





Department of Veterinary Medicine, Veterinary College, AAU, Anand

Profile:

The Department of Medicine happened to be one of the twelve full-fledged departments that had been established during the initial years of Veterinary College, Anand. The faculty of the department teaches Veterinary Clinical Medicine, Ethics & Jurisprudence and Veterinary Epidemiology & Preventive Medicine to under-graduate and post-graduate students. The main areas of research undertaken by the faculty under various research projects include bovine mastitis, canine dermatological disorders, Foot & Mouth Disease and important diseases of farm animals. So far, Government of India funded research projects on FMD, weather-based disease forecasting system and bovine mastitis have been completed. Besides, one research project each on bovine mastitis and canine dermatological disorders, funded by other agencies have been completed. Presently, one research project sponsored by Government of India and another Government of Gujarat funded plan research scheme are operational in the department. So far, the department has organized an ICAR sponsored summer school, a national-level symposium under the auspices of Indian Society for Veterinary Medicine (ISVM) and a number of refresher/training courses for the veterinarians working for state government animal husbandry department and co-operative dairies.

The faculty of the department renders expert veterinary services and advice to the farmers, pet owners, government/university/private farms on the diagnosis, prevention and control measures of diseases.

Faculties:

Sr. No.	Name	Designation	Phone (O)	Cell No.	Inter Com No.	E-Mail
1	Dr. S. K. Raval 	Professor & Head	263056	9429034634	947	skraval23@aaui.in skraval23@rediffmail.com
2	Dr. D. S. Nauriyal 	Professor	263056	9909412916	978	devshekhar19@gmail.com
3	Dr. G. C. Mandali 	Professor	263056	9427857449	965	gcmandali@aaui.in
4	Dr. D. B. Sadhu 	Assistant Professor	263056	8140300659	947	dashrathsadhu@aaui.in

Major Activities:

I. Teaching

A. UG Courses

Sr. No	Course No.	Course Title	Credits
1.	VMD-411	Veterinary Clinical Medicine-I (General & Systemic)	2+1=3
2.	VMD-412	Veterinary Preventive Medicine-I (Bacterial, Fungal & Rickettsial Diseases)	2+0=2
3.	VMD-421	Veterinary Clinical Medicine-II (Metabolic & Deficiency Diseases)	2+0=2
4.	VMD-422	Veterinary Preventive Medicine –II (Viral & Parasitic Diseases)	2+0=2
5.	VMD-511	Animal Welfare, Ethics & Jurisprudence	2+0=2
6.	VMD-512	Zoo/Wild Animal Breeding, Management, Nutrition and HealthCare	1+1=2
7.	VMD-513	Pet Animal Breeding Management, Nutrition and HealthCare	1+1=2
8.	VPP-322	Aquatic Animal Diseases, Health Care and Management	1+1=2
9.	-	Tracking programme: A student has to compulsorily take any two programme of two credits each (2X2=4 credits).	Non - Credit
		Total	17

Titles of Tracking programme:

- i. Feline Medicine
- ii. Dermatology
- iii. Alternative Medicine
- iv. Small Animal Critical Care
- v. Non-mammalian Medicine
- vi. Sports Animal Medicine

B. P.G. & Ph.D. Courses

Veterinary Clinical Medicine, Ethics and Jurisprudence

Post-Graduate Degree Programme:			
Sr. No.	Course No.	Course Title	Credits
1	VCM-601	Ruminant Clinical Medicine -I	2+0 = 2
2	VCM-602	Ruminant Clinical Medicine –II	2+0 = 2
3	VCM-603	Equine Clinical Medicine	2+0 = 2
4	VCM-604	Canine and Feline Clinical Medicine	2+0 = 2
5	VCM-605	Swine Clinical Medicine	1+0 = 1
6	VCM-606	Avian Medicine	1+0 = 1
7	VCM-607	Zoo, Wild & Laboratory Animal Medicine	2+0 = 2
8	VCM-608	Clinical Diseases of Animal Species of Regional Importance	1+0 = 1
9	VCM-609	Production Diseases	2+0 = 2
10	VCM-610	Diseases of Animals Caused by Toxicants	1+0 = 1
11	VCM-611	Veterinary Forensic Medicine	1+1 = 2
12	VCM-612	Clinical Diagnostic Techniques	0+2 = 2
13	VCM-613	Veterinary Emergency Medicine	0+2 = 2
14	VCM-614	Clinical Practice I	0+3 = 3
15	VCM-615	Clinical Practice II	0+3 = 3

