



DEPARTMENT OF VETERINARY PHARMACOLOGY & TOXICOLOGY

About Department

The department was started very recently with a vision to develop the department of veterinary pharmacology and toxicology as per MSVE 2016. The initial priority is to establish the minimum standard of UG teaching with respect to infrastructure facilities and laboratory instruments. The presently department is functioning under the principal office. Looking to biodiversity of Kutch region with respect to plants/herbs, the department will start the digital documentation of ethnoveterinary practices of the Kutch region and conduct the pharmacological screening of available ethnoveterinary resources in order to identify the biomolecules for future therapeutics purpose using in-silico screening and other advanced techniques.

Faculty Details

	Name:	Dr. Patel Hiteshkumar Bhikhubhai
	Designation:	Professor & Head
	Qualification:	Ph. D.
	Experience:	25 Years
	PG Students Guided	07 (MVSc)
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Postgraduate Students Guided

Sr. No.	Thesis Title	Major Advisor	Year of Submission
1.	Pharmacokinetics of Danofloxacin in Broilers	Dr. H. B. Patel	2023
2.	Impact of Lactic acid Administration on Pharmacokinetics of Marbofloxacin in Poultry	Dr. H. B. Patel	2022
3.	Pharmacokinetics of Ceftiofur Alone and Along with Blood Level Enhancing Vehicle in Kankrej cow calves	Dr. H. B. Patel	2021
4.	Assessment of heavy metals in soil, water, fodder and milk of dairy animals	Dr. H. B. Patel	2018
5.	Monitoring of toxic metals in milk of dairy animals in north Gujarat	Dr. H. B. Patel	2016

Summary of Publications

Sr. No.	Detail	Numbers
1.	Research Paper (National Journal)	45
2.	Research Paper (International Journal)	30
3.	Short Communications	--
4.	Recommendations	18
5.	Book/ Booklets	6
6.	Chapters in Books	5
7.	Training Manual / Practical Manual	8
8.	Technical Bulletins	3
9.	Review articles in scientific journals	30

10.	Popular articles in vernacular languages	50
11.	Informative leaflets / folders for farmers	6

Awards

Sr. No.	Details	Number of Awards
1.	National	02
2.	International	-
3.	Scientific Society/Body/Agency Awards for best paper presentation	01
4.	Scientific Society Awards for best poster presentation	01
5.	Best article award	01
6.	Best Thesis Award	-
7.	Best Teachers award	-
8.	Others	-

Details of Awards

Sr. No.	Name of Award	Name of Awardee	Year	Instituted by
1.	Poster Presentation Award	Dr. H. B. Patel	2024	ISBD
2.	Best Article (vernacular language) in <i>Gaudhuli</i>	Dr. H.B. Patel	2024	Kamdhenu University
3.	Best PhD Thesis award	Dr. H. B. Patel	2018	GAAS
4.	Young Scientist Award	Dr. H. B. Patel	2001	ISVPT
5.	Best poster presentation Award	Dr. H. B. Patel	2001	ISVPT

Achievements

1.	Dr. H. B. Patel nominated as members of Institutional Member Committee, CAZRI, Jodhpur (2024)
2.	Dr. H. B. Patel acted as Associate Editors of SDAU News and nominated as member of editorial team of GVC newsletter (2024)
3.	Dr. H. B. Patel acted as a Director of Information Technology at SDAU from 2016 to 2021

	Name:	Dr. Kamothi Dhaval Jitendra
	Designation:	Assistant Professor
	Qualification:	Ph.D.
	Experience:	1 Year
	PG Students Guided	-
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Summary of Publications

Sr. No.	Detail	Numbers
1.	Research Paper (National Journal)	8
2.	Research Paper (International Journal)	4
3.	Short Communications	--
4.	Recommendations	--
5.	Book/ Booklets	--
6.	Chapters in Books	6
7.	Training Manual / Practical Manual	2
8.	Technical Bulletins	--
9.	Review articles in scientific journals	4
10.	Popular articles in vernacular languages	--
11.	Informative leaflets / folders for farmers	--

