MADRAS VETERINARY COLLEGE, Chennai

6.4 SELF STUDY REPORT

ICAR ACCREDITATION 2020

6.4. SELF STUDY REPORT

on

MADRAS VETERINARY COLLEGE
CHENNAI

TAMIL NADU VETERINARY AND ANIMAL SCIENCES UNIVERSITY
CHENNAI – 600 051

6.4 SELF STUDY REPORT

MADRAS VETERINARY COLLEGE
Chennai - 600 007

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6.4 SELF STUDY REPORT
FOR
UNDERGRADUATE PROGRAMME
(B.V.Sc. & A.H.)

6.4. Self Study Report for BV.Sc & AH Programme

6.4.1. Brief History of the Degree Programme

- The Madras Veterinary College (MVC), the first of the seven constituent veterinary colleges of TANUVAS, was started as an equine treatment school with five students in a temporary structure at Saidapet, Chennai in 1903.
- It was affiliated to Madras University in 1935 and started offering B.V.Sc. Degree programme.
- The college was upgraded as Southern Regional Centre for Postgraduate Education and Research in the year 1958.
- M.V.Sc. Degree course was introduced in 1960
- Affiliated to Tamil Nadu Agricultural University in 1976
- Affiliated into Tamil Nadu Veterinary and Animal Sciences University, first of its kind in the country, in 1989.

Salient Achievements

I. Education

1. Student Output: The output of graduates during the year 2019 - 20 is provided below:

Degree	Boys	Girls	Total
B.V.Sc. & A.H.	22	23	45

2. **International recognitions:** The clinical facilities of this college have been recognized and students from many international veterinary institutions attend externship programmes. Some of the important institutions and number of faculty and student attendees during 2019 are provided below:

SI. No.	Name of the Institution	No. of student beneficiaries
1	Undergraduate Students from Bangladesh Agricultural University	54
2	Washington State University, USA	8
3	Oklahama State University	7
	Total	69

3. The college has to his credit a greater number of rankings in ICAR Junior fellowship during 2019. A total of four students achieved higher ranking and secured ICAR Junior fellowship.
4. Eleven students underwent two months externship training programme at Washington State University, USA and Oklahoma State University, USA under ICAR - NAHEP
5. Thirty seven student of final year B.V.Sc.&A.H degree programme have undergone various industry and farm oriented entrepreneurship training programme
6. Prepared video module in the existing TANUVAS VET MICRO APP - Theory of Unit IV Immunology and Serology of MSVE 2016 with IDG 2018-19 funds
7. Developed a Mobile APP on Zoonoses under ICAR Development Grant for the benefit of students and progressive farmers in English and Tamil languages.

8. Institute level SAPI Veterinary Physiology quiz competition was conducted on 20.12.2019 to select team of two students of MVC to represent in the Zonal level competition (South zone) at Veterinary College, Nandinagar, KVAFSU, Bidar, Karnataka on 03.01.2020.

9 Postgraduate research initiated in Computed Tomography Scan and 4D Ultrasonography.

10. Use of Electro-porator for electrochemotherapy for cancer management in small animals.

II. Research

The significant research achievements from this institution during this period are furnished below:

- DNA extraction from canine and feline parvovirus faecal samples and the extracted DNA amplified using the whole genome overlapping primers.
- Reported the localization of the PPAR-g receptor and AKT Pathway activation by confocal microscopy upon induction of this receptor for the first time in buffalo spermatozoa. Iron oxide (Fe3O4) nanoparticles with inherent peroxidase activity and magnetic property have been prepared and used as a reporter instead of the HRP enzyme
- Generated oligonucleotide sequences (aptamers) with binding ability to placental specific proteins (PAG1 and PAG-2) have been generated and the same had been confirmed by MALDI and ELONA assay.
- The kinetics of the pregnancy specific placental markers in maternal circulation post insemination and postpartum in buffaloes has been studied and the sera panel is known to possess varied concentration of the early pregnancy markers.
- SELEX procedures have been performed for three protein targets which have been reported as source of placental markers namely (proteins from pregnant serum, PAG-1 & PAG-2 ·
- Optimization of Polymerase Chain Reaction for Antigen Receptor Rearrangement (PARR) assay for the detection and differentiation of B and T cell lymphoma in dogs. The optimized assay is now provided as a diagnostic service to the MVC clinics.
- Screening and differentiation of the suspected samples from commercial poultry farms for the Marek's virus serotypes ·
- Generation of oligonucleotides with specific binding potential to bovine spermatozoa have been generated (different secondary structures with a dG value ranging from -5.13 to 10.07 kcal/mol) and same had been confirmed by confocal imaging and binding studies.
- Complete genome sequence of canine parvovirus was carried out using ten pairs of overlapping primer. It comprises of 4495 nucleotides (nt) containing two open reading frames (ORFs). ORF1 (nt 1-2007) encoded two non-structural proteins (NS1 and NS2), and ORF2 (nt 2014-4270) encoded two structural proteins (VP1 and VP2). It shares 99.33% nucleotide identity with those of CPV new 2a variants (MH476591 and MH476580) strains and shares 99.20% and 98.98% nucleotide identity with JQ268284 (CPV 2b) and KU508407 (CPV 2c) strains respectively. The sequence has been deposited in GenBank under the accession numbers MN661243. ·
- Oculo-nasal swabs obtained from 32 dogs suspected for Canine distemper virus in the Infectious disease ward of MVC hospital were screened using N gene specific RT-Nested PCR for CDV and 6 samples were found positive.
- A total of 265 cumulus oocyte complexes (COCs) were retrieved from 61 ovaries. The maturation rate was found to be 70.69%. Out of this, 127 COCs were subjected to viability staining. The viability percentage was found to be 70.87% (90/127). Buffalo oocytes maturation rate was less in 10mM nicotine than 1mM (78.5 vs 93%). Cryopreservation of buffalo embryos was attempted using encapsulation technique.

Out of the different concentrations used 1% sodium alginate with 100mM calcium chloride gave better encapsulation for cryopreservation. ·

- BHK clone 13 adopted CVS11 strains of rabies virus passaged from 24 to passage 51 and the presence of virus confirmed by DFAT.Thirty four numbers of brain impression smears from canine suspected for rabies was received from Dept. of Veterinary Pathology and fifteen samples were found to be positive by DFAT.Two numbers of rabies suspected brain biopsy samples received from Institute of Child Health, Egmore and one was found to be positive and one was found to be negative by DFAT. One number of rabies suspected corneal impression smear from pig was received from Animal Disease Intelligence Unit, Dindigul and found to be positive by DFAT. ·
- Metagenomic analysis of rumen fluid collected from slaughter house waste was carried out and the following 10 phyla were found to be predominant Bacteroidetes, Proteobacteria, Firmicutes, Kiritimatiellaeota, Euryarchaeota, Lentisphaerae, Verrucomicrobia, Patescibacteria, Fusobacteria, Spirochaetes.
- Electrochemically active bacteria has been isolated from slaughterhouse waste rumen fluid and the isolate has shown oxidation and reduction peaks in cyclic voltametry. Microbial fuel cells with four different redox mediators namely Methylene blue (300µM), Neutral red (200µM), Potassium ferricyanide (0.1M) and EDTA (20mM) were initiated and this MFC trial was run for 10 days.On the 10th day, the amount of voltage (in millivolts) and current (in milliamperes) generated was maximum for Neutral red (510mV;1.9mA).
- Standardized the procedure for new products development viz. Chocobar ice cream, Ghee residue orange peel chocolates, Encapsulated probiotic ice cream with natural sweeteners.
- NDV D58 and IBV B17 were used to formulate a combined inactivated vaccine with ISA 71 RVG adjuvant (SEPPIC). Control field trail is in progress.
- The new technology "Solar tick trap with pheromone impregnated vapour patch as bait" will help in control of ticks in an eco-friendly manner which was transferred for public utility through TRPVB, TANUVAS, Chennai-51
- Molecular characterization of *V.parahemolyticus* for virulent genes Thermostable direct heamolysin (tdh) and Thermostable related heamolysin (trh) has been standardized.
- Presumptive isolates of *V.parahemolyticus* and *Aeromonas hydrophila* were confirmed for tox R and 16srRNA by PCR.
- The presumptive isolates of L.monocytogenes from beef, milk, feed, sewage and soil were confirmed by molecular targeting hlyA gene and further isolates were confirmed for serotyping.
- Staphylococcus Bacteriophage with a spectrum of activity against various Staph. isolates have been isolated and characterized
- Diagnostic B Mode Ultrasonography of lens and posterior segment abnormalities in Equines
- Titanium Flexible Intra-medullary nail TFIN for the management of long bone fracture in immature dogs
- Ultrasound-Guided Transversus Abdominis Plane (TAP) block for abdominal mastectomy in dogs
- Evaluation of Vessel sealant for ovario-hystrectomy in bitches with pyometra
- Computed Tomography evaluation of thoraco-lumbar spine in normal and spinal injured cats
- Electro chemotherapy for mammary tumour in dogs
- Developed milk price policy model for Tamil Nadu.
- Aflatoxin contamination in maize value chain was mapped.

- Clinical Investigation was carried out in three temple elephants. An elephant at Madurai and treatment protocol was formulated and sent to Animal Disease Intelligence Unit, Madurai. Another elephant reared at Kancheepuram Sankara mutt and advice was given on housing and management. Field investigation of an elephant belonging to Arulmigu Adhikumbeswaraswamy Thirukovil Kumbakonnam was carried to assess the health status.
- Twenty-eight elephants at Anamalai Tiger Reserve were screened for health status and tuberculosis.
- Haematoma and intestinal obstruction in a reticulated python
- Foreign body ingestion in conures.
- During the period under report, seven research projects with a total financial outlay of Rs. 10.45 lakhs were completed successfully.
- At present, 41 externally-funded research projects for the total outlay of Rs. 1614.74 lakhs are functioning in various department of this institution
- A total of 380 research articles have been published by the staff and research scholars of this college which include 84 articles in international journals and 296 in national journals.
- The faculty and students presented 199 papers and 39 posters were 164 in different seminar and conferences during this period
- Around 34 manuals and seven books were published.
- A total of 69 popular articles were published by the staff for the benefit of farming community.

III. Clinical

Quality clinical services have been offered to 179860 farm and pet animals during the period under report which includes 9582 cattle, 221 buffaloes, 929 horses, 278 sheep, 3737 goats, 118944 dogs, 7461 cats, 8317 birds and 1165 other cases. Anti-rabies vaccination was done for 25549 large and small animals. 3641 birds were vaccinated with RDVK vaccine. In addition, health care was provided to Army, RPF, CRPF, CISF and TN Police dogs and horses.

A total of 329 cases were treated a in-patient, which includes 110 dogs, 12 cats, 57 cattle, 3 buffaloes and 147 horses.

Additional state of art facilities under clinical services

- Under referral services, 4440 ultrasound scan, 48 endoscopies, 928 ECG, 3420 critical care cases, 219 blood transfusions, 21 hemodialysis, 12994 radiological and 68 contrast studies, 61 physiotherapy, 34 CARM intensifier, 419 Echo Doppler, 1100 vaginal exfoliative cytology and 12 skin biopsies were done. A total of 40 CT scans were performed during this year.
- Intensive Care Unit established under ICAR Experiential Scheme offering services round the clock care of critically ill small animal patients.
- Advanced small animal anesthesia setup with establishment of anesthesiology unit.
- In Avian and Exotic pet unit, pigeons, domestic fowls, paraketes, rabbits, cockatiels, sun courses, turkeys, hamsters, budgerigars, love birds, African Grey parrots etc. were treated. A total number of 8317 cases were treated for different ailments during the period.

Ambulatory Services

In the year 2019, a total of 548 large animal owners have been benefitted by the ambulance service and the total Kms covered were 2863 for a total of 243 trips from the hospital to the owner's house.

IV. Extension

The college has also carried out significant extension work. Some of them are listed below;

- Self-Employment and Skill Development training programme being offered to six participants on Dairy Plant operations and Milk & Milk Products Quality Control.
- Technical advice and suggestions were offered to 42 dairy entrepreneurs.
- Conducted Kisan Mela at Agriculture Technology Information Centre on 15.02.2019 for 128 farmers about the technologies and value addition of meat and meat products.
- A six days training for Poultry Entrepreneurs sponsored by Central Poultry Development Organization and Training Institute (CPDO &TI), Bengaluru was organized at the Department of Poultry Science, Madras Veterinary College, Chennai from 18-02-2019 to 23-02-2019. A total of 75 participants including twelve women benefited from the training programme.
- A five day training programme was conducted under NADP Scheme at Farmers Hostel, Madhavaram Milk Colony, Chennai -51 from 24 to 28 June 2019. A total of 18 farmers (ST - 12 + SC - 6) including one women farmer attended the programme.
- Department of Poultry Science, Madras Veterinary College Chennai-7 conducted capacity Building Programme of five days duration from 18/11/2019 to 22/11/2019 at PGRIAS, Kattupakkam for the benefit of farmers on "Poultry Production, Processing, Waste Management& Marketing" under NADP Scheme. A total of 53 farmers (SC - 13) including four women farmers from 6 districts attended the programme.
- Three pamphlets regarding parasitic diseases were prepared in English and Tamil languages.
- Awareness Programme on Communicable Diseases - Prevention and control of Dengue and Swine flu" was conducted.
- A total of 462 necropsies were conducted during this period. Farmers and pet owners were advised based on the PM diagnosis.
- Farm advisory services given to five farmers
- Prepared and distributed techno-feasibility reports to the dairy farmers.
- DNA sexing is offered as a service at Wild life science department. A total of 30 samples were tested and revenue of Rs.9800/- has been generated.
- 36865 kgs. of TANUVAS mineral mixture was produced and supplied to the needy farmers.

V. Human Resources Development

The international and national awards won by staff of this institution are provided below:

- Awards and honours: The staff, students and research fellows from this college won as many as 52 awards/ prizes / certificates of appreciation from various agencies and professional organizations
- Overseas visit: Eleven faculty members from this college visited different institutions abroad for academic / research purposes
- Training of staff: A total of 135 faculty members from this college attended 164 training programmes / seminars/ workshops/ conferences organized by various societies, scientific bodies and visited various institutions for academic / research purposes
- Following 28 different conferences/ seminars/ symposia/ training programmes / workshops have been organized during this period and a total of 1,092 end-users such as students entrepreneurs, practicing veterinarians, scientists and faculty from other institutions and farmers have been benefited.

SI. No.	Programmes	No. of beneficiaries
1	Five days Workshop on "*In Silico* Molecular Modelling and Drug Designing"	15
2	Five days Workshop on "Vet informatics"	11
3	Five days Workshop on "Genomic and Proteomic Analysis for improvement of Productivity in Farm Animals"	12
4	Five days Workshop on "Computer Aided Drug Designing"	12
5	3 months HRD training programme	30
6	National level training programme was organized on "Intracytoplasmic sperm injection of farm animal oocytes"	7
7	National level training programme on "In vitro fertilization of farm animals oocytes and embryo co-culture"	5
8	Sensitisation workshop on Agricultural Knowledge Management Tools	147
9	Conduct of Icebreaking event for the first year students (2019-20 batch)	120
10	Conduct of motivational guest lecture on Orienting and Investing in College Life for the first year students (2019-20 batch)	120
11	Pre-conference Workshop on "Introduction To Small Animal Ophthalmology"	10
12	MARS sponsored "Hands on Training in Small Animal Orthopaedics"	9
13	MARS sponsored "Hands on Training in Small Animal Soft Tissue Surgery"	10
14	Training course on "Hygienic processing of meat and value-added meat products", TANUVAS,	4
15	Refresher training to personnel working in frozen semen banks of NDDB on "Breeding Soundness Examination for Breeding Bulls and Laboratory Techniques for Evaluation of Frozen Semen for Quality Assurance"	5
16	Training programme on "Karyotyping, Screening of Inherited Disorders and Testing of Parentage in Bovines"	1
17	Technical workshop on 'Foldscope : An innovative portable Microscope'	35
18	Workshop by Dept. of Wildlife science on Foldscope demonstration	20
19	Role of Information Technology in the Improvement of Veterinary Education	60
20	ICAR sponsored summer school on "Recent Trends in the Production of Functional Dairy Foods and Quality Assurance"	17
21	International Seminar on Innovative Extension Management for uplifting livelihood of farmers – Status, Initiatives and Way forward	220
22	An Orientation programme cum workshop on "Key Informant Interviews"	30
23	National workshop on Updates in Application of Histopathology and Immunohistochemistry in Tumour Diagnosis	21
24	Training programme on "Research Methodology" to the 2018-19 batch PG students	68
25	Foldscope as a tool to screen parasitic infections in wild animal	40
26	Clinical Laboratory Diagnostic Techniques for the ADIU Veterinarians	15
27	"Recent advances in clinical procedures and diagnostic imaging techniques in veterinary practice"	23
28	"Imaging, Clinical Diagnostic Techniques and Therapeutic Interventions in Companion and Farm Animals"	25
Total number of beneficiaries		**1092**

6.4.2. Faculty Strength

Cadre-wise

Category*	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/ other regulatory bodies
1. Professor	26	62	36	17
2. Associate Professor	62	5	57	16
3. Assistant Professor	149	90	59	41

Department -wise

S. No	Department	Name of Faculty and Designation
1	**Animal Husbandry Economics**	**1.** Dr. G. Kathiravan,PhD.- Professor and Head, **2.** Dr. A. Serma Saravana Pandian, PhD. MBA.,-Asst. Professor **3.** Dr. J. ShilpaShree, MVSc.,- Asst. Professor **4.** Dr. A. Shanmuga Sundaram–Assistant professor (Working at Wildlife Science)
2	**Centralized Clinical laboratory**	**1.** Dr. S. Vairamuthu - Professor and Head **2.** Dr. S. Subapriya - Assistant Professor **3.** Dr. N.R. Senthil - Assistant Professor
3	**Animal Husbandry Statistics&Computer Application**	**1.** Dr. M. Thirunavukkarasu - Professor and Head **2.** Dr. C. Balan - Assistant Professor
4	**Veterinary Pathology**	**1.** Dr. Ganne Venkata Sudhakar Rao - Professor and Head, **2.** Dr. R. Sridhar - Professor, **3.** Dr. S. Hemalatha - Professor, **4.** Dr. N. Pazhanivel - Professor, **5.** Dr. K. Nagarajan - Assistant Professor, **6.** Dr. M. Thangapandiyan - Assistant Professor, **7.** Dr. R. Mahaprabhu - Assistant Professor, **8.** Dr.V.Kumar-Assistant Professor, **9.** Dr.R.Saahithya-Graduate Assistant.
5	**Veterinary ClinicalMedicine**	**1.** Dr.S.Kavitha-Professor and Head **2.** Dr.P.Selvaraj–Professor **3.** Dr.K.Jeyaraja–Professor **4.** Dr.M.Chandrasekar-Professor **5.** Dr.M.Balagangatharathilagar-Assistant Professor **6.** Dr.D.Sumathi-Assistant Professor **7.** Dr.M.RanjithKumar-Assistant Professor **8.** Dr.H. Vijayakumar-Assistant Professor **9.** Dr.P. Pothiappan-Assistant Professor
6	**Central Instrumentation Laboratory**	1.Dr.S.Ramesh-Professor and Head

7	**Veterinary Anatomy**	**1.** Dr.Geetha Ramesh–Professor and Head **2.** Dr.S.Ushakumary-Professor **3.** Dr.T.A.Kannan–Professor **4.** Dr.O.R.Sathyamoorthy–Professor **5.** Dr.R.Gnanadevi-Assistant professor
8	**Library Science**	1.Dr.L.Rajendran-Assistant Librarian
9	**Veterinary Animal Husbandry andExtension Education**	**1.** Dr.P.Kumaravel-Professor and Head **2.** Dr.S.Saraswathi-Associate Professor **3.** Dr.N.VimalRajkumar-Assistant Professor **4.** Dr.P.Athilakshmy-Assistant Professor
10	**Veterinary Biochemistry**	**1.** Dr.P.S.L.Sesh-Professor and Head **2.** Dr.T.SatheeshKumar-Assistant Professor **3.** Dr.K.Padmanath-Assistant Professor **4.** Dr.M.Bhuvana-Assistant Professor
11	**Poultry Science**	**1.** Dr.S.T.Selvan-Professor and Head **2.** Dr.K.Sangilimadan-Professor **3.** Dr.A.Ashok-Professor **4.** Dr.P.Veeramani-Associate Professor
12	**Veterinary Preventive Medicine**	**1.** Dr.B.Nagarajan-Professor and Head **2.** Dr.K.Shoba-Professor **3.** Dr.T.Devi-Assistant Professor **4.** Dr.H.Prabhavathy-Assistant Professor
13	**WildlifeScience**	**1.** Dr.C.Sreekumar-Professor and Head **2.** Dr.M.Palanivelrajan-Assistant Professor **3.** Dr.A.Prathipa-Assistant Professor
14	**LPT(Meat Science)**	**1.** Dr.R.NarendraBabu-Professor and Head **2.** Dr.A.Vanathi-Assistant Professor **3.** Dr.C.Vasanthi-Assistant Professor **4.** Dr.R.Ramani-Assistant Professor **5.** Dr.S.Ezhilvelan-Assistant Professor
15	**LPT(Dairy Science)**	**1.** Dr.R.PalaniDorai-Professor and Head, **2.** Dr.D.Baskaran-Professor **3.** Dr.B.SureshSubramonian-Professor **4.** Dr.V.Veerapandian-Professor **5.** Dr.T.R.Pugazhenthi-Professor
16	**AnimalGenetics and Breeding**	**1.** Dr.S.M.K.Karthickeyan–Professor and Head **2.** Dr.R.Thiagarajan - Professor **3.** Dr.K.ThilakPonJawahar-Professor **4.** Dr.A.Gopinathan–Assistant professor **5.** Dr.A.SakthivelSelvan–Assistant Professor
17	**AnimalNutrition**	**1.** Dr.R.Karunakaran–Professor and Head **2.** Dr.J.Ramesh-Assistant Professor **3.** Dr.RBalamurugan,Assistant Professor
18	**Livestock Productionand Management**	**1.** Dr.Thanga.Thamilvanan-Professor and Head **2.** Dr.N.Kumaravelu -Professor **3.** Dr.A.Yasotha-Assistant Professor **4.** Dr.S.Usha-Assistant Professor **5.** Dr.D.Diviyalakshmi-Assistant Professor

19	**Veterinary Microbiology**	**1.** Dr.A.Thangavelu,-Professor and Head **2.** Dr.A.Srithar-Professor **3.** Dr.B.Samuel Masilamoni Ronald-Professor **4.** Dr.M.Vidhya-Assistant Professor **5.** Dr.S.Rajalakshmi@Radabai-Assistant Professor **6.** Dr.A.Elamurugan-Assistant Professor **7.** Dr.G.Elaiyaraja-Assistant Professor
20	**AnimalBio-Technology**	**1.** Dr.M.Parthiban,Ph.D.-Professor and Head **2.** Dr.A.Mangalagowri,Ph.D.-(WorkingatStem Cell) Professor **3.** Dr.K.G.Tirumurugaan,Ph.D.-Professor **4.** Dr.S.Meignanalakshmi,Ph.D.-Professor **5.** Dr.K.Brindha,Ph.D.-Associate Professor **6.** Dr.P.Raja,Ph.D.-Assistant Professor
21	**VeterinaryPublic Health and Epidemiology**	**1.** Dr.S.Sureshkannan-Professor and Head **2.** Dr.M.Asokkumar-Assistant Professor **3.** Dr.K.Porteen-Assistant Professor
22	**Veterinary Parasitology**	**1.** Dr.Bhaskaran Ravi Latha-Professor and Head **2.** Dr.A.Sangaran-Professor **3.** Dr.N.Jeyathilakan-Professor **4.** Dr.Arunkumar-Professor **5.** Dr.S.T.BinoSundar-Assistant Professor **6.** Dr.B.Rubinibala-Assistant Professor **7.** Dr.K.TKavitha-Assistant Professor **8.** Dr.R. Edith-Assistant Professor
23	**Veterinary Physiology**	**1.** Dr.V.Leela-Professor and Head **2.** Dr.S.Eswari- Professor **3.** Dr.G.Suganya-Assistant Professor **4.** Dr.N.Muniyappan-Assistant Professor
24	**Livestock Business Management**	**1.** Dr.M.Prabu-Professor and Head **2.** Dr.B.Jayavarathan-Assistant Professor
25	**Stem Cell**	1.Dr.Sabiha Hayath Basha-Professor and Head
26	**Veterinary Pharmacology&Toxicology**	**1.** Dr.S.Ramesh–Professor and Head **2.** Dr.T.Ramasamy–Assistant professor **3.** Dr.M.R.Srinivasan- Assistant professor **4.** Dr.L.Kalaiselvi-Assistant Professor **5.** Dr.S.P.Preetha-Assistant Professor **6.** Dr.M.Jayanthi-Assistant Professor
27	**Veterinary Gynaecologyand Obstetrics**	**1.** Dr.K.KrishnaKumar-Professor and Head **2.** Dr.N.Arunmozhi-Assistant Professor **3.** Dr.S.Rangasamy-Assistant Professor **4.** Dr.R.SureshKumar-Assistant Professor (Working in Clinics Department) **5.** Dr.U.S.Kalyan–Assistant Professor
28	**Agronomy**	**1.** Dr.C.Vennila-Assistant Professor **2.** Dr.T.Ananthi-Assistant Professor
29	**Education Cell**	**1.** Dr.S.Gomathinayagam-Professor and Head **2.** Dr.K.SureshKumar-Assistant Professor **3.** Dr.B.Dhivya-Assistant Professor

30	**Bioinformatics Centre & ARIS Cell**	1.Dr.K.Vijayarani,Professor and Head
31	**Veterinary Surgery&Radiology**	**1.** Dr.L.Nagarajan-Professor and Head **2.** Dr.MalaShammi-Professor **3.** Dr.C. Ramani -Professor **4.** Dr.Md.Shafiuzama-Professor **5.** Dr.R.Sivashankar-Assistant Professor **6.** Dr.A.Velavan-Assistant Professor **7.** Dr.H.Pushkin Raj-Assistant Professor **8.** Dr.C.Niranjana-Assistant Professor

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	Agronomy	0	0	5
2	Livestock Business Management	1	1	0
3	LPT(Dairy Science)	5	13	0
4	Veterinary Animal Husbandry and Extension Education	1	3	0
5	Veterinary Parasitology	0	6	0
6	Veterinary Physiology	4	6	0
7	Animal Biotechnology	2	7	0
8	Veterinary Microbiology	1	3	0
9	Bioinformatics Centre & ARIS Cell	0	5	0
10	Animal Nutrition	3	4	0
11	Livestock Production Management	1	2	1
12	Veterinary Preventive Medicine	1	1	2
13	Animal Genetics and Breeding	1	4	0
14	Poultry Science	2	2	2
15	LPT (Meat Science)	1	6	0
16	Wildlife Science	1	1	0
17	Veterinary Biochemistry	0	3	0
18	Veterinary Anatomy	5	4	0
19	Centralised Instrumentation Lab	1	3	0
20	Veterinary Clinical Medicine	9	4	0
21	Veterinary Pathology	1	6	0
22	Library Science	1	5	0
23	Veterinary Public Health and Epidemiology	3	1	0
24	Animal Husbandry Economics	0	2	0
25	Veterinary Surgery&Radiology	2	4	0
26	Veterinary Gynaecology and Obstetrics	4	5	0
27	Veterinary Pharmacology& Toxicology	6	2	0
28	Education Cell	3	3	0
29	Stem Cell	2	1	1

6.4.4. Classrooms and Laboratories: Mention the number of class rooms and functional laboratoriesavailable for the degree programme and justify if it is sufficient to meet the course curricularequirement. Lists major equipments, laboratories, farm facilities, workshops and other instructionalunits being utilized for the award of the Degree Programme may be given. Mention theory andpractical batches for the Degree Programme.

- Thirteen lecture hall, with a capacity of 80 students / lecture hall, are available to conduct the undergraduate and postgraduate classes
- Two examination halls, with a capacity of 140 / hall, are available to conduct the examinations.
- As per MSVE 2016 regulations, seventeen departments are engaged in conducting undergraduate courses with fully functional laboratories to meet out the requirements prescribed in the regulations.
- Theory classes are conducted in two batches and practical classes are conducted in four batches for undergraduate courses.

6.4.5. Conduct of Practical and Hands-on-Training: It is important to have a sound grasp of the theory that underlies any professional degree. But there are some skills that can only be learned through hands-on -practice. It is important that much of the learning material in any given course should be provided in a way that allows students to get as involved as possible to increase their knowledge and abilities. Clearly mention how far students are getting desired practical and hands-on-training as per the curriculum and meeting above mentioned requirements.

- Apart from regular classroom teaching, enough hands-on-training is offered to the students during practical hours, to meet the protocol / syllabi mentioned in UG curriculum.
- Students are trained in various animal husbandry practices right from the bottom level during livestock farm practices in Livestock Farm Complex.
- Students are getting excellent hands-on-training with regard to treatment protocols, surgical procedures, various diagnostic facilities viz. Haematological examination, X-ray, ultrasound, diagnostic procedures, emergency critical care management from a well established Veterinary Clinical Complex of Madras Veterinary College.

ICAR-NAHEP - Institutional Development Plan of TANUVAS

- A total of 546 faculty members have been trained on various aspects such as, IPR, Copyright, Industrial design and Plagiarism, Content development and management, Facilitative Teaching Technologies, Autofusion 360 for 3D printing, Knowledge improvement opportunities with Fulbright Commission and Art of Power point and Excel design – Content designing to improve quality of education.
- ICAR-NAHEP sponsored online lectures and workshops were conducted by IDP of TANUVAS. These include 60 guest lectures (4300 undergraduate students and faculty members), four online clerkships (100 undergraduate students), five National online workshops conducted with NAARM (149 faculty members) and one career guidance program (761 undergraduate students).
- Four faculty have undergone International training which played a major role in identification of simulators and other essential components required for establishment of LAC at MVC, Chennai.
- Sixteen UG students of the final year B.V.Sc. & A.H. have been sent for International clinical training at Washington State University, USA.

6.4.6. Supervision of students in PG/PhD programmes: NA

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): Mention the feedback mechanism (duly supported by the documents) from different stakeholders of the degree programme. What action the University has taken in last five years to address the issues raised in the feedback?

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

Actual student admitted in last five years							Attrition (%)						
2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022
133	128	129	126	127	126	127	27.82	--	--	3.97	0.79	2.71	3.14

6.4.9. ICT Application in Curricula Delivery: The ICT is now integral part of the teaching programme. ICAR has also been promoting the use of ICT in teaching and practical. Mention whether the Degree Programme is meeting the expectations. If there is any shortfall, it shall be clearly mentioned.

- The college campus is fully connected with high speed internet connectivity. This enabled to provide uninterrupted lecture delivery facility, even during this COVID 19 pandemic situation.
- The student lecture halls inside the college campus are wi-fi enabled and are provided with uninterrupted internet connectivity to the student community to access e-learning and e-library resources.
- All the student lecture halls are provided with interactive display board and LCD projectors for effective delivery of lectures by the faculty members
- In addition, smart class rooms are also available with state of art education technology facilities viz. Touch screen smart board, Integrated Public Address System and fully air conditioned smart class rooms to provide the best ambience for learning process.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for UG Degree Programmes and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following course is requested.

Name of the Degree Programmes accreditation is sought for: B.V.Sc & AH

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

6.4 SELF STUDY REPORT
FOR
POSTGRADUATE PROGRAMMES
(M.V.Sc.)

M.V.Sc.
in
Animal Biotechnology

DEPARTMENT OF ANIMAL BIOTECHNOLOGY
MADRAS VATERINARY COLLEGE

6.4. Self Study Report for MVSc IN Animal Biotechnology

6.4.1. Brief History of the Degree Programme

The Department of Animal Biotechnology was started at the Madras Veterinary College in 1989. In the year 1999, the Indian Council of Agricultural Research (ICAR) recognized the department as a "Centre of Excellence in Veterinary Biotechnology and Immunology". This Department is the first Animal Biotechnology Department in this country that was awarded the ISO 2001:9000 for Quality Management Systems through the British Standards Institute, UK. Recently, it has been awarded consecutively for the second term in Niche Area Scheme of Excellence in avian biotechnology to conduct research on "Improved and expanded vaccines and Immunological understanding of avian viruses" till date.

The Department of Animal Biotechnology is housed in two blocks of three floors each with 'state-of-the-art' facilities to carry out research in various facets of Biotechnology such as Molecular Diagnostics, Cell culture and Hybridoma, Immunotechnology, Animal Genomics and Embryo biotechnology. The Central Embryo Biotechnology lab is located at the University campus in Madhavaram.

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree	Boys	Girls	Total
M.V.Sc in Animal Biotechnology	-	-	-

2. International recognitions / collaborations :

II. Research

- Evaluation of NKT Cell Based Glycolipid Adjuvants with Rabies Vaccines to Improve Immunogenicity and Long Term Protection
- Generated oligonucleotide sequences with binding ability to placental specific proteins (early pregnancy markers) namely PAG-1 & PAG-2 which have been confirmed by MALDI. The binding of the aptamer to the proteins also had been confirmed by EMSA and ELONA. The identified aptamer sequences have been used to confirm the presence of pregnancy specific placental markers and early confirmation of pregnancy in buffaloes
- The sub clinical mastitis (SCM) positive animals were made into 4 groups for three supplementary trials with trisodium citrate (TSC), levamisole and combination of trisodium citrate and levamisole. The role of supplementation on the inflammatory changes and cytokine expression pattern were assessed and analysed by real time PCR. The upregulation of Tumor necrosis factor-α showed a significant variation ($P<0.05$) on 4^{th}day in between groups. The cytokine expression pattern on 10th day fold changes showed a highly significant variation ($P<0.01$) among supplement groups.
- Supplementation of synbiotics has been proven to be more effective than the supplementation of prebiotics and probiotics alone, in terms of the growth performance and immunomodulation in broiler chicken. The synbiotic combination either of 0.75% of mannan oligosaccharide or of 0.5% xylo oligosaccharide along with probiotics can be recommended to the broiler farming community for better profitability. However, based on the net profit per kg live weight of broiler chicken, the use of 0.5% xylo oligosaccharide in the symbiotic formulation is more profitable.

- Whole genome sequencing of the wild type Classical Swine Fever virus (CSFV), PK-15 adapted CSFV at 45th and 75th passage helped in understanding the genetic nature of the virus before and after adaptation. Attenuation of the virus could be attributed to 22 transition and 12 transversion mutations found in adapted viruses

III. Clinical

- **Additional state of art facilities under clinical services:**Nil
- **Ambulatory Services:** Nil

IV. Extension: Nil

V. Human Resources Development

The international and national awards won by staff of this institution are provided below:

- Awards and honours:

Sl.No.	Name of the faculty	Name of the Award / honour	Type of Award / Awarding Body with name of the event	Details of the Award (Reason for the Award)
1.	Dr.K.G.Tirumurugaan, Professor	Travel grant award	Received the Travel grant from Food and Agriculture Organization of the United Nations (FAO) and the World Organization for Animal Health (OIE)	To attend the second meeting of the Peste des petits ruminants – Global Research and Expertise Network (PPR GREN) held at International Livestock Research Institute, Nairobi, Kenya, from 13th to 15th November 2019.
2.	M. Prinyanka, K.G. Tirumurugaan and S. Balasubramanian.	Best Oral presentation award	20th Indian Veterinary Congress and National symposium on Veterinary Research Priorities in Translational Animal Health, Production and Food Safety held between 21 – 22nd February 2020 at Madras Veterinary College, Chennai-7.	Generation of ssDNA oligonucleotides and their utility in detecting early pregnancy markers in Buffalo
3.	Vignesh. R, K.G. Tirumurugaan and A. Gopinathan	Best Poster award	20th Indian Veterinary Congress and National symposium on Veterinary Research Priorities in Translational Animal Health, Production and Food Safety held between 21 – 22nd February 2020 at Madras Veterinary College, Chennai-7.	Generation of single stranded oligonucleotides with affinity to bovine spermatozoa

- Overseas visit: -
- Training of staff:

Sl. No.	Name and designation of the Scientist	Title of the Programme	Duration		Place	Approx. cost involved
			From	To		
1.	Dr.K.Brindha, Associate Professor	Workshop on 'Robotics based learning system development' under National Agricultural Higher Education Project on 'Institutional Development Plan of TANUVAS'	29.07.2019 to 31.07.2019		Madras Veterinary College, Chennai - sponsored by ICAR	
2.	Dr.K.G.Tirumurugaan, Professor & Dr.K.Brindha, Associate Professor	International workshop entitled "Livestock gene editing"	07.08.2019		Dept of VGO, MVC, Chennai.	
3.	Dr.K.Tirumurugaan, Professor	National symposium on "Current Trends in Contraception: Opportunities and Challenges for Population Control in Dogs and Cats"	19.09.2019 to 20.09.2019		Madras Veterinary College, Chennai.	
4.	Dr.K.Brindha, Associate professor	ICAR-NAHEP-IDP programmes "Pedagogical tools in modern Veterinary Education"	19.09.2019 to 21.09.2019		Madras Veterinary College, Chennai.	
5.	Dr.K.Brindha, Associate professor	"Basic hands on training in proteomics"	27.11.2019 to 29.11.2019		C-Camp, Banglore	
6.	Dr.K.G.Tirumurugaan, Professor	Second meeting of the Peste des petits ruminants - Global Research and Expertise Network (PPR GREN)	13.11.2019 to 15.11.2019		International Livestock Research Institute, Nairobi, Kenya	
7.	Dr.M.Parthiban, Professor and Head	Training program on "Quality Management System and Internal Audit – ISO/ IEC 17025:2017 Accreditation"	17.12.2019 to 18.12.2019		Dean, Faculty of Basic Sciences, MVC Campus	
8.	Dr.M.Parthiban, Professor and Head	Sensitization workshop on "NAHEP Component-2 Activities and Implementation of Academic Management System (AMS) in TANUVAS"	19.12.2019 to 20.12.2019		Madras Veterinary College, Chennai.	

9.	Dr.P.Raja Assistant Professor	Basic flowcytometry analysis training program	09.12.2019 to 11.12.2019	Center for Cellular and Molecular Platform (C-CAMP), Bangalore.	
10.	Dr.S.Meignanalakshmi Professor	Training program on "Quality management system and Internal Audit – ISO/IEC 17025:2017"	07.01.2020 to 10.01.2020	Dean, Faculty of Basic Sciences, MVC Campus	
11.	Dr.K.Brindha, Associate Professor	Training on "Next Generation Sequencing"	07.01.2020 to 08.01.2020	TRPVB, CAHS, Madhavaram.	

• Conferences/ seminars/ symposia/ training programmes / workshops organized during this period

Sl. No	Title of the Programme	Place	Duration		Name of the sponsoring agency	No. of Parti-cipants	No. of Papers presented	Approx. cost involved Rs.
			From	To				
1.	Level I- Short term specialized training for 5 days duration	Dept. of Animal Biotechnology, MVC	24.06.2019	28.06.2019	-	3	-	24,000/-
2.	Level II- Long term overview training for 28 days duration		15.05.2019	12.06.2019	-	20	-	2,00,000/-
3.	Level III- Project work or in-plant training for 3 months duration		December	February	-	18	-	3,60,000/-
4.	National training programme on Intracytoplasmic sperm injection	CEBU, ABT	20.09.2019	03.10.2019	-	1	-	80,000/-
5.	National Level Training Programme on "*In vitro* fertilization of farm animal oocytes and co- culture"	CEBU, ABT	02.05.2019	22.05.2019	-	13	-	6,50,000/-
			11.10.2019	31.10.2019	-	5	-	2,75,000/-
6.	National level workshop on "Recent trends in animal cell culture techniques"	Dept. of Animal Biotechnology, MVC	22.01.2020	24.01.2020	-	30	-	1,09,000/-

6.4.2. Faculty Strength

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/ other Regulatory bodies
1. Professor	1	1	0	-
2. Associate Professor	6	4	2	-
3. Assistant Professor	5	1	4	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	Animal Biotechnology	2	7	0

6.4.4. Classrooms and Laboratories

Mention the number of class rooms and functional laboratories available for the degree programme and justify if it is sufficient to meet the course curricular requirement. Lists major equipments, laboratories, farm facilities, workshops and other instructional units being utilized for the award of the Degree Programme may be given. Mention theory and practical batches for the Degree Programme.