16	VCM-691	Master's Seminar	1+0 = 1
		Total	29
Doctorate Degree Programme:			
Sr. No.	Course No.	Course Title	Credits
1	VCM-701	Advances in Gastroenterology	2+0
2	VCM-702	Advances in Cardiopulmonary Medicine	2+0
3	VCM-703	Advances in Neurological and Urological Disorders	2+0
4	VCM-704	Advances in Endocrine and Dermatological Disorders	2+0
5	VCM-705	Advances in Production Diseases	2+0
6	VCM-706	Advances in Paediatrics and Geriatrics	1+0
7	VCM-707	Advances in Veterinary Diagnostics	1+2
8	VCM-708	Advances in Veterinary Therapeutics	1+2
9	VCM-709	Advanced Clinical Practice-I	0+2
10	VCM-710	Advanced Clinical Practice-II	0+2
11	VCM-711	Advanced Clinical Practice-III	0+2
12	VCM-790	Special Problem	0+2
13	VCM-791	Doctoral Seminar-I	1+0
14	VCM-792	Doctoral Seminar-II	1+0
		Total	27

Veterinary Epidemiology and Preventive Medicine

Post-Graduate Degree Programme:			
Sr. No.	Course No.	Course Title	Credits
1	VEP-601	Principles of Epidemiology	2+0 = 2
2	VEP-602	Applied Epidemiology	1+1 = 2
3	VEP-603	Livestock and Poultry Disease Investigation	0+2 = 2
4	VEP-604	Veterinary Clinical Epidemiology	1+1 = 2
5	VEP-605	Biosecurity Practices in Diseases Prevention	1+1 = 2
6	VEP-606	Infectious Diseases of Ruminants –I	2+1 = 3
7	VEP-607	Infectious Diseases of Ruminants -II	2+1 = 3
8	VEP-608	Infectious Diseases of Equines	1+1 = 2
9	VEP-609	Infectious Diseases of Canines and Felines	2+1 = 3
10	VEP-610	Infectious Diseases of Poultry	2+1 = 3
11	VEP-611	Infectious Diseases of Animal Species of Regional Importance	2+1 = 3
12	VEP-612	Infectious Diseases of Laboratory and Zoo Animals	1+0 = 1
13	VEP-691	Master's Seminar	1+0 = 1
		Total	29

Doctorate Degree Programme:			
Sr. No.	Course No.	Course Title	Credits
1	VEP-701	Recent Concepts in Epidemiology and Disease Forecasting	2+1
2	VEP-702	Herd Health Management	2+1
3	VEP-703	Data Collection, Management and Presentation	2+1
4	VEP-704	Survey and Surveillance	2+1
5	VEP-705	Emerging and Re-emerging Animal Diseases	2+0

6	VEP-706	Ecology of Diseases	2+0
7	VEP-707	Molecular Approaches in Epidemiology	2+1
8	VEP-708	Advances in Prevention & Control of Infectious Diseases of Ruminants	2+1
9	VEP-709	Advances in Prevention & Control of Infectious Diseases of Equines	2+1
10	VEP-710	Advances in Prevention & Control of Diseases in Pet Animals	2+1
11	VEP-711	Advances in Prevention & Control of Diseases in Poultry	2+1
12	VEP-712	Advances in Infectious Diseases of Laboratory and Zoo Animals	1+0
13	VEP-713	Advances in Diagnosis and Management of Toxicological Conditions	1+1
14	VEP-790	Special Problem	0+2
15	VEP-791	Doctoral Seminar-I	1+0
16	VEP-792	Doctoral Seminar-II	1+0
		Total	38