Awards

Sr. No.	Details	Number of Awards
1.	National	02
2.	International	-
3.	Scientific Society/Body/Agency Awards for best paper presentation	02
4.	Scientific Society Awards for best poster presentation	02
5.	Best article award	04
6.	Best Thesis Award	-
7.	Best Teachers award	-
8.	Others	-

Details of Awards

Sr. No.	Name of Award	Name of Awardee	Year	Instituted by
1.	Best Poster Presentation Award	Dr. D.J. Kamothi	2020	ISVPT
2.	Award for 3 rd Position in M.V.Sc.	Dr. D.J. Kamothi	2022	LUVAS
3.	Best Poster Presentation Award	Dr. D.J. Kamothi	2023	ISVPT
4.	Young Scientist Award	Dr. D.J. Kamothi	2025	IAAVR

UG Academics

UG Course (As per VCI MSVE 2016 course curriculum)

Sr. No.	Course offered in Third Professional Year	Credits Hours
1.	Veterinary Pharmacology & Toxicology	4+1

UG Syllabus – Third Professional year

Theory

Unit	Contents
Unit 1	General Pharmacology Introduction, historical development, branches and scope of Pharmacology. Sources and nature of drugs. Pharmacological terms and definitions, nomenclature of drugs. Principles of drug activity: Pharmacokinetics - Routes of drug administration, absorption, distribution,

	biotransformation and excretion of drugs. Pharmacodynamics - Concept of drug and receptor, dose-response relationship, terms related to drug activity and factors modifying the drug effect and dosage. Adverse drug reactions, drug interactions
Unit 2	Drugs acting on ANS Neurohumoral transmission, Pharmacology of neurotransmitters. Adrenoceptors agonists and antagonists, adrenergic neuron blockers, cholinceptor agonists and antagonists. Autacoids: Histamine, histamine analogues and antihistaminic agents, 5-Hydroxytryptamine and its agonists and antagonists, eicosanoids, platelet activating factors, angiotensin, bradykinin and kallidin.
Unit 3	Drugs acting on CNS Classification of drugs acting on CNS. History, mechanism and stages of general anaesthesia. Inhalant, intravenous and dissociative anaesthetics. Hypnotics and sedatives; psychotropic drugs, anticonvulsants, opioid analgesics, non-steroidal anti-inflammatory drugs, analeptics and other CNS stimulants. Drugs acting on somatic nervous system: Local anaesthetics, muscle relaxants. Euthanizing agents.
Unit 4	Drugs acting on Different Body Systems Drugs acting on digestive system: Stomachics, antacids and antiulcers, prokinetics, carminatives, antizymotics, emetics, antiemetics, purgatives, antidiarrhoeals, cholagogues. Rumen pharmacology. Drugs acting on cardiovascular system: Cardiotonics and cardiac stimulants, antiarrhythmic drugs, vasodilators and antihypertensive agents, haematopoietic drugs, coagulants and anticoagulants. Drugs acting on respiratory system: Expectorants and antitussives, respiratory stimulants, bronchodilators and mucolytics. Drugs acting on urogenital system: Diuretics, drugs affecting urinary pH and tubular transport of drugs, ecobolics and tocolytics. Pharmacological basis of fluid therapy. Pharmacotherapeutics of hormones. Drugs acting on skin and mucous membranes: Emollients, demulcents and counter irritants.
Unit 5	Veterinary Chemotherapy Introduction and historical developments of chemotherapy. Antimicrobial agents: Classification, general principles in antimicrobial chemotherapy, antimicrobial resistance, combined antimicrobial therapy. Sulphonamides and their combination with diaminopyrimidines. Penicillins, cephalosporins, cephamycins and other beta lactams, beta lactamase inhibitors. Aminoglycosides and aminocyclitols, tetracyclines, amphenicols (chloramphenicol, thiamphenicol, florfenicol), macrolides, quinolones and fluoroquinolones, polypeptides (polymyxins, bacitracin) and glycopeptide antibiotics, Miscellaneous agents: Lincosamides, novobiocin, virginiamycin, tiamulin, nitrofurans and methenamine, Antitubercular drugs. Antifungal agents: Topical and systemic agents including anti-fungal antibiotics. Antiviral and anticancer agents. Anthelmintics: Drugs used against nematodes, cestodes, trematodes. Antiprotozoal agents: Drugs used in trypanosomiasis, theileriosis, babesiosis, coccidiosis, amoebiasis, giardiasis and trichomoniasis. Ectoparasitocides. Antiseptics and disinfectants. Pharmacology of drugs of abuse in animals. Pharmacology of indigenous medicinal plants: Scientific name, common name, active principles, pharmacological actions and therapeutic uses of Ginger, ocimum, neem, piper longum, withania, leptadenia, tinospora, embilica, eucalyptus, glycyrrhiza, trichospermum, curcuma, adhatoda, butea, aloes, sena, rheubarb, catechu etc.
Unit 6	Veterinary Toxicology Definitions, history of toxicology, fundamentals and scope of toxicology. Sources and classification of toxicants, factors modifying toxicity, general approaches to diagnosis and treatment of poisoning. Toxicity caused by metals and non-metals: Arsenic, lead, mercury, copper, molybdenum, selenium, phosphorus, fluoride, nitrates or nitrites, chlorate, common salt and urea. Poisonous plants: Cyanogenetic plants, abrus, ipomoea, datura, nux vomica, castor, oxalate producing plants, plants causing thiamine deficiency, plants causing photosensitization and lathyrism, oleander, and cotton. Toxicity caused by Agrochemicals: Insecticides - Chlorinated hydrocarbons, organophosphates, carbamates, pyrethroids, newer insecticides. Herbicides, fungicides and rodenticides. Fungal and bacterial toxins: aflatoxins, rubratoxin, ochratoxin, sporidesmin, citrinin, F-2 toxin, trichothecenes, ergot, fescue, botulinum toxin and