- The Department of Animal Biotechnology have 6 different units of laboratory namely Molecular Biology, Animal Cell Culture, Environmental biotechnology, Immunotechnology, Rabies Diagnostic Laboratory and Centralized Embryo biotechnology unit

6.4.5. Conduct of Practical and Hands-on-Training: It is important to have a sound grasp of the theory that underlies any professional degree. But there are some skills that can only be learned throughhands-on -practice. It is important that much of the learning material in any given course should beprovided in a way that allows students to get as involved as possible to increase their knowledge and abilities. Clearly mention how far students are getting desired practical and hands-on-trainingas per the curriculum and meeting above mentioned requirements.

- Students are getting excellent hands-on-training with regard to various protocols for molecular techniques

6.4.6. Supervision of students in PG/PhD programmes

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	ABT	12	9

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): Mention the feedback mechanism (duly supported by the documents) from different stakeholders of the degree programme. What action the University has taken in last five years to address the issues raised in the feedback?

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

M.V.Sc. Programmes

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
ABT (M.V.Sc)	5	-
2015-2016		
ABT (M.V.Sc)	3	-
2016-2017		
ABT (M.V.Sc)	4	-
2017-2018		
ABT (M.V.Sc)	2	50
2018-2019		
ABT (M.V.Sc)	-	-
2019-2020		
ABT (M.V.Sc)	-	-
2020-21		
ABT (M.V.Sc)	-	-
2021-22		
ABT (M.V.Sc)	-	-

6.4.9. ICT Application in Curricula Delivery

- The college campus is fully connected with high speed internet connectivity. This enabled to provide uninterrupted lecture delivery facility, even during this COVID 19 pandemic situation.
- In addition, smart class rooms are also available with state of art education technology facilities viz. Touch screen smart board, Integrated Public Address System and fully air conditioned smart class rooms to provide the best ambience for learning process.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

M.V.Sc. in Animal Biotechnology

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

M.V.Sc.
in
Animal Genetics and Breeding

DEPARTMENT OF ANIMAL GENETICS AND BREEDING
MADRAS VETERINARY COLLEGE

6.4. Self-Study Report for MVSc in Animal Genetics and Breeding

6.4.1. Brief History of the Degree Programme

The Department of Animal Genetics and Breeding established during 1949 is one of the oldest Departments of Madras Veterinary College. The M.V.Sc. degree programme was introduced during the year 1957 and Ph.D. programme in 1978. This was the first Department of Madras Veterinary College recognized by the University of Madras for pursuing Ph.D. programme. The Department has a well-equipped Cytogenetics Laboratory, Biometrical and Computer Laboratory, Molecular Genetics Laboratory and Frozen Semen Bank. Besides teaching undergraduate and postgraduate students, the faculty and PG students take up research work in the frontier areas of biometrical genetics, cytogenetics, molecular genetics, gamete research and cryopreservation of gametes. The objectives of the Department are:

- To impart education in Animal Genetics and Breeding at undergraduate and postgraduate levels
- To carry out characterization and conservation of native germplasm
- To formulate breeding policy
- To develop human resources in the areas of Animal Breeding, Cytogenetics, Molecular Genetics and Artificial Breeding
- To cater to the needs of stakeholders through training and advisory services

Salient Achievements

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree	Boys	Girls	Total
M.V.Sc in AGB	1	1	2

2. International recognitions / collaborations: Nil

II. Research

- Under GoI-NPBB-TNLDA scheme "National Facility for Molecular Screening of Cattle for Inherited Disorders and Parentage Verification", 262 blood samples of breeding bulls from various frozen semen stations and crossbred cows from field were tested for inherited disorders such as Bovine Citrullinemia (BC), Bovine Leucocyte Adhesion Deficiency (BLAD), Deficiency of Uridine Monophosphate Synthetase (DUMPS) and Factor XI deficiency (FXI). Of which, one sample was positive for BLAD and the other was positive for BC.
- A total of 45 trios (sire, dam and progeny) from field progeny testing scheme were subjected for parentage verification. Out of 45 progenies, 39 were confirmed their parentage and in the rest (13.33 per cent) of samples, the sire excluded.
- A total of 173 breeding bulls inducted for frozen semen production from various semen stations were screened for gross chromosomal abnormalities. All the bulls were found to possess normal chromosome complement of 60, XY with acrocentric autosomes, sub-metacentric X chromosome, metacentric Y chromosome in crossbred and acrocentric Y chromosome in indigenous cattle, except one Kangayam bull where chromosomal polymorphism was noticed in Y-chromosome (Sub-telocentric Y-chromosome).

Another, crossbred bull calf was found to have acrocentric Y chromosome, demonstrating the sire line of indigenous origin.

- Molecular characterization of Nattukuttai cattle using microsatellite markers revealed that the total number of alleles, number of observed alleles and effective number of alleles indicate high allelic richness among Nattukuttai cattle, demonstrating its potential for persistence and adaptability.
- The genetic distance and multivariate analyses reveal the distinct nature of Nattukuttai cattle from other three breeds viz. Kangayam, Malai madu and Malnad Gidda and thus it can be considered for recognition as a distinct breed.
- Genetic analyses of performance traits of Ostrich (*Struthio camelus australis*) under farm conditions revealed that age at first egg significantly ($p < 0.05$) influenced the egg production. Birds having early sexual maturity had better egg production.
- Egg weight was also influenced by the age of hen. Heavier eggs were laid by the hens having age between 42 and 138 months.
- Heritability estimates of chick weight and early production traits and repeatability estimates of egg and chick weight studied were found to be high, suggestive of improvement of these traits through selection.

III. Clinical - Not applicable

Additional state of art facilities under clinical services: Not applicable

Ambulatory Services: Not applicable

IV. Extension - Not applicable

V. Human Resources Development

International and National awards won by staff of this institution are provided below:

- Awards and honours: Nil
- Overseas visit: Nil
- Training of staff:

Sl. No.	Name and designation of the Scientist	Title of the Programme	Duration	Place
1	Dr. A. Gopinathan, Assistant Professor	Workshop on "Robotics Based Learning System Development" under NAHEP on IDP for TANUVAS	29/07/2019 to 31/07/2019	MVC Chennai
2	Dr. S.M.K.Karthickeyan Professor and Head, Dr. K. Thilak Pon Jawahar, Professor, Dr. A. Gopinathan, Assistant Professor, Dr. R. Nithiaselvi, Assistant Professor	Workshop on "Livestock Gene Editing"	07/08/2019	MVC Chennai
3	Dr. A. Gopinathan, Assistant Professor	Workshop on "Modern Education Technology" under NAHEP on IDP for TANUVAS	19/08/2019 to 21/08/2019	MVC Chennai

4	Dr. A. Gopinathan, Assistant Professor	Workshop on "Intellectual Property Rights"	05/09/2019	MVC Chennai
5	Dr. A. Gopinathan, Assistant Professor	Workshop on "Pedagogy Tools in Veterinary Education" under NAHEP on IDP for TANUVAS	19/09/2019 to 21/09/2019	MVC Chennai
6	Dr. S.M.K.Karthickeyan, Professor and Head, Dr. K. Thilak Pon Jawahar, Professor, Dr. A. Sakthivel Selvan, Assistant Professor	Sensitization workshop on NAHEP Component 2: Activities and Implementation of Academic Management System	19/12/2019 and 20/12/2019	MVC Chennai

- **Conferences/seminars/symposia/training programmes/workshops organized during this period**

Sl. No.	Programmes	No. of beneficiaries
1.	Refresher training to personnel working in frozen semen banks of NDDB on "Breeding Soundness Examination for Breeding Bulls and Laboratory Techniques for Evaluation of Frozen Semen for Quality Assurance" from 22/07/2019 to 02/08/2019 sponsored by National Dairy Development Board (NDDB)	5
2.	Training programme on "Karyotyping, Screening of Inherited Disorders and Testing of Parentage in Bovines" from 14/10/2019 to 19/10/2019 sponsored by Kerala Livestock Development Board (KLDB)	1

6.4.2. Faculty Strength:(For the period 2019-2020)

The faculty strength of the Degree Programme is given cadre-wise, both sanctioned and in-place

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the CAR/UGC/VCI/other regulatory bodies
Professor	1	1	--	-
Associate Professor	4	3	1	-
Assistant Professor	6	2	4	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	Animal Genetics and Breeding	1	4	0

6.4.4. Classrooms and Laboratories

UG laboratory - One

PG / Research laboratory - Four (Cytogenetics, Molecular genetics, Biometrical genetics and Artificial Breeding laboratories)

6.4.5. Conduct of Practical and Hands-on-Training: - Not applicable

6.4.6. Supervision of students in PG/PhD programmes: Number of students being supervised by Faculty in case of Masters/Ph. D Programme (as per ICAR/UGC guidelines). Mention the realistic figure /number of qualified faculty in relation to the intake of students, as per the guidelines in the matter.

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	AGB	10	9

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): Mention the feedback mechanism (duly supported by the documents) from different stakeholders of the degree programme. What action the University has taken in last five years to address the issues raised in the feedback?

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

M.V.Sc. Programmes

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
AGB (M.V.Sc)	3	-
2015-2016		
AGB (M.V.Sc)	5	-
2016-2017		
AGB (M.V.Sc)	2	-
2017-2018		
AGB (M.V.Sc)	3	33
2018-2019		
AGB (M.V.Sc)	1	-
2019-2020		
AGB (M.V.Sc)	3	-
2020-21		
AGB (M.V.Sc)	1	-
2021-22		
AGB (M.V.Sc)	-	-

6.4.9. ICT Application in Curricula Delivery

- The college campus is fully connected with high speed internet connectivity. This enabled to provide uninterrupted lecture delivery facility, even during this COVID 19 pandemic situation.
- The student lecture halls inside the college campus are wi-fi enabled and are provided with uninterrupted internet connectivity to the student community to access e-learning and e-library resources.
- All the student lecture halls are provided with interactive display board and LCD projectors for effective delivery of lectures by the faculty members
- In addition, smart class rooms are also available with state of art education technology facilities viz. Touch screen smart board, Integrated Public Address System and fully air conditioned smart class rooms to provide the best ambience for learning process.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

M.V.Sc. in Animal Genetics and Breeding

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

M.V.Sc.
in
Animal Husbandry Economics

DEPARTMENT OF ANIMAL HUSBANDRY ECONOMICS
MADRAS VATERINARY COLLEGE

6.4. Self Study Report for M.V.Sc. in Animal Husbandry Economics

6.4.1. Brief History of the Degree Programme

The unique Department of Animal Husbandry Economics was started on 12.12.1980 at

Madras Veterinary College, and continues to excel with the objectives of:

- Teaching Livestock Economics, Marketing and Business Management to Under Graduate and Post Graduate students
- Developing price policy models for major livestock products in Tamil Nadu
- Assessing cost of production of different livestock outputs; and conducting economic and financial analyses
- Undertaking policy studies for development of livestock sector
- Offering farm advisory services and delivering livestock enterprise projects to the aspiring farmers

EDUCATION

The department is offering courses on Livestock Economics, Marketing, Business Management, and Entrepreneurship for the students of B.V.Sc. & A.H. degree programme.

Post Graduate – M.V.Sc. and Ph.D.: The Department offers the following ICAR PG curriculum (Agricultural Economics) based courses for the students pursuing Masters (M.V.Sc.) and Doctoral (Ph.D.) programmes with Animal Husbandry Economics Specialization.

Salient Achievements

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree	Boys	Girls	Total
M.V.Sc in AHE	2	-	2

2. **International recognitions / collaborations :** NIL

II. Research

- This Department has completed 25 research projects within a short span of 13 years.
- Tamil Nadu State Planning Commission has identified this department as a consultant for framing the Livestock Policy of the State.
- This Department has trained more than 350 persons in different areas of livestock economics.
- This Department helped nearly 300 farmers for preparation of different livestock projects.

III. Clinical

- **Additional state of art facilities under clinical services:** NIL
- **Ambulatory Services:** NIL

IV. Extension: nil

V. Human Resources Development

- Awards and honours:

Sl No	Name of the institution / Staff / Student	Name of the award	Awarding body	Purpose of award	Nature of award
1	A.Serma Saravana Pandian	Best Paper Award	International conference on "Livestock Food Security and Food Safety – challenges opportunities and strategies"	Best Research paper presented at the conference	Certificate

- Overseas visit:
- Training of staff:

Sl No	Name and designation of the Scientist	Title of the Programme	Duration		Place	Approx. cost involved
			From	To		
1	Dr. J. Shilpa Shree Assistant Professor Dept. of Animal Husbandry Economics MVC, Chennai -7	Participated in ICAR Summer school programme on "Recent trends in the production of functional dairy foods and quality assurance	13.11.2019	03.12.2019	Madras Veterinary College, Chennai - 7	-
2	Dr. G.Kathiravan Professor and Head Dept. of Animal Husbandry Economics MVC, Chennai -7	Participated in the International conference on "Livestock Food Security and Food Safety – challenges opportunities and strategies"	28.01.2020	29.01.2020	Madras Veterinary College, Chennai - 7	Rs.3000
3	Dr. A. Serma Saravana Pandian Assistant Professor Dept. of Animal Husbandry Economics MVC, Chennai -7	Participated in the International conference on "Livestock Food Security and Food Safety – challenges opportunities and strategies"	28.01.2020	29.01.2020	Madras Veterinary College, Chennai - 7	Rs.3000
4	Dr. J. Shilpa Shree Assistant Professor Dept. of Animal Husbandry Economics MVC, Chennai -7	Participated in the International conference on "Livestock Food Security and Food Safety – challenges opportunities and strategies"	28.01.2020	29.01.2020	Madras Veterinary College, Chennai - 7	Rs.3000

5	Dr. G.Kathiravan Professor and Head Dept. of Animal Husbandry Economics MVC, Chennai -7	Workshop on "Advances in Market Intelligence"	13.12.2019	18.12.2019	Madras Veterinary College, Chennai - 7	-
6	Dr. A. Serma Saravana Pandian Assistant Professor Dept. of Animal Husbandry Economics MVC, Chennai -7	Workshop on "Advances in Market Intelligence"	13.12.2019	18.12.2019	Madras Veterinary College, Chennai - 7	-
7.	Dr. J. Shilpa Shree Assistant Professor Dept. of Animal Husbandry Economics MVC, Chennai -7	Workshop on "Advances in Market Intelligence"	13.12.2019	18.12.2019	Madras Veterinary College, Chennai - 7	-
8	Dr. G.Kathiravan Professor and Head Dept. of Animal Husbandry Economics MVC, Chennai -7	Sensitization workshop on "Implementation of Academics Management System (AMS)"	19.12.2019	20.12.2019	Madras Veterinary College, Chennai - 7	-

• Conferences/ seminars/ symposia/ training programmes / workshops organized during this period: Nil

6.4.2. Faculty Strength

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the CAR/UGC/VCI/other regulatory bodies
Professor	-	-	-	-
Associate Professor	2	1	1	-
Assistant Professor	5	3	2	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	Animal Husbandry Economics	0	2	0

6.4.4. Classrooms and Laboratories

Mention the number of class rooms and functional laboratories available for the degree programme and justify if it is sufficient to meet the course curricular requirement. Lists major equipments, laboratories, farm facilities, workshops and other instructional units being utilized for the award of the Degree Programme may be given. Mention theory and practical batches for the Degree Programme.

6.4.5. Conduct of Practical and Hands-on-Training: It is important to have a sound grasp of the theory that underlies any professional degree. But there are some skills that can only be learned through hands-on -practice. It is important that much of the learning material in any given course should be provided in a way that allows students to get as involved as possible to increase their knowledge and abilities. Clearly mention how far

students are getting desired practical and hands-on-training as per the curriculum and meeting above mentioned requirements.

- Nil

6.4.5. Conduct of Practical and Hands-on-Training: - Not applicable

6.4.6. Supervision of students in PG/PhD programmes: Number of students being supervised by Faculty in case of Masters/Ph. D Programme (as per ICAR/UGC guidelines). Mention the realistic figure /number of qualified faculty in relation to the intake of students, as per the guidelines in the matter.

- Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	AHE	3	3

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.):

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

M.V.Sc.. Programmes

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
AHE (M.V.Sc)	4	-
2015-2016		
AHE (M.V.Sc)	-	-
2016-2017		
AHE (M.V.Sc)	2	-
2017-2018		
AHE (M.V.Sc)	1	-
2018-2019		
AHE (M.V.Sc)	2	-
2019-2020		
AHE (M.V.Sc)	3	-
2020-21		
AHE (M.V.Sc)	-	-
2021-22		
AHE (M.V.Sc)	-	-

6.4.9. ICT Application in Curricula Delivery: The ICT is now integral part of the teaching programme. ICAR has also been promoting the use of ICT in teaching and practical. Mention whether the Degree Programme is meeting the expectations. If there is any shortfall, it shall be clearly mentioned.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

M.V.Sc. in Animal Husbandry Economics

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

M.V.Sc.
in
Animal Nutrition

DEPARTMENT OF ANIMAL NUTRITION
MADRAS VETERINARY COLLEGE

6.4. Self-Study Report for MVSc in Animal Nutrition

6.4.1. Brief History of the Degree Programme

Department of Animal Nutrition is one of the oldest department in Madras Veterinary College. It was organized as a separate unit in 1950 and recognized as regional center for postgraduate education as early as in 1958. In 1960 it was recognized for carrying out Ph.D., programs. So far around 125 post graduate theses and PhD theses have been generated in this department.

The department established good infrastructure facilities as early as in 1980 to conduct advance research in mineral nutrition and radio isotope-oriented research. Graduates of this department are spread all over India and have also established themselves in foreign countries such as USA, Canada, UK and New Zealand occupying coveted positions. The department was headed by stalwarts from the time of its inception.

Salient Achievements

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree	Boys	Girls	Total
M.V.Sc in Animal Nutrition	1	2	3

2. **International recognitions / collaborations :** Nil

II. Research

- The methane emission was significantly ($p<0.01$) decreased by 7.17 % in macroalgae supplemented (2 %) group than control. The average daily milk production was significantly ($p<0.05$) increased by 9.51 % in marine macroalgae supplemented group than control.
- The feeding of balanced ration was significantly reduced the methane emission in g / cow / day and g / kg DDMI / day by 24.45 and 24.66 %, respectively than unbalanced ration fed to the indigenous dairy cattle under field conditions. The average milk yield /day was significantly ($p<0.05$) increased by 31.74 % in balanced ration when compared with unbalanced ration.
- Sheanut cake at 8 per cent level in total mixed ration reduced the methane production in dairy cattle by 25.04 % and 10.26 % invitro and in vivo respectively. Feeding sheanut cake based ration to cross bred dairy cattle reduced the feed cost 3.88 per kg milk.
- A Significant ($p \leq 0.05$) increase in body weight gain (1991.7 g and 1969.30 g), feed conversion ratio (1.75 and 1.76) and a decrease in feed intake (3495.26 g and 3481.84 g) was observed in broiler chicken supplemented with Pomegranate peel (15 and 20 g/kg) and Lacto bacillus (10^9/kg) and also significantly reduced ($p \leq 0.05$) the serum cholesterol (115.33 and 109.33 mg/dl) and LDL (16.66 and 20.66 mg/dl) but did not significantly ($p > 0.05$) alter the serum triglycerides and HDL at day 35.
- In vitro gas production study was carried out to assess the effect of different (Inorganic, organic and Nano) forms of copper at graded levels (0,5, 10, 15 and 20 ppm) on rumen microbial biomass production and results revealed that supplementation of copper significantly improved (P<0.05) digestibility such as IVADMD, IVTDMD and microbial biomass production compared to unsupplemented group at all levels of addition and irrespective of forms.

- Overall production performances of piglets fed with Liquid Milk Replacer and Solid Milk Replacer indicated that cost per kg live weight gain for Liquid Milk Replacer fed piglets were less than the control. Indicating feeding of liquid milk replacer is more beneficial to pig farmer to produce more litter size with less production cost.

III. Clinical

- **Additional state of art facilities under clinical services:** Nil
- **Ambulatory Services:** Nil

IV. Extension

Nil

V. Human Resources Development

The international and national awards won by staff of this institution are provided below:

- Awards and honours: Nil
- Overseas visit: Nil
- Training of staff: Nil
- Conferences/ seminars/ symposia/ training programmes / workshops organized during this period : Nil

6.4.2. Faculty Strength

The faculty strength of the Degree Programme is given cadre-wise,both sanctioned and in-place (under the table mentioned below).

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/ VCI/other regulatory bodies
Professor	1	1	0	-
Associate Professor	2	0	2	-
Assistant Professor	7	2	5	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	Animal Nutrition	3	4	0

6.4.4. Classrooms and Laboratories:(Kindly provide the details in bulleted text)

- Number of class rooms-1
- Number of functional laboratories- 1
- Major Equipments

  1. Protein digestion and nitrogen distillation unit (Kjeltec)
  2. Ether extraction unit (Soxtec)

3. Fibre extraction system (Fibretec)
4. Hot air oven
5. Muffle furnace
6. Spectrophotometer
7. Feed mixer

6.4.5. Conduct of Practical and Hands-on-Training

- Nutrient analysis was carried out by the students by handling the equipments.
- Feed and Mineral mixture preparation was carried out by the students in the production unit.

6.4.6. Supervision of students in PG/PhD programmes

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	ANN	6	3

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.)

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

M.V.Sc. Programmes

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
ANN (M.V.Sc)	1	-
2015-2016		
ANN (M.V.Sc)	3	-
2016-2017		
ANN (M.V.Sc)	3	-
2017-2018		
ANN (M.V.Sc)	3	-
2018-2019		
ANN (M.V.Sc)	1	-
2019-2020		
ANN (M.V.Sc)	3	-
2020-21		
ANN (M.V.Sc)	4	-
2021-22		
ANN (M.V.Sc)	3	-

6.4.9. ICT Application in Curricula Delivery

- All the student lecture halls are provided with interactive display board and LCD projectors for effective delivery of lectures by the faculty members
- In addition, smart class rooms are also available with state of art education technology facilities viz. Touch screen smart board, Integrated Public Address System and fully air conditioned smart class rooms to provide the best ambience for learning process.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

M.V.Sc. in Animal Nutrition

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

M.V.Sc.
in
Bio-Statistics

6.4. Self Study Report for the M.V.Sc in Biostatistics

6.4.1. Brief History of the Degree Programme

- To teach statistics to undergraduate and postgraduate students of veterinary and animal husbandry, to offer a postgraduate programme (MVSc - Biostatistics)
- To undertake need based and innovative research, to train students, research scholars and faculty on sophisticated statistical analyses and IT usage
- To propagate appropriate technologies to the livestock and poultry farmers to ensure sustenance and upliftment of rural economy in Tamil Nadu.

Salient Achievements

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree	Boys	Girls	Total
M.V.Sc in Biostatistics	-	01	01

2. **International recognitions / collaborations : Nil**

II. Research

The significant research achievements

- The Damped Trend Exponential Smoothing was found to be the best fit model for forecasting cattle population in India. Indian cattle population forecast noticed a slightly decreasing trend from 2010-11 with a figure of 194.184 million to 187.661, 188.177, 188.191, and 188.192 million numbers in 2020-21, 2030-31, 2040-41 and 2050-51, respectively.
- The Brown Exponential Smoothing was found to be the best fit model for forecasting buffalo, sheep, pigs, poultry population, milk production and egg production in India. Indian cattle population forecast noticed a slightly decreasing trend from 2010-11 with a figure of 194.184 million to 187.661, 188.177, 188.191, and 188.192 million numbers in 2020-21, 2030-31, 2040-41 and 2050-51, respectively
- The buffalo population was predicted to be increasing from 2000-01 and the predicted populations were 116.663, 127.787, 138.910 and 148.921 million in 2020-21, 2030-31, 2040-41 and 2050-51 respectively. The forecasted sheep population for the years 2020-21, 2030-31, 2040-41, and 2050-51 were 65.773, 72.673, 79.57 and 85.781 million, respectively.
- The forecasted pig population showed a drastic decline in the future years, 6.116, 9.308, 8.732 and 5.414 million during 2020-21, 2030-31, 2040-41 and 2050-51, respectively. The projected poultry population would be 887.649, 1123.479, 1359.310, and 1571.557 million during 2020-21, 2030-31, 2040-41 and 2050-51 respectively.
- The forecast obtained showed that milk production would increase to 207.57, 311.86, 416.16 and 520.45 MT respectively during 2020-21, 2030-31, 2040-41 and 2050-51 from 121.80 MT during the year 2010-11.

- The forecasted values obtained from the best fitted Brown ES was 103341.99, 144374.02, 185406.04 and 222334.86 million numbers during the years 2020-21, 2030-31, 2040-41 and 2050-51, respectively.
- ARIMA (1,1,0) was found to be the best fit model for prediction of goat population and the forecasted numbers of goat populations were 139.811, 153.155, 166.400 and 178.320 million during 2020-21, 2030-31, 2040-41 and 2050-51 respectively.
- ARIMA (0,1,1) was the best fit model for forecasting meat and wool production.The forecasted values of meat production showed that meat production would increase from 1.08 MT in 2000-01 to 5.18, 7.63, 10.07 and 12.52 MT, respectively during 2020-21, 2030-31, 2040-41 and 2050-51. Wool production would increase appreciably over years with a production of 46.26, 52.06, 58.59 and 65.17 million kg, respectively during the years 2020-21, 2030-31, 2040-41 and 2050-51 from 43.00 million kg in 2010-11.

III. Clinical – NIL

IV. Extension – NIL

V. Human Resources Development

The international and national awards won by staff of this institution are provided below:

- Awards and honours: Nil
- Overseas visit: Nil
- Training of staff:

Sl. No.	Name and designation of the Scientist	Title of the Programme	Duration		Place	Approx. cost involved
			From	To		
1.	Dr.M.Thirunavukkarasu Professor and Head	Nodal Officers Workshop under NAHEP - Component 2A	18.09.19	19.09.19	New Delhi	Nil
2.	Dr.M.Thirunavukkarasu Professor and Head	Training Workshop on Education Management and Academic Leadership	20.09.19	25.09.19	NAARM, Hyderabad	Nil
3.	Dr.M.Thirunavukkarasu Professor and Head	Sensitization Workshop on NAHEP Component 2 - Activities and Implementation of Academic Management System (AMS) in TANUVAS	19.12.19	20.12.19	Madras Veterinary College	Nil
4.	Dr.P.Thirunavukkarasu Assistant Professor	Sensitization Workshop on NAHEP Component 2 - Activities and Implementation of Academic Management System (AMS) in TANUVAS	19.12.19	20.12.19	Madras Veterinary College	Nil
5.	Dr.C.Balan Assistant Professor	Workshop on Advances in Market Intelligence for the Faculty of TANUVAS under ICAR-NAHEP IDP Programme	13.12.19	20.12.19	Madras Veterinary College	Nil

6.	Dr.C.Balan Assistant Professor	International Conference on Livestock, Food Security and Food Safety - Challenges, Opportunities and Strategies	28.01.20	29.01.20	Madras Veterinary College	Rs.3000
7.	Dr.C.Balan Assistant Professor	National Symposium on Veterinary Research Priorities in Translational Animal Health, production and Food Safety	21.02.20	22.02.20	Madras Veterinary College	Rs.4000
8.	Dr.C.Balan Assistant Professor	Winter School on Advances of Econometric Modelling and Forecasting in Agriculture	04.03.20	24.03.20	IASRI, New Delhi	Nil

- Conferences/ seminars/ symposia/ training programmes / workshops Organized during this period

SI.No.	Programmes	No. of beneficiaries
1.	International Conference on Livestock, Food Security and Food Safety - Challenges, Opportunities and Strategies	140

6.4.2. Faculty Strength: (For the period 2019-2020)

The faculty strength of the Degree Programme is given cadre-wise, both sanctioned and in-place (under the table mentioned below).

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/other regulatory bodies
Professor	01	01	0	-
Associate Professor	-	-	-	-
Assistant Professor	3	2	1	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	AHS&CA	1	1	0

6.4.4. Classrooms and Laboratories

- One computer lab available in the department with 38 nos. of computer systems
- Available computers are sufficient for handling practical classes for the course on AGB Unit-1 Biostatistics and Computer Application 3+1 to the Second professional year students
- List of equipments /instructional units in the department as follows:

1. Computers – 38 nos.
2. Laser printers – 4 nos.
3. Server station – 1no.
4. LCD Projector – 2 nos.
5. Seminar hall - 2 nos.

- Theory has been divided as two batches of students (60 nos. in each batches) and for practical divided four batches of students (30 nos. in each batches)

6.4.5. Conduct of Practical and Hands-on-Training

- One computer lab available in the department with 38 nos. of computer system for hands on training on computer applications and data analysis to both UG and PG students
- All Practical classes for the courses offered in the subjects of Statistics and Computer Applications include hands on training in
- Exercises in descriptive and inferential statistics – One problem being explained
- Another problem given for the students to do by themselves
- Home works based on in-class exercises
- Hands on training in computer operations and applications

6.4.5. Conduct of Practical and Hands-on-Training: - Not applicable

6.4.6. Supervision of students in PG/PhD programmes:

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	Biostatistics	2	0

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): Mention the feedback mechanism (duly supported by the documents) from different stakeholders of the degree programme. What action the University has taken in last five years to address the issues raised in the feedback?

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

M.V.Sc. Programmes

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
Bio-statistics (M.V.Sc)	4	-
2015-2016		
Bio-statistics (M.V.Sc)	6	-
2016-2017		
Bio-statistics (M.V.Sc)	5	-
2017-2018		
Bio-statistics (M.V.Sc)	3	33
2018-2019		
Bio-statistics (M.V.Sc)	1	-
2019-2020		
Bio-statistics (M.V.Sc)	-	-
2020-21		
Bio-statistics (M.V.Sc)	-	-
2021-22		
Bio-statistics (M.V.Sc)	-	-

6.4.9. ICT Application in Curricula Delivery

- Providing computers with high speed internet connectivity to the students for learning basic computer applications and hands on training
- Established e-courses for all subjects of the UG degree programme and uploaded in the university website for the benefit of the students
- Guidance on research designs, data analysis and interpretation of results for research scholars.
- The ICT is now integral part of the teachingprogramme. ICAR has also been promoting the use of ICT in teaching and practical. Mentionwhether the Degree Programme is meeting the expectations. If there is any shortfall, it shall beclearly mentioned.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

M.V.Sc. in Bio-Statistics

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

M.V.Sc.
in
Dairy Microbiology

DEPARTMENT OF LPT (DAIRY SCIENCE),
MADRAS VETERINARY COLLEGE

6.4. Self Study Report for M.V.Sc in Dairy Microbiology

6.4.1. Brief History of the Degree Programme

Department of Dairy Science was started in the year 1947 as an independent unit considering the important role of dairy sector in terms of its contribution to GDP of our country. Thereafter, this department was involved in educating the students pursuing Veterinary Science on the subjects of Dairy Science and Animal management, leading to the award of G.M.V.C. degree. Dr. C.N. Stark from USA was appointed as the first Professor of Dairy Science. This department has a full-fledged Dairy Plant with latest equipments, where processing of milk and dairy products preparation are being carried out throughout the year.

Salient Achievements

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree	Boys	Girls	Total
M.V.Sc in Dairy Microbiology	-	1	1

2. **International recognitions / collaborations : ---**

II. Research

- Patent on "RYZ-Cream – Composition and Process for Preparation thereof" – Approved and Patent certificate obtained on 02.09.2019
- Development of probiotic ghee residue chocolates with orange peel. The probiotic ghee residue dark and white chocolate with orange peel was developed with nutritional and functional properties by utilizing the by-products such as ghee residue and orange peel.
- It was found that the developed chocolate was acceptable up to 60 days retaining desirable level of probiotics in the chocolate.
- In the present study neither coliforms nor yeast and moulds were detected during the storage period upto 60 days of storage period.

III. Clinical – Not Applicable

- Additional state of art facilities under clinical services
- Ambulatory Services

IV. Extension

- Conducted World Milk Day celebration in association with IDA TN Chapter & IDA - South Zone at CFDT, Koduveli on 18.06.2019
- Conducted one month Skill development training programme on on "Milk and Milk Products Quality Control Assistant" from 17.06.2019 -20.07.2019 and 26.02.2020 organized by DDE, TANUVAS. Totally 2 entrepreneurs attended and benefited in this training.
- Offered Skill development training for the final year BVSc students of Orissa Vet College from 30.10.2019 – 05.11.2019. Totally 19 students attended and benefited in this training.

V. Human Resources Development

The international and national awards won by staff of this institution are provided below:

- Awards and honours: Nil
- Overseas visit: Nil
- Training of staff:

Sl. No.	Name and designation of the Scientist	Title of the Programme	Duration		Place	Approx. cost involved
			From	To		
1	Dr.T.R.Pugazhenthi, Professor	One day Seminar on "The Dutch Dairy Days 2019" organized by IDA – TN Chapter	16th May 2019		The Hablis Hotel, Guindy, Chennai	-
2	Dr. D. Baskaran, Professor Dr.B.Suresh Subramonian, Professor Dr. T.R.Pugazhenthi, Professor	World Milk Day celebration in association with IDA TN Chapter & IDA - South Zone	18.06.2019		CFDT, Koduveli, Chennai	
3	Dr.B.Suresh Subramonian, Professor Dr. T.R.Pugazhenthi, Professor	Two days seminar on "Promotion of Dairy Enterpreneurship through Innovative Strategies" by Indian Dairy Association, Tamil Nadu chapter	October 18th & 19th , 2019		Karunya Institute of Technology and Sciences (KITS), Coimbatore	
4	Dr. B. Dhanalakshmi, Professor & Head, Dr. R. Palani Dorai, Professor Dr. T.R.Pugazhenthi, Professor	Orientation Programme for the Academic Counsellors of IGNOU - DDT Course organized by IGNOU, Regional Centre, Chennai	22.11.2019		MVC, Chennai	
5	Dr. T.R. Pugazhenthi, Professor	NAARM training on "Advances in Market Intelligence for the Faculty of TANUVAS"	13.12.2019 to 18.12.2019		MVC, Chennai	
6	Dr. T.R. Pugazhenthi, Professor	International Conference on "Livestock, Food Security and Food Safety – Challenges, Opportunities and Strategies" - ICFS 2020	28.01.2020 29.01.2020		MVC, Chennai	

- **Conferences/ seminars/ symposia/ training programmes / workshops organized during this period**

Sl.No.	Programmes	No. of beneficiaries
1	❖ ICAR Summer School on ❖ "Recent Trends in the Production of Functional Dairy Foods and Quality Assurance"	17

6.4.2. Faculty Strength

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/other regulatory bodies
Professor	1	1	-	-
Associate Professor	2	1*	1	-
Assistant Professor	6	2*	4	-

* Professors shown against Associate Professor and Assistant Professor

6.4.4. Classrooms and Laboratories

- Two laboratories separately for Undergraduate and Post Graduate students are there in this Department.
- The following major equipments are available at this Department for the award of the Degree Programme: Trinocular Research Microscope, Freeze Drier, Fermentor, Homogenizer, Texture Analyser, Laminar Air Flow, Spray drier, Moulder cum semi automatic packing machine, water activity meter, SOFTEL softy ice cream machine with accessories, Auto spiral plater with colony counter, Blast freeze and, Ice candy machine.

6.4.5. Conduct of Practical and Hands-on-Training*:* (It is important to have a sound grasp of the theory that underlies any professional degree. But there are some skills that can only be learned through hands-on -practice. It is important that much of the learning material in any given course should be provided in a way that allows students to get as involved as possible to increase their knowledge and abilities. Clearly mention how far students are getting desired practical and hands-on-training as per the curriculum and meeting above mentioned requirements.)

- Students are empowered with technology for the preparation of products like flavoured milk, curd, masala butter milk, lassi, gulabjamun etc.,
- Students are exposed to packaging technologies involved in packaging of various fluid and solid dairy products
- Students come to know about the commercial aspects of marketing strategies of the dairy products

6.4.6. Supervision of students in PG/PhD programmes

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	DSC	6	4

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): Mention the feedback mechanism (duly supported by the documents) from different stakeholders of the degree programme. What action the University has taken in last five years to address the issues raised in the feedback?

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

M.V.Sc. Programmes

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
DSC (M.V.Sc)	-	-
2015-2016		
DSC(M.V.Sc)	1	-
2016-2017		
DSC (M.V.Sc)	-	-
2017-2018		
DSC (M.V.Sc)	-	-
2018-2019		
DSC (M.V.Sc)	1	-
2019-2020		
DSC(M.V.Sc)	1	-
2020-21		
DSC(M.V.Sc)	-	-
2021-22		
DSC(M.V.Sc)	-	-

6.4.9. ICT Application in Curricula Delivery: The ICT is now integral part of the teaching programme. ICAR has also been promoting the use of ICT in teaching and practical. Mention whether the Degree Programme is meeting the expectations. If there is any shortfall, it shall be clearly mentioned.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

M.V.Sc. in Dairy Microbiology

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

M.V.Sc.
in
Livestock Production Management

DEPARTMENT OF LIVESTOCK PRODUCTION AND MANAGEMENT
MADRAS VETERINARY COLLEGE

6.4. Self Study Report for M.V.Sc in Livestock Production Management

6.4.1. Brief History of the Degree Programme

The Department of Livestock Production and Management, formerly known as Department of Hygiene, is one of the oldest departments of the College, having its origin in the year 1903.

Currently this department is engaged in teaching the subjects of Animal handling, Dairy Farming, Sheep and Goat, Swine, Rabbit, Pet, Draught and Laboratory animal Production and Management to under and post graduate students. So far 102 M.V.Sc's and 21 for Ph.D.'s had been produced by this department.

This department has also been engaged in research on different specialized livestock farming systems, management techniques, stress management, health management, nutritional management and economical eco friendly utilization and disposal of farm waste etc. The faculty of this department has published 287 research papers, 293 popular articles, Six books and Eighteen teaching manuals.

This department is also engaged in developing human resources in specialized field to the needy organizations apart from rendering farm advisory services to the needy farmers and livestock entrepreneurs. This department has also conducted a National seminar on Climatology and Animal Production in 1984 and a national symposium on Livestock Industry for Self/Gainful Employment in 1996.In addition to that a training programme on HRD in augmenting livestock production sponsored by Directorate of Extension, Ministry of Agriculture,Govt. of India in 2001 and a Short course on Newer technologies in augmenting livestock production sponsored by ICAR in 2002 and Seminar cum Exhibition on Emu Industry-Prospects in India on 06.10.2008.

Gramin Krishi Mausum Sewa Scheme (Formerly –IAAS)GOI-Ministry of Earth Sciences, Government of India, New-Delhi sponsored

Salient Achievements

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree	Boys	Girls	Total
M.V.Sc in LPM	2	1	3

2. **International recognitions / collaborations : NA**

II. Research

- A research study was conducted for the diagnosis for the sub clinical mastitis which causes major economical loss to the farming community. The results revealed that TANUVAS TEAT PROTECT spray is superior to Potassium permanganate in curing SCM of crossbred cows
- The research on the different type of flooring to the weaner piglets revealed that polyurathene slatted floor provided the maximum comfort when compared to other type of flooring and significantly improvised the body weight.

III. Clinical

- **Additional state of art facilities under clinical services: NA**
- **Ambulatory Services: NA**

IV. Extension

Details of Farmers Awareness Programme conducted at **Madhukarai Village, Changelpattu District**
Date : 10.02.2020

Gramin Krishi Mausam Sewa (Integrated Agromet Advisory Services Scheme) scheme functioning in the department of Livestock Production Management, Madras Veterinary College, Chennai – 7 organized on Awareness program on weather forecast and livestock management at Madhukarai village, Chengalpattu District on 10.02.2020 respectively.