II. Research

C. Projects Completed

Sr. No.	Title of Scheme	Agency	Duration	Budget (Rs. Lakhs)	PI/Co-I
1	A Pilot Study on Techno-economic Surveillance on Foot and Mouth Disease in Rural Gujarat	ICAR	1984 to 1987	54.00	PI: Dr. M.R. Dave
2	National Agricultural Technology Project-Weather Based Animal Disease Forecast (NATP)	NATP	May, 2000–Dec, 2004	8.60	PI: Dr. P.R. Patel Co-I: Dr. S.K. Raval
3	“Use of Recent Molecular Techniques to Reduce Economic Losses Incurred due to Bovine Mastitis by Evolving Diagnostic, Therapeutic and Preventive Measures” (B.H. No. 18442)	Government of India	June, 2010-May, 2012	150.00	PI: Dr. D.S. Nauriyal Co-I: Dr. A.M. Thaker Dr. C.G. Joshi Dr. D.N. Rank Dr. M.K. Jhala Dr. A. Roy
4	“Evaluation of Efficacy of a Formulation in the Treatment of Sub-clinical Bovine Mastitis” (B. H. 18321-01)	Other	June-September, 2014	2.13	PI: Dr. D.S. Nauriyal Co-I: Dr. S.V. Shah
5	“Evaluation of Efficacy of a Nanotechnology Based Formulation against Infection / Infestations of Canine	Other	June-December, 2015	1.26	PI: Dr. D.S. Nauriyal

Skin" (B.H. 18458-02)				
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D. On-going Projects

Sr. No.	Title of Scheme and B.H. No.	Agency	Duration	Bud get (Rs.)	PI/Co-I
1	“Diagnosis, Epidemiology and Management of Diseases of Livestock” (B.H. 12956); Renamed after merger of two earlier plan schemes: “Disease Management of Livestock at Anand” & “Diagnosis and Epidemiology of Important Diseases of Animals at Anand”	Govt. of Gujarat	November, 2005 ..continuing	--	PI: Dr. D.S. Nauriyal Co-I: Dr. S.K. Raval Dr. G.C. Mandali
2	Strengthening of New Department at Veterinary Science College a. Veterinary Epidemiology & Preventive Medicine b. Veterinary Extension	Govt. of Gujarat	July 2005 to till Date	--	PI: Dr. S.K. Raval Co-I: Dr. A.C. Vaidya
2	Developing Advance Diagnostic & Alternative Control Approaches against Bovine Mastitis (B.H. 18503)	Government of India	June, 2014- March, 2017	100	PI: Dr. D. S. Nauriyal Co-I: Dr. C.G. Joshi Dr. D.N. Rank Dr. A. Roy
3	Impact of climate on epidemiology of major important diseases of cattle and buffalo in middle Gujarat (B.H. 18457-79)	Climate Change Dept.,GEDA , Govt. of Gujarat	January 2017 to January 2022	72.38	PI: Dr. S.K. Raval Co-I: Dr. M. M. Lunagaria Dr. R. J. Modi Dr. A. N. Kanani

E. Number of M.V.Sc. & Ph.D. degrees awarded

M. V.Sc.	: 51
Ph.D.	: 07

F. Research Publications:

International Journals	: 21
National Journals	: 60

G. Research Recommendations (Scientific/Farmers Community):

1. Clinical cases of bacterial and fungal infection of ear can be treated with herbal ear drops (containing *Acorus calamus*, *Andropogon* sp., *Allium sativum*, *Azadirachta indica*, *Boswellia serrata* extract, *Cedrus deodara*, *Cinnamomum zeylanicum*,

Curcuma longa, *Eucalyptus globulus*, *Pinnus longifolia*, *Zingiber officinale* in oil base) instilled twice daily at least for two weeks. To achieve complete cure concurrent use of herbal eardrops with systemic antibacterial (Enrofloxacin, Amoxicillin + Clavulanic acid, Cefotaxime, Cephelexin) and antifungal (Ketoconazole) drugs is suggested (Dr. D.S. Nauriyal).