	tetanus toxin. Venomous bites and stings: Snake, scorpion, spider, bees and wasp, toad and fishes (puffer fish, shellfish). Toxicity caused by food additives and preservatives. Drug and pesticide residue toxicology. Environmental pollutants: Air and water pollutants. Concept of radiation hazards.
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Practical

Unit	Contents
Unit 1	General Pharmacology Handling and washing of laboratory wares. Handling and operation of commonly used laboratory instruments. Concept of good laboratory practices (GLP). Pharmacy appliances. Principles of compounding and dispensing. Metrology, systems of weights and measures, pharmacy calculations. Pharmaceutical processes. Pharmaceutical dosage forms. Prescription writing, incompatibilities. Drug standards and regulations, custody of poisons. Compounding and dispensing of powders, ointments, mixtures, liniments, lotions, liquors, tinctures, emulsions, and electuaries.
Unit 2	ANS Pharmacology Demonstration of the action of autonomic agonists and antagonists on intact or isolated preparations of the laboratory animals. Simulated animal experiments should be preferred over use of live animals. The lab for simulated experiments should be established within a span of one year.
Unit 3	CNS Pharmacology Handling of lab animals. Regulatory guidelines for use of lab animals. Demonstration of the effect of CNS active drugs and local anaesthetics in laboratory animals. The lab for simulated experiments should be established within a span of one year.
Unit 4	Veterinary Chemotherapy Demonstration of various chemotherapeutic agents and their dosage forms. Demonstration of antibiotic sensitivity test and its interpretation.
Unit 5	Veterinary Toxicology Collection, preservation and dispatch of material for toxicological analysis. General principles for toxicological analysis. Detection of heavy metals or non-metals or plant poisons. Demonstration of agrochemical toxicity and its antidotal therapy via simulation methods. Demonstration of toxic weeds and plants of local area. Methods of calculation of median lethal dose (LD ₅₀) or maximum tolerated dose (MTD).

