animal Cell	VBC -704	2+0
5.	Methods in Protein Analysis	VBC -705	2+1
6.	Nutritional Biochemistry	VBC -706	2+0
7.	Advances in Intermediary Metabolism	VBC -707	2+0
8.	Endocrine control of fuel metaboloism	VBC -708	2+0
9.	Diagnostic Enzymology – I	VBC -709	2+0
10.	Diagnostic Enzymology – II	VBC -710	2+0
11.	Biochemistry of Development and Differentiation	VBC -711	2+0
12.	Advances in Techniques in Biochemistry	VBC -712	1+1
13.	Advances in Mineral and Vitamin Metabolism and Related Diseases	VBC -713	2+0
14.	Special Problem	VBC -790	0+2
15.	Doctoral Seminar – I	VBC -791	1+0
16	Doctoral Seminar – II	VBC -792	1+0
17	Doctoral Research	VBC -799	45

II. Research

A. Research Projects Completed **:** Four AGRESCO approved research projects competed.

B. Ongoing Research Projects **:** Nil

C. i. Number of M.V.Sc. degrees awarded: 12
ii. Number of Ph. D. degrees awarded : 03

D. Research Publications

National Journal	20
International Journal	12

F Facility available at department:

1) BS – 120 Chemistry Analyzer
2) Fully Automated Blood cell Counter
3) Thermocycler
4) Gel electrophoresis apparatus
5) Deep fridge (-20^0 C)
6) Water bath with shaker
7) Centrifuges of different capacities (Non-refrigerated) - 3
8) Water Distillation Plant
9) Microscopes (Binocular, Monocular)
10) Top pan Microbalance
11) Gel doc system
12) Multimedia projector, Computers and accessories
13) Spectrophotometer
14) U V Spectrophotometer
15) ELISA plate reader
16) Laminar air flow cabinet

G. Future Thrust Areas:

1) Endocrine aspect of animal growth, reproduction and lactation.
2) Effect of climatic on animal physiology and its biochemical constituents.
3) Assessment of novel biological markers and molecules in animal reproduction and lactation.
4) Use of advance biotechnological methods in prediction of animal physiology and behavior.
5) Stem cell research for animal health and productivity.
6) Development of modern diagnostic methods and therapeutic management of non infectious diseases like metabolic and deficiency diseases.
7) Role of minerals in animal physiology to establish macro and micro mineral profiles of livestock of all the climatic zone of Gujarat.
8) Hormonal profile of livestock in relation to certain reproductive and systemic diseases.
9) Studies on effect of neem extract on physiological and immunological parameters.
10) Enzyme kinetic studies on indigenous cattle of Gujarat.

B. Media Gallery