2. A herbal gel containing Devdaru oil 1.0 g, Nilgiri oil 0.20 g, Haridra Ghansatva 0.04 g., Gandhaprasarinee Ghansatva 0.04 g, Madhuyashti Ghansatva 0.01 g and Shudh Gandhaka 1.0 g per 10 gram of drug in emulsifier gel base is an effective treatment for bovine subclinical mastitis by administering topically on affected quarter(s) after each milking for 5 consecutive days (Dr. D.S. Nauriyal).
3. Intramammary administration of 10 ml of 1 per cent aqueous solution (once a day for 5 days) of alkaloid obtained from chloroform extract of *Prosopis juliflora* leaves is effective in the treatment of subclinical mastitis in cattle based on somatic cell count (SCC) and bacteriological examination (Dr. D.S. Nauriyal).
4. Topical application of 5 g of a gel based herbal drug {containing *Curcuma longa* (0.04 g), *Paedaria foetida* (0.04 g), *Glycyrrhiza glabra* (0.1 g), *Eucalyptus globulus* (0.2 g), *Cedrus deodara* (1.0 g) and Shudh Gandhaka (1.0 g) in each 10 g} on sub-clinically infected udder quarters twice daily after milking for 5 consecutive days results in significant reduction in bacterial load and immunomodulation till day 21 post-treatment, hence suggested as an effective herbal therapy against bovine sub-clinical mastitis (Dr. D.S. Nauriyal).
5. Intramammary infusion of 10 ml of 1% *Prosopis juliflora* alkaloids formulation in normal saline once a day for 5 consecutive days is an effective treatment for bovine sub-clinical mastitis (Dr. D.S. Nauriyal).
6. The intramammary administration of 10 ml of 1% aqueous formulation of *Prosopis juliflora* alkaloids once daily for 5 consecutive days in sub-clinically affected mastitic quarter results in immunopotentiality, hence it is recommended to scientific community for use as a treatment regimen (Dr. D.S. Nauriyal).
7. The nut milk extract of *Senecapus anacerdim* (Bhilamo) at the dose rate of 2.5 gm/kg b. wt. orally once a day for seven week has anticancerous effect on N-nihoso diethylamine induced hepatocellular carcinoma in Wistar rat (Dr. S.K. Raval).
8. An ayurvedic paste preparation containing Indrajawa (*Holarrhena antidysentrica*)
9. 10 mg, Triamana (*Gentiana kuroo*) 20 mg, Indian aconite (*Aconitum charmanthum*), nagkesar, camphor, seed of *Butea monosperma*, Mushakarni (*Merremia gangetica*) and Brahmi (*Centella asiatica*) 10 mg each) with excipient of creta preparata is effective against ascariasis affected buffalo calves at a single oral dose rate of 5 gm per 10 kg body weight. (Dr. G.C. Mandali).

II. Extension

A. Refresher Training Courses/Summer Schools conducted	18
B. Seminar/Symposia/Conference/Workshop organized	04
C. Diagnostic Services / Clinical Camps / Farmers' advisory services /Ambulatory Clinics/Vaccination camps	24
D. NSS Camps /Krishi- Mahotsav / Pashupalan Shibirs / Radio-TV Talks Delivered/Exhibitions/Farmers' meet-day/Kisan Call Center /Field Visit	74
E. Expert services to State Government / Co-op. dairies / Other agencies /NGOs	18
F. Publication of Popular articles / Books / Booklets / Pamphlets / Leaflets / Souvenir / Compendium /Chapters/Lab Manuals/ raining manuals etc.	136
G. Publications	

Popular articles	86
Books	10
Booklets	03
Pamphlets	05
Leaflets	05
Compendium	05
Lab. Manuals	15
Training Manuals	07

Achievements:

A. Awards/Honours/Recognitions/Appreciations:

1. **Appreciation Award** by the Indian Society for Veterinary Medicine (ISVM Conference–2003, Dr. D S Nauriyal).
2. **Best Oral Presentation Award** by the Indian Society for Veterinary Medicine (ISVM Conference–2004, Dr. D S Nauriyal).
3. **Best Poster Presentation Award** by the Indian Society for Veterinary Medicine (ISVM Conference–2013, Dr. D S Nauriyal).
4. **Best Poster Presentation Award** (ASCAD Seminar–2013, Dr. D S Nauriyal).
5. **Best Oral Presentation Award** by the Indian Society for Veterinary Medicine (ISVM Conference-2016, Dr. D S Nauriyal).
6. **Professor J. P. Trivedi Award** by Gujarat Association for Agricultural Science (sponsored by Hariom Ashram, 2001 Dr. S. K. Raval)
7. **Best Paper & Oral Presentation Award** by Association of Agro meteorologist-2001 (Dr. S. K. Raval)
8. **Best Paper Award** for article published in Indian Journal of Dairy Science-2005 (Dr. S. K. Raval)
9. **Best Paper Award** for research article published in Indian Journal of Dairy Science (Indian Dairy Association-2004, Dr. G C Mandali).
10. **Uttam lekh Award:** Anand Agricultural University-2005 (Dr. G C Mandali).
11. **Uttam lekh Award:** Anand Agricultural University-2005 (Dr. G C Mandali).
12. **Uttam lekh Award:** Anand Agricultural University-2009 (Dr. G C Mandali).
13. **Uttam lekh Award:** Anand Agricultural University-2010 (Dr. G C Mandali).
14. **Uttam lekh Award:** Anand Agricultural University-2011 (Dr. G C Mandali).