Syllabus Distribution for Annual Board Examination:

Examination	PAPERS	UNITS	MAXIMUM MARKS	WEIGHTAGE
Internal Assessment	First	30 % (Unit 1 and 2)	40	10
	Second	60 % (Unit 3 and 4)	40	10
	Third	90 % (Unit 5 and 6)	40	10
Annual Board	THEORY			
	Paper-I	Unit 1,2,3 and 4	100	20
	Paper-II	Unit 5 and 6	100	20
	PRACTICAL			
	Paper-I	Unit 1 and 2	60	20
	Paper – II	Unit 3, 4 and 5	60	20

PG Academics

Summary of PG student:

Sr. No.	Details	No. of Students passed out	No. of Students presently enrolled
1.	Master	-	-
2.	Doctorate	-	-
3.	Total	-	-

To be started in next academic year (2026-27)

PG Courses

Sr. No.	Course Code	Title of Course	Credit Hours
1	VPT-501	Concepts of Pharmacology, Drug Design and Development	2+0
2	VPT-502	Autonomic and Autacoid Pharmacology	2+1
3	VPT-503	CNS Pharmacology	2+1
4	VPT-504	Digestive and Respiratory Pharmacology	2+1
5	VPT-505	Cardiovascular and Urinary System Pharmacology	2+0
6	VPT-506	Endocrine and Reproductive Pharmacology	2+1
7	VPT-507	Chemotherapy	2+1
8	VPT-508	Toxicology of Xenobiotics	2+1
9	VPT-509	Toxinology	2+1
10	VPT-510	Pharmacological Techniques	0+2
11	VPT-511	Techniques In Toxicology	0+2
12	VPT-512	Ethnopharmacology	1+1
13	VPT-513	Fundamentals of Pharmacokinetics	1+1
14	VPT-591	Master's Seminar	1+0
15	VPT-599	Master's Research	30

Ph. D. Courses

Sr. No.	Course Code	Title of Course	Credit Hours
1	VPT-601	Molecular Pharmacology	3+0
2	VPT-602	Advances in Autacoid Pharmacology	1+0
3	VPT-603	Pharmacology of Herbal Drugs	2+1
4	VPT-604	Biotransformation of Xenobiotics	2+0
5	VPT-605	Clinical Pharmacology and Pharmacokinetics	2+1
6	VPT-606	Pharmacogenomics	2+0
7	VPT-607	Immunopharmacology and Immunotoxicology	2+0
8	VP -608	Molecular Toxicology	3+0
9	VPT-609	Clinical Toxicology	2+1
10	VPT-610	Ecotoxicology	3+0
11	VPT-611	Regulatory Toxicology	2+1
12	VPT-690	Special Problem	0+1
13	VPT-691	Doctoral Seminar I	1+0
14	VPT-692	Doctoral Seminar II	1+0
15	VPT-699	Doctoral Research	75

PG Examination Patterns

Sr. No.	Examination	Theory	Practical
1	Self-study (Assignment/ Presentation)	20	-
2	Internal tests:- First Test Mid Term Test	10 20	- 50
3	Semester End Examination	50	50
	Total Marks	100	100

Research Area of the Department

• Survey of Ethnoveterinary Practice of Kutch Region and its digitalization
• Pharmacological screening of locally available and popular plants
• Pharmacokinetics of antimicrobials and tissue residues
• Pharmacogenetics
• <i>In-silico</i> screening and Bio-simulation
• Monitoring of environmental pollutants
• Herbal Pharmacology

Advanced Instrumentation Facilities

Sr. No.	Name of Instruments
	-

Contact details

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