In this campaign **107 farmers** participated and benefited. As a part of the campaign free veterinary health camp was organized. Deworming, Infertility treatment, Artificial Insemination for cattle, buffalo, sheep and goats were done. Over all 125 **cattle and buffaloes, 78 sheep and goats and 5 puppies were benefited.**

To increase milk production among the dairy animals **TANUVAS mineral mixture was distributed to 107 farmers free of cost**. The Weather Based Management of Agriculture, Livestock and Poultry awareness campaign was inaugurated by Dr. Thanga.Thamil Vanan, Nodal Officer, GKMS Scheme and Dr.D.Divyalakshmi, Technical Officer, GKMS Scheme. The function was benched by Dr.K.K.Singh, Scientist G and Head, IMD Agromet Services, New Delhi. The Joint Director of Animal Husbandry, Kancheepuram district and Scientist from Madras Veterinary College participated and delivered lectures on weather based management of livestock and agriculture. **The programme was sponsored by Ministry of Earth Sciences, Government of India**.

V. Human Resources Development

The international and national awards won by staff of this institution are provided below:

- Awards and honours:

Sl.No.	Name of the faculty	Name of the Award / honour	Type of Award / Awarding Body with name of the event	Details of the Award (Reason for the Award)
1	Dr. N. Kumaravelu	Shantha memorial prize	TANUVAS	Bargur Madu book
2	Dr. N. Kumaravelu	ISAPM Appreciation award	ISAPM	Outstanding performance in the field of livestock production

- Overseas visit: NA
- Training of staff:

Sl. No.	Name and designation of the Scientist	Title of the Programme	Duration		Place	Approx. cost involved
			From	To		
1	Dr.N.Kumaravelu	ISAPM conference	6th February, 2020		Jaipur	-
2	Dr.A.Yasotha	ISAPM conference	6th February,2020		Jaipur	-

3	Dr.A.Yasotha	Interational LASA conference	22-23.11.2019	Pune	-
4	Dr.S.Usha	ISAPM conference	6th February,2020	Jaipur	-
5	D.Divyalakshmi	International Conference on "Livestock, Food Security and Food Safety	January 28-29, 2020	MVC	-

• Conferences/ seminars/ symposia/ training programmes / workshops organized during this period

Sl. No.	Title of the Programme	Place	Duration		Name of the sponsoring agency	No. of Partici-pants	No. of Papers presented	Approx. cost involved
			From	To				
1	Farmers awareness programme	Madhuranthagam	10.02.2020		GKMS	106 farmers	-	35,000
2.	Farmers meet cum symposia for goat rearers	VCRI, Tirunelveli	2-3 January,2020		Aavin, NABARD	More than 500 farmers		

6.4.2. Faculty Strength

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/other regulatory bodies
Professor	1	2	-	-
Associate Professor	1	-	1	-
Assistant Professor	5	3	2	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	LPM	1	2	1

6.4.4. Classrooms and Laboratories

- Class room and a laboratory (environmental lab) is present with audio visual aids is available for the students

6.4.5. Conduct of Practical and Hands-on-Training: It is important to have a sound grasp of the theory that underlies any professional degree. But there are some skills that can only be learned through hands-on -practice. It is important that much of the learning material in any given course should be provided in a way that allows students to get as involved as possible to increase their knowledge and abilities. Clearly mention how far students are getting desired practical and hands-on-training as per the curriculum and meeting above mentioned requirements.

- Apart from regular classroom teaching, enough hands-on-training is offered to the students during practical hours, to meet the protocol / syllabi mentioned in UG and PG curriculum.
- Students are trained in various animal husbandry practices right from the bottom level during livestock farm practices in Livestock Farm Complex.

6.4.6. Supervision of students in PG/PhD programmes

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	LPM	8	4

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): Mention the feedback mechanism (duly supported by the documents) from different stakeholders of the degree programme. What action the University has taken in last five years to address the issues raised in the feedback?

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

M.V.Sc. Programmes

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
LPM (M.V.Sc)	2	-
2015-2016		
LPM (M.V.Sc)	2	-
2016-2017		
LPM (M.V.Sc)	5	-
2017-2018		
LPM (M.V.Sc)	1	-
2018-2019		
LPM (M.V.Sc)	3	-
2019-2020		
LPM (M.V.Sc)	1	-
2020-21		
LPM (M.V.Sc)	3	-
2021-22		
LPM (M.V.Sc)	1	-

6.4.9. ICT Application in Curricula Delivery: The ICT is now integral part of the teaching programme. ICAR has also been promoting the use of ICT in teaching and practical. Mention whether the Degree Programme is meeting the expectations. If there is any shortfall, it shall be clearly mentioned. Nil

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

M.V.Sc. in Livestock Production Management

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

M.V.Sc.
in
Livestock Products Technology

DEPARTMENT OF LIVESTOCK PRODUCTS TECHNOLOGY
MADRAS VETERINARY COLLEGE

6.4. Self-Study Report for MVSc in Livestock Products Technology

6.4.1. Brief History of the Degree Programme

The Department of Meat Science and Technology was created in the year 1958-59. The department was recognised as post-graduate department in the year 1962, to promote the principles of hygienic meat production as the first of its kind in India. A modern meats laboratory was established in the year 1972.

The Department was created to educate the students on various aspects of meat hygiene, fresh meat technology, processed meat technology, developments of various value added novel products, animal by-products utilization and veterinary public health. To promote the principles of hygienic meat production, a Modern Meats Laboratory (with facilities for slaughter of food animals, processing of meat and meat products with storage facilities), Quality Control Laboratory, Meat Species Identification Laboratory, Meat Microbiology Laboratory and Meat Products Processing Laboratory were established.

Department of Dairy Science was started in the year 1947 as an independent unit considering the important role of dairy sector in terms of its contribution to GDP of our country. Thereafter, this department was involved in educating the students pursuing Veterinary Science on the subjects of Dairy Science and Animal management, leading to the award of G.M.V.C. degree. Dr. C.N. Stark from USA was appointed as the first Professor of Dairy Science. This department has a full-fledged Dairy Plant with latest equipments, where processing of milk and dairy products preparation are being carried out throughout the year.

Salient Achievements

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree	Boys	Girls	Total
M.V.Sc in LPT	2	3	3

2. **International recognitions / collaborations :**

II. Research

- A protocol for preparation of feather meal by microbial keratinase was developed
- A protocol to prepare keratin biopolymer was developed
- Bioactive peptide from chicken intestines possessing anti-diabetic and anti-oxidant activity was developed
- An electrical impedance meter was developed and the impedance measured in meat was found to correlate well with the microbial counts of meat
- A method to assess proximate analysis of beef and chicken by Fourier Transform Near Infrared Spectroscopy (FTNIR) was evolved.
- A method to assess heavy metals in ready-to-eat chicken meat products using Inductively Coupled Plasma Optical Emission Spectrophotometers (ICP-OES) was developed
- Patent on "RYZ-Cream – Composition and Process for Preparation thereof" – Approved and Patent certificate obtained on 02.09.2019

- Development of probiotic ghee residue chocolates with orange peel. The probiotic ghee residue dark and white chocolate with orange peel was developed with nutritional and functional properties by utilizing the by-products such as ghee residue and orange peel.
- It was found that the developed chocolate was acceptable up to 60 days retaining desirable level of probiotics in the chocolate.
- In the present study neither coliforms nor yeast and moulds were detected during the storage period upto 60 days of storage period

III. Clinical

- **Additional state of art facilities under clinical services:** Nil
- **Ambulatory Services:** Nil

IV. Extension

- Pig Restrainer fabricated under the AICRP on PHET scheme has been commercialized. One unit has been sold to the Veterinary College and Research Institute, Tirunelveli.
- Conducted World Milk Day celebration in association with IDA TN Chapter & IDA - South Zone at CFDT, Koduveli on 18.06.2019
- Conducted one month Skill development training programme on on "Milk and Milk Products Quality Control Assistant" from 17.06.2019 -20.07.2019 and 26.02.2020 organized by DDE, TANUVAS. Totally 2 entrepreneurs attended and benefitted in this training.
- Offered Skill development training for the final year BVSc students of Orissa Vet College from 30.10.2019 – 05.11.2019. Totally 19 students attended and benefitted in this training.

V. Human Resources Development

The international and national awards won by staff of this institution are provided below:

- Awards and honours:
- New Product development - National Symposium on "Organic and Genetically Modified Food" on 14.02.2020 at the Department of Food Process Engineering, School of BioEngineering, SRM Institute of Science and Technology, Kattankulathur- 603203 for Development of Value added Goat Meat Spread enriched with Calcium" to Dr.M.Raziuddin and Dr.R.Narendra Babu.
- Best Poster Presentation - National Symposium on "Organic and Genetically Modified Food" on 14.02.2020 at the Department of Food Process Engineering, School of BioEngineering, SRM Institute of Science and Technology, Kattankulathur- 603203 for the poster entitled "Development of Value added Goat Meat Spread enriched with Calcium" to Dr.M.Raziuddin and Dr.R.Narendra Babu"
    - Overseas visit:
    - Training of staff:
    - Conferences/ seminars/ symposia/ training programmes / workshops organized during this period

Sl.No.	Programmes	No. of beneficiaries
1.	Livestock Assistant Training Programme for Lab Assistant	1
2.	Hygienic Meat Production (Hands on training on handling of Electrical Stunner and hygienic slaughter, dressing and fabrication of food animals)	4

Sl. No.	Name and designation of the Scientist	Title of the Programme	Duration		Place	Approx. cost involved
			From	To		
1	Dr.T.R.Pugazhenthi, Professor	One day Seminar on "The Dutch Dairy Days 2019" organized by IDA – TN Chapter	16th May 2019		The Hablis Hotel, Guindy, Chennai	-
2	Dr. D. Baskaran, Professor Dr.B.Suresh Subramonian, Professor Dr. T.R.Pugazhenthi, Professor	World Milk Day celebration in association with IDA TN Chapter & IDA - South Zone	18.06.2019		CFDT, Koduveli, Chennai	
3	Dr.B.Suresh Subramonian, Professor Dr. T.R.Pugazhenthi, Professor	Two days seminar on "Promotion of Dairy Enterpreneurship through Innovative Strategies" by Indian Dairy Association, Tamil Nadu chapter	October 18th & 19th , 2019		Karunya Institute of Technology and Sciences (KITS), Coimbatore	
4	Dr. B. Dhanalakshmi, Professor & Head, Dr. R. Palani Dorai, Professor Dr. T.R.Pugazhenthi, Professor	Orientation Programme for the Academic Counsellors of IGNOU - DDT Course organized by IGNOU, Regional Centre, Chennai	22.11.2019		MVC, Chennai	
5	Dr. T.R. Pugazhenthi, Professor	NAARM training on "Advances in Market Intelligence for the Faculty of TANUVAS"	13.12.2019 to 18.12.2019		MVC, Chennai	
6	Dr. T.R. Pugazhenthi, Professor	International Conference on "Livestock, Food Security and Food Safety – Challenges, Opportunities and Strategies" - ICFS 2020	28.01.2020 29.01.2020		MVC, Chennai	

6.4.2. Faculty Strength

Meat Science

Department MAIN			
Category	**Sanctioned faculty**	**Faculty in place**	**Vacant position**
Professor	2	1	1
Associate Professor	2	-	2
Assistant Professor	2	-	2
AICRP on PHET Scheme			
Senior Scientist (LPT)/ Associate Professor	1	1	-
Scientist (AS & PE),(Food Microbiology),(Technician (T6))/Assistant Professor	3	3	-

Dairy Science

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/other regulatory bodies
Professor	1	1	-	-
Associate Professor	2	2	1	-
Assistant Professor	6	2	4	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	LPT	6	19	0

6.4.4. Classrooms and Laboratories

Mention the number of class rooms and functional laboratories available for the degree programme and justify if it is sufficient to meet the course curricula requirement. Lists major equipments, laboratories, farm facilities, workshops and other instructional units being utilized for the award of the Degree Programme may be given. Mention theory and practical batches for the Degree Programme.

Number of Classrooms: 2

Number of Laboratories : 5

Slaughter hall

- Overhead Rails
- Hoist
- Pig Restrainer
- Captive bolt stunners

- Electrical Stunner
- Brisket cutting saw
- Mobile Scalding Tank
- Modular chiller and modular freezer
- Cabinet / Commercial Deep freezers
- Semi-automated poultry processing line
- Mobile poultry processing plant
- Vacuum packaging machine

Meat Products Laboratory

- Meat mincer
- Bowl Chopper
- Sausage stuffer
- Patty making machine
- Ice flaking Machine
- Brine Injector
- Vacuum Tumbler
- Smoking Cabinet
- Retort processing unit
- Meat slicer
- Blade tenderiser
- Cooking vat and other gadgets for cooking including LPG gas stove, micro wave oven, electric grill, tandoor and barbecue cooking.
- Twin screw extruder

Meat Quality Control Laboratory

- pH meter
- Hunter lab Spectro-colorimeter
- Texture Analyser
- UV-vis spectrphotomer
- Warner Bratzler Shear Force Machine
- Virtis Homogeniser for assessment of myofibrillar fragmentation index
- Digital Polar planimeter
- Electrical impedance meter
- Salinometer
- Microscope with facilities for micrometry.

Meat Microbiology Laboratory

- Class II Bio-safety Cabinet
- Stomacher
- Colony counter
- Autoclaves
- Hot air oven
- Incubator and BOD incubator

Meat Speciation Laboratory

- Gel Electrophoresis
- PCR
- Refrigerated Centrifuge
- Shaker
- Spinwin

Food Testing Laboratory for Meat and Meat products

- LC MS MS
- GC MS MS
- ICP OES
- Vitek 2 Compact
- FTNIR spectrophotometer
- Kjeltec 2100 distillation unit
- Soxtec 8000 extraction unit

The following major equipment are available at this Department for the award of the Degree Programme: Trinocular Research Microscope, Freeze Drier, Fermentor, Homogenizer, Texture Analyser, Laminar Air Flow, Spray drier, Moulder cum semi automatic packing machine, water activity meter, SOFTEL softy ice cream machine with accessories, Auto spiral plater with colony counter, Blast freeze and, Ice candy machine

6.4.5. Conduct of Practical and Hands-on-Training: It is important to have a sound grasp of the theory that underlies any professional degree. But there are some skills that can only be learned through hands-on -practice. It is important that much of the learning material in any given course should be provided in a way that allows students to get as involved as possible to increase their knowledge and abilities. Clearly mention how far students are getting desired practical and hands-on-training as per the curriculum and meeting above mentioned requirements.

- Student are provided hands on training in slaughter and dressing of food animals, ante- mortem inspection, post – mortem examination of food animals and their carcasses; assessment of meat quality including physico-chemical, microbial and sensory qualities, preservation and processing of meat and meat products including slaughter house by-products.
- Students are empowered with technology for the preparation of products like flavoured milk, curd, masala butter milk, lassi, gulabjamun etc.,

- Students are exposed to packaging technologies involved in packaging of various fluid and solid dairy products
- Students come to know about the commercial aspects of marketing strategies of the dairy products

6.4.6. Supervision of students in PG/PhD programmes

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	LPT	12	8

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.)

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

M.V.Sc. Programmes

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
LPT (M.V.Sc)	11	-
2015-2016		
LPT (M.V.Sc)	15	-
2016-2017		
LPT (M.V.Sc)	12	-
2017-2018		
LPT (M.V.Sc)	11	13
2018-2019		
LPT (M.V.Sc)	3	-
2019-2020		
LPT (M.V.Sc)	6	-
2020-21		
LPT (M.V.Sc)	-	-
2021-22		
LPT (M.V.Sc)	1	**1**

6.4.9. ICT Application in Curricula Delivery: The ICT is now integral part of the teaching programme. ICAR has also been promoting the use of ICT in teaching and practical. Mention whether the Degree Programme is meeting the expectations. If there is any shortfall, it shall be clearly mentioned.

- ICT tools used in classes include power point presentations for both theory and practical Video lessons developed in house from the department and as well as from the internet source, in Smart boards and Television,

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

M.V.Sc. in Livestock Products Technology

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

M.V.Sc.
in
Poultry Science

DEPARTMENT OF POULTRY SCIENCE
MADRAS VETERINARY COLLEGE

6.4. Self-Study Report for MVSc in Poultry Science

6.4.1. Brief History of the Degree Programme

To meet the manpower requirement of the poultry industry, the Department of Poultry Science was started in the Madras Veterinary College in the year 1970 with the following objectives.

1.To impart teaching for Under Graduate, Post Graduate and Doctoral Programmes.

2.To conduct research programmes for M.V.Sc., and Ph.D., Scholars Farm advisory services.

Salient Achievements

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree	Boys	Girls	Total
M.V.Sc in Poultry science	2	1	3

2. **International recognitions / collaborations :** Nil

I. Research

The significant research achievements from this institution during this period are furnished below:

- Thermal conditioned Aseel, NN and NNB3 had a significantly higher body weight, weight gain with better feed efficiency than control.
- Aseel had high relative mRNA (fold change) expression with respect to IF-β resulted in better immune genes expression.
- Thermal conditioning is the best managemental approaches which lead to improve the thermo tolerance in different chicken strains.
- Nano Se supplementation had significant inference on body weight, weight gain by reduced feed consumption with better FCR during fifth week of age.
- The per cent livability and immune response against Newcastle Disease virus were not significantly influenced by nano Se supplementation and other anti-stressors.
- Increased levels of Hb, TEC and PCV were recorded in birds supplemented with nano Se than other anti-stressors and control group.
- Nano Se and other anti-stressors will be effectively utilized to improve the productivity and to enhance the thermal resistance of broilers during summer stress.
- The eggs of Lories had significantly higher egg weight compared to Lorikeets.
- The Loriinae predominantly laid two egg clutches and rarely single egg clutches.
- The egg weight, shape index, per cent fertility and per cent total hatchability significantly differed among different species of Lorikeets but only egg weight among different species of Lories.
- The higher egg weight category in Lorikeets had significantly better fertility, fertile hatchability and total hatchability.

- The egg size, shape index, fertility and egg laying pattern can be exploited by genetic, nutrition and management practices to get more number of chicks per dam.
- In vov injection of DCP + Vitamin D3 significantly increased per cent hatchability and day-old broiler chick weight.
- The marketing body weight and weight gain at fifth week was significantly increased by in ovo intervention when compared to non-injected controls.
- *In ovo* injection of 25 ppm nano DCP + Vitamin D3 improved production performance, reduced leg weakness and increased net profit.

III. Clinical: N.A.

- **Additional state of art facilities under clinical services: NA**
- **Ambulatory Services: NA**

IV. Extension

Capacity building programmes within state for progressive poultry farmers/ unemployed youth under **NADP scheme on Establishment of rural poultry inputs and skill Development centre,** Department of Poultry Science, MVC, Chennai.

First five-day training programme was conducted at Farmers Hostel, Madhavaram Milk Colony, Chennai 51 from 24th to 28th June 2019. A total of 18 farmers (ST - 12 + SC - 6) including one women farmer from 6 districts attended the programme.

- Second five-day programme was conducted at PGRIAS, Kattupakkam from 18th to 22nd, November, 2019 for 53 candidates from 19 districts of the state. The participants include 4 women and 13 scheduled caste entrepreneurs.
- Third five-day training programme was conducted at PGRIAS, Kattupakkam from 27th to 31th January, 2020. A total of 54 entrepreneurs (49 men + 5 women) including 8 schedule caste candidates form 20 districts participated.

V. Human Resources Development

- Awards and honours: Nil
- Overseas visit: Nil
- Training of staff: Nil
- Conferences/ seminars/ symposia/ training programmes / workshops organized during this period: Nil

6.4.2. Faculty Strength

The faculty strength of the Degree Programme is given cadre-wise, both sanctioned and in-place (under the table mentioned below).

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/ other regulatory bodies
Professor	1	1	-	-
Associate Professor	2	2	-	-
Assistant Professor	6	1	5	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	Poultry Science	2	2	2

6.4.4. Classrooms and Laboratories

- One Classroom for PG and laboratories for UG and PG are available in the department.

6.4.5. Conduct of Practical and Hands-on-Training

It is important to have a sound grasp of the theory that underlies any professional degree. But there are some skills that can only be learned through hands-on -practice. It is important that much of the learning material in any given course should be provided in a way that allows students to get as involved as possible to increase their knowledge and abilities. Clearly mention how far students are getting desired practical and hands-on-training as per the curriculum and meeting above mentioned requirements.

- Apart from regular classroom teaching, enough hands-on-training is offered to the students during practical hours, to meet the protocol / syllabi mentioned in PG curriculum.
- Students are trained in various animal husbandry practices right from the bottom level during livestock farm practices in Livestock Farm Complex.

6.4.6. Supervision of students in PG/PhD programmes

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	PSC	12	9

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): Mention the feedback mechanism (duly supported by the documents) from different stakeholders of the degree programme. What action the University has taken in last five years to address the issues raised in the feedback?

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

M.V.Sc. Programmes

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
PSC (M.V.Sc)	6	-
2015-2016		
PSC (M.V.Sc)	7	-
2016-2017		
PSC (M.V.Sc)	5	-
2017-2018		
PSC (M.V.Sc)	6	16
2018-2019		
PSC (M.V.Sc)	3	-
2019-2020		
PSC (M.V.Sc)	3	-
2020-21		
PSC (M.V.Sc)	1	-
2021-22		
PSC (M.V.Sc)	1	-

6.4.9. ICT Application in Curricula Delivery

The ICT is now integral part of the teaching programme. ICAR has also been promoting the use of ICT in teaching and practical. Mention whether the Degree Programme is meeting the expectations. If there is any shortfall, it shall be clearly mentioned.

- The college campus is fully connected with high speed internet connectivity. This enabled to provide uninterrupted lecture delivery facility, even during this COVID 19 pandemic situation.
- The student lecture halls inside the college campus are wi-fi enabled and are provided with uninterrupted internet connectivity to the student community to access e-learning and e-library resources.
- All the student lecture halls are provided with interactive display board and LCD projectors for effective delivery of lectures by the faculty members
- In addition, smart class rooms are also available with state of art education technology facilities viz. Touch screen smart board, Integrated Public Address System and fully air conditioned smart class rooms to provide the best ambience for learning process.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

M.V.Sc. in Poultry Science

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

M.V.Sc.
in
Veterinary Anatomy

DEPARTMENT OF VETERINARY ANATOMY
MADRAS VETERINARY COLLEGE

6.4. Self-Study Report for M.V.Sc in Veterinary Anatomy

6.4.1. Brief History of the Degree Programme

Teaching of veterinary anatomy and histology was started as early as 1903 when the Madras Veterinary College was started. The main objectives of the department are:

- To teach anatomy of domestic animals to undergraduate and postgraduate students of veterinary science
- To impart training programmes for field veterinarians/ clinicians to refresh their anatomical knowledge and provide hands on training which can be applied in clinical diagnosis, physical examination and surgical procedures
- To carry out basic research programmes

Salient Achievements

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree	Boys	Girls	Total
M.V.Sc in VAN	-	-	-

2. International recognitions / collaborations: Nil

II. Research

- Gross and microanatomy of the hepatopancreatic organ in guinea pig (cavia porcellus)
- Gross and microanatomical studies on the intestines of guinea pig(*Cavia porcellus*).

III. Clinical - Not applicable

- Additional state of art facilities under clinical services: Not applicable
- Ambulatory Services: Not applicable

IV. Extension - Not applicable

V. Human Resources Development

International and National awards won by staff of this institution are provided below:

- Awards and honours:

Sl.No.	Name of the faculty	Name of the Award / honour	Type of Award / Awarding Body with name of the event	Details of the Award (Title of the thesis / Research article / poster / oral paper presented)
1.	S. Senthilkumar, T.A.Kannan and S.Usha Kumary	Best poster presentation award – III	VC&RI, Orathanadu- 614625. Clinical anatomy of bovines and canines for effective veterinary practice	'Omentopexy and Abomasopexy in Bovine: Significance of Surgical Anatomy''

- Overseas visit: Nil
- Training of staff:
- **Conferences/seminars/symposia/training programmes/workshops organized during this period**

6.4.2. Faculty Strength

The faculty strength of the Degree Programme is given cadre-wise, both sanctioned and in-place

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/ VCI/other regulatory bodies
Professor	1	1	-	-
Associate Professor	3	3	-	-
Assistant Professor	4	1	3	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	Veterinary Anatomy	5	4	0

6.4.4. Classrooms and Laboratories

UG laboratory - Two (One for Gross Anatomy and one for Histology)

PG / Research laboratory - Two

6.4.5. Conduct of Practical and Hands-on-Training

- Apart from regular classroom teaching, enough hands-on-training is offered to the students during practical hours, to meet the protocol / syllabi mentioned in UG and PG curriculum.

6.4.6. Supervision of students in PG/PhD programmes: Number of students being supervised by Faculty in case of Masters/Ph. D Programme (as per ICAR/UGC guidelines). Mention the realistic figure /number of qualified faculty in relation to the intake of students, as per the guidelines in the matter.

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	VAN	5	5

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): Mention the feedback mechanism (duly supported by the documents) from different stakeholders of the degree programme. What action the University has taken in last five years to address the issues raised in the feedback?

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

M.V.Sc. Programme

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
VAN (M.V.Sc)	2	-
2015-2016		
VAN (M.V.Sc)	4	-
2016-2017		
VAN (M.V.Sc)	2	-
2017-2018		
VAN (M.V.Sc)	3	-
2018-2019		
VAN (M.V.Sc)	-	-
2019-2020		
VAN (M.V.Sc)	-	-
2020-21		
VAN (M.V.Sc)	1	-
2021-22		
VAN (M.V.Sc)	1	-

6.4.9. ICT Application in Curricula Delivery

- The college campus is fully connected with high speed internet connectivity. This enabled to provide uninterrupted lecture delivery facility, even during this COVID 19 pandemic situation.
- The student lecture halls inside the college campus are wi-fi enabled and are provided with uninterrupted internet connectivity to the student community to access e-learning and e-library resources.
- All the student lecture halls are provided with interactive display board and LCD projectors for effective delivery of lectures by the faculty members
- In addition, smart class rooms are also available with state of art education technology facilities viz. Touch screen smart board, Integrated Public Address System and fully air conditioned smart class rooms to provide the best ambience for learning process.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

M.V.Sc. in Veterinary Anatomy

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

M.V.Sc.
in
Veterinary and Animal Husbandry Extension Education

DEPARTMENT OF VETERINARY & ANIMAL HUSBANDRY EXTENSION EDUCATION
MADRAS VETERINARY COLLEGE

6.4. Self Study Report for M.V.Sc in Veterinary AH Extension Education

6.4.1. Brief History of the Degree Programme:

The Department of Extension was established in the year 1963 with an aim to teach under graduate students in the aspects of sociology, rural development and transfer of scientific know-how to the farming community. From 2000 –2001 onwards the department offers three courses in accordance with the VCI regulations. In the year 1990-91, post-graduate programme on Animal Husbandry Extension was introduced. The Department of Communication and Entrepreneurship was merged with this department on 01.05.2003 and was renamed as the Department of Veterinary and Animal Husbandry Extension and Entrepreneurship.

Objectives

- To impart teaching to undergraduate and post graduate students in animal husbandry extension
- To undertake research in veterinary and animal husbandry extension
- To record and arrange for dissemination of scientific information on livestock and poultry farming through different media
- To analyse the impact of various extension programmes of TANUVAS

In the year 1990-91, post-graduate programme on Animal Husbandry Extension was introduced, for the first time in South India, with an idea of developing manpower for strengthening the extension institutes and research centers. In the year 2005, Ph.D., programme on Veterinary and Animal Husbandry Extension was introduced at Madras Veterinary College. Periodical field visits are undertaken by under graduate and postgraduate students as a part of their course. This helps in understanding the activities of the farmers, officials, extension personnel, etc and also development of various teaching aids and conducting campaign.

Salient Achievements

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree	Boys	Girls	Total
M.V.Sc in VAE	-	-	-

2. **International recognitions / collaborations:**

II. Research

- Developed Hydrological Animal Disaster Management Model - Interactive Information Dissemination Disc, Animal Disaster Management Model for Drought Management – An Interactive Information Dissemination Disc and Animal Disaster Management Model for Earthquake – An Interactive Information Dissemination Disc for the benefit of farmers.

III. Clinical

- **Additional state of art facilities under clinical services: Nil**
- **Ambulatory Services: Nil**

IV. Extension

- An International Seminar on Innovative Extension Management for uplifting livelihood of farmers – Status, Initiatives and Way forward was jointly organized by Department of Veterinary and Animal Husbandry Extension Education, Madras Veterinary College, Chennai and National Institute of Agricultural Extension Management (MANAGE), Telangana on 27.06.2019 & 28.06.2019 at Madras Veterinary College, Chennai - 600 007. A total of 220 participants representing ICAR institutes, State Agricultural Universities, State Veterinary Universities, State Department of Animal Husbandry and Aavin from the states of Tamil Nadu, Kerala, Andhra Pradesh, Telangana, Karnataka, West Bengal attended the seminar. In addition delegates from Bangladesh, USA, Ethiopia, Sri Lanka and Nigeria participated in this programme. A total of 125 research papers were presented along with invited and lead papers in five themes by the delegates from India and Abroad. Dr. Usha Rani I.A.S, Director General, National Institute of Agricultural Extension Management (MANAGE), Telangana released the compendium and offered inaugural address.

- A Training of Trainers (ToT) programme on "Animal Disaster Management" for faculty of TANUVAS was organised from 04.02.2020 to 06.02.2020 by the Department of Veterinary and Animal Husbandry Extension Education, Madras Veterinary College, Chennai of TANUVAS in collaboration with Tamil Nadu Disaster Risk Reduction Agency (TNDRRA), World Animal Protection, New Delhi at Madras Veterinary College, Chennai. Dr. J. Radhakrishnan, I.A.S. Principal Secretary/Commissioner of Revenue Administration, Govt. of Tamil Nadu inaugurated the newly established Veterinary Emergency Response Units (VERU) at Constituent colleges of TANUVAS (VCRI at Namakkal, Orathanadu and Tirunelveli and distributed Emergency Veterinary kits to newly established VERUs. He also released a State Disaster Management Standard Operating Procedures (SOP) and delivered the inaugural address. Shri. K.M.Singh, I.P.S. (Retd.) Former Member, NDMA, New Delhi released a Hand book on Animal Disaster Management and offered special address. The National Disaster Response Force, Arakonam exhibited and demonstrated various disasters relief devices for the benefit of the stakeholders.

V. Human Resources Development

- Awards and honours: Nil
- Overseas visit: Nil
- Training of staff:

Sl. No.	Name and designation of the Scientist	Title of the Programme	Duration		Place	Approx. cost involved
			From	To		
1	Dr. P. Kumaravel Professor and Head	IDP workshop for Nodal officers	08.11.2019		UAS. Bengaluru	Rs.3,000
2	Dr. P. Kumaravel Professor and Head	Study on the pattern of functioning of Livestock development Boards of other states	18.12.2019 & 19.12.2019		Livestock Development Board, Telangana	Rs. 15,000
3	Dr. P. Kumaravel Professor and Head	Workshop on Key Informant Interviews	20.11.2019 to 27.11.2019		MVC, Chennai	-
4	Dr. S. Saraswathi	Workshop on Key Informant Interviews	20.11.2019 to 27.11.2019		MVC, Chennai	-
5	Dr. N. Vimal Rajkumar	Workshop on Key Informant Interviews	20.11.2019 to 27.11.2019		MVC, Chennai	-

- **Conferences/ seminars/ symposia/ training programmes / workshops organized during this period**

SI.No.	Programmes	No. of beneficiaries
1.	**International Seminar** on Innovative Extension Management for uplifting livelihood of farmers – Status, Initiatives and Way forward on 27.06.2019 & 28.06.2019	220
2.	**A Training of Trainers (ToT) programme** for faculty of TANUVAS on "Animal Disaster Management" on 04.02.2020 to 06.02.2020	40
3.	**Orientation programme cum workshop** on "Key Informant Interviews" on 20.11.2019 to 27.11.2019	10
4.	**Student educational campaign** for III year students on 14.03.2020	140
5.	**Training programme** on indigenous poultry technology on 23.01.2020, 29.02.2020, 10.02.2020 and 23.12.2019	200

6.4.2. Faculty Strength

The faculty strength of the Degree Programme is given cadre-wise, both sanctioned and in-place (under the table mentioned below).

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/other regulatory bodies
Professor	1	1	-	-
Associate Professor	2	1	1	-
Assistant Professor	4	2	2	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	VAE	1	3	0

6.4.4. Classrooms and Laboratories

- Fully furnished audio and video recording room is established at the department of Veterinary and Animal Husbandry Extension Education, Madras Veterinary College for the benefit of students.

6.4.5. Conduct of Practical and Hands-on-Training

- A One day Educational campaign was conducted by the Departmnt of Veterinary and Animal Husbandry Extension Education for the benefit of undergraduate students on 14.03.2020 at Kalyanakuppam village, Tiruvallur district. A total of 120 undegraduate students and more than 50 livestock farmers and farm women participated.
- Skill in Radio and TV script writing pertaining to Animal Husbandry practices was imparted to UG students.

6.4.6. Supervision of students in PG/PhD programmes

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	VAE	9	6

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): Mention the feedback mechanism (duly supported by the documents) from different stakeholders of the degree programme. What action the University has taken in last five years to address the issues raised in the feedback?

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

M.V.Sc. Programmes

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
VAE (M.V.Sc)	2	-
2015-2016		
VAE (M.V.Sc)	3	-
2016-2017		
VAE (M.V.Sc)	1	-
2017-2018		
VAE (M.V.Sc)	3	-
2018-2019		
VAE (M.V.Sc)	-	-
2019-2020		
VAE (M.V.Sc)	-	-
2020-21		
VAE (M.V.Sc)	-	-
2021-22		
VAE (M.V.Sc)	1	-

6.4.9. ICT Application in Curricula Delivery

- The student lecture halls inside the college campus are wi-fi enabled and are provided with uninterrupted internet connectivity to the student community to access e-learning and e-library resources.
- All the student lecture halls are provided with interactive display board and LCD projectors for effective delivery of lectures by the faculty members

- In addition, smart class rooms are also available with state of art education technology facilities viz. Touch screen smart board, Integrated Public Address System and fully air conditioned smart class rooms to provide the best ambience for learning process.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

M.V.Sc. in Veterinary and Animal Husbandry Extension Education

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

M.V.Sc.
in
Veterinary Biochemistry

DEPARTMENT OF VETERINARY BIOCHEMISTRY
MADRAS VETERINARY COLLEGE

6.4. Self Study Report for M.V.Sc in Veterinary Biochemistry

6.4.1. Brief History of the Degree Programme

Brief History

- M.V.Sc. Programme in Veterinary Biochemistry was started from the Academic Year 2010 - 11 with 03 seats.
- Ph.D. Programme in Veterinary Biochemistry was started from the Academic Year 2019 - 20 with 02 seats.

Objectives

- To offer quality education in Veterinary Biochemistry using modern education technology to equip the PG Scholars to meet the challenges in the field.
- Imparting the technical know-how and the basic skills on various analytical techniques

Achievements

Fifteen students have completed M.V.Sc degree in Veterinary Biochemistry from this department and are placed as faculty in TNAU / TANUVAS / DAH, Tamilnadu / Private Pharmaceutical companies and three of them are pursuing Ph.D. programme at IVRI. The research work undertaken by Master degree students were on:

- Use of plant products including vegetable oils for control of diabetes.
- Use of nano composites for control of diabetes
- Identification of circulating tumor cells for early detection of cancer.
- Identification of diagnostic markers in cardiac and renal disorders.

Salient Achievements

I. Education

1. Student Output: The output of graduates during the year 2019 - 20: NIL

Degree	Boys	Girls	Total
M.V.Sc in VBC	-	-	-

2. **International recognitions / collaborations:** NIL

II. Research

- External Research Project Completed: 1; Funding agency: Ayush, GOI on "*In vitro* and *in vivo* nephroprotective evaluation of AYUSH-K1 extract; Fund Outlay: 9.65 Lakhs
  - Validation of chronic renal failure model induced by anti-GBM antibodies in rats
  - Standardization of surgical procedures for unilateral nephrectomy model
  - In rats having chronic renal failure, the experimental results indicate repair to the glomerular basement membrane by treating them with AYUSH K-1 extract at three doses (100, 200 and 400 mg/kg)

- External Research Project Obtained: 1; Funding agency: Ayush, GOI.
- Research Articles Published: 03.
- Research Papers presented in Conferences: 02

III. Clinical

- **Additional state of art facilities under clinical services:** Nil
- **Ambulatory Services:** Nil

IV. Extension : NIL

V. Human Resources Development : NIL

The international and national awards won by staff of this institution are provided below:

- Awards and honours:
- Overseas visit:
- Training of staff:
- Conferences/ seminars/ symposia/ training programmes / workshops organized during this period

6.4.2. Faculty Strength

The faculty strength of the Degree Programme is given cadre-wise,both sanctioned and in-place (under the table mentioned below).

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/other regulatory bodies
Professor	-	1	-	-
Associate Professor	1	-	-	-
Assistant Professor	4	3	1	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	Veterinary Biochemistry	0	3	0

6.4.4. Classrooms and Laboratories: (Kindly provide the details in bulleted text)

- A separate PG lab of 400 sq.ft is available.
- For PG programmes both the theory and practical classes are conducted as single batch.
- The list of major instruments at PG Lab are furnished below:
    1. UV-Vis. Spectrophotometer
    2. Thermocycler
    3. High Speed Refrigerated Centrifuge
    4. Deep Freezer (-20º C and - 80ºC)
    5. Electrophoretic apparatus (Vertical/ sub-marine/ 2D-Gel)

6. Electro-blotting apparatus
7. Ice flaking machine
8. Gel Doc
9. Flame Photometer

6.4.5. Conduct of Practical and Hands-on-Training

- Demonstrations of advanced techniques are shown wherever possible.
- The PG scholars are given Hands on training in Bioinformatics and in Lab Animal Handling and Management practices.

6.4.6. Supervision of students in PG/PhD programmes

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	VBC	2	-

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.)

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

M.V.Sc Programmes

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
VBC (M.V.Sc)	2	-
2015-2016		
VBC (M.V.Sc)	3	-
2016-2017		
VBC (M.V.Sc)	1	-
2017-2018		
VBC (M.V.Sc)	1	-
2018-2019		
VBC (M.V.Sc)	-	-
2019-2020		
VBC (M.V.Sc)	-	-
2020-21		
VBC (M.V.Sc)	-	-
2021-22		
VBC (M.V.Sc)	-	-

6.4.9. ICT Application in Curricula Delivery: The ICT is now integral part of the teaching programme. ICAR has also been promoting the use of ICT in teaching and practical. Mention whether the Degree Programme is meeting the expectations. If there is any shortfall, it shall be clearly mentioned.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

M.V.Sc. in Veterinary Biochemistry

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

M.V.Sc.
in
Veterinary Medicine

DEPARTMENT OF VETERINARY MEDICINE
MADRAS VETERINARY COLLEGE

6.4. Self-Study Report for MVSc in Veterinary Medicine

6.4.1. Brief History of the Degree Programme

The department has been recognized by ICAR as Centre of Advanced Studies during 1995 and then Centre of Advanced Faculty Training (CAFT) since 2010.