B. Assignments as Subject Expert/Member (Selection Committee/Advisory Board):

- **Member-Selection Committee: (Dr. D. S. Nauriyal)**
 - Union Public Service Commission (UPSC), New Delhi
 - Rajasthan Public Service Commission (RPSC), Ajmer (Rajasthan)
 - Agricultural Scientists Recruitment Board (ASRB), New Delhi
 - Maharashtra Animal and Fishery Science University (MAFSU), Nagpur (Maharashtra)
 - Anand Agricultural University (AAU), Anand (Gujarat)
 - Junagadh Agricultural University (JAU), Junagadh (Gujarat)
- **Member-Screening Committee: ASRB, New Delhi (Dr. D. S. Nauriyal)**
- **Member-Special Committee on Fundamental Research:** Central Council for Research in Homoeopathy (CCRH), Ministry of AYUSH, Health & Family Welfare, Government of India, New Delhi. **(Dr. D. S. Nauriyal)**

- **Member-Editorial Board, Indian Journal of Veterinary Medicine (ISVM) (Dr. D.S. Nauriyal)**
- **Subject Expert: Management Committee on Control of Mastitis: NDDDB, Anand (Dr. D. S. Nauriyal)**
- **Vice-President: Indian Society for Veterinary Medicine (ISVM). (Dr. D. S. Nauriyal)**
- **Member-Selection Committee: (Dr. S. K. Raval)**
 - Navsari Agricultural University, Navsari
 - Junagadh Agricultural University, Junagadh
 - Sardar Krushinagar Agricultural University, Dantiwada
- Contribution in Krushimahotsav since 2005 as **Scientist Expert** in Animal Health/Husbandry in orientation programme for Agricultural Scientist of AAU. **(Dr. G. C. Mandali)**
- Member-Soil Health Card Scheme. **(Dr. G. C. Mandali)**

C. Advanced Instrumentation/Lab Facilities:

Laboratory Facilities:

The department boasts of having a Mastitis Research Laboratory and an Instrumentation Laboratory with advance instrumentation facilities.



Mastitis Research Laboratory



Instrum

entation Laboratory

Advanced Instrumentation:

Sr. No.	Instruments
1	Electronic Somatic Cell Counter (Fossomatic TM Minor); Hilleroed, Denmark
2	Milk Analyzer (Milko Scan TM Minor); Hilleroed, Denmark
3	Digital pH & Electronic Conductivity Meter (Thermo Fisher)
4	Trinocular Research Microscope (Leica)
5	Biochemical Auto-analyzer (Merck)
6	Haematological Auto-analyzer
7	Spectrophotometer (Thermo Fisher)
8	Elisa Reader & Washer (Thermo Fisher)
9	Centrifuge Machine (Thermo Fisher)
10	Urine Analyzer (Uri scan Optima – II)
11	Bio-safety Cabinet (Thermo Fisher)
12	Hot Air Oven (Thermo Scientific)
13	Bacteriological Incubator (Thermo Scientific)
14	Analytical Balance (Sartorius)
15	E.C.G. Machine (DRE)
16	Blood Gas Analyzer (Abbott)
17	Multipara Monitor (Bionet)
18	Multipurpose Rigid Diagnostic Set (Karl Storz)

D. Patents filed/Technology Developed: Nil

E. Special Recognition (SRC/NSS/AGRESCO Convener / Hostel Rector etc.):

- Dr. S K Raval as Hostel Rector
- Dr. G C Mandali as Programme Officer, National Services Schemes for 6 years
- Dr. G C Mandali as level II officer since 2012

Future Thrust Areas:

- Development of new diagnostic and therapeutic protocols for bovine mastitis and important canine skin disorders.
- Effect of climate on animal health