Objectives

- To impart the knowledge of Clinical Medicine and Therapeutics at doctorate level students and staff
- To undertake field oriented research to increase the production of herbivorous animals especially ruminants by Ph.D. students by adopting up to date and advanced techniques.
- To offer specialized referral services.
- Providing facilities for advanced research
- Training field Veterinarians

Salient Achievements

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree	Boys	Girls	Total
M.V.Sc in VCM	3	2	5

2. **International recognitions / collaborations** : nil

II. Research

- Overall incidence of Acute Kidney Injury (AKI) recorded in the present study was 0.58 per cent
- Among CRRT techniques under study, CVVHDF had relatively higher survival rates of (22.22 per cent) than CVVH (14.81 per cent).
- AKI dogs associated with MODS had a lower patient survivability (21.43 per cent) than the non-MODS AKI dogs
- In the present study prevalence of staphylococcal pyoderma was found to be 54.3% (88 out of 162).Out of 54.3% staphylococcal isolates, 15.90% (14 out of 88) isolates were identified as methicillin resistant Staphylococcus (MRS) on antibiotic sensitivity test
- Only to amikacin and linezolid there is no resistance recorded in this study
- Time taken for complete recovery ranged from 21 to 42 days..
- Overall incidence of pleural effusion was 0.12 per cent
- Echocardiographic findings observed were DCM, MVD and intrathoracic mass
- Ultrasonography was found to be superior over radiography in identifying the presence of pleural effusion and hepatic lesions and tumours
- Incidence of hypertension in dogs having CKD was found to be 12.3%.

- The healthy dogs exhibited BAER wave form consisting of five peaks, with distinct wave V followed by a deep trough.
- In severely affected otitis cases, the latencies of all waves were prolonged and the wave I / V amplitude ratio was also reduced
- Eosinophilic bronchopneumopathy (EBP) was recorded in 2 to 6 years age group anmals with male predominance.
- BALF analysis was found to be the gold standard test in the confirmation of EBP in dogs

III. Clinical

- Additional state of art facilities under clinical services: Nil
- Ambulatory Services: Nil

IV. Extension

V. Human Resources Development

The international and national awards won by staff of this institution are provided below:

- Awards and honours:

S.No.	Name of the Staff	Name of Award	Place and Date
1.	Dr. S. kavitha	First best oral companion non infectious Third best oral Avian Medicine session	38th ISVM, Bangalore
2.	D. Sumathi & P. Pothiappan	Third best oral Avian Medicine session	38th ISVM, Bangalore
3.	M. Chandrasekar, D. Sumathi, M.B.Thilagar, K.G.Thirumurugan, N. Palanivel, S. Vairamuthu, M.G. Jayathangaraj & S. Esther	First Best Oral Presentation for the paper Screening of Band T cell lymphoma in canine and its chemotherapeutic response at 37th ISVM, Bikaner, Rajasthan	Bikaner, Rajasthan
4.	M. B. Thilagar, R. Jasmin, S. Prathaban & M.G. Jayathanagaraj	Third Best Oral Presentation - for the paper on Intraosseous route a life saving route for resuscitation of small animals neonate and paediatric patients at 37th ISVM, Bikaner, Rajasthan	Bikaner, Rajasthan
5.	M. B. Thilagar, R. Jasmin, M. Chandrasekar, K. Jeyaraja, G. R. Bharanidharan & M.G. Jayathangaraj	First Best Poster Presentation for the paper – Clinical management and prognostication of complicated babesiosis in dogs at 37th ISVM, Bikaner, Rajasthan	Bikaner, Rajasthan
6.	M. Ranjithkumar, K. Jeyaraja, P. Thirunavukkarasu, D.Sumathi, M.G. Jayathangaraj	First Best Poster Presentation – for the paper Identifying the microbiota in Enrofloxacin relapsing cystitis dogs at 37th ISVM, Bikaner, Rajasthan	Bikaner, Rajasthan
7.	M. Ranjithkumar, K. Jeyaraja, D. Chandrasekaran, H. Prabhavathy, C.Jayanthy, S. Kavitha	Second Best Oral Presentation - for the paper Fixing the right add-on to Idiopathic Epileptic Dogs with optimal serum Phenobarbital level at 37th ISVM, Bikaner, Rajasthan	Bikaner, Rajasthan
8.	K. Jeyaraja, D. Sumathi, M.G.Jayathangaraj.	Second best Poster presentation on Therapeutic protocols in the Treatment of Baabesia gibsoni in Dogs	In: 10th Kerala Veterinary Science Congress, held at Kannur on 10 & 11.11.2018
9.	D. Sumathi	Best Oral presentation on Semi-automated Peritoneal Dialysis is a newer therapeutic option for Acute Kidney Injury in Dogs - a case study”-	Conference/symposium on 11th-12th held at Nedumbasseri, Kochi during November 2017

10.	Athira G.R., Dr. K. Jeyaraja	Second best- Successful Management of a Refractory Atrial Fibrillation Assocciated with Dilated Cardiomyopathy (DCM) in a Cross Bred Dog	10th clinical case conference on Farm and Companion Animal Practice For Veterinary Students
11.	BavaFakhrudeen., Dr. B. Gowri	First best Medical Management of Guttural Pouch Empyema in a Thoroughbred Mare	10th clinical case conference on Farm and Companion Animal Practice For Veterinary Students
12.	Shanmugasundaram M., Dr. D. Sumathi	Second best - Successful Medical Management of Feline Infectious Anemia	10th clinical case conference on Farm and Companion Animal Practice For Veterinary Students

- Overseas visit: Nil
- Training of staff:

Sl. No.	Name of the Training/ Seminar/Conference/ Symposia/Workshop, etc.	Name of the sponsoring agency	Place & Date	Name and designation of staff
1.	Preconference on CME on what's new inoccular inflammation & infections	Sankara Nethralaya, Chennai	Sankara Nethralaya, Chennai dt 12.10.19	Dr. P. Pothiappan
2.	Annual Conference of Society of Inflammation Research on "Changing Concepts in Inflammation: Bench to Bed side"	Sankara Nethralaya, Chennai	Sankara Nethralaya, Chennai dt 12.10.19	Dr. P. Pothiappan
3.	Attended WASAVA CE & FSAPAI CE programme	Self	Mumbai dated 22-24, November, 2019	Dr. M. Chandrasekar, Dr. D. Sumathi, Dr. M. Ranjithkumar & Dr. P. Pothiappan

• Conferences/ seminars/ symposia/ training programmes / workshops organized during this period

SI.No.	Programmes	No. of beneficiaries
1	21 days CAFT programme programme.- Recent advances in clinical procedures and diagnostic imaging techniques in veterinary practice	23
2	Training Organized under ICAR – CAFT national training programme on "Imaging, Clinical Diagnostic Techniques and Therapeutic Interventions in Companion and Farm Animals	25
3	Organized Training programme in Critical care for small animal veterinary Practitioners	20
4	Organised Ultrasonography training sponsored by MARS India pvt ltd to field practitioners of India	10

6.4.2. Faculty Strength

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/other regulatory bodies
Professor	2	2	-	-
Associate Professor	3	2	1	-
Assistant Professor	8	5	3	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	Veterinary Clinical Medicine	9	4	0

6.4.4. Classrooms and Laboratories

Mention the number of class rooms and functional laboratories available for the degree programme and justify if it is sufficient to meet the course curricula requirement. Lists major equipments, laboratories, farm facilities, workshops and other instructional units being utilized for the award of the Degree Programme may be given. Mention theory and practical batches for the Degree Programme.

6.4.5. Conduct of Practical and Hands-on-Training: It is important to have a sound grasp of the theory that underlies any professional degree. But there are some skills that can only be learned through hands-on -practice. It is important that much of the learning material in any given course should be provided in a way that allows students to get as involved as possible to increase their knowledge and abilities. Clearly mention how far students are getting desired practical and hands-on-training as per the curriculum and meeting above mentioned requirements.

6.4.6. Supervision of students in PG/PhD programmes

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	VCM	13	10

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): Mention the feedback mechanism (duly supported by the documents) from different stakeholders of the degree programme. What action the University has taken in last five years to address the issues raised in the feedback?

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

M.V.Sc. and Ph.D. Programmes

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
VMD (M.V.Sc)	5	-
2015-2016		
VMD (M.V.Sc)	4	-
2016-2017		
VMD (M.V.Sc)	5	-
2017-2018		
VMD (M.V.Sc)	7	-
2018-2019		
VMD (M.V.Sc)	2	-
2019-2020		
VMD (M.V.Sc)	5	-
2020-21		
VMD (M.V.Sc)	6	-
2021-22		
VMD (M.V.Sc)	6	-

6.4.9. ICT Application in Curricula Delivery: The ICT is now integral part of the teaching programme. ICAR has also been promoting the use of ICT in teaching and practical. Mention whether the Degree Programme is meeting the expectations. If there is any shortfall, it shall be clearly mentioned.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

M.V.Sc. in Veterinary Medicine

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

M.V.Sc.
in
Veterinary Gynaecology and Obstetrics

DEPARTMENT OF VETERINARY GYNAECOLOGY AND OBSTETRICS
MADRAS VETERINARY COLLEGE

6.4. Self Study Report for M.V.Sc in Veterinary Gynaecology and Obstetrics

6.4.1. Brief History of the Degree Programme

- Department was created in the year 1958
- Postgraduate degree course was introduced in 1960
- Doctoral programme was started in 1979

Objectives

1. To offer quality education in Veterinary Gynaecology and Obstetrics and to equip students to meet the challenges in the field
2. To develop diagnostics and treatment protocols for canine and bovine reproductive disorders
3. To conduct studies on male reproduction for treatment and conservation
4. To disseminate knowledge through trainings, workshop and conferences

Salient Achievements

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree	Boys	Girls	Total
M.V.Sc in VGO	2	-	2

2. **International recognitions / collaborations: Nil**

II. Research

The significant research achievements from this institution during this period are furnished below:

- ICAR -AICRP : Phase II scheme on Nutritional and Physiological Approaches for Enhancing Reproductive Performance in Animals (S.C.No.24014) with budget outlay of Rs. 40.81 Lakhs
- NADP externally funded scheme on Augmenting reproduction and production potential through adoption of assisted reproductive techniques using sexed semen in dairy cattle (S.C.No.22298) with a budget outlay of Rs. 133 Lakhs

III. Clinical

- **Additional state of art facilities under clinical services:** Nil
- **Ambulatory Services:** Nil

IV. Extension: Nil

V. Human Resources Development

The international and national awards won by staff of this institution are provided below:

- Awards and honours:

- Maruthamuthu Mariyayee Memorial Award to Dr. K. Krishnakumar for the Best Teacher for the year 2018
- Best Research paper presentation award to N.Arunmozhi, J.Umamageshwari, D.Reena, P.Sreedevi, Cecilia Joseph and K.Krishnakumar in the XXXV Annual convention of ISSAR and International Symposium "Global perspectives to enhance livestock fertility through modern reproductive techniques for doubling farmer's income during 18.12.2019 to 20.12.2019
- Best Research paper presentation award to T.Sarath, R.Sureshkumar, K.Kavitha, P.Sridevi, K.Krishnakumar and A.Elango in the XXXV Annual convention of ISSAR and International Symposium "Global perspectives to enhance livestock fertility through modern reproductive techniques for doubling farmer's income during 18.12.2019 to 20.12.2019
- Best Research paper presentation award to C.Pugazharasi, S.Sathishkumar, T.Sarath, T.A.Kannan, S.Balasubramanian,U.S.Kalyaan and K.Krishnakumar in the XXXV Annual convention of ISSAR and International Symposium "Global perspectives to enhance livestock fertility through modern reproductive techniques for doubling farmer's income during 18.12.2019 to 20.12.2019
- Third prize for the oral presentation to J.Umamageshwari, G.Monica, S.Balasubramanian, S.Rangasamy, K.Krishnakumar, S.P.Preetha, K.Vishwanathan and Radha Perumal in the National symposium on Veterinary Research Priorities in Translational Animal Health, Production and Food Safety on 21.02.2020 and 22.02.2020

- Overseas visit: Nil
- Training of staff:

Sl. No.	Name and designation	Title of the Programme	Duration		Place
			From	To	
1.	K.Krishnakumar Professor and Head	35th Annual convention of ISSAR	18.12.2019	20.12.2019	VCRI, Namakkal
2.	N.Arunmozhi, Assistant Professor	35th Annual convention of ISSAR	18.12.2019	20.12.2019	VCRI, Namakkal
3.	S.Rangasamy Assistant Professor	Modern Education Technology	19.08.2019	21.08.2019	MVC, Chennai
4.	S.Rangasamy Assistant Professor	"Robotics based learning system development	29.07.2019	31.07.2019	MVC, Chennai
5.	U.S.Kalyaan Assistant Professor	35th Annual convention of ISSAR	18.12.2019	20.12.2019	VCRI, Namakkal

- **Conferences/ seminars/ symposia/ training programmes / workshops organized during this period**

SI.No.	Programmes	No. of beneficiaries
1	A one-day International Workshop on "Livestock Gene Editing" was conducted on 07.08.2019 to discuss about the efficacy and need for gene editing in the field of Veterinary Gynaecology and Obstetrics	200
2	A three-day National training programme on "Animal Birth control" was conducted from 10th to 12th of March 2020 for hands on training of Veterinarians in the field of reproductive surgery with sponsorship from Indian Immunologicals.	10

6.4.2. Faculty Strength

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/other regulatory bodies
Professor	1	1	-	-
Associate Professor	3	-	3	-
Assistant Professor	4	4	-	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	VGO	4	5	0

6.4.4. Classrooms and Laboratories

- UG Classroom – 1
- UG Gynaecology Lab – 1
- UG Andrology lab – 1
- PG ART Lab I -1
- PG ART Lab II – 1
- PG & PhD Molecular biology lab - 1

6.4.5. Conduct of Practical and Hands-on-Training: It is important to have a sound grasp of the theory that underlies any professional degree. But there are some skills that can only be learned through hands-on -practice. It is important that much of the learning material in any given course should be provided in a way that allows students to get as involved as possible to increase their knowledge and abilities. Clearly mention how far students are getting desired practical and hands-on-training as per the curriculum and meeting above mentioned requirements.

Hands on training is being provided with the following:

- Genitalia palpation
- Palpation box
- Phantom box
- SAC and LAC OP
- Uterine torsion model
- Ultrasonographic exam
- VEC
- Vaginoscopy
- Semen collection, evaluation and Cryopreservation

6.4.6. Supervision of students in PG/PhD programmes: Number of students being supervised by Faculty in case of Masters/Ph. D Programme (as per ICAR/UGC guidelines). Mention the realistic figure /number of qualified faculty in relation to the intake of students, as per the guidelines in the matter.

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	VGO	4	5

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.):

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

M.V.Sc. and Ph.D. Programmes

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
VGO (M.V.Sc)	3	-
2015-2016		
VGO (M.V.Sc)	3	-
2016-2017		
VGO (M.V.Sc)	6	-
2017-2018		
VGO (M.V.Sc)	3	-
2018-2019		
VGO (M.V.Sc)	3	-
2019-2020		
VGO (M.V.Sc)	3	-
2020-21		
VGO (M.V.Sc)	4	-
2021-22		
VGO (M.V.Sc)	3	-

6.4.9. ICT Application in Curricula Delivery: The ICT is now integral part of the teaching programme. ICAR has also been promoting the use of ICT in teaching and practical. Mention whether the Degree Programme is meeting the expectations. If there is any shortfall, it shall be clearly mentioned.

- Smart classroom with Smart LED TV
- Monitor attached microscope

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

M.V.Sc. in Veterinary Gynaecology and Obstetrics

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

M.V.Sc.
in
Veterinary Microbiology

DEPARTMENT OF VETERINARY MICROBIOLOGY
MADRAS VETERINARY COLLEGE

6.4. Self-Study Report for MVSc in Veterinary Microbiology

6.4.1. Brief History of the Degree Programme:

The subject Veterinary Microbiology was taught to the students of Veterinary Science as early as 1904. It was first taught under the aegis of Department of Bacteriology and Pathology. The Department of Bacteriology became a separate entity during 1949. A separate Department of Virology was started during 1971. Later during 1977 the departments of Bacteriology and Virology were merged together to become Department of Microbiology. It was renamed as Department of Veterinary Microbiology during 2002.

Salient Achievements

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree	Boys	Girls	Total
M.V.Sc in Veterinary Microbiology	1	-	1

2. **International recognitions / collaborations**

- In collaboration with Royal Veterinary College, London a project entitled "GCRF – One Health Poultry Hub (Network Scheme)" funded by United Kingdom Research Foundation was obtained.

II. Research

- Plasmid based reverse genetics system for rescue of Newcastle disease virus (NDV-D58) was developed which is essential to develop a marker vaccine strain
- A inactivated combined vaccine against ND and IB developed with novel adjuvant has been demonstrated with comparable seroconversion against both the antigenic targets with respect to presently available commercial vaccines
- MLST typing of two *Staphylococcus pseudintermedius* isolates revealed the presence of new sequence types (ST1398 and ST1523) in this region. Hence, the prevalent clonal complex may be different from other European and American countries.
- Total of 48 isolates of *Clostridium perfringens* were isolated from livestock and poultry and characterized. Toxinotyping by multiplex PCR which revealed 97.91% belong to type A and 2.08% to type C. Minor toxin cpb2 was also identified among 27.08% of the isolates.
- Total of 4 research articles (NAAS >6) were published and 4 research papers were presented in different conferences

III. Clinical

- **Not Applicable**

Additional state of art facilities under clinical services

- Not Applicable

Ambulatory Services

- Not Applicable

IV. Extension

- The faculty members of the department participated in 46th India Tourist & Industrial Fair 2020 organised by Government of Tamil Nadu.

V. Human Resources Development

The international and national awards won by staff of this institution are provided below:

- **Awards and honours**:
- **Overseas visit**:

  Dr. BSM. Ronald visited Royal Veterinary College for academic purpose from 10thDecember 2019 to 22ndDecember 2019.

- **Training of staff**:

Sl. No.	Name and designation of the faculty	Title of the Programme	Duration	Place	Approx. cost involved
1.	S. Rajalakshmi@ Radabai	International workshop on 'Livestock gene editing"	07.08.2019	MVC, Chennai	--
		"Modern Education Technology"	19.08.2019 & 21.08.2019	MVC, Chennai	ICAR sponsored
		"Pedagogical tools in Veterinary education"	19.09.2019 |& 21.09.2019	MVC, Chennai	ICAR sponsored
2.	M. Vidhya	17th Certificate Course in Laboratory Animal Science, CCLAS (accredited by FELASA)	18th - 28th September 2019	TANUVAS, Chennai	Rs.17,000
		IDP workshop on "Content Development"	19th-21st March 2019	Madras Veterinary College	NAHEP Sponsored
		IDP workshop on " Robotics Based Learning System Development"	20th – 31st July 2019	Madras Veterinary College	NAHEP Sponsored
		NAHEP – IDP workshop on "Modern Education Technology"	19th - 22nd August 2019	Madras Veterinary College	
3.	G. Elaiyaraja,	33rd ICAR-CAFT course on Microbiological Techniques for Diagnosis of Emerging and Re-emerging Diseases of Veterinary Importance	20th Nov 2019 to 10th Dec 2019	Dept. of Veterinary Microbiology, Lala Lajpat Rai University of Veterinary and Animal Sciences, Hisar-125004, Haryana.	ICAR sponsored
4.	A.Elamurugan,	33rd ICAR-CAFT course on Microbiological Techniques for Diagnosis of Emerging and Re-emerging Diseases of Veterinary Importance	20th Nov 2019 to 10th Dec 2019	Dept. of Veterinary Microbiology, Lala Lajpat Rai University of Veterinary and Animal Sciences, Hisar-125004,Haryana.	ICAR sponsored
5.	G. Elaiyaraja,	Brucellosis and Tuberculosis	27.01.2020 & 28.01.2020	Central University Laboratory, CAHS, Studies, TANUVAS	TN State Funded Scheme

6.	A. Thangavelu, BSM. Ronald, S. Rajalakshmi, M.Vidhya and G. Elaiyaraja	20th Indian Veterinary Congress on "Veterinary Research Priorities in Translational Animal Health, Production and Food Safety"	21.02.2020 & 22.02.2020	Department of Veterinary Microbiology, Madras Veterinary College, Vepery, Chennai.	Rs.21,500
7.	Dr.BSM. Ronald	Participated in first Annual GCRF-UKRI One Health Poultry Hub Conference	10-02-2020 to 14-02-2020	Gujarat	Not Applicable

- **Conferences/ seminars/ symposia/ training programmes / workshops organized during this period**

SlNo.	Programmes	No. of beneficiaries
1	20th Indian Veterinary Congress, XXVII Annual conference of IAAVR and National symposium on "Veterinary Research Priorities in Translational Animal Health, Production and Food Safety"	147

6.4.2. Faculty Strength

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/other regulatory bodies
Professor	1	1	-	-
Associate Professor	3	2	-	-
Assistant Professor	5	4	-	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	Veterinary Microbiology	1	3	0

6.4.4. Classrooms and Laboratories

- Separate laboratory and teaching room facilities are available for Undergraduate and Postgraduate students
- Undergraduate laboratory can accommodate 40 students with LCD project facility and also 20 binocular microscopes.
- Department has different research laboratories such as Newcastle Disease laboratory, Infectious Bronchitis laboratory, Bacteriology laboratory.

6.4.5. Conduct of Practical and Hands-on-Training

It is important to have a sound grasp of the theorythat underlies any professional degree. But there are some skills that can only be learned throughhands-on -practice. It is important that much of the learning material in any given course should beprovided in a way that allows students to get as involved as possible to increase their knowledgeand abilities. Clearly mention how far students are getting desired practical and hands-on-trainingas per the curriculum and meeting above mentioned requirements.

- Four batch of students (each 40) attend practical classes and taught different microbiological techniques like
  - o Culture of bacterial and fungal organisms
  - o Staining and biochemical characterization of bacterial and fungal organisms
  - o Cultivation of viruses in cell culture and embryonated chicken eggs

    Hand-on Training all the above techniques makes undergraduate students to understand the microbiology better

6.4.6. Supervision of students in PG/PhD programmes: Number of students being supervised by Faculty in case of Masters/Ph. D Programme (as per ICAR/UGC guidelines). Mention the realistic figure /number of qualified faculty in relation to the intake of students, as per the guidelines in the matter.

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	VMC	15	9

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): Mention the feedback mechanism (duly supported by the documents) from different stakeholders of the degree programme. What action the University has taken in last five years to address the issues raised in the feedback?

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

M.V.Sc.Programmes

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
VMC(M.V.Sc)	2	-
2015-2016		
VMC(M.V.Sc)	2	-
2016-2017		
VMC(M.V.Sc)	5	**20**
2017-2018		
VMC(M.V.Sc)	4	-
2018-2019		
VMC(M.V.Sc)	2	-
2019-2020		
VMC(M.V.Sc)	1	-
2020-21		
VMC(M.V.Sc)	3	-
2021-22		
VMC(M.V.Sc)	4	-

6.4.9. ICT Application in Curricula Delivery

The ICT is now integral part of the teaching programme. ICAR has also been promoting the use of ICT in teaching and practical. Mention whether the Degree Programme is meeting the expectations. If there is any shortfall, it shall be clearly mentioned.

- A "VIDEO TUTORIAL" has been created as an additional scope on the existing Mobile Application-TANUVAS VETMICRO, exclusively to support the II BVSc & AH students with a better understanding on the Course: Veterinary Immunology and Serology. The Video tutorial developed using the ICAR 2018-19 grant, focuses on 5 major chapters, which constitute the 'must-know' basics of the course.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

M.V.Sc. in Veterinary Microbiology

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

M.V.Sc.
in
Veterinary Parasitology

DEPARTMENT OF VETERINARY PARASITOLOGY
MADRAS VETERINARY COLLEGE

6.4. Self-Study Report for MVSc in Veterinary Parasitology

6.4.1. Brief History of the Degree Programme

- The Department of Veterinary Parasitology, Madras Veterinary College was started in 1929
- During the year 1947, this department was recognised as a postgraduate department for the award of M.Sc., degree
- During 1955-58, three batches of ICAR sponsored postgraduate course leading to 'Diploma in Veterinary Parasitology' was conducted and 15 candidates from various states underwent the diploma course
- In 1958, this department was upgraded as postgraduate department for the award of M.V.Sc.,Degree
- In 1960 it was recognized for Ph.D., programme

Education

- To offer courses in Veterinary Parasitology for undergraduate and postgraduate students and to introduce innovative educational technologies in teaching and evaluation for U.G. and P.G. students.

Research

- To undertake research on parasitic diseases for rapid diagnosis and effective control

Extension

- To disseminate the advances in diagnosis and control of parasitic Diseases /infections by offering training programmes and contact courses to field veterinarians
- To create awareness on parasitic infections in livestock and pets and the need to control them to entrepreneurs, farmers and pet owners through TV, All India Radio, popular articles, pamphlets and books

Salient Achievements

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree	Boys	Girls	Total
M.V.Sc in VPA	1	2	3

2. **International recognitions / collaborations : NIL**

II. Research

- A rTc-CTL-1 based ELISA was developed for animals to detect toxocarosis
- Single sporulated oocyst, based PCR was developed for the first time in India for accurate detection of bovine coccidian species
- A lateral flow-through technique (LFT) was developed for diagnosis of hydatidosis in buffaloes
- Occurrence of bovine schistosomosis caused by *Schistosoma indicum* in Chennai was observed in slaughter house study

III. Clinical

- Examination of clinical samples of domestic animals, wild animals and human beings
- Identification of worm parasites and arthropods of Veterinary and Medical importance
- Forensic Entomology samples for resolving police cases
- Human serum samples screened for Hydatidosis
- Samples from University farms, State government farms regularly screened for epg and anthelmintic resistance assessment
- PCR based diagnosis of haemoparasitic diseases of small and large animals
- Regular screening of police dogs for presence of helminths
- **Additional state of art facilities under clinical services:**
- **Ambulatory Services: NIL**

IV. Extension

- Pamphlet on "Five point check in goats to diagnose parasitic infections", C. Soundararajan and Bhaskaran Ravi Latha, 2019

V. Human Resources Development

- Awards and honours:

Sl.No.	Name of the faculty	Name of the Award / honour	Type of Award / Awarding Body with name of the event	Details of the Award (Reason for the Award)
1.	Dr. Shivani Mamane	Rao Saheb Dr. M. Anant Narayan Rao Memorial Prize"	Certificate with Medal	For securing the highest mark in the subject of Veterinary Parasitology during her BVSc at the 21st Convocation of TANUVAS held at MVC on 10.12.2019
2.	Dr. N.Jeyathilakan	XXV NCVP-MVC Mid- career excellence award	Certificate with Medal At 29th National Congress of Veterinary Parasitology held at Jabalpur, Madhya Pradesh from 5th to 7th February 2020.	Awarded for Mid-career excellence in the field of Veterinary Parasitology
3.	Dr. R.Edith	Pradyumna Kumar and Priti Rani Das innovative Ph.D research award	Certificate with Medal At 29th National Congress of Veterinary Parasitology held at Jabalpur, Madhya Pradesh from 5th to 7th February 2020.	For the innovative Ph.D research
4.	Dr.K.T.Kavitha	Mrs. Saraswathy Anandan best Ph.D thesis award	Certificate with Medal At 29th National Congress of Veterinary Parasitology held at Jabalpur, Madhya Pradesh from 5th to 7th February 2020.	For the best Ph.D research
5.	Dr. S. Gowrishankar and Dr.B.R.Latha,	Dr. V.S Alwar best article award	Certificate with Medal At 29th National Congress of Veterinary Parasitology held at Jabalpur, Madhya Pradesh from 5th to 7th February 2020.	For the best research article in Journal of Veterinary Parasitology
6.	Dr. Neelakshi Deka	IAAVP young scientist award	Certificate with Medal At 29th National Congress of Veterinary Parasitology held at Jabalpur, Madhya Pradesh from 5th to 7th February 2020.	For the best presentation of M.V.Sc research work

Overseas visit:

- Dr. A. Sangaran and Dr. C. Soundararajan, Professors participated and presented papers at the 27th conference of the "World Association for the Advancement of Veterinary Parasitology (WAAVP) held at Madison, USA from 06.07.2019 to 11.07.2019
- Dr. S. Arunkumar, Professor participated and presented paper at the International Conference on "Sustainable agriculture production for food, nutrition and livelihood security: A challenge for Asian farmers held at Pattaya, Thailand from 25.09.2019 to 27.09.2019

Training of staff

S. No.	Name and Designation of the scientist	Title of the Programme	Duration	Place	Approx. cost involved
1.	Dr. S.T. Bino Sundar	Workshop on "Content Development" under ICAR-NAHEP programme, IDP-TANUVAS	18.03.2019 to 20.03.2019	Madras Veterinary College	-
2.	Dr. S.T. Bino Sundar	Sensitization Workshop on "Agricultural knowledge management tools" organized by University library, TANUVAS	27.03.2019	Madras Veterinary College	-
3.	Dr. R. Edith				
4.	Dr. K.T. Kavitha				
5.	Dr. B. Rubinibala				
6.	Dr. S.T. Bino Sundar	Workshop on "Robotics based learning system development" organized under NAHEP-IDP	29.07.2019 to 31.07.2019	Madras Veterinary College	-
7.	Dr. S.T. Bino Sundar	Workshop on "Modern Education Technology" organized under NAHEP-IDP	19.08.2019 to 21.08.2019	Madras Veterinary College	-
8.	Dr. S.T. Bino Sundar	Workshop on "Pedagogical tools in modern Veterinary Education" organized under NAHEP-IDP	19.09.2019 to 21.09.2019	Madras Veterinary College	-
9.	Dr. Bhaskaran Ravi Latha	Sensitization workshop (NAHEP-II) on "Implementation of academic management system"	19.12.2019 to 20.12.2019	Madras Veterinary College	-
10.	Dr. K.T. Kavitha	Insecticide resistance: Biochemical and molecular perspectives and strategies for combating resistance to insecticides	08.01.2020 to 28.01.2020	ICAR-NBAIR, Bengaluru	-

❖ Conferences/ seminars/ symposia/ training programmes / workshops organized during this period - NIL

6.4.2. Faculty Strength

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/other regulatory bodies
Professor	1	1	-	-
Associate Professor	2	1	1	-
Assistant Professor	9	6	3	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	Veterinary Parasitology	0	6	0

6.4.4. Classrooms and Laboratories :(Kindly provide the details in bulleted text)

Mention the number of class rooms and functional laboratories available for the degree programme and justify if it is sufficient to meet the course curricula requirement. Lists major equipments, laboratories, farm facilities, workshops and other instructional units being utilized for the award of the Degree Programme may be given. Mention theory and practical batches for the Degree Programme.

- One UG laboratory – Well equipped
- One PG research laboratory – Well equipped

6.4.5. Conduct of Practical and Hands-on-Training: It is important to have a sound grasp of the theory that underlies any professional degree. But there are some skills that can only be learned through hands-on -practice. It is important that much of the learning material in any given course should be provided in a way that allows students to get as involved as possible to increase their knowledge and abilities. Clearly mention how far students are getting desired practical and hands-on-training as per the curriculum and meeting above mentioned requirements.

- Well trained to handle practical aspects of Veterinary Parasitology

6.4.6. Supervision of students in PG/PhD programmes:

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	VPA	11	9

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): Mention the feedback mechanism (duly supported by the documents) from different stakeholders of the degree programme. What action the University has taken in last five years to address the issues raised in the feedback?

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

M.V.Sc. Programmes

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
VPA (M.V.Sc)	3	-
2015-2016		
VPA (M.V.Sc)	3	-
2016-2017		
VPA (M.V.Sc)	2	-
2017-2018		
VPA (M.V.Sc)	3	-
2018-2019		
VPA (M.V.Sc)	2	-
2019-2020		
VPA (M.V.Sc)	-	-
2020-21		
VPA (M.V.Sc)	1	-
2021-22		
VPA (M.V.Sc)	-	-

6.4.9. ICT Application in Curricula Delivery: The ICT is now integral part of the teaching programme. ICAR has also been promoting the use of ICT in teaching and practical. Mention whether the Degree Programme is meeting the expectations. If there is any shortfall, it shall be clearly mentioned.

- Preparation of digitized E-flash cards
- Preparation of the new Veterinary Parasitology UG practical manual according to MSVE 2016

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

M.V.Sc. in Veterinary Parasitology

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

M.V.Sc.
in
Veterinary Pathology

DEPARTMENT OF VETERINARY PATHOLOGY
MADRAS VETERINARY COLLEGE

6.4. Self-Study Report for MVSc in Veterinary Pathology

6.4.1. Brief History of the Degree Programme

The Madras Veterinary College pathology programme is one of the best in the Nation, and 109 M.V.Sc. and 28 Ph.D. Candidates graduated since 1956 and 1979 respectively. Many post graduates and doctorates have gone on to leadership positions in industry and academia nationally and internationally. Anatomic pathology students are exposed to a wide range of case materials, are encouraged to pursue research interests and have opportunities to participate and present case reports in conferences and seminars.

The post graduate and doctoral programmes are designed to prepare competitively selected veterinarians for careers in veterinary diagnostic pathology, or industry, or to provide a foundation for entering a career in pharmaceutical research. The department has two adjunct faculty members from United States of America who help in teaching post –graduate and doctoral students. They are Dr. Ron Tyler (Senior) BS, DVM, Ph.D. (American Board Certified in Anatomic Pathology, Clinical Pathology and Toxicology) at present an Independent consultant and Dr. Srinivasa Rao, DVM, Ph.D., Diplomate ACVP, Chief, Laboratory Animal Medicine, Animal Program Director, Vaccine Research Center, National Institute of Health, Maryland USA who is also an Assistant Professor (Adjunct) Department of Molecular and Comparative Pathobiology, John Hopkins University of School of Medicine, USA. The post-graduate and doctoral students are taught the following courses respectively:

Salient Achievements

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree	Boys	Girls	Total
M.V.Sc in VPP	1	4	5

2. **International recognitions / collaborations :** NA

II. Research

The significant research achievements from this institution during this period are furnished below:

- The colorimetric PCR assay was developed for differentiation of serotype 1 (field strain) with vaccine serotypes of 2 and 3 using feather follicles i.e. Non-invasive collection
- The developed colorimetric PCR assay is used to screen the samples by non-invasive method i.e., Feather follicles as a sample for detection of MDV.
- In conventional PCR, sophisticated instruments and gel documentation are required whereas the developed colorimetric PCR assay, no need for sophisticated instruments and gel documentation
- Standard operating protocol of colorimetric PCR was developed to detect MD

III. Clinical

- **Additional state of art facilities under clinical services:** Nil
- **Ambulatory Services:**

IV. Extension: Nil

V. Human Resources Development

The international and national awards won by staff of this institution are provided below:

- Awards and honours : Nil
- Overseas visit : Nil
- Training of staff : Nil
- Conferences/ seminars/ symposia/ training programmes / workshops organized during this period

6.4.2. Faculty Strength

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/other regulatory bodies
Professor	1	1	-	-
Associate Professor	2	2	-	-
Assistant Professor	5	5	-	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	Veterinary Pathology	1	6	0

6.4.4. Classrooms and Laboratories:(Kindly provide the details in bulleted text)

Class rooms : 2 (UG and PG)

Laboratories : 2 (HP lab and Molecular lab)

Equipment : **HP lab** : Microtome, oven, Fridge, fume hood, Microscope, multi-head microscope, fluorescent microscope,

Molecular lab : Thermal cycler, centrifuge, refrigerated centrifuge, incubator, Gel documentation system, Co_2 incubator, molecular work station, bio safety cabinet, Deep freezer -20^0, Analytical weighing balance, Gel electrophoresis unit, Vortex

6.4.5. Conduct of Practical and Hands-on-Training

It is important to have a sound grasp of the theory that underlies any professional degree. But there are some skills that can only be learned through hands-on -practice. It is important that much of the learning material in any given course should be provided in a way that allows students to get as involved as possible to increase their knowledge and abilities. Clearly mention how far students are getting desired practical and hands-on-training as per the curriculum and meeting above mentioned requirements.

The students are given hands on training in necropsy technique and histopathological techniques.

Students are getting excellent hands-on-training with regard to treatment protocols, surgical procedures, various diagnostic facilities viz. Haematological examination, diagnostic procedures, from a well established Central Clinical laboratory of Madras Veterinary College

6.4.6. Supervision of students in PG/PhD programmes: Number of students being supervised by Faculty in case of Masters/Ph. D Programme (as per ICAR/UGC guidelines). Mention the realistic figure /number of qualified faculty in relation to the intake of students, as per the guidelines in the matter.

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	VPP	8	5

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): Mention the feedback mechanism (duly supported by the documents) from different stakeholders of the degree programme. What action the University has taken in last five years to address the issues raised in the feedback?

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

M.V.Sc. Programmes

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
VPP (M.V.Sc)	2	-
2015-2016		
VPP (M.V.Sc)	5	-
2016-2017		
VPP (M.V.Sc)	2	-
2017-2018		
VPP (M.V.Sc)	3	33
2018-2019		
VPP (M.V.Sc)	5	-
2019-2020		
VPP (M.V.Sc)	5	-
2020-21		
VPP (M.V.Sc)	5	-
2021-22		
VPP (M.V.Sc)	4	-

6.4.9. ICT Application in Curricula Delivery: The ICT is now integral part of the teaching programme. ICAR has also been promoting the use of ICT in teaching and practical. Mention whether the Degree Programme is meeting the expectations. If there is any shortfall, it shall be clearly mentioned : Nil

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

M.V.Sc. in Veterinary Pathology

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

M.V.Sc.
in
Veterinary Pharmacology and Toxicology

DEPARTMENT OF VETERINARY PHARMACOLOGY AND TOXICOLOGY
MADRAS VETERINARY COLLEGE

6.4. Self-Study Report for M.V.Sc in Veterinary Pharmacology and Toxicology

6.4.1. Brief History of the Degree Programme

M.V.Sc programme was started in 1958 and Ph. D in 1979. The postgraduate education was started after understanding the huge potential for research in the subject Pharmacology and Toxicology. The outgoing graduates will suit the need for R&D in Drug discovery and Toxicology. So far more than 50 students have completed and have secured research positions in industries and academics. Some of the students have taken of teaching position.

Salient Achievements

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree	Boys	Girls	Total
M.V.Sc in VPT	-	2	2

2. **International recognitions / collaborations : Nil**

II. Research

The significant research achievements from this institution during this period are furnished below:

- Developed assay method for Oxytetracycline in chicken meat.
- Established resistance pattern against E. coli isolated from poultry.
- Standardized assay method for Chlorpyrifos residue using Gas Chromatography.

III. Clinical -

- **Additional state of art facilities under clinical services:** Nil
- **Ambulatory Services:** Nil

IV. Extension: Nil

V. Human Resources Development

The international and national awards won by staff of this institution are provided below:

- Awards and honours: NIL
- Overseas visit: NIL
- Training of staff: NIL
- Conferences/ seminars/ symposia/ training programmes / workshops organized during this period

SI.No.	Programmes	No. of beneficiaries
1	Pharmaceutical meet for outgoing UG students	135

6.4.2. Faculty Strength

The faculty strength of the Degree Programme is given cadre-wise, both sanctioned and in-place (under the table mentioned below).

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/other regulatory bodies
Professor	1	1	0	-
Associate Professor	2	0	2	-
Assistant Professor	7	5	2	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	Veterinary pharmacology and Toxicology	6	2	0

6.4.4. Classrooms and Laboratories: (Kindly provide the details in bulleted text)

- One laboratory for UG practical (Pharmacy)
- One Laboratory for UG practical (Toxicology)
- One class room for practicals
- One seminar hall for PG class
- One Laboratory with cell culture, analytical instrument and ultrasound scanner for PG and Ph. D research.

6.4.5. Conduct of Practical and Hands-on-Training: It is important to have a sound grasp of the theory that underlies any professional degree. But there are some skills that can only be learned through hands-on -practice. It is important that much of the learning material in any given course should be provided in a way that allows students to get as involved as possible to increase their knowledge and abilities. Clearly mention how far students are getting desired practical and hands-on-training as per the curriculum and meeting above mentioned requirements.

Besides lectures students are given demonstration on animal handling and drug administration in laboratory animals.

6.4.6. Supervision of students in PG/PhD programmes

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	VPT	5	4

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): Mention the feedback mechanism (duly supported by the documents) from different stakeholders of the degree programme. What action the University has taken in last five years to address the issues raised in the feedback?

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

M.V.Sc.

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
VPT (M.V.Sc)	3	-
2015-2016		
VPT (M.V.Sc)	3	-
2016-2017		
VPT (M.V.Sc)	2	-
VPT (Ph.D)	-	-
2017-2018		
VPT (M.V.Sc)	4	-
2018-2019		
VPT (M.V.Sc)	3	-
2019-2020		
VPT (M.V.Sc)	2	-
2020-21		
VPT (M.V.Sc)	2	-
2021-22		
VPT (M.V.Sc)	3	-

6.4.9. ICT Application in Curricula Delivery: The ICT is now integral part of the teaching programme. ICAR has also been promoting the use of ICT in teaching and practical. Mention whether the Degree Programme is meeting the expectations. If there is any shortfall, it shall be clearly mentioned.

- For better understanding of the pharmacology important concepts are taught using computer aided learning. In this specific software that contains tutorial mode and examination mode with appropriate visual and interactive features are used.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

M.V.Sc. in Veterinary Pharmacology and Toxicology

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

M.V.Sc.
in
Veterinary Physiology

DEPARTMENT OF VETERINARY PHYSIOLOGY
MADRAS VETERINARY COLLEGE, CHENNAI

6.4. Self Study Report for MVSc in Veterinary physiology

6.4.1. Brief History of the Degree Programme:

Veterinary Physiology, a foundation subject of Veterinary science was taught to the students as early as 1903 in Dobbin hall. Genesis of Veterinary Physiology department dates back to 1930. In 1960, this department was upgraded as postgraduate department for the award of M.V.Sc., degree and in 1984 it was recognized for Ph.D., programme

Objectives

Education

- To offer courses in Veterinary Physiology for undergraduate and postgraduate students and to introduce innovative educational technologies in teaching and evaluation for undergraduate and postgraduate students.

Research

- To undertake research on thrust areas with an aim to unravel the novel physiological mechanisms thereby improving the productivity of domestic animals.

Salient Achievements

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree (Veterinary Physiology)	Boys	Girls	Total
M.V.Sc	1	2	3

2. **International recognitions / collaborations**

II. Research

- Novel biomarkers have been identified for hepatic and renal injury which helps in early diagnosis
- Canine fertility biomarker – Osteopontin have been identified which helps to mark out the hypofertile dogs from the fertile ones.

III. Clinical

Research on Clinical Physiology have been collaborated with Veterinary Clinical Complex of MVC, Chennai.

- **Additional state of art facilities under clinical services:**Nil
- **Ambulatory Services:** Nil

IV. Extension: Not Applicable

V. Human Resources Development

The international and national awards won by staff of this institution are provided below:

- Awards and honours:

Dr.S.Eswari, Professor received the best oral presentation award in the Session V- Molecular, cellular and systems Physiology for optimizing health and production in Society of Animal Physiologists of India and ICAR-CSWRI- Avikanagar, Rajasthan during the XXVIII Annual Conference of SAPI and National symposium on Physiological approaches to address environmental challenges for increasing animal productivity and farmers income.

- Overseas visit: Nil
- Training of staff:

- Dr.S.Eswari attended an International workshop on Livestock Gene Editing on 7/8/2019 at Madras Veterinary College, Chennai.
- Dr. G. Suganya attended an International workshop on Livestock Gene Editing on 7/8/2019 at Madras Veterinary College, Chennai.
- Dr.S.Eswari attended a Workshop on Intellectual property rights – IPR on 5/9/2019 at Madras Veterinary College, Chennai.
- Dr. G. Suganya attended an Refresher course in "Biomedical Science" 12/11/2019 to 25/11/2019 at UGC – HRDC, University of Madras, Chennai.
- Dr.S.Eswari attended a DST sponsored training on "General Management Programme for Women Scientists" from 02/12/2019 to 13/12/2019 at Administrative Staff College of India- ASCI, Hyderabad.
- Dr. V. Leela attended a Sensitization workshop on NAHEP component 2 activities and Implementation of Academic Management System from 19/12/2019 to 20/12/2019 at Madras Veterinary College, Chennai.
- Dr. S.Eswari attended a Sensitization workshop on NAHEP component 2 activities and Implementation of Academic Management System from 19/12/2019 to 20/12/2019 at Madras Veterinary College, Chennai.

- Conferences/ seminars/ symposia/ training programmes / workshops organized during this period

SI.No.	Programmes	No. of beneficiaries
--	-	

6.4.2. Faculty Strength

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/other regulatory bodies
Professor	-	-	-	-
Associate Professor	2	2	-	-
Assistant Professor	6	2	4	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	Veterinary Physiology	4	6	0

6.4.4. Classrooms and Laboratories: (Kindly provide the details in bulleted text)

- Physiology undergraduate lectures are being handled exclusively in a vast spacious comfortable gallery with LCD facility
- Undergraduate Practical sessions are being handled in the Physiology laboratory which is well furnished with sufficient required equipment as per MSVE 2016 curriculum.
- There are four batches of approximately 32 students per batch per practicals and lecture being handled in two batches of approximately 65 students per batch.

6.4.5. Conduct of Practical and Hands-on-Training

- Students are regularly being taken to Veterinary Clinical Complex for the demonstration of blood collection, Blood transfusion techniques, rumen liquor collection, demonstration of ruminoreticular motility, Demonstration of ECG, Blood Pressure recording, Spirometry, Saliva collection in animals, Semen collection, and usage of Ultrasound technique in Reproductive Physiology.

6.4.6. Supervision of students in PG programmes

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	VPY	3	3

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.)

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

M.V.Sc. Programmes

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
VPY (M.V.Sc)	3	-
2015-2016		
VPY (M.V.Sc)	3	-
2016-2017		
VPY (M.V.Sc)	2	-
2017-2018		
VPY (M.V.Sc)	3	-
2018-2019		
VPY (M.V.Sc)	1	-
2019-2020		
VPY (M.V.Sc)	1	-
2020-21		
VPY (M.V.Sc)	-	-
2021-22		
VPY (M.V.Sc)	-	-

6.4.9. ICT Application in Curricula Delivery:

- PPT mode of Delivery for routine teaching
- Mobile Apps for educating UG and PG students in Zoonotic pathogens
- Video lessons specifically in teaching practicals are utilized in the department

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

M.V.Sc. in Veterinary Physiology

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

M.V.Sc.
in
Veterinary Public Health

DEPARTMENT OF VETERINARY PUBLIC HEALTH AND EPIDEMIOLOGY
MADRAS VETERINARY COLLEGE

6.4. Self Study Report for M.V.Sc in Veterinary Public Health

6.4.1. Brief History of the Degree Programme

The Department of Veterinary Public Health and Epidemiology was established during July, 2011 in view of compliance of Veterinary Council of India MSVE regulation for undergraduate degree program (BVSc & AH).

Objective

- To impart value added UG and PG education for immediate and long term application and utility
- To prioritize strategies and develop skills to undertake epidemiological investigations and disease modelling for control and eradication programmes for zoonoses of major public health importance
- To make an objective analysis of contemporary issues such as antibiotic resistance Support for applied research by way of technical cooperation projects
- To offer an effective, outreach-enhanced veterinary public health service

Salient Achievements

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree	Boys	Girls	Total
M.V.Sc in VPH	2	1	3

2. **International recognitions / collaborations**

II. Research

- DBT- Bill and Melinda Gates foundation- BIRAC project on High resolution genome based tracing of antimicrobial resistant *E.coli* in pork production chain: A One health system study with a fund outlay of Rs 12.15 lakhs under the Principal Investigator- Dr. K.Porteen , Assistant Professor, VPH, MVC

III. Clinical

- The Department coordinated with the clinical unit Under observation of Rabies (UOR) through which the suspected cases of Rabies were monitored throughout the year and annual occurrence of Cases attending clinics were recorded

Additional state of art facilities under clinical services

- Aided in molecular diagnosis of selected Zoonotic pathogens(*Leptospira, Brucella* and *Mycobacterium*)

Ambulatory Services: Nil

IV. Extension

Vaccination and Health Camps were organized routinely every year at Madras Veterinary College adopted villages in commemoration of

- World Tuberculosis Day
- World Zoonosis Day
- World Rabies Day
- World Environment Day

V. Human Resources Development

- Training Program was organised to train Medical Practioners on Zoonotic pathogens Diagnosis (10 per batch)

6.4.2. Faculty Strength

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/other regulatory bodies
Professor	1	1	-	-
Associate Professor	1	-	1	-
Assistant Professor	3	2	1	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	Veterinary Public Health	3	1	0

6.4.4. Classrooms and Laboratories:(Kindly provide the details in bulleted text)

- Functional laboratories - 2 (Meat and Milk Hygiene lab and Zoonosis lab), wherein VCI has recommended separate laboratories for Meat Hygiene and Milk Hygiene with lab space of 600 sq ft.

Major Equipments available in this Department

- Gel electrophoresis
- Thermocycler
- Class II Biosafety Cabinet (Isolater)
- Inverted microscope
- pH Meter
- Binocular microscope
- Analytical balance
- Dark Field Microscope
- Vortex mixer
- Microplate ELISA reader

- Hot plate with Magnetic stirrer
- CO_2 Incubator
- Centrifuge
- Gel Documentation system

6.4.5. Conduct of Practical and Hands-on-Training

- The students of Under graduate and Post Graduate are given hands on Practices in Milk and meat hygiene(Quality control assay), Zoonosis (Pathogen Screening and Diagnosis) and Environment hygiene(Water analysis, Air quality)

6.4.6. Supervision of students in PG/PhD programmes

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	VPH	3	2

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.)

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

M.V.Sc. Programmes

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
VPH (M.V.Sc)	2	-
2015-2016		
VPH (M.V.Sc)	2	-
2016-2017		
VPH (M.V.Sc)	2	-
2017-2018		
VPH (M.V.Sc)	3	-
2018-2019		
VPH (M.V.Sc)	1	-
2019-2020		
VPH (M.V.Sc)	2	-
2020-21		
VPH (M.V.Sc)	2	-
2021-22		
VPH (M.V.Sc)	3	-

6.4.9. ICT Application in Curricula Delivery

- PPT mode of Delivery for routine teaching
- Mobile Apps for educating UG and PG students in Zoonotic pathogens
- Video lessons specifically in teaching practicals are utilized in the department

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

M.V.Sc. in Veterinary Public Health

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

M.V.Sc.
in
Veterinary Surgery and Radiology

DEPARTMENT OF VETERINARY SURGERY AND RADIOLOGY
MADRAS VETERINARY COLLEGE

6.4. Self-Study Report for M.V.Sc in Veterinary Surgery and Radiology

6.4.1. Brief History of the Degree Programme

- M.V.Sc program started in 1960 Total completed 230 Candidates
- Ph.D Program in 1988 Total Completed 47 candidates

Salient Achievements

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree	Boys	Girls	Total
M.V.Sc in VSR	4	1	5

2. **International recognitions / collaborations :** NIL

II. Research

- CT imaging studies for Canine Spine and Brachycephalic Airway Syndrome in dogs
- Wound healing of skin with low level laser in dogs and application of collagen in wound healing
- Equine gas anesthetic protocols for surgical intervention
- Orthopaedic implants for small animals
- CT scan imaging of thoracic diseases in dogs

III. Clinical

- **Additional state of art facilities under clinical services**
  - CT Scan Imaging Service
  - **Ambulatory Services:** NIL

IV. Extension

- Provided expert consultation to Arignar Anna Zoological Park for treatment of Wild Animals
- Asian Elephant treatment at Samayapuram
- Expert Consult to imported animals by NDDB for Semen Station at Quarantine Office in Chennai

V. Human Resources Development

The international and national awards won by staff of this institution are provided below:

- Awards and honours:

S.No	Name of the Staff	Name of Award	Place and Date	Medal/Cash Price/ Citation
1	Dr C Ramani	INSA award	Israel, 2.2.19	Travel grant
2	Dr H Pushkin Raj	Best paper presentation	Navsari, Gujarat.	Gold medal

- Overseas visit: Dr. C Ramani Visited Israel on INSA travel grant for training in Electroretinography
- Training of staff: NIL
- Conferences/ seminars/ symposia/ training programmes / workshops organized during this period

SI.No.	Programmes	No. of beneficiaries
1	WASAVA outreach programme on "Computed Tomography in Veterinary Practice"	20
2	Pre-conference workshop on Principles of Small Animal Orthopedics	20
3	Short Course on "Novel approaches in disease diagnosis via imaging modalities in veterinary clinical practice"	12
4	Small Animal Ophthalmic Surgery	12
5	Soft Tissue Surgery	12
6	Small Animal Diagnostic Radiography	12
7	Small Animal Orthopaedic Surgery	12

6.4.2. Faculty Strength

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/other regulatory bodies
Professor	3	3	Nil	-
Associate Professor	1	1	Nil	-
Assistant Professor	4	4	Nil	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	Veterinary Surgery and Radiology	2	4	0

6.4.4. Classrooms and Laboratories: NA

Mention the number of class rooms and functional laboratories available for the degree programme and justify if it is sufficient to meet the course curricular equirement. Lists major equipments, laboratories, farm facilities, workshops and other instructional units being utilized for the award of the Degree Programme may be given. Mention theory and practical batches for the Degree Programme.

- UG Practical Lab 1
- Seminar Hall 1
- Class room 1
- Operation Theatre 4

6.4.5. Conduct of Practical and Hands-on-Training

It is important to have a sound grasp of the theory that underlies any professional degree. But there are some skills that can only be learned through hands-on -practice. It is important that much of the learning material in any given course should be provided in a way that allows students to get as involved as possible to increase their knowledge and abilities. Clearly mention how far students are getting desired practical and hands-on-training as per the curriculum and meeting above mentioned requirements.

- One hands on training Pre conference workshop in small animal orthopaedics for students
- Clinical skill development in Veterinary Surgical techniques for small and large animals through practical and VCP course
- Diagnostic Imaging techniques for small and large animals through practical and VCP course

6.4.6. Supervision of students in PG/PhD programmes

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	VSR	9	5

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.)

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

M.VSc. Programmes

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
VSR (M.V.Sc)	7	-
2015-2016		
VSR (M.V.Sc)	7	-
2016-2017		
VSR (M.V.Sc)	7	-
2017-2018		
VSR (M.V.Sc)	6	-
2018-2019		
VSR (M.V.Sc)	4	-
2019-2020		
VSR (M.V.Sc)	6	-
2020-21		
VSR (M.V.Sc)	7	**14**
2021-22		
VSR (M.V.Sc)	5	-

6.4.9. ICT Application in Curricula Delivery

- All the student lecture halls are provided with interactive display board and LCD projectors for effective delivery of lectures by the faculty members
- In addition, smart class rooms are also available with state of art education technology facilities viz. Touch screen smart board, Integrated Public Address System and fully air conditioned smart class rooms to provide the best ambience for learning process.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

M.V.Sc in Veterinary Surgery and Radiology

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

M.V.Sc.
in
Wildlife Science

DEPARTMENT OF WILDLIFE SCIENCE
MADRAS VETERINARY COLLEGE

6.4. Self Study Report for MVSc in Wildlife Science

6.4.1. Brief History of the Degree Programme:

The Department of Wildlife Science, the first of its kind among veterinary universities in India, was established on 01.10.1994 at Madras Veterinary College. The main objective of this department is to impart education and training on wildlife with emphasis on wild animal health and management to undergraduate students and Master's research for postgraduate scholars. Doctoral degree was started in 2011 and the Postgraduate Diploma in Wild Animal Disease Management (PGDWADM) (DISTANCE EDUCATION - ONLINE MODE) was initiated from 2012.

Salient Achievements

Since inception, five students have successfully completed their Ph.D., 52 students have completed M.V.Sc. and 29 students have completed their PGDWADM. It is a matter of pride for the department that all the students of the department are well placed in the state departments, State Agricultural and Veterinary Universities, various wildlife-related sectors, NGOs, etc**.**

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree	Boys	Girls	Total
M.V.Sc in Wildlife Science	1	1	2

2. **International recognitions / collaborations**

II. Research

- Tigers of Arignar Anna Zoological Park spent most of their time in active behaviours (68%). Amongst the enclosures, the tigers were more active in enriched enclosure (79.68±1.73) and show more of resting behaviour in enclosure simulating to its natural condition (47.47±11.36).
- It was found that enrichments proved to be effective in altering the behaviour pattern as well as in giving the response in form of variation in levels of faecal cortisol metabolites (FCMs).
- It was found that the summer enrichment in combination with predator faeces is found to best for enrichment.
- Non-invasive monitoring of health status of captive wild animals using behavioural recordings and levels of faecal cortisol metabolites (FCMs) would be helpful in designing zoo management programs for captive tigers. Estimation of reproductive steroids was useful in understanding the basic reproductive endocrinology for implication of suitable captive breeding protocols.

III. Clinical

- **Additional state of art facilities under clinical services:** Nil
- **Ambulatory Services:** Nil

IV. Extension

- Technical assistance for treatment of sick King cobra at Arignar Anna Zoological Park, Vandalur – technical assistance was offered in treating of a sick king cobra at Arignar Anna Zoological Park, Vandalur.

- Field investigation – Faculty of this department inspected facilities of Farmers Training Centre, Enathur, Kanchipuram for maintaining of elephants belonging to Sankara Mutt on 28.11.2019 and gave suggestions for construction of shed.
- Clinical Investigation to examine the elephant (Malachi) and formulate the treatment protocol to Animal Disease Intelligence Unit, Madurai on 19.07.2019.

V. Human Resources Development

The international and national awards won by staff of this institution are provided below:

- Awards and honours:

Sl. No.	Name of the Faculty	Name of the Award / honour	Type of Award / Awarding Body with name of the event	Details of the Award (Title of the thesis / Research article / poster / oral paper presented)
1	Palanivelrajan M	Certificate of Award – Third in the technical session	38th Annual convention of Indian Society for Veterinary Medicine & National Symposium on "Advancement in Veterinary Medicine in Mitigating Challenges to Animal Health" on 5th -7th February, 2020 organized by Veterinary College, KVAFSU, Hebbal, Bengaluru - 560 024, Karnataka	Oral – "Avian Medicine" on the "Scaly Leg in Budgerigars (*Melopsittacus undulatus*)" by Palanivelrajan, M., Sreekumar, C., Sumathi, D. and Pothiappan

- Overseas visit: Nil
- Training of staff:

Sl. No.	Name and designation of the Scientist	Title of the Programme	Duration		Place	Approx. cost involved
			From	To		
1	Palanivelrajan M	CAFT 21 Days National Training Programme on "Advances in disease diagnosis and treatment protocols in health management of farm and pet animals"	1st August to 21st August, 2019		Veterinary Clinical Medicine, Madras Veterinary College, Chennai – 600 007	-
2	Palanivelrajan M	Workshop on "Intellectual Property Rights (IPR)" organized by the Director of Research, TANUVAS, Chennai	05.09.2019		Madras Veterinary College, Chennai – 600 007	
3	Palanivelrajan M	NAHEP Programme IDP of TANUVAS workshop on "Pedagogical tools in modern veterinary education"	19.09.2019 to 21.09.2019		Madras Veterinary College,	
4	Palanivelrajan M	Training Programme on "Endoscopy – Care & Maintenance of Endoscopes for Faculties and Postgraduate students" organized by the Director of Clinics, TANUVAS	27.09.2019		Madras Veterinary College, Chennai – 600 007	
5	Prathipa A	Certificate course on CCLAS 2019 accredited by FELAS	18.09.2019 to 28.09.2019		MVC	Rs.17,700/-
6	Sreekumar C	Training course of "Birdsound recording" at the Wildlife Institute of India	13.04.19 to 16.04.19		Wildlife Institute of India, Dehradun	-Rs.10,000.00
7	Sreekumar, C	Workshop on NAHEP component 2 "Activities and implementation of Academic Management System (AMS)"	19.12.2019 and 20.12.2019		Madras veterinary College, TANUVAS	Nil
8	Sreekumar, C	The International Conference on "Advancement in Veterinary Sciences for wildlife conservation", .	13.11.2019 to 15.11.2019		CSIR - Centre for cellular and molecular biology, Hyderabad	Rs.10,000.00

- Conferences/ seminars/ symposia/ training programmes / workshops organized during this period

SI. No.	Programmes	No. of beneficiaries
1	An outreach programme on popularizing the application of Foldscope" as part of the twinning programme of the project with the ongoing Foldscope project in College of Poultry Production and Management (CPPM), Hosur – for the benefit of III B.V.Sc. & A.H. students of Madras Veterinary College, Chennai on 24th July, 2019	130
2	"An outreach programme on popularizing the application of Foldscope" for the benefit of forest/wildlife veterinarians at Anamalai Elephant Camp on 27th and 28th July, 2019	3
3	"An outreach programme on popularizing the application of Foldscope" as part of the twinning programme with the ongoing Foldscope project in College of Poultry Production and Management (CPPM), Hosur on 31st July, 2019	70
4	"An outreach programme on popularizing the application of Foldscope" in MGR college, Hosur on 31st July 2019	200

6.4.2. Faculty Strength

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/other regulatory bodies
Professor	-	-	-	-
Associate Professor	1	1	0	-
Assistant Professor	2	2	0	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	Wildlife Science	1	1	0

6.4.4. Classrooms and Laboratories

Molecular laboratory for DNA sexing of birds and DNA identification of wild animals. The lab is equipped with

1. Thermal cycler
2. Gel documentation system
3. Class II biosafety cabinet
4. pH meter
5. Orbital shaker
6. Heater with magnetic stirrer
7. Autoclave
8. Hot-air oven
9. Binocular microscopes (Two)
10. Laminar Clean air workstation
11. Incubator for bacteriological work

6.4.5. Conduct of Practical and Hands-on-Training

- MVSc and Ph.D. scholar mandatorily undergo a course on 'Zoological park Clinical Training (0+2)' where they visit the zoo and work with zoo veterinarians
- MVSc scholars undergo a course on "Clinical training on aves and reptiles (0+1)" where hands-on training on operations with birds are taught
- Internship students are required to undergo "Internship training programme-Zoological Park Training" as a part of curriculum.

6.4.6. Supervision of students in PG programmes

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	WLS	3	4

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.)

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

M.VSc. Programmes

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
WLS (M.V.Sc)	4	-
2015-2016		
WLS (M.V.Sc)	5	-
2016-2017		
WLS (M.V.Sc)	5	-
2017-2018		
WLS (M.V.Sc)	1	-
2018-2019		
WLS (M.V.Sc)	1	-
2019-2020		
WLS (M.V.Sc)	1	-
2020-21		
WLS (M.V.Sc)	2	**50**
2021-22		
WLS (M.V.Sc)	2	-

6.4.9. ICT Application in Curricula Delivery

- All the student lecture halls are provided with interactive display board and LCD projectors for effective delivery of lectures by the faculty members
- In addition, smart class rooms are also available with state of art education technology facilities viz. Touch screen smart board, Integrated Public Address System and fully air conditioned smart class rooms to provide the best ambience for learning process.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

M.V.Sc in Wildlife Science

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

M.V.Sc.
in
Bio-Statistics

DEPT. OF ANIMAL HUSBANDRY STATISTICS AND COMPUTER APPLICATIONS
MADRAS VETERINARY COLLEGE

6.4. Self Study Report for the M.Sc in Biostatistics

6.4.1. Brief History of the Degree Programme

- To teach statistics to undergraduate and postgraduate students of veterinary and animal husbandry, to offer a postgraduate programme (MVSc - Biostatistics)
- To undertake need based and innovative research, to train students, research scholars and faculty on sophisticated statistical analyses and IT usage
- To propagate appropriate technologies to the livestock and poultry farmers to ensure sustenance and upliftment of rural economy in Tamil Nadu.

Salient Achievements

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree	Boys	Girls	Total
M.Sc in Biostatistics	-	01	01

2. **International recognitions / collaborations : Nil**

II. Research

The significant research achievements

- The Damped Trend Exponential Smoothing was found to be the best fit model for forecasting cattle population in India. Indian cattle population forecast noticed a slightly decreasing trend from 2010-11 with a figure of 194.184 million to 187.661, 188.177, 188.191, and 188.192 million numbers in 2020-21, 2030-31, 2040-41 and 2050-51, respectively.
- The Brown Exponential Smoothing was found to be the best fit model for forecasting buffalo, sheep, pigs, poultry population, milk production and egg production in India. Indian cattle population forecast noticed a slightly decreasing trend from 2010-11 with a figure of 194.184 million to 187.661, 188.177, 188.191, and 188.192 million numbers in 2020-21, 2030-31, 2040-41 and 2050-51, respectively
- The buffalo population was predicted to be increasing from 2000-01 and the predicted populations were 116.663, 127.787, 138.910 and 148.921 million in 2020-21, 2030-31, 2040-41 and 2050-51 respectively. The forecasted sheep population for the years 2020-21, 2030-31, 2040-41, and 2050-51 were 65.773, 72.673, 79.57 and 85.781 million, respectively.
- The forecasted pig population showed a drastic decline in the future years, 6.116, 9.308, 8.732 and 5.414 million during 2020-21, 2030-31, 2040-41 and 2050-51, respectively. The projected poultry population would be 887.649, 1123.479, 1359.310, and 1571.557 million during 2020-21, 2030-31, 2040-41 and 2050-51 respectively.
- The forecast obtained showed that milk production would increase to 207.57, 311.86, 416.16 and 520.45 MT respectively during 2020-21, 2030-31, 2040-41 and 2050-51 from 121.80 MT during the year 2010-11.
- The forecasted values obtained from the best fitted Brown ES was 103341.99, 144374.02, 185406.04 and 222334.86 million numbers during the years 2020-21, 2030-31, 2040-41 and 2050-51, respectively.

- ARIMA (1,1,0) was found to be the best fit model for prediction of goat population and the forecasted numbers of goat populations were 139.811, 153.155, 166.400 and 178.320 million during 2020-21, 2030-31, 2040-41 and 2050-51 respectively.
- ARIMA (0,1,1) was the best fit model for forecasting meat and wool production.The forecasted values of meat production showed that meat production would increase from 1.08 MT in 2000-01 to 5.18, 7.63, 10.07 and 12.52 MT, respectively during 2020-21, 2030-31, 2040-41 and 2050-51. Wool production would increase appreciably over years with a production of 46.26, 52.06, 58.59 and 65.17 million kg, respectively during the years 2020-21, 2030-31, 2040-41 and 2050-51 from 43.00 million kg in 2010-11.

III. Clinical – NIL

IV. Extension – NIL

V. Human Resources Development

The international and national awards won by staff of this institution are provided below:

- Awards and honours: Nil
- Overseas visit: Nil
- Training of staff:

Sl. No.	Name and designation of the Scientist	Title of the Programme	Duration		Place	Approx. cost involved
			From	To		
1.	Dr.M.Thirunavukkarasu Professor and Head	Nodal Officers Workshop under NAHEP - Component 2A	18.09.19	19.09.19	New Delhi	Nil
2.	Dr.M.Thirunavukkarasu Professor and Head	Training Workshop on Education Management and Academic Leadership	20.09.19	25.09.19	NAARM, Hyderabad	Nil
3.	Dr.M.Thirunavukkarasu Professor and Head	Sensitization Workshop on NAHEP Component 2 - Activities and Implementation of Academic Management System (AMS) in TANUVAS	19.12.19	20.12.19	Madras Veterinary College	Nil
4.	Dr.P.Thirunavukkarasu Assistant Professor	Sensitization Workshop on NAHEP Component 2 - Activities and Implementation of Academic Management System (AMS) in TANUVAS	19.12.19	20.12.19	Madras Veterinary College	Nil
5.	Dr.C.Balan Assistant Professor	Workshop on Advances in Market Intelligence for the Faculty of TANUVAS under ICAR-NAHEP IDP Programme	13.12.19	20.12.19	Madras Veterinary College	Nil

6.	Dr.C.Balan Assistant Professor	International Conference on Livestock, Food Security and Food Safety - Challenges, Opportunities and Strategies	28.01.20	29.01.20	Madras Veterinary College	Rs.3000
7.	Dr.C.Balan Assistant Professor	National Symposium on Veterinary Research Priorities in Translational Animal Health, production and Food Safety	21.02.20	22.02.20	Madras Veterinary College	Rs.4000
8.	Dr.C.Balan Assistant Professor	Winter School on Advances of Econometric Modelling and Forecasting in Agriculture	04.03.20	24.03.20	IASRI, New Delhi	Nil

 Conferences/ seminars/ symposia/ training programmes / workshops Organized during this period

SI. No.	Programmes	No. of beneficiaries
1.	International Conference on Livestock, Food Security and Food Safety - Challenges, Opportunities and Strategies	140

6.4.2. Faculty Strength

The faculty strength of the Degree Programme is given cadre-wise, both sanctioned and in-place (under the table mentioned below).

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/other regulatory bodies
Professor	01	01	0	-
Associate Professor	-	-	-	-
Assistant Professor	3	2	1	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	AHS&CA	1	1	0

6.4.4. Classrooms and Laboratories

- One computer lab available in the department with 38 nos. of computer systems
- Available computers are sufficient for handling practical classes for the course on AGB Unit-1 Biostatistics and Computer Application 3+1 to the Second professional year students

- List of equipments /instructional units in the department as follows:
  1. Computers – 38 nos.
  2. Laser printers – 4 nos.
  3. Server station – 1no.
  4. LCD Projector – 2 nos.
  5. Seminar hall - 2 nos.
- Theory has been divided as two batches of students (60 nos. in each batches) and for practical divided four batches of students (30 nos. in each batches)

6.4.5. Conduct of Practical and Hands-on-Training

- One computer lab available in the department with 38 nos. of computer system for hands on training on computer applications and data analysis to both UG and PG students
- All Practical classes for the courses offered in the subjects of Statistics and Computer Applications include hands on training in
- Exercises in descriptive and inferential statistics – One problem being explained
- Another problem given for the students to do by themselves
- Home works based on in-class exercises
- Hands on training in computer operations and applications

6.4.5. Conduct of Practical and Hands-on-Training: - Not applicable

6.4.6. Supervision of students in PG/PhD programmes:

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	Biostatistics	2	0

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): Mention the feedback mechanism (duly supported by the documents) from different stakeholders of the degree programme. What action the University has taken in last five years to address the issues raised in the feedback?

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

M.Sc. Programmes

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
M.Sc Biostatistics	4	-
2015-2016		
M.Sc Biostatistics	6	-
2016-2017		
M.Sc Biostatistics	5	-
2017-2018		
M.Sc Biostatistics	3	33
2018-2019		
M.Sc Biostatistics	1	-
2019-2020		
M.Sc Biostatistics	-	-
2020-21		
M.Sc Biostatistics	-	-
2021-22		
M.Sc Biostatistics	-	-

6.4.9. ICT Application in Curricula Delivery

- Providing computers with high speed internet connectivity to the students for learning basic computer applications and hands on training
- Established e-courses for all subjects of the UG degree programme and uploaded in the university website for the benefit of the students
- Guidance on research designs, data analysis and interpretation of results for research scholars.
- The ICT is now integral part of the teaching programme. ICAR has also been promoting the use of ICT in teaching and practical. Mention whether the Degree Programme is meeting the expectations. If there is any shortfall, it shall be clearly mentioned.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

M.Sc. in Bio- Statistics

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

M.Sc.
in
Bio-technology

DEPARTMENT OF ANIMAL BIOTECHNOLOGY
MADRAS VATERINARY COLLEGE

6.4. Self Study Report for MSc in Animal Biotechnology

6.4.1. Brief History of the Degree Programme

The Department of Animal Biotechnology was started at the Madras Veterinary College in 1989. In the year 1999, the Indian Council of Agricultural Research (ICAR) recognized the department as a "Centre of Excellence in Veterinary Biotechnology and Immunology". This Department is the first Animal Biotechnology Department in this country that was awarded the ISO 2001:9000 for Quality Management Systems through the British Standards Institute, UK. Recently, it has been awarded consecutively for the second term in Niche Area Scheme of Excellence in avian biotechnology to conduct research on "Improved and expanded vaccines and Immunological understanding of avian viruses" till date.

The Department of Animal Biotechnology is housed in two blocks of three floors each with 'state-of-the-art' facilities to carry out research in various facets of Biotechnology such as Molecular Diagnostics, Cell culture and Hybridoma, Immunotechnology, Animal Genomics and Embryo biotechnology. The Central Embryo Biotechnology lab is located at the University campus in Madhavaram.

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree	Boys	Girls	Total
M.Sc in Animal Biotechnology	-	-	-

2. **International recognitions / collaborations**

II. Research

- Evaluation of NKT Cell Based Glycolipid Adjuvants with Rabies Vaccines to Improve Immunogenicity and Long Term Protection
- Generated oligonucleotide sequences with binding ability to placental specific proteins (early pregnancy markers) namely PAG-1 & PAG-2 which have been confirmed by MALDI. The binding of the aptamer to the proteins also had been confirmed by EMSA and ELONA. The identified aptamer sequences have been used to confirm the presence of pregnancy specific placental markers and early confirmation of pregnancy in buffaloes
- The sub clinical mastitis (SCM) positive animals were made into 4 groups for three supplementary trials with trisodium citrate (TSC), levamisole and combination of trisodium citrate and levamisole. The role of supplementation on the inflammatory changes and cytokine expression pattern were assessed and analysed by real time PCR. The upregulation of Tumor necrosis factor-α showed a significant variation ($P<0.05$) on 4^{th}day in between groups. The cytokine expression pattern on 10th day fold changes showed a highly significant variation ($P<0.01$) among supplement groups.
- Supplementation of synbiotics has been proven to be more effective than the supplementation of prebiotics and probiotics alone, in terms of the growth performance and immunomodulation in broiler chicken. The synbiotic combination either of 0.75% of mannan oligosaccharide or of 0.5% xylo oligosaccharide along with probiotics can be recommended to the broiler farming community for better profitability. However, based on the net profit per kg live weight of broiler chicken, the use of 0.5% xylo oligosaccharide in the symbiotic formulation is more profitable.

- Whole genome sequencing of the wild type Classical Swine Fever virus (CSFV), PK-15 adapted CSFV at 45th and 75th passage helped in understanding the genetic nature of the virus before and after adaptation. Attenuation of the virus could be attributed to 22 transition and 12 transversion mutations found in adapted viruses

III. Clinical

- **Additional state of art facilities under clinical services:**Nil
- **Ambulatory Services:** Nil

IV. Extension: Nil

V. Human Resources Development

The international and national awards won by staff of this institution are provided below:

- Awards and honours:

Sl. No.	Name of the faculty	Name of the Award / honour	Type of Award / Awarding Body with name of the event	Details of the Award (Reason for the Award)
1.	Dr.K.G.Tirumurugaan, Professor	Travel grant award	Received the Travel grant from Food and Agriculture Organization of the United Nations (FAO) and the World Organization for Animal Health (OIE)	To attend the second meeting of the Peste des petits ruminants – Global Research and Expertise Network (PPR GREN) held at International Livestock Research Institute, Nairobi, Kenya, from 13th to 15th November 2019.
2.	M. Prinyanka, K.G. Tirumurugaan and S. Balasubramanian.	Best Oral presentation award	20th Indian Veterinary Congress and National symposium on Veterinary Research Priorities in Translational Animal Health, Production and Food Safety held between 21 – 22nd February 2020 at Madras Veterinary College, Chennai-7.	Generation of ssDNA oligonucleotides and their utility in detecting early pregnancy markers in Buffaloe
3.	Vignesh. R, K.G. Tirumurugaan and A. Gopinathan	Best Poster award	20th Indian Veterinary Congress and National symposium on Veterinary Research Priorities in Translational Animal Health, Production and Food Safety held between 21 – 22nd February 2020 at Madras Veterinary College, Chennai-7.	Generation of single stranded oligonucleotides with affinity to bovine spermatozoa

- Overseas visit:
- Training of staff:

Sl. No.	Name and designation of the Scientist	Title of the Programme	Duration		Place	Approx. cost involved
			From	To		
1.	Dr.K.Brindha, Associate Professor	Workshop on 'Robotics based learning system development' under National Agricultural Higher Education Project on 'Institutional Development Plan of TANUVAS'	29.07.2019 to 31.07.2019		Madras Veterinary College, Chennai - sponsored by ICAR	
2.	Dr.K.G.Tirumurugaan, Professor and Dr.K.Brindha, Associate Professor	International workshop entitled "Livestock gene editing"	07.08.2019		Dept of VGO, MVC, Chennai.	
3.	Dr.K.Tirumurugaan, Professor	*National symposium on "Current Trends in Contraception: Opportunities and Challenges for Population Control in Dogs and Cats"*	19.09.2019 to 20.09.2019		Madras Veterinary College, Chennai.	
4.	Dr.K.Brindha, Associate professor	ICAR-NAHEP-IDP programmes "Pedagogical tools in modern veterinary education"	19.09.2019 to 21.09.2019		Madras Veterinary College, Chennai.	
5.	Dr.K.Brindha, Associate professor	"Basic hands on training in proteomics"	27.11.2019 to 29.11.2019		C-Camp, Banglore	
6.	Dr.K.G.Tirumurugaan, Professor	Second meeting of the Peste des petits ruminants - Global Research and Expertise Network (PPR GREN)	13.11.2019 to 15.11.2019		International Livestock Research Institute, Nairobi, Kenya	
7.	Dr.M.Parthiban, Professor and Head	Training program on "Quality Management System and Internal Audit – ISO/IEC 17025:2017 Accreditation"	17.12.2019 to 18.12.2019		Dean, Faculty of Basic Sciences, MVC Campus	
8.	Dr.M.Parthiban, Professor and Head	Sensitization workshop on "NAHEP Component-2 Activities and Implementation of Academic Management System (AMS) in TANUVAS"	19.12.2019 to 20.12.2019		Madras Veterinary College, Chennai.	
9.	Dr.P.Raja Assistant Professor	Basic flowcytometry analysis training program	09.12.2019 to 11.12.2019		Center for Cellular and Molecular Platform (C-CAMP), Bangalore.	
10.	Dr.S.Meignanalakshmi Professor	Training program on "Quality management system and Internal Audit –ISO/ IEC 17025:2017"	07.01.2020 to 10.01.2020		Dean, Faculty of Basic Sciences, MVC Campus	
11.	Dr.K.Brindha, Associate Professor	Training on "Next Generation Sequencing"	07.01.2020 to 08.01.2020		TRPVB, CAHS, Madhavaram.	

- Conferences/ seminars/ symposia/ training programmes / workshops organized during this period

Sl. No	Title of the Programme	Place	Duration		Name of the sponsoring agency	No. of Parti-cipants	No. of Papers presented	Approx. cost involved Rs.
			From	To				
1.	Level I- Short term specialized training for 5 days duration	Dept. of Animal Biotechnology, MVC	24.06.2019	28.06.2019	-	3	-	24,000/-
2.	Level II- Long term overview training for 28 days duration		15.05.2019	12.06.2019	-	20	-	2,00,000/-
3.	Level III- Project work or in-plant training for 3 months duration		December	February	-	18	-	3,60,000/-
4.	National training programme on Intracytoplasmic sperm injection	CEBU, ABT	20.09.2019	03.10.2019	-	1	-	80,000/-
5.	National Level Training Programme on "*In vitro* fertilization of farm animal oocytes and co- culture"	CEBU, ABT	02.05.2019	22.05.2019	-	13	-	6,50,000/-
			11.10.2019	31.10.2019	-	5	-	2,75,000/-
6.	National level workshop on "Recent trends in animal cell culture techniques"	Dept. of Animal Biotechnology, MVC	22.01.2020	24.01.2020	-	30	-	1,09,000/-

6.4.2. Faculty Strength

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/other regulatory bodies
Professor	1	1	0	-
Associate Professor	6	4	2	-
Assistant Professor	5	1	4	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	Animal Biotechnology	2	7	0

6.4.4. Classrooms and Laboratories

The Department of Animal Biotechnology have 6 different units of laboratory namely Molecular Biology, Animal Cell Culture, Environmental biotechnology, Immunotechnology, Rabies Diagnostic Laboratory and Centralized Embryo biotechnology unit

6.4.5. Conduct of Practical and Hands-on-Training: It is important to have a sound grasp of the theory that underlies any professional degree. But there are some skills that can only be learned through hands-on -practice. It is important that much of the learning material in any given course should be provided in a way that allows students to get as involved as possible to increase their knowledge and abilities. Clearly mention how far students are getting desired practical and hands-on-training as per the curriculum and meeting above mentioned requirements.

6.4.6. Supervision of students in PG/PhD programmes

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	ABT	12	9

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): Mention the feedback mechanism (duly supported by the documents) from different stakeholders of the degree programme. What action the University has taken in last five years to address the issues raised in the feedback?

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

M.Sc. Programmes

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
BT (M.Sc)	-	-
2015-2016		
BT (M.Sc)	-	-
2016-2017		
BT (M.Sc)	2	-
2017-2018		
BT (M.Sc)	-	-
2018-2019		
BT (M.Sc)	-	-
2019-2020		
BT (M.Sc)	-	-
2020-21		
BT (M.Sc)	-	-
2021-22		
BT (M.Sc)	1	-

6.4.9. ICT Application in Curricula Delivery

- The college campus is fully connected with high speed internet connectivity. This enabled to provide uninterrupted lecture delivery facility, even during this COVID 19 pandemic situation.
- In addition, smart class rooms are also available with state of art education technology facilities viz. Touch screen smart board, Integrated Public Address System and fully air conditioned smart class rooms to provide the best ambience for learning process.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

M.Sc. in Bio-technology

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

6.4 SELF STUDY REPORT FOR DOCTORAL PROGRAMME (Ph.D)

Ph.D
in
Animal Biotechnology

DEPARTMENT OF ANIMAL BIOTECHNOLOGY
MADRAS VATERINARY COLLEGE

6.4. Self Study Report for Ph.D. in Animal Biotechnology

6.4.1. Brief History of the Degree Programme

The Department of Animal Biotechnology was started at the Madras Veterinary College in 1989. In the year 1999, the Indian Council of Agricultural Research (ICAR) recognized the department as a "Centre of Excellence in Veterinary Biotechnology and Immunology". This Department is the first Animal Biotechnology Department in this country that was awarded the ISO 2001:9000 for Quality Management Systems through the British Standards Institute, UK. Recently, it has been awarded consecutively for the second term in Niche Area Scheme of Excellence in avian biotechnology to conduct research on "Improved and expanded vaccines and Immunological understanding of avian viruses" till date.

The Department of Animal Biotechnology is housed in two blocks of three floors each with 'state-of-the-art' facilities to carry out research in various facets of Biotechnology such as Molecular Diagnostics, Cell culture and Hybridoma, Immunotechnology, Animal Genomics and Embryo biotechnology. The Central Embryo Biotechnology lab is located at the University campus in Madhavaram.

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree	Boys	Girls	Total
Ph.D. in Animal Biotechnology	-	-	-

2. **International recognitions / collaborations**

II. Research

- Evaluation of NKT Cell Based Glycolipid Adjuvants with Rabies Vaccines to Improve Immunogenicity and Long Term Protection
- Generated oligonucleotide sequences with binding ability to placental specific proteins (early pregnancy markers) namely PAG-1 & PAG-2 which have been confirmed by MALDI. The binding of the aptamer to the proteins also had been confirmed by EMSA and ELONA. The identified aptamer sequences have been used to confirm the presence of pregnancy specific placental markers and early confirmation of pregnancy in buffaloes
- The sub clinical mastitis (SCM) positive animals were made into 4 groups for three supplementary trials with trisodium citrate (TSC), levamisole and combination of trisodium citrate and levamisole. The role of supplementation on the inflammatory changes and cytokine expression pattern were assessed and analysed by real time PCR. The upregulation of Tumor necrosis factor-α showed a significant variation ($P<0.05$) on 4^{th}day in between groups. The cytokine expression pattern on 10th day fold changes showed a highly significant variation ($P<0.01$) among supplement groups.
- Supplementation of synbiotics has been proven to be more effective than the supplementation of prebiotics and probiotics alone, in terms of the growth performance and immunomodulation in broiler chicken. The synbiotic combination either of 0.75% of mannan oligosaccharide or of 0.5% xylo oligosaccharide along with probiotics can be recommended to the broiler farming community for better profitability. However, based on the net profit per kg live weight of broiler chicken, the use of 0.5% xylo oligosaccharide in the symbiotic formulation is more profitable.

- Whole genome sequencing of the wild type Classical Swine Fever virus (CSFV), PK-15 adapted CSFV at 45th and 75th passage helped in understanding the genetic nature of the virus before and after adaptation. Attenuation of the virus could be attributed to 22 transition and 12 transversion mutations found in adapted viruses

III. Clinical

- **Additional state of art facilities under clinical services:**Nil
- **Ambulatory Services:** Nil

IV. Extension: Nil

V. Human Resources Development

The international and national awards won by staff of this institution are provided below:

- Awards and honours:

Sl. No.	Name of the faculty	Name of the Award / honour	Type of Award / Awarding Body with name of the event	Details of the Award (Reason for the Award)
1.	Dr.K.G.Tirumurugaan, Professor	Travel grant award	Received the Travel grant from Food and Agriculture Organization of the United Nations (FAO) and the World Organization for Animal Health (OIE)	To attend the second meeting of the Peste des petits ruminants – Global Research and Expertise Network (PPR GREN) held at International Livestock Research Institute, Nairobi, Kenya, from 13th to 15th November 2019.
2.	M. Prinyanka, K.G. Tirumurugaan and S. Balasubramanian.	Best Oral presentation award	20th Indian Veterinary Congress and National symposium on Veterinary Research Priorities in Translational Animal Health, Production and Food Safety held between 21 – 22nd February 2020 at Madras Veterinary College, Chennai-7.	Generation of ssDNA oligonucleotides and their utility in detecting early pregnancy markers in Buffaloe
3.	Vignesh. R, K.G. Tirumurugaan and A. Gopinathan	Best Poster award	20th Indian Veterinary Congress and National symposium on Veterinary Research Priorities in Translational Animal Health, Production and Food Safety held between 21 – 22nd February 2020 at Madras Veterinary College, Chennai-7.	Generation of single stranded oligonucleotides with affinity to bovine spermatozoa

- Overseas visit:
- Training of staff:

Sl. No.	Name and designation of the Scientist	Title of the Programme	Duration		Place	Approx. cost involved
			From	To		
1.	Dr.K.Brindha, Associate Professor	Workshop on 'Robotics based learning system development' under National Agricultural Higher Education Project on 'Institutional Development Plan of TANUVAS'	29.07.2019 to 31.07.2019		Madras Veterinary College, Chennai - sponsored by ICAR	
2.	Dr.K.G.Tirumurugaan, Professor and Dr.K.Brindha, Associate Professor	International workshop entitled "Livestock gene editing"	07.08.2019		Dept of VGO, MVC, Chennai.	
3.	Dr.K.Tirumurugaan, Professor	*National symposium on "Current Trends in Contraception: Opportunities and Challenges for Population Control in Dogs and Cats"*	19.09.2019 to 20.09.2019		Madras Veterinary College, Chennai.	
4.	Dr.K.Brindha, Associate professor	ICAR-NAHEP-IDP programmes "Pedagogical tools in modern veterinary education"	19.09.2019 to 21.09.2019		Madras Veterinary College, Chennai.	
5.	Dr.K.Brindha, Associate professor	"Basic hands on training in proteomics"	27.11.2019 to 29.11.2019		C-Camp, Banglore	
6.	Dr.K.G.Tirumurugaan, Professor	Second meeting of the Peste des petits ruminants - Global Research and Expertise Network (PPR GREN)	13.11.2019 to 15.11.2019		International Livestock Research Institute, Nairobi, Kenya	
7.	Dr.M.Parthiban, Professor and Head	Training program on "Quality Management System and Internal Audit – ISO/ IEC 17025:2017 Accreditation"	17.12.2019 to 18.12.2019		Dean, Faculty of Basic Sciences, MVC Campus	
8.	Dr.M.Parthiban, Professor and Head	Sensitization workshop on "NAHEP Component-2 Activities and Implementation of Academic Management System (AMS) in TANUVAS"	19.12.2019 to 20.12.2019		Madras Veterinary College, Chennai.	

9.	Dr.P.Raja Assistant Professor	Basic flowcytometry analysis training program	09.12.2019 to 11.12.2019	Center for Cellular and Molecular Platform (C-CAMP), Bangalore.	
10.	Dr.S.Meignanalakshmi Professor	Training program on "Quality management system and Internal Audit – ISO/IEC 17025:2017"	07.01.2020 to 10.01.2020	Dean, Faculty of Basic Sciences, MVC Campus	
11.	Dr.K.Brindha, Associate Professor	Training on "Next Generation Sequencing"	07.01.2020 to 08.01.2020	TRPVB, CAHS, Madhavaram.	

- Conferences/ seminars/ symposia/ training programmes / workshops organized during this period

Sl. No	Title of the Programme	Place	Duration		Name of the sponsoring agency	No. of Parti-cipants	No. of Papers presented	Approx. cost involved Rs.
			From	To				
1.	Level I- Short term specialized training for 5 days duration	Dept. of Animal Biotechnology, MVC	24.06.2019	28.06.2019	-	3	-	24,000/-
2.	Level II- Long term overview training for 28 days duration		15.05.2019	12.06.2019	-	20	-	2,00,000/-
3.	Level III- Project work or in-plant training for 3 months duration		December	February	-	18	-	3,60,000/-
4.	National training programme on Intracytoplasmic sperm injection	CEBU, ABT	20.09.2019	03.10.2019	-	1	-	80,000/-
5.	National Level Training Programme on "*In vitro* fertilization of farm animal oocytes and co- culture"	CEBU, ABT	02.05.2019	22.05.2019	-	13	-	6,50,000/-
			11.10.2019	31.10.2019	-	5	-	2,75,000/-
6.	National level workshop on "Recent trends in animal cell culture techniques"	Dept. of Animal Biotechnology, MVC	22.01.2020	24.01.2020	-	30	-	1,09,000/-

6.4.2. Faculty Strength

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/other regulatory bodies
Professor	1	1	0	-
Associate Professor	6	4	2	-
Assistant Professor	5	1	4	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	Animal Biotechnology	2	7	0

6.4.4. Classrooms and Laboratories

The Department of Animal Biotechnology have 6 different units of laboratory namely Molecular Biology, Animal Cell Culture, Environmental biotechnology, Immunotechnology, Rabies Diagnostic Laboratory and Centralized Embryo biotechnology unit

6.4.5. Conduct of Practical and Hands-on-Training: It is important to have a sound grasp of the theory that underlies any professional degree. But there are some skills that can only be learned through hands-on -practice. It is important that much of the learning material in any given course should be provided in a way that allows students to get as involved as possible to increase their knowledge and abilities. Clearly mention how far students are getting desired practical and hands-on-training as per the curriculum and meeting above mentioned requirements.

- Students are getting excellent hands-on-training with regard to various protocols for molecular techniques

6.4.6. Supervision of students in PG/PhD programmes

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	ABT	12	9

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): Mention the feedback mechanism (duly supported by the documents) from different stakeholders of the degree programme. What action the University has taken in last five years to address the issues raised in the feedback?

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

Ph.D. Programmes

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
ABT (Ph.D)	1	-
2015-2016		
ABT (Ph.D)	4	-
2016-2017		
ABT (Ph.D)	2	-
2017-2018		
ABT (Ph.D)	2	-
2018-2019		
ABT (Ph.D)	1	-
2019-2020		
ABT (Ph.D)	3	-
2020-21		
ABT (Ph.D)	2	-
2021-22		
ABT (Ph.D)	1	-

6.4.9. ICT Application in Curricula Delivery

- The college campus is fully connected with high speed internet connectivity. This enabled to provide uninterrupted lecture delivery facility, even during this COVID 19 pandemic situation.
- In addition, smart class rooms are also available with state of art education technology facilities viz. Touch screen smart board, Integrated Public Address System and fully air conditioned smart class rooms to provide the best ambience for learning process.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

Ph.D. in Animal Biotechnology

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

Ph.D
in
Animal Genetics and Breeding

DEPARTMENT OF ANIMAL GENETICS AND BREEDING
MADRAS VETERINARY COLLEGE

6.4. Self-Study Report for Ph.D in Animal Genetics and Breeding

6.4.1. Brief History of the Degree Programme:

The Department of Animal Genetics and Breeding established during 1949 is one of the oldest Departments of Madras Veterinary College. The M.V.Sc. degree programme was introduced during the year 1957 and Ph.D. programme in 1978. This was the first Department of Madras Veterinary College recognized by the University of Madras for pursuing Ph.D. programme. The Department has a well-equipped Cytogenetics Laboratory, Biometrical and Computer Laboratory, Molecular Genetics Laboratory and Frozen Semen Bank. Besides teaching undergraduate and postgraduate students, the faculty and PG students take up research work in the frontier areas of biometrical genetics, cytogenetics, molecular genetics, gamete research and cryopreservation of gametes. The objectives of the Department are:

- To impart education in Animal Genetics and Breeding at undergraduate and postgraduate levels
- To carry out characterization and conservation of native germplasm
- To formulate breeding policy
- To develop human resources in the areas of Animal Breeding, Cytogenetics, Molecular Genetics and Artificial Breeding
- To cater to the needs of stakeholders through training and advisory services

Salient Achievements

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree	Boys	Girls	Total
Ph.D in AGB	-	-	-

2. International recognitions / collaborations: Nil

II. Research

- Under GoI-NPBB-TNLDA scheme "National Facility for Molecular Screening of Cattle for Inherited Disorders and Parentage Verification", 262 blood samples of breeding bulls from various frozen semen stations and crossbred cows from field were tested for inherited disorders such as Bovine Citrullinemia (BC), Bovine Leucocyte Adhesion Deficiency (BLAD), Deficiency of Uridine Monophosphate Synthetase (DUMPS) and Factor XI deficiency (FXI). Of which, one sample was positive for BLAD and the other was positive for BC.
- A total of 45 trios (sire, dam and progeny) from field progeny testing scheme were subjected for parentage verification. Out of 45 progenies, 39 were confirmed their parentage and in the rest (13.33 per cent) of samples, the sire excluded.
- A total of 173 breeding bulls inducted for frozen semen production from various semen stations were screened for gross chromosomal abnormalities. All the bulls were found to possess normal chromosome complement of 60, XY with acrocentric autosomes, sub-metacentric X chromosome, metacentric Y chromosome in crossbred and acrocentric Y chromosome in indigenous cattle, except one Kangayam bull where chromosomal polymorphism was noticed in Y-chromosome (Sub-telocentric Y-chromosome).

Another, crossbred bull calf was found to have acrocentric Y chromosome, demonstrating the sire line of indigenous origin.

- Molecular characterization of Nattukuttai cattle using microsatellite markers revealed that the total number of alleles, number of observed alleles and effective number of alleles indicate high allelic richness among Nattukuttai cattle, demonstrating its potential for persistence and adaptability.
- The genetic distance and multivariate analyses reveal the distinct nature of Nattukuttai cattle from other three breeds viz. Kangayam, Malai madu and Malnad Gidda and thus it can be considered for recognition as a distinct breed.
- Genetic analyses of performance traits of Ostrich (*Struthio camelus australis*) under farm conditions revealed that age at first egg significantly ($p < 0.05$) influenced the egg production. Birds having early sexual maturity had better egg production.
- Egg weight was also influenced by the age of hen. Heavier eggs were laid by the hens having age between 42 and 138 months.
- Heritability estimates of chick weight and early production traits and repeatability estimates of egg and chick weight studied were found to be high, suggestive of improvement of these traits through selection.

III. Clinical - Not applicable

Additional state of art facilities under clinical services: Not applicable

Ambulatory Services: Not applicable

IV. Extension - Not applicable

V. Human Resources Development

International and National awards won by staff of this institution are provided below:

- Awards and honours: Nil
- Overseas visit: Nil
- Training of staff:

Sl. No.	Name and designation of the Scientist	Title of the Programme	Duration	Place
1	Dr. A. Gopinathan, Assistant Professor	Workshop on "Robotics Based Learning System Development" under NAHEP on IDP for TANUVAS	29/07/2019 to 31/07/2019	MVC Chennai
2	Dr. S.M.K.Karthickeyan Professor and Head, Dr. K. Thilak Pon Jawahar, Professor, Dr. A. Gopinathan, Assistant Professor, Dr. R. Nithiaselvi, Assistant Professor	Workshop on "Livestock Gene Editing"	07/08/2019	MVC Chennai
3	Dr. A. Gopinathan, Assistant Professor	Workshop on "Modern Education Technology" under NAHEP on IDP for TANUVAS	19/08/2019 to 21/08/2019	MVC Chennai
4	Dr. A. Gopinathan, Assistant Professor	Workshop on "Intellectual Property Rights"	05/09/2019	MVC Chennai
5	Dr. A. Gopinathan, Assistant Professor	Workshop on "Pedagogy Tools in Veterinary Education" under NAHEP on IDP for TANUVAS	19/09/2019 to 21/09/2019	MVC Chennai
6	Dr. S.M.K.Karthickeyan, Professor and Head, Dr. K. Thilak Pon Jawahar, Professor, Dr. A. Sakthivel Selvan, Assistant Professor	Sensitization workshop on NAHEP Component 2: Activities and Implementation of Academic Management System	19/12/2019 and 20/12/2019	MVC Chennai

- **Conferences/seminars/symposia/training programmes/workshops organized during this period**

Sl. No.	Programmes	No. of beneficiaries
1.	Refresher training to personnel working in frozen semen banks of NDDB on "Breeding Soundness Examination for Breeding Bulls and Laboratory Techniques for Evaluation of Frozen Semen for Quality Assurance" from 22/07/2019 to 02/08/2019 sponsored by National Dairy Development Board (NDDB)	5
2.	Training programme on "Karyotyping, Screening of Inherited Disorders and Testing of Parentage in Bovines" from 14/10/2019 to 19/10/2019sponsored by Kerala Livestock Development Board (KLDB)	1

6.4.2. Faculty Strength

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/other regulatory bodies
Professor	1	1	-	-
Associate Professor	4	3	1	-
Assistant Professor	6	2	4	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	Animal Genetics and Breeding	1	4	0

6.4.4. Classrooms and Laboratories

UG laboratory - One

PG / Research laboratory - Four (Cytogenetics, Molecular genetics, Biometrical genetics and Artificial Breeding laboratories)

6.4.5. Conduct of Practical and Hands-on-Training: - Not applicable

6.4.6. Supervision of students in PG/PhD programmes: Number of students being supervised by Faculty in case of Masters/Ph. D Programme (as per ICAR/UGC guidelines). Mention the realistic figure /number of qualified faculty in relation to the intake of students, as per the guidelines in the matter.

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	AGB	10	9

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): Mention the feedback mechanism (duly supported by the documents) from different stakeholders of the degree programme. What action the University has taken in last five years to address the issues raised in the feedback?

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

Ph.D. Programmes

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
AGB (Ph.D)	-	-
2015-2016		
AGB (Ph.D)	-	-
2016-2017		
AGB (Ph.D)	-	-
2017-2018		
AGB (Ph.D.)	3	33
2018-2019		
AGB (Ph.D.)	2	-
2019-2020		
AGB (Ph.D.)	2	-
2020-21		
AGB (Ph.D.)	4	-
2021-22		
AGB (Ph.D.)	1	-

6.4.9. ICT Application in Curricula Delivery

- The college campus is fully connected with high speed internet connectivity. This enabled to provide uninterrupted lecture delivery facility, even during this COVID 19 pandemic situation.
- The student lecture halls inside the college campus are wi-fi enabled and are provided with uninterrupted internet connectivity to the student community to access e-learning and e-library resources.
- All the student lecture halls are provided with interactive display board and LCD projectors for effective delivery of lectures by the faculty members
- In addition, smart class rooms are also available with state of art education technology facilities viz. Touch screen smart board, Integrated Public Address System and fully air conditioned smart class rooms to provide the best ambience for learning process.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

Ph.D. in Animal Genetics and Breeding

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

Ph.D
in
Animal Husbandry Economics

DEPARTMENT OF ANIMAL HUSBANDRY ECONOMICS
MADRAS VATERINARY COLLEGE

6.4. Self Study Report for Ph.D in Animal Husbandry Economics

6.4.1. Brief History of the Degree Programme

The unique Department of Animal Husbandry Economics was started on 12.12.1980 at Madras Veterinary College, and continues to excel with the objectives of:

- Teaching Livestock Economics, Marketing and Business Management to Under Graduate and Post Graduate students
- Developing price policy models for major livestock products in Tamil Nadu
- Assessing cost of production of different livestock outputs; and conducting economic and financial analyses
- Undertaking policy studies for development of livestock sector
- Offering farm advisory services and delivering livestock enterprise projects to the aspiring farmers

EDUCATION

The department is offering courses on Livestock Economics, Marketing, Business Management, and Entrepreneurship for the students of B.V.Sc. & A.H. degree programme.

Post Graduate – M.V.Sc. and Ph.D.: The Department offers the ICAR PG curriculum (Agricultural Economics) based courses for the students pursuing Masters (M.V.Sc.) and Doctoral (Ph.D.) programmes with Animal Husbandry Economics Specialization.

Salient Achievements

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree	Boys	Girls	Total
Ph.D in AHE	-	-	-

2. **International recognitions / collaborations :** NIL

II. Research

- This Department has completed 25 research projects within a short span of 13 years.
- Tamil Nadu State Planning Commission has identified this department as a consultant for framing the Livestock Policy of the State.
- This Department has trained more than 350 persons in different areas of livestock economics.
- This Department helped nearly 300 farmers for preparation of different livestock projects.

III. Clinical

- **Additional state of art facilities under clinical services:** NIL
- **Ambulatory Services:** NIL

IV. Extension: nil

V. Human Resources Development

- Awards and honours:

S. No	Name of the institution / Staff / Student	Name of the award	Awarding body	Purpose of award	Nature of award
1	A.Serma Saravana Pandian	Best Paper Award	International conference on "Livestock Food Security and Food Safety – challenges opportunities and strategies"	Best Research paper presented at the conference	Certificate

- Overseas visit:
- Training of staff:

Sl. No.	Name and designation of the Scientist	Title of the Programme	Duration		Place	Approx. cost involved
			From	To		
1	Dr. J. Shilpa Shree Assistant Professor Dept. of Animal Husbandry Economics MVC, Chennai -7	Participated in ICAR Summer school programme on "Recent trends in the production of functional dairy foods and quality assurance	13.11.2019	03.12.2019	Madras Veterinary College, Chennai - 7	-
2	Dr. G.Kathiravan Professor and Head Dept. of Animal Husbandry Economics MVC, Chennai -7	Participated in the International conference on "Livestock Food Security and Food Safety – challenges opportunities and strategies"	28.01.2020	29.01.2020	Madras Veterinary College, Chennai - 7	Rs.3000
3	Dr. A. Serma Saravana Pandian Assistant Professor Dept. of Animal Husbandry Economics MVC, Chennai -7	Participated in the International conference on "Livestock Food Security and Food Safety – challenges opportunities and strategies"	28.01.2020	29.01.2020	Madras Veterinary College, Chennai - 7	Rs.3000
4	Dr. J. Shilpa Shree Assistant Professor Dept. of Animal Husbandry Economics MVC, Chennai -7	Participated in the International conference on "Livestock Food Security and Food Safety – challenges opportunities and strategies"	28.01.2020	29.01.2020	Madras Veterinary College, Chennai - 7	Rs.3000
5	Dr. G.Kathiravan Professor and Head Dept. of Animal Husbandry Economics MVC, Chennai -7	Workshop on "Advances in Market Intelligence"	13.12.2019	18.12.2019	Madras Veterinary College, Chennai - 7	-
6	Dr. A. Serma Saravana Pandian Assistant Professor Dept. of Animal Husbandry Economics MVC, Chennai -7	Workshop on "Advances in Market Intelligence"	13.12.2019	18.12.2019	Madras Veterinary College, Chennai - 7	-
7.	Dr. J. Shilpa Shree Assistant Professor Dept. of Animal Husbandry Economics MVC, Chennai -7	Workshop on "Advances in Market Intelligence"	13.12.2019	18.12.2019	Madras Veterinary College, Chennai - 7	-
8	Dr. G.Kathiravan Professor and Head Dept. of Animal Husbandry Economics MVC, Chennai -7	Sensitization workshop on "Implementation of Academics Management System (AMS)"	19.12.2019	20.12.2019	Madras Veterinary College, Chennai - 7	-

• **Conferences/ seminars/ symposia/ training programmes / workshops organized during this period:** Nil

6.4.2. Faculty Strength

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/other regulatory bodies
Professor	-	-	-	-
Associate Professor	2	1	1	-
Assistant Professor	5	3	2	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	Animal Husbandry Economics	0	2	0

6.4.4. Classrooms and Laboratories

Mention the number of class rooms and functional laboratories available for the degree programme and justify if it is sufficient to meet the course curricula requirement. Lists major equipments, laboratories, farm facilities, workshops and other instructional units being utilized for the award of the Degree Programme may be given. Mention theory and practical batches for the Degree Programme.

6.4.5. Conduct of Practical and Hands-on-Training: It is important to have a sound grasp of the theory that underlies any professional degree. But there are some skills that can only be learned through hands-on -practice. It is important that much of the learning material in any given course should be provided in a way that allows students to get as involved as possible to increase their knowledge and abilities. Clearly mention how far students are getting desired practical and hands-on-training as per the curriculum and meeting above mentioned requirements.

- Nil

6.4.6. Supervision of students in PG/PhD programmes: Number of students being supervised by Faculty in case of Masters/Ph. D Programme (as per ICAR/UGC guidelines). Mention the realistic figure /number of qualified faculty in relation to the intake of students, as per the guidelines in the matter.

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	AHE	3	3

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.)

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

Ph.D. Programmes

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
AHE (Ph.D)	-	-
2015-2016		
AHE (Ph.D)	-	-
2016-2017		
AHE (Ph.D)	3	-
2017-2018		
AHE (Ph.D.)	1	-
2018-2019		
AHE (Ph.D.)	1	-
2019-2020		
AHE (Ph.D.)	-	-
2020-21		
AHE (Ph.D.)	-	-
2021-22		
AHE (Ph.D.)	-	-

6.4.9. ICT Application in Curricula Delivery: The ICT is now integral part of the teaching programme. ICAR has also been promoting the use of ICT in teaching and practical. Mention whether the Degree Programme is meeting the expectations. If there is any shortfall, it shall be clearly mentioned. **Nil**

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

Ph.D. in Animal Husbandry Economics

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

Ph.D
in
Animal Nutrition

DEPARTMENT OF ANIMAL NUTRITION
MADRAS VETERINARY COLLEGE

6.4. Self-Study Report for Ph.D in Animal Nutrition

6.4.1. Brief History of the Degree Programme

Department of Animal Nutrition is one of the oldest departments in Madras Veterinary College. It was organized as a separate unit in 1950 and recognized as regional center for postgraduate education as early as in 1958. In 1960 it was recognized for carrying out Ph.D., programs. So far around 125 post graduate theses and PhD theses have been generated in this department.

The department established good infrastructure facilities as early as in 1980 to conduct advance research in mineral nutrition and radio isotope-oriented research. Graduates of this department are spread all over India and have also established themselves in foreign countries such as USA, Canada, UK and New Zealand occupying coveted positions. The department was headed by stalwarts from the time of its inception.

Salient Achievements

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree	Boys	Girls	Total
Ph.D in Animal Nutrition	2	1	3

2. **International recognitions / collaborations : Nil**

II. Research

- The methane emission was significantly ($p<0.01$) decreased by 7.17 % in macroalgae supplemented (2 %) group than control. The average daily milk production was significantly ($p<0.05$) increased by 9.51 % in marine macroalgae supplemented group than control.
- The feeding of balanced ration was significantly reduced the methane emission in g / cow / day and g / kg DDMI / day by 24.45 and 24.66 %, respectively than unbalanced ration fed to the indigenous dairy cattle under field conditions. The average milk yield /day was significantly ($p<0.05$) increased by 31.74 % in balanced ration when compared with unbalanced ration.
- Sheanut cake at 8 per cent level in total mixed ration reduced the methane production in dairy cattle by 25.04 % and 10.26 % invitro and in vivo respectively. Feeding sheanut cake based ration to cross bred dairy cattle reduced the feed cost 3.88 per kg milk.
- A Significant ($p \leq 0.05$) increase in body weight gain (1991.7 g and 1969.30 g), feed conversion ratio (1.75 and 1.76) and a decrease in feed intake (3495.26 g and 3481.84 g) was observed in broiler chicken supplemented with Pomegranate peel (15 and 20 g/kg) and Lacto bacillus (10^9/kg) and also significantly reduced ($p \leq 0.05$) the serum cholesterol (115.33 and 109.33 mg/dl) and LDL (16.66 and 20.66 mg/dl) but did not significantly ($p > 0.05$) alter the serum triglycerides and HDL at day 35.
- In vitro gas production study was carried out to assess the effect of different (Inorganic, organic and Nano) forms of copper at graded levels (0,5, 10, 15 and 20 ppm) on rumen microbial biomass production and results revealed that supplementation of copper significantly improved (P<0.05) digestibility such as IVADMD, IVTDMD and microbial biomass production compared to unsupplemented group at all levels of addition and irrespective of forms.

- Overall production performances of piglets fed with Liquid Milk Replacer and Solid Milk Replacer indicated that cost per kg live weight gain for Liquid Milk Replacer fed piglets were less than the control. Indicating feeding of liquid milk replacer is more beneficial to pig farmer to produce more litter size with less production cost.

III. Clinical

- **Additional state of art facilities under clinical services:** Nil
- **Ambulatory Services:** Nil

IV. Extension

Nil

V. Human Resources Development

The international and national awards won by staff of this institution are provided below:

- Awards and honours: Nil
- Overseas visit: Nil
- Training of staff: Nil
- Conferences/ seminars/ symposia/ training programmes / workshops organized during this period: Nil

6.4.2. Faculty Strength

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/other regulatory bodies
Professor	1	1	0	-
Associate Professor	2	0	2	-
Assistant Professor	7	2	5	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	Animal Nutrition	3	4	0

6.4.4. Classrooms and Laboratories:(Kindly provide the details in bulleted text)

- Number of class rooms-1
- Number of functional laboratories- 1
- Major Equipments

  1. Protein digestion and nitrogen distillation unit (Kjeltec)
  2. Ether extraction unit (Soxtec)
  3. Fibre extraction system (Fibretec)
  4. Hot air oven
  5. Muffle furnace
  6. Spectrophotometer
  7. Feed mixer

6.4.5. Conduct of Practical and Hands-on-Training

- Nutrient analysis was carried out by the students by handling the equipments.
- Feed and Mineral mixture preparation was carried out by the students in the production unit.

6.4.6. Supervision of students in PG/PhD programmes

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	ANN	6	3

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.)

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

M.V.Sc. and Ph.D. Programmes

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
ANN (Ph.D)	2	-
2015-2016		
ANN (Ph.D)	2	-
2016-2017		
ANN (Ph.D)	-	-
2017-2018		
ANN (Ph.D.)	3	-
2018-2019		
ANN (Ph.D.)	2	-
2019-2020		
ANN (Ph.D.)	-	-
2020-21		
ANN (Ph.D.)	1	-
2021-22		
ANN (Ph.D.)	-	-

6.4.9. ICT Application in Curricula Delivery

- All the student lecture halls are provided with interactive display board and LCD projectors for effective delivery of lectures by the faculty members

- In addition, smart class rooms are also available with state of art education technology facilities viz. Touch screen smart board, Integrated Public Address System and fully air conditioned smart class rooms to provide the best ambience for learning process.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

Ph.D. in Animal Nutrition

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

Ph.D
in
Biotechnology

DEPARTMENT OF ANIMAL BIOTECHNOLOGY
MADRAS VATERINARY COLLEGE

6.4. Self Study Report for Ph.D. in Biotechnology

6.4.1. Brief History of the Degree Programme

The Department of Animal Biotechnology was started at the Madras Veterinary College in 1989. In the year 1999, the Indian Council of Agricultural Research (ICAR) recognized the department as a "Centre of Excellence in Veterinary Biotechnology and Immunology". This Department is the first Animal Biotechnology Department in this country that was awarded the ISO 2001:9000 for Quality Management Systems through the British Standards Institute, UK. Recently, it has been awarded consecutively for the second term in Niche Area Scheme of Excellence in avian biotechnology to conduct research on "Improved and expanded vaccines and Immunological understanding of avian viruses" till date.

The Department of Animal Biotechnology is housed in two blocks of three floors each with 'state-of-the-art' facilities to carry out research in various facets of Biotechnology such as Molecular Diagnostics, Cell culture and Hybridoma, Immunotechnology, Animal Genomics and Embryo biotechnology. The Central Embryo Biotechnology lab is located at the University campus in Madhavaram.

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree	Boys	Girls	Total
Ph.D. in Biotechnology	-	-	-

2. **International recognitions / collaborations**

II. Research

- Evaluation of NKT Cell Based Glycolipid Adjuvants with Rabies Vaccines to Improve Immunogenicity and Long Term Protection
- Generated oligonucleotide sequences with binding ability to placental specific proteins (early pregnancy markers) namely PAG-1 & PAG-2 which have been confirmed by MALDI. The binding of the aptamer to the proteins also had been confirmed by EMSA and ELONA. The identified aptamer sequences have been used to confirm the presence of pregnancy specific placental markers and early confirmation of pregnancy in buffaloes
- The sub clinical mastitis (SCM) positive animals were made into 4 groups for three supplementary trials with trisodium citrate (TSC), levamisole and combination of trisodium citrate and levamisole. The role of supplementation on the inflammatory changes and cytokine expression pattern were assessed and analysed by real time PCR. The upregulation of Tumor necrosis factor-α showed a significant variation ($P<0.05$) on 4^{th}day in between groups. The cytokine expression pattern on 10th day fold changes showed a highly significant variation ($P<0.01$) among supplement groups.
- Supplementation of synbiotics has been proven to be more effective than the supplementation of prebiotics and probiotics alone, in terms of the growth performance and immunomodulation in broiler chicken. The synbiotic combination either of 0.75% of mannan oligosaccharide or of 0.5% xylo oligosaccharide along with probiotics can be recommended to the broiler farming community for better profitability. However, based on the net profit per kg live weight of broiler chicken, the use of 0.5% xylo oligosaccharide in the symbiotic formulation is more profitable.

- Whole genome sequencing of the wild type Classical Swine Fever virus (CSFV), PK-15 adapted CSFV at 45th and 75th passage helped in understanding the genetic nature of the virus before and after adaptation. Attenuation of the virus could be attributed to 22 transition and 12 transversion mutations found in adapted viruses

III. Clinical

- **Additional state of art facilities under clinical services:** Nil
- **Ambulatory Services:** Nil

IV. Extension: Nil

V. Human Resources Development

The international and national awards won by staff of this institution are provided below:

- Awards and honours:

Sl.No.	Name of the faculty	Name of the Award / honour	Type of Award / Awarding Body with name of the event	Details of the Award (Reason for the Award)
1.	Dr.K.G.Tirumurugaan, Professor	Travel grant award	Received the Travel grant from Food and Agriculture Organization of the United Nations (FAO) and the World Organization for Animal Health (OIE)	To attend the second meeting of the Peste des petits ruminants – Global Research and Expertise Network (PPR GREN) held at International Livestock Research Institute, Nairobi, Kenya, from 13th to 15th November 2019.
2.	M. Prinyanka, K.G. Tirumurugaan and S. Balasubramanian.	Best Oral presentation award	20th Indian Veterinary Congress and National symposium on Veterinary Research Priorities in Translational Animal Health, Production and Food Safety held between 21 – 22nd February 2020 at Madras Veterinary College, Chennai-7.	Generation of ssDNA oligonucleotides and their utility in detecting early pregnancy markers in Buffaloe
3.	Vignesh. R, K.G. Tirumurugaan and A. Gopinathan	Best Poster award	20th Indian Veterinary Congress and National symposium on Veterinary Research Priorities in Translational Animal Health, Production and Food Safety held between 21 – 22nd February 2020 at Madras Veterinary College, Chennai-7.	Generation of single stranded oligonucleotides with affinity to bovine spermatozoa

- Overseas visit:
- Training of staff:

Sl. No.	Name and designation of the Scientist	Title of the Programme	Duration		Place	Approx. cost involved
			From	To		
1.	Dr.K.Brindha, Associate Professor	Workshop on 'Robotics based learning system development' under National Agricultural Higher Education Project on 'Institutional Development Plan of TANUVAS'	29.07.2019 to 31.07.2019		Madras Veterinary College, Chennai - sponsored by ICAR	
2.	Dr.K.G.Tirumurugaan, Professor and Dr.K.Brindha, Associate Professor	International workshop entitled "Livestock gene editing"	07.08.2019		Dept of VGO, MVC, Chennai.	
3.	Dr.K.Tirumurugaan, Professor	*National symposium on "Current Trends in Contraception: Opportunities and Challenges for Population Control in Dogs and Cats"*	19.09.2019 to 20.09.2019		Madras Veterinary College, Chennai.	
4.	Dr.K.Brindha, Associate professor	ICAR-NAHEP-IDP programmes "Pedagogical tools in modern veterinary education"	19.09.2019 to 21.09.2019		Madras Veterinary College, Chennai.	
5.	Dr.K.Brindha, Associate professor	"Basic hands on training in proteomics"	27.11.2019 to 29.11.2019		C-Camp, Banglore	
6.	Dr.K.G.Tirumurugaan, Professor	Second meeting of the Peste des petits ruminants - Global Research and Expertise Network (PPR GREN)	13.11.2019 to 15.11.2019		International Livestock Research Institute, Nairobi, Kenya	
7.	Dr.M.Parthiban, Professor and Head	Training program on "Quality Management System and Internal Audit – ISO/IEC 17025:2017 Accreditation"	17.12.2019 to 18.12.2019		Dean, Faculty of Basic Sciences, MVC Campus	
8.	Dr.M.Parthiban, Professor and Head	Sensitization workshop on "NAHEP Component-2 Activities and Implementation of Academic Management System (AMS) in TANUVAS"	19.12.2019 to 20.12.2019		Madras Veterinary College, Chennai.	
9.	Dr.P.Raja Assistant Professor	Basic flowcytometry analysis training program	09.12.2019 to 11.12.2019		Center for Cellular and Molecular Platform (C-CAMP), Bangalore.	
10.	Dr.S.Meignanalakshmi Professor	Training program on "Quality management system and Internal Audit –ISO/IEC 17025:2017"	07.01.2020 to 10.01.2020		Dean, Faculty of Basic Sciences, MVC Campus	
11.	Dr.K.Brindha, Associate Professor	Training on "Next Generation Sequencing"	07.01.2020 to 08.01.2020		TRPVB, CAHS, Madhavaram.	

• Conferences/ seminars/ symposia/ training programmes / workshops organized during this period

Sl. No	Title of the Programme	Place	Duration		Name of the sponsoring agency	No. of Parti-cipants	No. of Papers presented	Approx. cost involved Rs.
			From	To				
1.	Level I- Short term specialized training for 5 days duration	Dept. of Animal Biotechnology, MVC	24.06.2019	28.06.2019	-	3	-	24,000/-
2.	Level II- Long term overview training for 28 days duration		15.05.2019	12.06.2019	-	20	-	2,00,000/-
3.	Level III- Project work or in-plant training for 3 months duration		December	February	-	18	-	3,60,000/-
4.	National training programme on Intracytoplasmic sperm injection	CEBU, ABT	20.09.2019	03.10.2019	-	1	-	80,000/-
5.	National Level Training Programme on "*In vitro* fertilization of farm animal oocytes and co- culture"	CEBU, ABT	02.05.2019	22.05.2019	-	13	-	6,50,000/-
			11.10.2019	31.10.2019	-	5	-	2,75,000/-
6.	National level workshop on "Recent trends in animal cell culture techniques"	Dept. of Animal Biotechnology, MVC	22.01.2020	24.01.2020	-	30	-	1,09,000/-

6.4.2. Faculty Strength

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/other regulatory bodies
Professor	1	1	0	-
Associate Professor	6	4	2	-
Assistant Professor	5	1	4	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	Animal Biotechnology	2	7	0

6.4.4. Classrooms and Laboratories

The Department of Animal Biotechnology have 6 different units of laboratory namely Molecular Biology, Animal Cell Culture, Environmental biotechnology, Immunotechnology, Rabies Diagnostic Laboratory and Centralized Embryo biotechnology unit

6.4.5. Conduct of Practical and Hands-on-Training: It is important to have a sound grasp of the theory that underlies any professional degree. But there are some skills that can only be learned through hands-on -practice. It is important that much of the learning material in any given course should be provided in a way that allows students to get as involved as possible to increase their knowledge and abilities. Clearly mention how far students are getting desired practical and hands-on-training as per the curriculum and meeting above mentioned requirements.

• Students are getting excellent hands-on-training with regard to various protocols for molecular techniques

6.4.6. Supervision of students in PG/PhD programmes

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	ABT	12	9

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): Mention the feedback mechanism (duly supported by the documents) from different stakeholders of the degree programme. What action the University has taken in last five years to address the issues raised in the feedback?

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

Ph.D. Programmes

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
BT (Ph.D)	-	-
2015-2016		
BT (Ph.D)	-	-
2016-2017		
BT (Ph.D)	2	-
2017-2018		
BT (Ph.D)	2	-
2018-2019		
BT (Ph.D)	2	-
2019-2020		
BT (Ph.D)	4	-
2020-21		
BT (Ph.D)	1	-
2021-22		
BT (Ph.D)	1	-

6.4.9. ICT Application in Curricula Delivery

- The college campus is fully connected with high speed internet connectivity. This enabled to provide uninterrupted lecture delivery facility, even during this COVID 19 pandemic situation.
- In addition, smart class rooms are also available with state of art education technology facilities viz. Touch screen smart board, Integrated Public Address System and fully air conditioned smart class rooms to provide the best ambience for learning process.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

Ph.D. in Biotechnology

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

Ph.D
in
Livestock Production Management

DEPARTMENT OF LIVESTOCK PRODUCTION MANAGEMENT
MADRAS VETERINARY COLLEGE

6.4. Self Study Report for Ph.D. in Livestock Production Management

6.4.1. Brief History of the Degree Programme

The Department of Livestock Production and Management, formerly known as Department of Hygiene, is one of the oldest departments of the College, having its origin in the year 1903.

Currently this department is engaged in teaching the subjects of Animal handling, Dairy Farming, Sheep and Goat, Swine, Rabbit, Pet, Draught and Laboratory animal Production and Management to under and post graduate students. So far 102 M.V.Sc's and 21 for Ph.D.'s had been produced by this department.

This department has also been engaged in research on different specialized livestock farming systems, management techniques, stress management, health management, nutritional management and economical eco friendly utilization and disposal of farm waste etc. The faculty of this department has published 287 research papers, 293 popular articles, Six books and Eighteen teaching manuals.

This department is also engaged in developing human resources in specialized field to the needy organizations apart from rendering farm advisory services to the needy farmers and livestock entrepreneurs. This department has also conducted a National seminar on Climatology and Animal Production in 1984 and a national symposium on Livestock Industry for Self/Gainful Employment in 1996.In addition to that a training programme on HRD in augmenting livestock production sponsored by Directorate of Extension, Ministry of Agriculture,Govt. of India in 2001 and a Short course on Newer technologies in augmenting livestock production sponsored by ICAR in 2002 and Seminar cum Exhibition on Emu Industry-Prospects in India on 06.10.2008.

Gramin Krishi Mausum Sewa Scheme (Formerly –IAAS)GOI-Ministry of Earth Sciences, Government of India, New-Delhi sponsored

Salient Achievements

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree	Boys	Girls	Total
Ph.D in LPM	-	-	-

2. **International recognitions / collaborations : NA**

II. Research

- A research study was conducted for the diagnosis for the sub clinical mastitis which causes major economical loss to the farming community. The results revealed that TANUVAS TEAT PROTECT spray is superior to Potassium permanganate in curing SCM of crossbred cows
- The research on the different type of flooring to the weaner piglets revealed that polyurathene slatted floor provided the maximum comfort when compared to other type of flooring and significantly improvised the body weight.

III. Clinical

- **Additional state of art facilities under clinical services: NA**
- **Ambulatory Services: NA**

IV. Extension

Details of Farmers Awareness Programme conducted at Madhukarai Village, Changelpattu District | Date : 10.02.2020

Gramin Krishi Mausam Sewa (Integrated Agromet Advisory Services Scheme) scheme functioning in the department of Livestock Production Management, Madras Veterinary College, Chennai – 7 organized on Awareness program on weather forecast and livestock management y at Madhukarai village, Chengalpattu District on 10.02.2020 respectively.

In this campaign 107 farmers participated and benefited. As a part of the campaign free veterinary health camp was organized. Deworming, Infertility treatment, Artificial Insemination for cattle, buffalo, sheep and goats were done. Over all 125 cattle and buffaloes, 78 sheep and goats and 5 puppies were benefited.

To increase milk production among the dairy animals TANUVAS mineral mixture was distributed to 107 farmers free of cost. The Weather Based Management of Agriculture, Livestock and Poultry awareness campaign was inaugurated by Dr. Thanga.Thamil Vanan, Nodal Officer, GKMS Scheme and Dr.D.Divyalakshmi, Technical Officer, GKMS Scheme. The function was benched by Dr.K.K.Singh, Scientist G and Head, IMD Agromet Services, New Delhi. The Joint Director of Animal Husbandry, Kancheepuram district and Scientist from Madras Veterinary College participated and delivered lectures on weather based management of livestock and agriculture. The programme was sponsored by Ministry of Earth Sciences, Government of India.

V. Human Resources Development

The international and national awards won by staff of this institution are provided below:

- Awards and honours:
- Awards for contribution and significant activities

Sl.No.	Name of the faculty	Name of the Award / honour	Type of Award / Awarding Body with name of the event	Details of the Award (Reason for the Award)
1	Dr. N. Kumaravelu	Shantha memorial prize	TANUVAS	Bargur Madu book
2	Dr. N. Kumaravelu	ISAPM Appreciation award	ISAPM	Outstanding performance in the field of livestock production

- Overseas visit: NA
- Training of staff:

Sl. No.	Name and designation of the Scientist	Title of the Programme	Duration		Place	Approx. cost involved
			From	To		
1	Dr.N.Kumaravelu	ISAPM conference	6th February, 2020		Jaipur	-

2	Dr.A.Yasotha	ISAPM conference	6th February,2020	Jaipur	-
3	Dr.A.Yasotha	Interational LASA conference	22-23.11.2019	Pune	-
4	Dr.S.Usha	ISAPM conference	6th February,2020	Jaipur	-
5	D.Divyalakshmi	International Conference on "Livestock, Food Security and Food Safety	January 28-29, 2020	MVC	-

• Conferences/ seminars/ symposia/ training programmes / workshops organized during this period

Sl. No.	Title of the Programme	Place	Duration		Name of the sponsoring agency	No. of Partici-pants	No. of Papers presented	Approx. cost involved
			From	To				
1	Farmers awareness programme	Madhuranthagam	10.02.2020		GKMS	106 farmers	-	35,000
2.	Farmers meet cum symposia for goat rearers	VCRI, Tirunelveli	2-3 January,2020		Aavin, NABARD	More than 500 farmers		

6.4.2. Faculty Strength

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/ VCI/other regulatory bodies
Professor	1	2	-	-
Associate Professor	1	-	1	-
Assistant Professor	5	3	2	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	LPM	1	2	1

6.4.4. Classrooms and Laboratories

Class room and a laboratory (environmental lab) is present with audio visual aids is available for the students

6.4.5. Conduct of Practical and Hands-on-Training: It is important to have a sound grasp of the theory that underlies any professional degree. But there are some skills that can only be learned through hands-on -practice. It is important that much of the learning material in any given course should be provided in a way that allows students to get as involved as possible to increase their knowledge and abilities. Clearly mention how far

students are getting desired practical and hands-on-training as per the curriculum and meeting above mentioned requirements.

- Apart from regular classroom teaching, enough hands-on-training is offered to the students during practical hours, to meet the protocol / syllabi mentioned in UG and PG curriculum.
- Students are trained in various animal husbandry practices right from the bottom level during livestock farm practices in Livestock Farm Complex.

6.4.6. Supervision of students in PG/PhD programmes

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	LPM	8	4

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): Mention the feedback mechanism (duly supported by the documents) from different stakeholders of the degree programme. What action the University has taken in last five years to address the issues raised in the feedback?

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

Ph.D. Programmes

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
LPM (Ph.D)	1	-
2015-2016		
LPM (Ph.D)	-	-
2016-2017		
LPM (Ph.D)	-	-
2017-2018		
LPM (Ph.D.)	1	-
2018-2019		
LPM (Ph.D.)	1	-
2019-2020		
LPM (Ph.D.)	1	-
2020-21		
LPM (Ph.D.)	1	-
2021-22		
LPM (Ph.D.)	2	-

6.4.9. ICT Application in Curricula Delivery: The ICT is now integral part of the teaching programme. ICAR has also been promoting the use of ICT in teaching and practical. Mention whether the Degree Programme is meeting the expectations. If there is any shortfall, it shall be clearly mentioned. Nil

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

Ph.D. in Livestock Production Management

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

Ph.D
in
Livestock Products Technology

DEPARTMENT OF LIVESTOCK PRODUCTS TECHNOLOGY
MADRAS VETERINARY COLLEGE

6.4. Self-Study Report for Ph.D in Livestock Products Technology

6.4.1. Brief History of the Degree Programme:

The Department of Meat Science and Technology was created in the year 1958-59. The department was recognised as post-graduate department in the year 1962, to promote the principles of hygienic meat production as the first of its kind in India. A modern meats laboratory was established in the year 1972.

The Department was created to educate the students on various aspects of meat hygiene, fresh meat technology, processed meat technology, developments of various value added novel products, animal by-products utilization and veterinary public health. To promote the principles of hygienic meat production, a Modern Meats Laboratory (with facilities for slaughter of food animals, processing of meat and meat products with storage facilities), Quality Control Laboratory, Meat Species Identification Laboratory, Meat Microbiology Laboratory and Meat Products Processing Laboratory were established.

Department of Dairy Science was started in the year 1947 as an independent unit considering the important role of dairy sector in terms of its contribution to GDP of our country. Thereafter, this department was involved in educating the students pursuing Veterinary Science on the subjects of Dairy Science and Animal management, leading to the award of G.M.V.C. degree. Dr. C.N. Stark from USA was appointed as the first Professor of Dairy Science. This department has a full-fledged Dairy Plant with latest equipments, where processing of milk and dairy products preparation are being carried out throughout the year.

Salient Achievements

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree	Boys	Girls	Total
Ph.D in LPT	1	1	2

2. **International recognitions / collaborations :**

II. Research

- A protocol for preparation of feather meal by microbial keratinase was developed
- A protocol to prepare keratin biopolymer was developed
- Bioactive peptide from chicken intestines possessing anti-diabetic and anti-oxidant activity was developed
- An electrical impedance meter was developed and the impedance measured in meat was found to correlate well with the microbial counts of meat
- A method to assess proximate analysis of beef and chicken by Fourier Transform Near Infrared Spectroscopy (FTNIR) was evolved.
- A method to assess heavy metals in ready-to-eat chicken meat products using Inductively Coupled Plasma Optical Emission Spectrophotometers (ICP-OES) was developed
- Patent on "RYZ-Cream – Composition and Process for Preparation thereof" – Approved and Patent certificate obtained on 02.09.2019
- Development of probiotic ghee residue chocolates with orange peel

The probiotic ghee residue dark and white chocolate with orange peel was developed with nutritional and functional properties by utilizing the by-products such as ghee residue and orange peel.

- It was found that the developed chocolate was acceptable up to 60 days retaining desirable level of probiotics in the chocolate.
- In the present study neither coliforms nor yeast and moulds were detected during the storage period upto 60 days of storage period

III. Clinical

- **Additional state of art facilities under clinical services:** Nil
- **Ambulatory Services:** Nil

IV. Extension

- Pig Restrainer fabricated under the AICRP on PHET scheme has been commercialized. One unit has been sold to the Veterinary College and Research Institute, Tirunelveli.
- Conducted World Milk Day celebration in association with IDA TN Chapter & IDA - South Zone at CFDT, Koduveli on 18.06.2019
- Conducted one month Skill development training programme on on "Milk and Milk Products Quality Control Assistant" from 17.06.2019 -20.07.2019 and 26.02.2020 organized by DDE, TANUVAS. Totally 2 entrepreneurs attended and benefitted in this training.
- Offered Skill development training for the final year BVSc students of Orissa Vet College from 30.10.2019 – 05.11.2019. Totally 19 students attended and benefitted in this training.

V. Human Resources Development

The international and national awards won by staff of this institution are provided below:

- Awards and honours:
  - o New Product development - National Symposium on "Organic and Genetically Modified Food" on 14.02.2020 at the Department of Food Process Engineering, School of BioEngineering, SRM Institute of Science and Technology, Kattankulathur- 603203 for Development of Value added Goat Meat Spread enriched with Calcium" to Dr.M.Raziuddin and Dr.R.Narendra Babu.
  - o Best Poster Presentation - National Symposium on "Organic and Genetically Modified Food" on 14.02.2020 at the Department of Food Process Engineering, School of BioEngineering, SRM Institute of Science and Technology, Kattankulathur- 603203 for the poster entitled "Development of Value added Goat Meat Spread enriched with Calcium" to Dr.M.Raziuddin and Dr.R.Narendra Babu"
- Overseas visit:
- Training of staff:
- Conferences/ seminars/ symposia/ training programmes / workshops organized during this period

SI.No.	Programmes	No. of beneficiaries
1.	Livestock Assistant Training Programme for Lab Assistant	1
2.	Hygienic Meat Production (Hands on training on handling of Electrical Stunner and hygienic slaughter, dressing and fabrication of food animals)	4

Sl. No.	Name and designation of the Scientist	Title of the Programme	Duration		Place	Approx. cost involved
			From	To		
1	Dr.T.R.Pugazhenthi, Professor	One day Seminar on "The Dutch Dairy Days 2019" organized by IDA – TN Chapter	16th May 2019		The Hablis Hotel, Guindy, Chennai	-
2	Dr. D. Baskaran, Professor Dr.B.Suresh Subramonian, Professor Dr. T.R.Pugazhenthi, Professor	World Milk Day celebration in association with IDA TN Chapter & IDA - South Zone	18.06.2019		CFDT, Koduveli, Chennai	
3	Dr.B.Suresh Subramonian, Professor Dr. T.R.Pugazhenthi, Professor	Two days seminar on "Promotion of Dairy Enterpreneurship through Innovative Strategies" by Indian Dairy Association, Tamil Nadu chapter	October 18th & 19th , 2019		Karunya Institute of Technology and Sciences (KITS), Coimbatore	
4	Dr. B. Dhanalakshmi, Professor & Head, Dr. R. Palani Dorai, Professor Dr. T.R.Pugazhenthi, Professor	Orientation Programme for the Academic Counsellors of IGNOU - DDT Course organized by IGNOU, Regional Centre, Chennai	22.11.2019		MVC, Chennai	
5	Dr. T.R. Pugazhenthi, Professor	NAARM training on "Advances in Market Intelligence for the Faculty of TANUVAS"	13.12.2019 to 18.12.2019		MVC, Chennai	
6	Dr. T.R. Pugazhenthi, Professor	International Conference on "Livestock, Food Security and Food Safety – Challenges, Opportunities and Strategies" - ICFS 2020	28.01.2020 29.01.2020		MVC, Chennai	

6.4.2. Faculty Strength

Meat Science

Department MAIN			
Category	**Sanctioned faculty**	**Faculty in place**	**Vacant position**
Professor	2	1	1
Associate Professor	2	-	2
Assistant Professor	2	-	2
AICRP on PHET Scheme			
Senior Scientist (LPT)/ Associate Professor	1	1	-
Scientist (AS & PE),(Food Microbiology),(Technician (T6))/Assistant Professor	3	3	-

Dairy Science

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/ VCI/other regulatory bodies
Professor	1	1	-	-
Associate Professor	2	2	1	-
Assistant Professor	6	2	4	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	LPT	6	19	0

6.4.4. Classrooms and Laboratories: (Kindly provide the details in bulleted text)

Mention the number of class rooms and functional laboratories available for the degree programme and justify if it is sufficient to meet the course curricula requirement. Lists major equipments, laboratories, farm facilities, workshops and other instructional units being utilized for the award of the Degree Programme may be given. Mention theory and practical batches for the Degree Programme.

Number of Classrooms: 2

Number of Laboratories : 5

Slaughter hall

- Overhead Rails
- Hoist
- Pig Restrainer
- Captive bolt stunners

- Electrical Stunner
- Brisket cutting saw
- Mobile Scalding Tank
- Modular chiller and modular freezer
- Cabinet / Commercial Deep freezers
- Semi-automated poultry processing line
- Mobile poultry processing plant
- Vacuum packaging machine

Meat Products Laboratory

- Meat mincer
- Bowl Chopper
- Sausage stuffer
- Patty making machine
- Ice flaking Machine
- Brine Injector
- Vacuum Tumbler
- Smoking Cabinet
- Retort processing unit
- Meat slicer
- Blade tenderiser
- Cooking vat and other gadgets for cooking including LPG gas stove, micro wave oven, electric grill, tandoor and barbecue cooking.
- Twin screw extruder

Meat Quality Control Laboratory

- pH meter
- Hunter lab Spectro-colorimeter
- Texture Analyser
- UV-vis spectrphotomer
- Warner Bratzler Shear Force Machine
- Virtis Homogeniser for assessment of myofibrillar fragmentation index
- Digital Polar planimeter
- Electrical impedance meter
- Salinometer
- Microscope with facilities for micrometry.

Meat Microbiology Laboratory

- Class II Bio-safety Cabinet
- Stomacher
- Colony counter
- Autoclaves
- Hot air oven
- Incubator and BOD incubator

Meat Speciation Laboratory

- Gel Electrophoresis
- PCR
- Refrigerated Centrifuge
- Shaker
- Spinwin

Food Testing Laboratory for Meat and Meat products

- LC MS MS
- GC MS MS
- ICP OES
- Vitek 2 Compact
- FTNIR spectrophotometer
- Kjeltec 2100 distillation unit
- Soxtec 8000 extraction unit

The following major equipment are available at this Department for the award of the Degree Programme: Trinocular Research Microscope, Freeze Drier, Fermentor, Homogenizer, Texture Analyser, Laminar Air Flow, Spray drier, Moulder cum semi automatic packing machine, water activity meter, SOFTEL softy ice cream machine with accessories, Auto spiral plater with colony counter, Blast freeze and, Ice candy machine

6.4.5. Conduct of Practical and Hands-on-Training: It is important to have a sound grasp of the theory that underlies any professional degree. But there are some skills that can only be learned through hands-on -practice. It is important that much of the learning material in any given course should be provided in a way that allows students to get as involved as possible to increase their knowledge and abilities. Clearly mention how far students are getting desired practical and hands-on-training as per the curriculum and meeting above mentioned requirements.

- Student are provided hands on training in slaughter and dressing of food animals, ante- mortem inspection, post – mortem examination of food animals and their carcasses; assessment of meat quality including physico-chemical, microbial and sensory qualities, preservation and processing of meat and meat products including slaughter house by-products.
- Students are empowered with technology for the preparation of products like flavoured milk, curd, masala butter milk, lassi, gulabjamun etc.,

- Students are exposed to packaging technologies involved in packaging of various fluid and solid dairy products
- Students come to know about the commercial aspects of marketing strategies of the dairy products

6.4.6. Supervision of students in PG/PhD programmes

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	LPT	12	8

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.)

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

Ph.D. Programmes

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
LPT (Ph.D)	3	-
2015-2016		
LPT (Ph.D)	2	-
2016-2017		
LPT (Ph.D)	2	-
2017-2018		
LPT (Ph.D.)	4	-
2018-2019		
LPT (Ph.D.)	1	-
2019-2020		
LPT (Ph.D.)	-	-
2020-21		
LPT (Ph.D.)	-	-
2021-22		
LPT (Ph.D.)	-	-

6.4.9. ICT Application in Curricula Delivery: The ICT is now integral part of the teaching programme. ICAR has also been promoting the use of ICT in teaching and practical. Mention whether the Degree Programme is meeting the expectations. If there is any shortfall, it shall be clearly mentioned.

- ICT tools used in classes include power point presentations for both theory and practical Video lessons developed in house from the department and as well as from the internet source, in Smart boards and Television,

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

Ph.D. in Livestock Products Technology

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

Ph.D
in
Poultry Science

DEPARTMENT OF POULTRY SCIENCE
MADRAS VETERINARY COLLEGE

6.4. Self-Study Report for Ph.D in Poultry Science

6.4.1. Brief History of the Degree Programme

To meet the manpower requirement of the poultry industry, the Department of Poultry Science was started in the Madras Veterinary College in the year 1970 with the following objectives.

1.To impart teaching for Under Graduate, Post Graduate and Doctoral Programmes.

2.To conduct research programmes for M.V.Sc., and Ph.D., Scholars Farm advisory services.

Salient Achievements

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree	Boys	Girls	Total
Ph.D in Poultry science	1	NIL	1

2. **International recognitions / collaborations :** Nil

II. Research

The significant research achievements from this institution during this period are furnished below:

- Thermal conditioned Aseel, NN and NNB3 had a significantly higher body weight, weight gain with better feed efficiency than control.
- Aseel had high relative mRNA (fold change) expression with respect to IF-β resulted in better immune genes expression.
- Thermal conditioning is the best managemental approaches which lead to improve the thermo tolerance in different chicken strains.
- Nano Se supplementation had significant inference on body weight, weight gain by reduced feed consumption with better FCR during fifth week of age.
- The per cent livability and immune response against Newcastle Disease virus were not significantly influenced by nano Se supplementation and other anti-stressors.
- Increased levels of Hb, TEC and PCV were recorded in birds supplemented with nano Se than other anti-stressors and control group.
- Nano Se and other anti-stressors will be effectively utilized to improve the productivity and to enhance the thermal resistance of broilers during summer stress.
- The eggs of Lories had significantly higher egg weight compared to Lorikeets.
- The Loriinae predominantly laid two egg clutches and rarely single egg clutches.
- The egg weight, shape index, per cent fertility and per cent total hatchability significantly differed among different species of Lorikeets but only egg weight among different species of Lories.
- The higher egg weight category in Lorikeets had significantly better fertility, fertile hatchability and total hatchability.
- The egg size, shape index, fertility and egg laying pattern can be exploited by genetic, nutrition and management practices to get more number of chicks per dam.

- In vov injection of DCP + Vitamin D3 significantly increased per cent hatchability and day-old broiler chick weight.
- The marketing body weight and weight gain at fifth week was significantly increased by in ovo intervention when compared to non-injected controls.
- *In ovo* injection of 25 ppm nano DCP + Vitamin D3 improved production performance, reduced leg weakness and increased net profit.

III. Clinical: N.A.

- **Additional state of art facilities under clinical services:** NA
- **Ambulatory Services:** NA

IV. Extension

- Capacity building programmes within state for progressive poultry farmers/ unemployed youth under NADP scheme on Establishment of rural poultry inputs and skill Development centre**,** Department of Poultry Science, MVC, Chennai.
- First five-day training programme was conducted at Farmers Hostel, Madhavaram Milk Colony, Chennai 51 from 24th to 28th June 2019. A total of 18 farmers (ST - 12 + SC - 6) including one women farmer from 6 districts attended the programme.
- Second five-day programme was conducted at PGRIAS, Kattupakkam from 18th to 22nd, November, 2019 for 53 candidates from 19 districts of the state. The participants include 4 women and 13 scheduled caste entrepreneurs.
- Third five-day training programme was conducted at PGRIAS, Kattupakkam from 27th to 31th January, 2020. A total of 54 entrepreneurs (49 men + 5 women) including 8 schedule caste candidates form 20 districts participated.

V. Human Resources Development

- Awards and honours: Nil
- Overseas visit: Nil
- Training of staff: Nil
- Conferences/ seminars/ symposia/ training programmes / workshops organized during this period: Nil

6.4.2. Faculty Strength

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/other regulatory bodies
Professor	1	1	-	-
Associate Professor	2	2	-	-
Assistant Professor	6	1	5	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	Poultry Science	2	2	2

6.4.4. Classrooms and Laboratories

- One Classroom for PG and laboratories for UG and PG are available in the department.

6.4.5. Conduct of Practical and Hands-on-Training

It is important to have a sound grasp of the theorythat underlies any professional degree. But there are some skills that can only be learned throughhands-on -practice. It is important that much of the learning material in any given course should beprovided in a way that allows students to get as involved as possible to increase their knowledgeand abilities. Clearly mention how far students are getting desired practical and hands-on-trainingas per the curriculum and meeting above mentioned requirements.

- Apart from regular classroom teaching, enough hands-on-training is offered to the students during practical hours, to meet the protocol / syllabi mentioned in PG curriculum.
- Students are trained in various animal husbandry practices right from the bottom level during livestock farm practices in Livestock Farm Complex.

6.4.6. Supervision of students in PG/PhD programmes

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	PSC	12	9

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): Mention the feedback mechanism (duly supported by the documents) from different stakeholders of the degree programme. What action the University has taken in last five years to address the issues raised in the feedback?

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

Ph.D. Programmes

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
PSC (Ph.D)	2	**50**
2015-2016		
PSC (Ph.D)	-	**-**
2016-2017		
PSC (Ph.D)	1	**-**
2017-2018		
PSC (Ph.D.)	-	**-**
2018-2019		
PSC (Ph.D.)	-	-
2019-2020		
PSC (Ph.D.)	-	**-**
2020-21		
PSC (Ph.D.)	3	**-**
2021-22		
PSC (Ph.D.)	-	**-**

6.4.9. ICT Application in Curricula Delivery

The ICT is now integral part of the teaching programme. ICAR has also been promoting the use of ICT in teaching and practical. Mention whether the Degree Programme is meeting the expectations. If there is any shortfall, it shall be clearly mentioned.

- The college campus is fully connected with high speed internet connectivity. This enabled to provide uninterrupted lecture delivery facility, even during this COVID 19 pandemic situation.
- The student lecture halls inside the college campus are wi-fi enabled and are provided with uninterrupted internet connectivity to the student community to access e-learning and e-library resources.
- All the student lecture halls are provided with interactive display board and LCD projectors for effective delivery of lectures by the faculty members
- In addition, smart class rooms are also available with state of art education technology facilities viz. Touch screen smart board, Integrated Public Address System and fully air conditioned smart class rooms to provide the best ambience for learning process.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

Ph.D. in Poultry Science

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

Ph.D
in
Veterinary Anatomy

DEPARTMENT OF VETERINARY ANATOMY
MADRAS VETERINARY COLLEGE

6.4. Self-Study Report for Ph.D in Veterinary Anatomy

6.4.1. Brief History of the Degree Programme

Teaching of veterinary anatomy and histology was started as early as 1903 when the Madras Veterinary College was started. The main objectives of the department are:

- To teach anatomy of domestic animals to undergraduate and postgraduate students of veterinary science
- To impart training programmes for field veterinarians/ clinicians to refresh their anatomical knowledge and provide hands on training which can be applied in clinical diagnosis, physical examination and surgical procedures
- To carry out basic research programmes

Salient Achievements

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree	Boys	Girls	Total
Ph.D in VAN	1	2	3

2. International recognitions / collaborations: Nil

II. Research

- Gross and microanatomy of the hepatopancreatic organ in guinea pig (cavia porcellus)
- Gross and microanatomical studies on the intestines of guinea pig(*Cavia porcellus*).

III. Clinical - Not applicable

- Additional state of art facilities under clinical services: Not applicable
- Ambulatory Services: Not applicable

IV. Extension - Not applicable

V. Human Resources Development

International and National awards won by staff of this institution are provided below:

- Awards and honours:

Sl. No.	Name of the faculty	Name of the Award / honour	Type of Award / Awarding Body with name of the event	Details of the Award (Title of the thesis / Research article / poster / oral paper presented)
1.	S. Senthilkumar, T.A.Kannan and S.UshaKumary	Best poster presentation award – III	VC&RI, Orathanadu-614625. Clinical anatomy of bovines and canines for effective veterinary practice	'Omentopexy and Abomasopexy in Bovine: Significance of Surgical Anatomy''

- Overseas visit: Nil
- Training of staff:
- **Conferences/seminars/symposia/training programmes/workshops organized during this period**

6.4.2. Faculty Strength

The faculty strength of the Degree Programme is given cadre-wise, both sanctioned and in-place

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/other regulatory bodies
Professor	1	1	-	-
Associate Professor	3	3	-	-
Assistant Professor	4	1	3	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	Veterinary Anatomy	5	4	0

6.4.4. Classrooms and Laboratories

UG laboratory - Two (One for Gross Anatomy and one for Histology)

PG / Research laboratory - Two

6.4.5. Conduct of Practical and Hands-on-Training

- Apart from regular classroom teaching, enough hands-on-training is offered to the students during practical hours, to meet the protocol / syllabi mentioned in UG and PG curriculum.

6.4.6. Supervision of students in PG/PhD programmes: Number of students being supervised by Faculty in case of Masters/Ph. D Programme (as per ICAR/UGC guidelines). Mention the realistic figure /number of qualified faculty in relation to the intake of students, as per the guidelines in the matter.

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	VAN	5	5

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): Mention the feedback mechanism (duly supported by the documents) from different stakeholders of the degree programme. What action the University has taken in last five years to address the issues raised in the feedback?

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

Ph.D. Programmes

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
VAN (Ph.D)	1	-
2015-2016		
VAN (Ph.D)	-	-
2016-2017		
VAN (Ph.D)	-	-
2017-2018		
VAN (Ph.D.)	2	-
2018-2019		
VAN (Ph.D.)	2	-
2019-2020		
VAN (Ph.D.)	3	-
2020-21		
VAN (Ph.D.)	3	**33**
2021-22		
VAN (Ph.D.)	2	-

6.4.9. ICT Application in Curricula Delivery

- The college campus is fully connected with high speed internet connectivity. This enabled to provide uninterrupted lecture delivery facility, even during this COVID 19 pandemic situation.
- The student lecture halls inside the college campus are wi-fi enabled and are provided with uninterrupted internet connectivity to the student community to access e-learning and e-library resources.
- All the student lecture halls are provided with interactive display board and LCD projectors for effective delivery of lectures by the faculty members
- In addition, smart class rooms are also available with state of art education technology facilities viz. Touch screen smart board, Integrated Public Address System and fully air conditioned smart class rooms to provide the best ambience for learning process.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

Ph.D. in Veterinary Anatomy

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

Ph.D
in
Veterinary and Animal Husbandry Extension Education

DEPT OF VETERINARY & ANIMAL HUSBANDRY EXTENSION EDUCATION
MADRAS VETERINARY COLLEGE

6.4. Self Study Report for Ph.D. in Veterinary AH Extension

6.4.1. Brief History of the Degree Programme

The Department of Extension was established in the year 1963 with an aim to teach under graduate students in the aspects of sociology, rural development and transfer of scientific know-how to the farming community. From 2000 –2001 onwards the department offers three courses in accordance with the VCI regulations. In the year 1990-91, post-graduate programme on Animal Husbandry Extension was introduced. The Department of Communication and Entrepreneurship was merged with this department on 01.05.2003 and was renamed as the Department of Veterinary and Animal Husbandry Extension and Entrepreneurship.

Objectives

- To impart teaching to undergraduate and post graduate students in animal husbandry extension
- To undertake research in veterinary and animal husbandry extension
- To record and arrange for dissemination of scientific information on livestock and poultry farming through different media
- To analyse the impact of various extension programmes of TANUVAS

In the year 1990-91, post-graduate programme on Animal Husbandry Extension was introduced, for the first time in South India, with an idea of developing manpower for strengthening the extension institutes and research centers. In the year 2005, Ph.D., programme on Veterinary and Animal Husbandry Extension was introduced at Madras Veterinary College. Periodical field visits are undertaken by under graduate and postgraduate students as a part of their course. This helps in understanding the activities of the farmers, officials, extension personnel, etc and also development of various teaching aids and conducting campaign.

Salient Achievements

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree	Boys	Girls	Total
Ph.D in VAE	-	-	-

2. **International recognitions / collaborations:**

II. Research

- Developed Hydrological Animal Disaster Management Model - Interactive Information Dissemination Disc, Animal Disaster Management Model for Drought Management – An Interactive Information Dissemination Disc and Animal Disaster Management Model for Earthquake – An Interactive Information Dissemination Disc for the benefit of farmers.

III. Clinical

- **Additional state of art facilities under clinical services:** Nil
- **Ambulatory Services:** Nil

IV. Extension

- An International Seminar on Innovative Extension Management for uplifting livelihood of farmers – Status, Initiatives and Way forward was jointly organized by Department of Veterinary and Animal Husbandry Extension Education, Madras Veterinary College, Chennai and National Institute of Agricultural Extension Management (MANAGE), Telangana on 27.06.2019 & 28.06.2019 at Madras Veterinary College, Chennai - 600 007. A total of 220 participants representing ICAR institutes, State Agricultural Universities, State Veterinary Universities, State Department of Animal Husbandry and Aavin from the states of Tamil Nadu, Kerala, Andhra Pradesh, Telangana, Karnataka, West Bengal attended the seminar. In addition delegates from Bangladesh, USA, Ethiopia, Sri Lanka and Nigeria participated in this programme. A total of 125 research papers were presented along with invited and lead papers in five themes by the delegates from India and Abroad. Dr. Usha Rani I.A.S, Director General, National Institute of Agricultural Extension Management (MANAGE), Telangana released the compendium and offered inaugural address.

- A Training of Trainers (ToT) programme on "Animal Disaster Management" for faculty of TANUVAS was organised from 04.02.2020 to 06.02.2020 by the Department of Veterinary and Animal Husbandry Extension Education, Madras Veterinary College, Chennai of TANUVAS in collaboration with Tamil Nadu Disaster Risk Reduction Agency (TNDRRA), World Animal Protection, New Delhi at Madras Veterinary College, Chennai. Dr. J. Radhakrishnan, I.A.S. Principal Secretary/Commissioner of Revenue Administration, Govt. of Tamil Nadu inaugurated the newly established Veterinary Emergency Response Units (VERU) at Constituent colleges of TANUVAS (VCRI at Namakkal, Orathanadu and Tirunelveli and distributed Emergency Veterinary kits to newly established VERUs. He also released a State Disaster Management Standard Operating Procedures (SOP) and delivered the inaugural address. Shri. K.M.Singh, I.P.S. (Retd.) Former Member, NDMA, New Delhi released a Hand book on Animal Disaster Management and offered special address. The National Disaster Response Force, Arakonam exhibited and demonstrated various disasters relief devices for the benefit of the stakeholders.

V. Human Resources Development

- Awards and honours: Nil
- Overseas visit: Nil
- Training of staff:

Sl. No.	Name and designation of the Scientist	Title of the Programme	Duration		Place	Approx. cost involved
			From	To		
1	Dr. P. Kumaravel Professor and Head	IDP workshop for Nodal officers	08.11.2019		UAS. Bengaluru	Rs.3,000
2	Dr. P. Kumaravel Professor and Head	Study on the pattern of functioning of Livestock development Boards of other states	18.12.2019 & 19.12.2019		Livestock Development Board, Telangana	Rs. 15,000
3	Dr. P. Kumaravel Professor and Head	Workshop on Key Informant Interviews	20.11.2019 to 27.11.2019		MVC, Chennai	-
4	Dr. S. Saraswathi	Workshop on Key Informant Interviews	20.11.2019 to 27.11.2019		MVC, Chennai	-
5	Dr. N. Vimal Rajkumar	Workshop on Key Informant Interviews	20.11.2019 to 27.11.2019		MVC, Chennai	-

• Conferences/ seminars/ symposia/ training programmes / workshops organized during this period

SI.No.	Programmes	No. of beneficiaries
1.	International Seminar on Innovative Extension Management for uplifting livelihood of farmers – Status, Initiatives and Way forward on 27.06.2019 & 28.06.2019	220
2.	A Training of Trainers (ToT) programme for faculty of TANUVAS on "Animal Disaster Management" on 04.02.2020 to 06.02.2020	40
3.	Orientation programme cum workshop on "Key Informant Interviews" on 20.11.2019 to 27.11.2019	10
4.	Student educational campaign for III year students on 14.03.2020	140
5.	Training programme on indigenous poultry technology on 23.01.2020, 29.02.2020, 10.02.2020 and 23.12.2019	200

6.4.2. Faculty Strength

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/ VCI/other regulatory bodies
Professor	1	1	-	-
Associate Professor	2	1	1	-
Assistant Professor	4	2	2	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	VAE	1	3	0

6.4.4. Classrooms and Laboratories

- Fully furnished audio and video recording room is established at the department of Veterinary and Animal Husbandry Extension Education, Madras Veterinary College for the benefit of students.

6.4.5. Conduct of Practical and Hands-on-Training

- A One day Educational campaign was conducted by the Departmnt of Veterinary and Animal Husbandry Extension Education for the benefit of undergraduate students on 14.03.2020 at Kalyanakuppam village, Tiruvallur district. A total of 120 undegraduate students and more than 50 livestock farmers and farm women participated.
- Skill in Radio and TV script writing pertaining to Animal Husbandry practices was imparted to UG students.

6.4.6. Supervision of students in PG/PhD programmes

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	VAE	9	6

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): Mention the feedback mechanism (duly supported by the documents) from different stakeholders of the degree programme. What action the University has taken in last five years to address the issues raised in the feedback?

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

Ph.D. Programmes

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
VAE (Ph.D)	-	-
2015-2016		
VAE (Ph.D)	-	-
2016-2017		
VAE (Ph.D)	1	-
2017-2018		
VAE (Ph.D.)	2	-
2018-2019		
VAE (Ph.D.)	1	-
2019-2020		
VAE (Ph.D.)	-	-
2020-21		
VAE (Ph.D.)	2	-
2021-22		
VAE (Ph.D.)	1	-

6.4.9. ICT Application in Curricula Delivery

- The student lecture halls inside the college campus are wi-fi enabled and are provided with uninterrupted internet connectivity to the student community to access e-learning and e-library resources.
- All the student lecture halls are provided with interactive display board and LCD projectors for effective delivery of lectures by the faculty members
- In addition, smart class rooms are also available with state of art education technology facilities viz. Touch screen smart board, Integrated Public Address System and fully air conditioned smart class rooms to provide the best ambience for learning process.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

Ph.D. in Veterinary and Animal Husbandry Extension

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

Ph.D
in
Veterinary Biochemistry

DEPARTMENT OF VETERINARY BIOCHEMISTRY
MADRAS VETERINARY COLLEGE

6.4. Self Study Report for Ph.D in Veterinary Biochemistry

6.4.1. Brief History of the Degree Programme

Brief History

- M.V.Sc. Programme in Veterinary Biochemistry was started from the Academic Year 2010 - 11 with 03 seats.
- Ph.D. Programme in Veterinary Biochemistry was started from the Academic Year 2019 - 20 with 02 seats.

Objectives

- To offer quality education in Veterinary Biochemistry using modern education technology to equip the PG Scholars to meet the challenges in the field.
- Imparting the technical know-how and the basic skills on various analytical techniques

Achievements

Fifteen students have completed M.V.Sc degree in Veterinary Biochemistry from this department and are placed as faculty in TNAU / TANUVAS / DAH, Tamilnadu / Private Pharmaceutical companies and three of them are pursuing Ph.D. programme at IVRI. The research work undertaken by Master degree students were on:

- Use of plant products including vegetable oils for control of diabetes.
- Use of nano composites for control of diabetes
- Identification of circulating tumor cells for early detection of cancer.
- Identification of diagnostic markers in cardiac and renal disorders.

Salient Achievements

I. Education

1. Student Output: The output of graduates during the year 2019 - 20: NIL

Degree	Boys	Girls	Total
Ph.D in VBC	-	-	-

2. **International recognitions / collaborations:** NIL

II. Research

- External Research Project Completed: 1; Funding agency: Ayush, GOI on "*In vitro* and *in vivo* nephroprotective evaluation of AYUSH-K1 extract; Fund Outlay: 9.65 Lakhs
  - Validation of chronic renal failure model induced by anti-GBM antibodies in rats
  - Standardization of surgical procedures for unilateral nephrectomy model
  - In rats having chronic renal failure, the experimental results indicate repair to the glomerular basement membrane by treating them with AYUSH K-1 extract at three doses (100, 200 and 400 mg/kg)
- External Research Project Obtained: 1; Funding agency: Ayush, GOI.
- Research Articles Published: 03.
- Research Papers presented in Conferences: 02

III. Clinical

- **Additional state of art facilities under clinical services:** Nil
- **Ambulatory Services:** Nil

IV. Extension : NIL

V. Human Resources Development : NIL

The international and national awards won by staff of this institution are provided below:

- Awards and honours:
- Overseas visit:
- Training of staff:
- Conferences/ seminars/ symposia/ training programmes / workshops organized during this period

6.4.2. Faculty Strength

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/ other regulatory bodies
Professor	-	1	-	-
Associate Professor	1	-	-	-
Assistant Professor	4	3	1	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	Veterinary Biochemistry	0	3	0

6.4.4. Classrooms and Laboratories

- A separate PG lab of 400 sq.ft is available.
- For PG programmes both the theory and practical classes are conducted as single batch.
- The list of major instruments at PG Lab are furnished below:
    1. UV-Vis. Spectrophotometer
    2. Thermocycler
    3. High Speed Refrigerated Centrifuge
    4. Deep Freezer (-20º C and - 80ºC)
    5. Electrophoretic apparatus (Vertical/ sub-marine/ 2D-Gel)
    6. Electro-blotting apparatus
    7. Ice flaking machine
    8. Gel Doc
    9. Flame Photometer

6.4.5. Conduct of Practical and Hands-on-Training

- Demonstrations of advanced techniques are shown wherever possible.
- The PG scholars are given Hands on training in Bioinformatics and in Lab Animal Handling and Management practices.

6.4.6. Supervision of students in PG/PhD programmes

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	VBC	2	-

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.):

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

Ph.D. Programmes

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
VBC (Ph.D)	-	-
2015-2016		
VBC (Ph.D)	-	-
2016-2017		
VBC (Ph.D)	1	-
2017-2018		
VBC (Ph.D.)	-	-
2018-2019		
VBC (Ph.D.)	-	-
2019-2020		
VBC (Ph.D.)	1	-
2020-21		
VBC (Ph.D.)	-	-
2021-22		
VBC (Ph.D.)	-	-

6.4.9. ICT Application in Curricula Delivery: The ICT is now integral part of the teaching programme. ICAR has also been promoting the use of ICT in teaching and practical. Mention whether the Degree Programme is meeting the expectations. If there is any shortfall, it shall be clearly mentioned: NIL

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

Ph.D. in Veterinary Biochemistry

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

Ph.D
in
Veterinary Clinical Medicine

DEPARTMENT OF VETERINARY MEDICINE
MADRAS VETERINARY COLLEGE

6.4. Self-Study Report for Ph.D in Veterinary Clinical Medicine

6.4.1. Brief History of the Degree Programme:

The department has been recognized by ICAR as Centre of Advanced Studies during 1995 and then Centre of Advanced Faculty Training (CAFT) since 2010.

Objectives

- To impart the knowledge of Clinical Medicine and Therapeutics at doctorate level students and staff
- To undertake field oriented research to increase the production of herbivorous animals especially ruminants by Ph.D. students by adopting up to date and advanced techniques.
- To offer specialized referral services.
- Providing facilities for advanced research
- Training field Veterinarians

Salient Achievements

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree	Boys	Girls	Total
Ph.D in VCM	1	-	1

2. **International recognitions / collaborations : nil**

II. Research

- Overall incidence of Acute Kidney Injury (AKI) recorded in the present study was 0.58 per cent
- Among CRRT techniques under study, CVVHDF had relatively higher survival rates of (22.22 per cent) than CVVH (14.81 per cent).
- AKI dogs associated with MODS had a lower patient survivability (21.43 per cent) than the non-MODS AKI dogs
- In the present study prevalence of staphylococcal pyoderma was found to be 54.3% (88 out of 162).Out of 54.3% staphylococcal isolates, 15.90% (14 out of 88) isolates were identified as methicillin resistant Staphylococcus (MRS) on antibiotic sensitivity test
- Only to amikacin and linezolid there is no resistance recorded in this study
- Time taken for complete recovery ranged from 21 to 42 days..
- Overall incidence of pleural effusion was 0.12 per cent
- Echocardiographic findings observed were DCM, MVD and intrathoracic mass
- Ultrasonography was found to be superior over radiography in identifying the presence of pleural effusion and hepatic lesions and tumours
- Incidence of hypertension in dogs having CKD was found to be 12.3%.

- The healthy dogs exhibited BAER wave form consisting of five peaks, with distinct wave V followed by a deep trough.
- In severely affected otitis cases, the latencies of all waves were prolonged and the wave I / V amplitude ratio was also reduced
- Eosinophilic bronchopneumopathy (EBP) was recorded in 2 to 6 years age group anmals with male predominance.
- BALF analysis was found to be the gold standard test in the confirmation of EBP in dogs

III. Clinical

- Additional state of art facilities under clinical services: Nil
- **Ambulatory Services: Nil**

IV. Extension

V. Human Resources Development

The international and national awards won by staff of this institution are provided below:

- Awards and honours:

S.No.	Name of the Staff	Name of Award	Place and Date
1.	Dr. S. Kavitha	First best oral companion non infectious Third best oral Avian Medicine session	38th ISVM, Bangalore
2.	D. Sumathi & P. Pothiappan	Third best oral Avian Medicine session	38th ISVM, Bangalore
3.	M. Chandrasekar, D. Sumathi, M.B.Thilagar, K.G.Thirumurugan, N. Palanivel, S. Vairamuthu, M.G. Jayathangaraj & S. Esther	First Best Oral Presentation for the paper Screening of Band T cell lymphoma in canine and its chemotherapeutic response at 37th ISVM, Bikaner, Rajasthan	Bikaner, Rajasthan
4.	M. B. Thilagar, R. Jasmin, S. Prathaban & M.G. Jayathanagaraj	Third Best Oral Presentation - for the paper Intraosseous route a life saving route for resuscitation of small animals neonate and paediatric patients at 37th ISVM, Bikaner, Rajasthan	Bikaner, Rajasthan
5.	M. B. Thilagar, R. Jasmin, M. Chandrasekar, K. Jeyaraja, G. R. Bharanidharan & M.G. Jayathangaraj	First Best Poster Presentation for the paper – Clinical management and prognostication of complicated babesiosis in dogs at 37th ISVM, Bikaner, Rajasthan	Bikaner, Rajasthan
6.	M. Ranjithkumar, K. Jeyaraja, P. Thirunavukkarasu, D.Sumathi, M.G. Jayathangaraj	First Best Poster Presentation – for the paper Identifying the microbiota in Enrofloxacin relapsing cystitis dogs at 37th ISVM, Bikaner, Rajasthan	Bikaner, Rajasthan
7.	M. Ranjithkumar, K. Jeyaraja, D. Chandrasekaran, H. Prabhavathy, C.Jayanthy, S. Kavitha	Second Best Oral Presentation - for the paper Fixing the right add-on to Idiopathic Epileptic Dogs with optimal serum Phenobarbital level at 37th ISVM, Bikaner, Rajasthan	Bikaner, Rajasthan

8.	K. Jeyaraja, D. Sumathi, M.G.Jayathangaraj.	Second best Poster presentation on Therapeutic protocols in the Treatment ofBaabesia gibsoni in Dogs	In: 10th Kerala Veterinary Science Congress, held at Kannur on 10 & 11.11.2018
9.	D. Sumathi	Best Oral presentation on Semi-automated Peritoneal Dialysis is a newer therapeutic option for Acute Kidney Injury in Dogs - a case study"-	Conference/ symposium on 11th-12th held at Nedumbasseri, Kochi during November 2017
10.	Author: Athira G.R., Faculty Advisor: Dr. K. Jeyaraja	Second best- Successful Management of a Refractory Atrial Fibrillation Assocciated with Dilated Cardiomyopathy (DCM) in a Cross Bred Dog	10th clinical case conference on Farm and Companion Animal Practice For Veterinary Students
11.	Author: BavaFakhrudeen., Faculty Advisor: Dr. B. Gowri	First best Medical Management of Guttural Pouch Empyema in a Thoroughbred Mare	10th clinical case conference on Farm and Companion Animal Practice For Veterinary Students
12.	Author: Shanmugasundaram M., Faculty Advisor: Dr. D. Sumathi	Second best - Successful Medical Management of Feline Infectious Anemia	10th clinical case conference on Farm and Companion Animal Practice For Veterinary Students

- Overseas visit: Nil
- Training of staff:

Sl. No.	Name of the Training/ Seminar/Conference/ Symposia/Workshop, etc.	Name of the sponsoring agency	Place & Date	Name and designation of staff
1.	Preconference on CME on what's new inoccular inflammation & infections	Sankara Nethralaya, Chennai	Sankara Nethralaya, Chennai dt 12.10.19	Dr. P. Pothiappan
2.	Annual Conference of Society of Inflammation Research on "Changing Concepts in Inflammation: Bench to Bed side"	Sankara Nethralaya, Chennai	Sankara Nethralaya, Chennai dt 12.10.19	Dr. P. Pothiappan
3.	Attended WASAVA CE & FSAPAI CE programme	Self	Mumbai dated 22-24, November, 2019	Dr. M. Chandrasekar, Dr. D. Sumathi, Dr. M. Ranjithkumar & Dr. P. Pothiappan

• Conferences/ seminars/ symposia/ training programmes / workshops organized during this period

SI. No.	Programmes	No. of beneficiaries
1	21 days CAFT programme programme.- Recent advances in clinical procedures and diagnostic imaging techniques in veterinary practice	23
2	Training Organized under ICAR – CAFT national training programme on "Imaging, Clinical Diagnostic Techniques and Therapeutic Interventions in Companion and Farm Animals	25
3	Organized Training programme in Critical care for small animal veterinary Practitioners	20
4	Organised Ultrasonography training sponsored by MARS India pvt ltd to field practitioners of India	10

6.4.2. Faculty Strength

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/other regulatory bodies
Professor	2	2	-	-
Associate Professor	3	2	1	-
Assistant Professor	8	5	3	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	Veterinary Clinical Medicine	9	4	0

6.4.4. Classrooms and Laboratories

Mention the number of class rooms and functional laboratories available for the degree programme and justify if it is sufficient to meet the course curricula requirement. Lists major equipments, laboratories, farm facilities, workshops and other instructional units being utilized for the award of the Degree Programme may be given. Mention theory and practical batches for the Degree Programme.

6.4.5. Conduct of Practical and Hands-on-Training: It is important to have a sound grasp of the theory that underlies any professional degree. But there are some skills that can only be learned through hands-on -practice. It is important that much of the learning material in any given course should be provided in a way that allows students to get as involved as possible to increase their knowledge and abilities. Clearly mention how far students are getting desired practical and hands-on-training as per the curriculum and meeting above mentioned requirements.

6.4.6. Supervision of students in PG/PhD programmes

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	VCM	13	10

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): Mention the feedback mechanism (duly supported by the documents) from different stakeholders of the degree programme. What action the University has taken in last five years to address the issues raised in the feedback?

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

Ph.D. Programmes

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
VMD(C) (Ph.D)	4	-
2015-2016		
VMD(C) (Ph.D)	2	-
2016-2017		
VMD(C) (Ph.D)	1	-
2017-2018		
VMD(C) (Ph.D)	-	-
2018-2019		
VMD(C) (Ph.D)	-	-
2019-2020		
VMD(C) (Ph.D)	1	-
2020-21		
VMD(C) (Ph.D)	1	-
2021-22		
VMD(C) (Ph.D)	3	-

6.4.9. ICT Application in Curricula Delivery: The ICT is now integral part of the teaching programme. ICAR has also been promoting the use of ICT in teaching and practical. Mention whether the Degree Programme is meeting the expectations. If there is any shortfall, it shall be clearly mentioned.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

Ph.D. in Veterinary Clinical Medicine

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

Ph.D
in
Veterinary Gynaecology and Obstetrics

DEPARTMENT OF VETERINARY GYNAECOLOGY AND OBSTETRICS
MADRAS VETERINARY COLLEGE

6.4. Self Study Report for Ph.D in Veterinary Gynaecology and Obstetrics

6.4.1. Brief History of the Degree Programme

- Department was created in the year 1958
- Postgraduate degree course was introduced in 1960
- Doctoral programme was started in 1979

Objectives

1. To offer quality education in Veterinary Gynaecology and Obstetrics and to equip students to meet the challenges in the field
2. To develop diagnostics and treatment protocols for canine and bovine reproductive disorders
3. To conduct studies on male reproduction for treatment and conservation
4. To disseminate knowledge through trainings, workshop and conferences

Salient Achievements

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree	Boys	Girls	Total
Ph.D in VGO	-	-	-

2. **International recognitions / collaborations: Nil**

II. Research

The significant research achievements from this institution during this period are furnished below:

- ICAR -AICRP : Phase II scheme on Nutritional and Physiological Approaches for Enhancing Reproductive Performance in Animals (S.C.No.24014) with budget outlay of Rs. 40.81 Lakhs
- NADP externally funded scheme on Augmenting reproduction and production potential through adoption of assisted reproductive techniques using sexed semen in dairy cattle (S.C.No.22298) with a budget outlay of Rs. 133 Lakhs

III. Clinical

- **Additional state of art facilities under clinical services:** Nil
- **Ambulatory Services:** Nil

IV. Extension: Nil

V. Human Resources Development

The international and national awards won by staff of this institution are provided below:

- Awards and honours:
  - Maruthamuthu Mariyayee Memorial Award to Dr. K. Krishnakumar for the Best Teacher for the year 2018

- Best Research paper presentation award to N.Arunmozhi, J.Umamageshwari, D.Reena, P.Sreedevi, Cecilia Joseph and K.Krishnakumar in the XXXV Annual convention of ISSAR and International Symposium "Global perspectives to enhance livestock fertility through modern reproductive techniques for doubling farmer's income during 18.12.2019 to 20.12.2019
- Best Research paper presentation award to T.Sarath, R.Sureshkumar, K.Kavitha, P.Sridevi, K.Krishnakumar and A.Elango in the XXXV Annual convention of ISSAR and International Symposium "Global perspectives to enhance livestock fertility through modern reproductive techniques for doubling farmer's income during 18.12.2019 to 20.12.2019
- Best Research paper presentation award to C.Pugazharasi, S.Sathishkumar, T.Sarath, T.A.Kannan, S.Balasubramanian,U.S.Kalyaan and K.Krishnakumar in the XXXV Annual convention of ISSAR and International Symposium "Global perspectives to enhance livestock fertility through modern reproductive techniques for doubling farmer's income during 18.12.2019 to 20.12.2019
- Third prize for the oral presentation to J.Umamageshwari, G.Monica, S.Balasubramanian, S.Rangasamy, K.Krishnakumar, S.P.Preetha, K.Vishwanathan and Radha Perumal in the National symposium on Veterinary Research Priorities in Translational Animal Health, Production and Food Safety on 21.02.2020 and 22.02.2020

- Overseas visit: Nil
- Training of staff:

Sl. No.	Name and designation	Title of the Programme	Duration		Place
			From	To	
1.	K.Krishnakumar Professor and Head	35th Annual convention of ISSAR	18.12.2019	20.12.2019	VCRI, Namakkal
2.	N.Arunmozhi, Assistant Professor	35th Annual convention of ISSAR	18.12.2019	20.12.2019	VCRI, Namakkal
3.	S.Rangasamy Assistant Professor	Modern Education Technology	19.08.2019	21.08.2019	MVC, Chennai
4.	S.Rangasamy Assistant Professor	"Robotics based learning system development	29.07.2019	31.07.2019	MVC, Chennai
5.	U.S.Kalyaan Assistant Professor	35th Annual convention of ISSAR	18.12.2019	20.12.2019	VCRI, Namakkal

• Conferences/ seminars/ symposia/ training programmes / workshops organized during this period

SI.No.	Programmes	No. of beneficiaries
1	A one-day International Workshop on "Livestock Gene Editing" was conducted on 07.08.2019 to discuss about the efficacy and need for gene editing in the field of Veterinary Gynaecology and Obstetrics	200
2	A three-day National training programme on "Animal Birth control" was conducted from 10th to 12th of March 2020 for hands on training of Veterinarians in the field of reproductive surgery with sponsorship from Indian Immunologicals.	10

6.4.2. Faculty Strength

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/ other regulatory bodies
Professor	1	1	-	-
Associate Professor	3	-	3	-
Assistant Professor	4	4	-	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	VGO	4	5	0

6.4.4. Classrooms and Laboratories

- UG Classroom – 1
- UG Gynaecology Lab – 1
- UG Andrology lab – 1
- PG ART Lab I -1
- PG ART Lab II – 1
- PG & PhD Molecular biology lab - 1

6.4.5. Conduct of Practical and Hands-on-Training: It is important to have a sound grasp of the theory that underlies any professional degree. But there are some skills that can only be learned through hands-on -practice. It is important that much of the learning material in any given course should be provided in a way that allows students to get as involved as possible to increase their knowledge and abilities. Clearly mention how far students are getting desired practical and hands-on-trainingas per the curriculum and meeting above mentioned requirements.

Hands on training is being provided with the following:

- Genitalia palpation
- Palpation box
- Phantom box
- SAC and LAC OP
- Uterine torsion model
- Ultrasonographic exam
- VEC
- Vaginoscopy
- Semen collection, evaluation and Cryopreservation

6.4.6. Supervision of students in PG/PhD programmes: Number of students being supervised by Faculty in case of Masters/Ph. D Programme (as per ICAR/UGC guidelines). Mention the realistic figure /number of qualified faculty in relation to the intake of students, as per the guidelines in the matter.

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	VGO	4	5

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.)

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

Ph.D. Programmes

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
VGO (Ph.D)	3	-
2015-2016		
VGO (Ph.D)	3	-
2016-2017		
VGO (Ph.D)	3	-
2017-2018		
VGO (Ph.D.)	2	-
2018-2019		
VGO (Ph.D.)	2	-
2019-2020		
VGO (Ph.D.)	-	-
2020-21		
VGO (Ph.D.)	2	-
2021-22		
VGO (Ph.D.)	-	-

6.4.9. ICT Application in Curricula Delivery: The ICT is now integral part of the teaching programme. ICAR has also been promoting the use of ICT in teaching and practical. Mentionwhether the Degree Programme is meeting the expectations. If there is any shortfall, it shall beclearly mentioned.

- Smart classroom with Smart LED TV
- Monitor attached microscope

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

Ph.D. in Veterinary Gynaecology and Obstetrics

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

Ph.D
in
Veterinary Microbiology

DEPARTMENT OF VETERINARY MICROBIOLOGY
MADRAS VETERINARY COLLEGE

6.4. Self-Study Report for Ph.D in Veterinary Microbiology

6.4.1. Brief History of the Degree Programme

The subject Veterinary Microbiology was taught to the students of Veterinary Science as early as 1904. It was first taught under the aegis of Department of Bacteriology and Pathology. The Department of Bacteriology became a separate entity during 1949. A separate Department of Virology was started during 1971. Later during 1977 the departments of Bacteriology and Virology were merged together to become Department of Microbiology. It was renamed as Department of Veterinary Microbiology during 2002.

Salient Achievements

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree	Boys	Girls	Total
Ph.D in Veterinary Microbiology	1	-	1

2. **International recognitions / collaborations**

- In collaboration with Royal Veterinary College, London a project entitled "GCRF – One Health Poultry Hub (Network Scheme)" funded by United Kingdom Research Foundation was obtained.

II. Research

- Plasmid based reverse genetics system for rescue of Newcastle disease virus (NDV-D58) was developed which is essential to develop a marker vaccine strain
- A inactivated combined vaccine against ND and IB developed with novel adjuvant has been demonstrated with comparable seroconversion against both the antigenic targets with respect to presently available commercial vaccines
- MLST typing of two*Staphylococcus pseudintermedius* isolates revealed the presence of new sequence types (ST1398 and ST1523) in this region. Hence, the prevalent clonal complex may be different from other European and American countries.
- Total of 48 isolates of *Clostridium perfringens* were isolated from livestock and poultry and characterized. Toxinotyping by multiplex PCR which revealed 97.91% belong to type A and 2.08% to type C. Minor toxin cpb2 was also identified among 27.08% of the isolates.
- Total of 4 research articles (NAAS >6) were published and 4 research papers were presented in different conferences

III. Clinical

- Not Applicable

Additional state of art facilities under clinical services

- Not Applicable

Ambulatory Services

- Not Applicable

IV. Extension

- The faculty members of the department participated in 46th India Tourist & Industrial Fair 2020organised by Government of Tamil Nadu.

V. Human Resources Development

The international and national awards won by staff of this institution are provided below:

- **Awards and honours**:
- **Overseas visit**:

  Dr. BSM. Ronald visited Royal Veterinary College for academic purpose from 10thDecember 2019 to 22ndDecember 2019.

- **Training of staff**:

Sl. No.	Name and designation of the faculty	Title of the Programme	Duration	Place	Approx. cost involved
1.	S. Rajalakshmi@ Radabai	International workshop on 'Livestock gene editing"	07.08.2019	MVC, Chennai	--
		"Modern Education Technology"	19.08.2019 & 21.08.2019	MVC, Chennai	ICAR sponsored
		"Pedagogical tools in Veterinary education"	19.09.2019 |& 21.09.2019	MVC, Chennai	ICAR sponsored
2.	M. Vidhya	17th Certificate Course in Laboratory Animal Science, CCLAS (accredited by FELASA)	18th - 28th September 2019	TANUVAS, Chennai	Rs.17,000
		IDP workshop on "Content Development"	19th-21st March 2019	Madras Veterinary College	NAHEP Sponsored
		IDP workshop on " Robotics Based Learning System Development"	20th – 31st July 2019	Madras Veterinary College	NAHEP Sponsored
		NAHEP – IDP workshop on "Modern Education Technology"	19th - 22nd August 2019	Madras Veterinary College	
3.	G. Elaiyaraja,	33rd ICAR-CAFT course on Microbiological Techniques for Diagnosis of Emerging and Re-emerging Diseases of Veterinary Importance	20th Nov 2019 to 10th Dec 2019	Dept. of Veterinary Microbiology, Lala Lajpat Rai University of Veterinary and Animal Sciences, Hisar-125004,Haryana.	ICAR sponsored
4.	A.Elamurugan,	33rd ICAR-CAFT course on Microbiological Techniques for Diagnosis of Emerging and Re-emerging Diseases of Veterinary Importance	20th Nov 2019 to 10th Dec 2019	Dept. of Veterinary Microbiology, Lala Lajpat Rai University of Veterinary and Animal Sciences, Hisar-125004,Haryana.	ICAR sponsored

5.	G. Elaiyaraja,	Brucellosis and Tuberculosis	27.01.2020 & 28.01.2020	Central University Laboratory, CAHS, Studies, TANUVAS	TN State Funded Scheme
6.	A. Thangavelu, BSM. Ronald, S. Rajalakshmi, M.Vidhya and G. Elaiyaraja	20th Indian Veterinary Congress on "Veterinary Research Priorities in Translational Animal Health, Production and Food Safety"	21.02.2020 & 22.02.2020	Department of Veterinary Microbiology, Madras Veterinary College, Vepery, Chennai.	Rs.21,500
7.	Dr.BSM. Ronald	Participated in first Annual GCRF-UKRI One Health Poultry Hub Conference	10-02-2020 to 14-02-2020	Gujarat	Not Applicable

• Conferences/ seminars/ symposia/ training programmes / workshops organized during this period

Sl No.	Programmes	No. of beneficiaries
1	20th Indian Veterinary Congress, XXVII Annual conference of IAAVR and National symposium on "Veterinary Research Priorities in Translational Animal Health, Production and Food Safety"	147

4.2. Faculty Strength

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/other regulatory bodies
Professor	1	1	-	-
Associate Professor	3	2	-	-
Assistant Professor	5	4	-	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	Veterinary Microbiology	1	3	0

6.4.4. Classrooms and Laboratories

- Separate laboratory and teaching room facilities are available for Undergraduate and Postgraduate students
- Undergraduate laboratory can accommodate 40 students with LCD project facility and also 20 binocular microscopes.
- Department has different research laboratories such as Newcastle Disease laboratory, Infectious Bronchitis laboratory, Bacteriology laboratory.

6.4.5. Conduct of Practical and Hands-on-Training:

It is important to have a sound grasp of the theory that underlies any professional degree. But there are some skills that can only be learned through hands-on -practice. It is important that much of the learning material in any given course should be provided in a way that allows students to get as involved as possible to increase their knowledge and abilities. Clearly mention how far students are getting desired practical and hands-on-training as per the curriculum and meeting above mentioned requirements.

- Four batch of students (each 40) attend practical classes and taught different microbiological techniques like
  - o Culture of bacterial and fungal organisms
  - o Staining and biochemical characterization of bacterial and fungal organisms
  - o Cultivation of viruses in cell culture and embryonated chicken eggs

  Hand-on Training all the above techniques makes undergraduate students to understand the microbiology better

6.4.6. Supervision of students in PG/PhD programmes: Number of students being supervised by Faculty in case of Masters/Ph. D Programme (as per ICAR/UGC guidelines). Mention the realistic figure /number of qualified faculty in relation to the intake of students, as per the guidelines in the matter.

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	VMC	15	9

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): Mention the feedback mechanism (duly supported by the documents) from different stakeholders of the degree programme. What action the University has taken in last five years to address the issues raised in the feedback?

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

Ph.D Programmes

Name of the Degree Programme	Batch/Number of studentsin theory class	Attrition (%)
2014-2015		
VMC(Ph.D)	1	-
2015-2016		
VMC(Ph.D)	1	-
2016-2017		
VMC(Ph.D)	3	-
2017-2018		
VMC(Ph.D.)	1	**100**
2018-2019		
VMC(Ph.D.)	2	50
2019-2020		
VMC(Ph.D.)	1	-
2020-21		
VMC(Ph.D.)	1	-
2021-22		
VMC(Ph.D.)	1	-

6.4.9. ICT Application in Curricula Delivery

The ICT is now integral part of the teaching programme. ICAR has also been promoting the use of ICT in teaching and practical. Mention whether the Degree Programme is meeting the expectations. If there is any shortfall, it shall be clearly mentioned.

- .A "VIDEO TUTORIAL" has been created as an additional scope on the existing Mobile Application-TANUVAS VETMICRO, exclusively to support the II BVSc& AH students with a better understanding on the Course: Veterinary Immunology and Serology. The Video tutorial developed using the ICAR 2018-19 grant, focuses on 5 major chapters, which constitute the 'must-know' basics of the course.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

Ph.D. in Veterinary Microbiology

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

Ph.D
in
Veterinary Parasitology

DEPARTMENT OF VETERINARY PARASITOLOGY
MADRAS VETERINARY COLLEGE

6.4. Self-Study Report for Ph.D in Veterinary Parasitology

6.4.1. Brief History of the Degree Programme

- The Department of Veterinary Parasitology, Madras Veterinary College was started in 1929
- During the year 1947, this department was recognised as a postgraduate department for the award of M.Sc., degree
- During 1955-58, three batches of ICAR sponsored postgraduate course leading to 'Diploma in Veterinary Parasitology' was conducted and 15 candidates from various states underwent the diploma course
- In 1958, this department was upgraded as postgraduate department for the award of M.V.Sc.,Degree
- In 1960 it was recognized for Ph.D., programme

Education

- To offer courses in Veterinary Parasitology for undergraduate and postgraduate students and to introduce innovative educational technologies in teaching and evaluation for U.G. and P.G. students.

Research

- To undertake research on parasitic diseases for rapid diagnosis and effective control

Extension

- To disseminate the advances in diagnosis and control of parasitic Diseases /infections by offering training programmes and contact courses to field veterinarians
- To create awareness on parasitic infections in livestock and pets and the need to control them to entrepreneurs, farmers and pet owners through TV, All India Radio, popular articles, pamphlets and books

Salient Achievements

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree	Boys	Girls	Total
Ph.D in VPA	-	-	-

2. **International recognitions / collaborations :** NIL

II. Research

- A rTc-CTL-1 based ELISA was developed for animals to detect toxocarosis
- Single sporulated oocyst, based PCR was developed for the first time in India for accurate detection of bovine coccidian species
- A lateral flow-through technique (LFT) was developed for diagnosis of hydatidosis in buffaloes
- Occurrence of bovine schistosomosis caused by *Schistosoma indicum* in Chennai was observed in slaughter house study

III. Clinical

- Examination of clinical samples of domestic animals, wild animals and human beings
- Identification of worm parasites and arthropods of Veterinary and Medical importance
- Forensic Entomology samples for resolving police cases
- Human serum samples screened for Hydatidosis
- Samples from University farms, State government farms regularly screened for epg and anthelmintic resistance assessment
- PCR based diagnosis of haemoparasitic diseases of small and large animals
- Regular screening of police dogs for presence of helminths
- **Additional state of art facilities under clinical services:**
- **Ambulatory Services: NIL**

IV. Extension

- Pamphlet on "Five point check in goats to diagnose parasitic infections", C. Soundararajan and Bhaskaran Ravi Latha, 2019

V. Human Resources Development

- Awards and honours:

Sl. No.	Name of the faculty	Name of the Award / honour	Type of Award / Awarding Body with name of the event	Details of the Award (Reason for the Award)
1.	Dr. Shivani Mamane, MVSc scholar	Rao Saheb Dr. M. Anant Narayan Rao Memorial Prize"	Certificate with Medal	For securing the highest mark in the subject of Veterinary Parasitology during her BVSc at the 21st Convocation of TANUVAS held at MVC on 10.12.2019
2.	Dr. N.Jeyathilakan, Professor	XXV NCVP-MVC Mid- career excellence award	Certificate with Medal At 29th National Congress of Veterinary Parasitology held at Jabalpur, Madhya Pradesh from 5th to 7th February 2020.	Awarded for Mid-career excellence in the field of Veterinary Parasitology
3.	Dr. R.Edith, Assistant Professor	Pradyumna Kumar and Priti Rani Das innovative Ph.D research award	Certificate with Medal At 29th National Congress of Veterinary Parasitology held at Jabalpur, Madhya Pradesh from 5th to 7th February 2020.	For the innovative Ph.D research

4.	Dr.K.T.Kavitha, Assistant Professor	Mrs. Saraswathy Anandan best Ph.D thesis award	Certificate with Medal At 29th National Congress of Veterinary Parasitology held at Jabalpur, Madhya Pradesh from 5th to 7th February 2020.	For the best Ph.D research
5.	Dr. S. Gowrishankar, MVSc scholar and Dr.B.R.Latha, Professor and Head	Dr. V.S Alwar best article award	Certificate with Medal At 29th National Congress of Veterinary Parasitology held at Jabalpur, Madhya Pradesh from 5th to 7th February 2020.	For the best research article in Journal of Veterinary Parasitology
6.	Dr. Neelakshi Deka, M.V.Sc scholar	IAAVP young scientist award	Certificate with Medal At 29th National Congress of Veterinary Parasitology held at Jabalpur, Madhya Pradesh from 5th to 7th February 2020.	For the best presentation of M.V.Sc research work

Overseas visit:

- Dr. A. Sangaran and Dr. C. Soundararajan, Professors participated and presented papers at the 27th conference of the "World Association for the Advancement of Veterinary Parasitology (WAAVP) held at Madison, USA from 06.07.2019 to 11.07.2019
- Dr. S. Arunkumar, Professor participated and presented paper at the International Conference on "Sustainable agriculture production for food, nutrition and livelihood security: A challenge for Asian farmers held at Pattaya, Thailand from 25.09.2019 to 27.09.2019

Training of staff

S. No.	Name and Designation of the scientist	Title of the Programme	Duration	Place	Approx. cost involved
1.	Dr. S.T. Bino Sundar Assistant Professor	Workshop on "Content Development" under ICAR-NAHEP programme, IDP-TANUVAS	18.03.2019 to 20.03.2019	Madras Veterinary College	-
2.	Dr. S.T. Bino Sundar and Assistant Professor	Sensitization Workshop on "Agricultural knowledge management tools" organized by University library, TANUVAS	27.03.2019	Madras Veterinary College	-
3.	Dr. R. Edith Assistant Professor				
4.	Dr. K.T. Kavitha Assistant Professor				
5.	Dr. B. Rubinibala Assistant Professor				
6.	Dr. S.T. Bino Sundar, Assistant Professor	Workshop on "Robotics based learning system development" organized under NAHEP-IDP	29.07.2019 to 31.07.2019	Madras Veterinary College	-
7.	Dr. S.T. Bino Sundar, Assistant Professor	Workshop on "Modern Education Technology" organized under NAHEP-IDP	19.08.2019 to 21.08.2019	Madras Veterinary College	-

8.	Dr. S.T. Bino Sundar, Assistant Professor	Workshop on "Pedagogical tools in modern Veterinary Education" organized under NAHEP-IDP	19.09.2019 to 21.09.2019	Madras Veterinary College	-
9.	Dr. Bhaskaran Ravi Latha, Professor and Head	Sensitization workshop (NAHEP-II) on "Implementation of academic management system"	19.12.2019 to 20.12.2019	Madras Veterinary College	-
10.	Dr. K.T. Kavitha Assistant Professor	Insecticide resistance: Biochemical and molecular perspectives and strategies for combating resistance to insecticides	08.01.2020 to 28.01.2020	ICAR-NBAIR, Bengaluru	-

• Conferences/ seminars/ symposia/ training programmes / workshops organized during this period NIL

6.4.2. Faculty Strength

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/other regulatory bodies
Professor	1	1	-	-
Associate Professor	2	1	1	-
Assistant Professor	9	6	3	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	Veterinary Parasitology	0	6	0

6.4.4. Classrooms and Laboratories

Mention the number of class rooms and functional laboratories available for the degree programme and justify if it is sufficient to meet the course curricula requirement. Lists major equipments, laboratories, farm facilities, workshops and other instructional units being utilized for the award of the Degree Programme may be given. Mention theory and practical batches for the Degree Programme.

- One UG laboratory – Well equipped
- One PG research laboratory – Well equipped

6.4.5. Conduct of Practical and Hands-on-Training: It is important to have a sound grasp of the theorythat underlies any professional degree. But there are some skills that can only be learned throughhands-on -practice. It is important that much of the learning material in any given course should beprovided in a way that allows students to get as involved as possible to increase their knowledgeand abilities. Clearly mention how far students are getting desired practical and hands-on-trainingas per the curriculum and meeting above mentioned requirements.

- Well trained to handle practical aspects of Veterinary Parasitology

6.4.6. Supervision of students in PG/PhD programmes

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	VPA	11	9

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): Mention the feedback mechanism (duly supported by the documents) from different stakeholders of the degree programme. What action the University has taken in last five years to address the issues raised in the feedback?

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

Ph.D. Programmes

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
VPA (Ph.D)	-	-
2015-2016		
VPA (Ph.D)	3	-
2016-2017		
VPA (Ph.D)	1	-
2017-2018		
VPA (Ph.D.)	2	-
2018-2019		
VPA (Ph.D.)	-	-
2019-2020		
VPA (Ph.D.)	1	-
2020-21		
VPA (Ph.D.)	2	**50**
2021-22		
VPA (Ph.D.)	1	-

6.4.9. ICT Application in Curricula Delivery: The ICT is now integral part of the teaching programme. ICAR has also been promoting the use of ICT in teaching and practical. Mention whether the Degree Programme is meeting the expectations. If there is any shortfall, it shall be clearly mentioned.

- Preparation of digitized E-flash cards
- Preparation of the new Veterinary Parasitology UG practical manual according to MSVE 2016

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

Ph.D. in Veterinary Parasitology

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

Ph.D
in
Veterinary Pathology

DEPARTMENT OF VETERINARY PATHOLOGY
MADRAS VETERINARY COLLEGE

6.4. Self-Study Report for Ph.D in Veterinary Pathology

6.4.1. Brief History of the Degree Programme

The Madras Veterinary College pathology programme is one of the best in the Nation, and 109 M.V.Sc. and 28 Ph.D. Candidates graduated since 1956 and 1979 respectively. Many post graduates and doctorates have gone on to leadership positions in industry and academia nationally and internationally. Anatomic pathology students are exposed to a wide range of case materials, are encouraged to pursue research interests and have opportunities to participate and present case reports in conferences and seminars.

The post graduate and doctoral programmes are designed to prepare competitively selected veterinarians for careers in veterinary diagnostic pathology, or industry, or to provide a foundation for entering a career in pharmaceutical research. The department has two adjunct faculty members from United States of America who help in teaching post –graduate and doctoral students. They are Dr. Ron Tyler (Senior) BS, DVM, Ph.D. (American Board Certified in Anatomic Pathology, Clinical Pathology and Toxicology) at present an Independent consultant and Dr. Srinivasa Rao, DVM, Ph.D., Diplomate ACVP, Chief, Laboratory Animal Medicine, Animal Program Director, Vaccine Research Center, National Institute of Health, Maryland USA who is also an Assistant Professor (Adjunct) Department of Molecular and Comparative Pathobiology, John Hopkins University of School of Medicine, USA. The post-graduate and doctoral students are taught the following courses respectively:

Salient Achievements

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree	Boys	Girls	Total
Ph.D in VPP	3	-	3

2. **International recognitions / collaborations : NA**

II. Research

The significant research achievements from this institution during this period are furnished below:

- The colorimetric PCR assay was developed for differentiation of serotype 1 (field strain) with vaccine serotypes of 2 and 3 using feather follicles i.e. Non-invasive collection
- The developed colorimetric PCR assay is used to screen the samples by non-invasive method i.e., Feather follicles as a sample for detection of MDV.
- In conventional PCR, sophisticated instruments and gel documentation are required whereas the developed colorimetric PCR assay, no need for sophisticated instruments and gel documentation
- Standard operating protocol of colorimetric PCR was developed to detect MD

III. Clinical

- **Additional state of art facilities under clinical services :** Nil
- **Ambulatory Services:**

IV. Extension: Nil

V. Human Resources Development

The international and national awards won by staff of this institution are provided below:

- Awards and honours: Nil
- Overseas visit: Nil
- Training of staff: Nil
- Conferences/ seminars/ symposia/ training programmes / workshops organized during this period

6.4.2. Faculty Strength

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/ VCI/other regulatory bodies
Professor	1	1	-	-
Associate Professor	2	2	-	-
Assistant Professor	5	5	-	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	Veterinary Pathology	1	6	0

6.4.4. Classrooms and Laboratories

Class rooms : 2 (UG and PG)

Laboratories : 2 (HP lab and Molecular lab)

Equipment : **HP lab** : Microtome, oven, Fridge, fume hood, Microscope, multi-head microscope, fluorescent microscope,

Molecular lab : Thermal cycler, centrifuge, refrigerated centrifuge, incubator, Gel documentation system, Co_2 incubator, molecular work station, bio safety cabinet, Deep freezer -20^0, Analytical weighing balance, Gel electrophoresis unit, Vortex

6.4.5. Conduct of Practical and Hands-on-Training:

It is important to have a sound grasp of the theory that underlies any professional degree. But there are some skills that can only be learned through hands-on -practice. It is important that much of the learning material in any given course should be provided in a way that allows students to get as involved as possible to increase their knowledge and abilities. Clearly mention how far students are getting desired practical and hands-on-training as per the curriculum and meeting above mentioned requirements.

The students are given hands on training in necropsy technique and histopathological techniques.

Students are getting excellent hands-on-training with regard to treatment protocols, surgical procedures, various diagnostic facilities viz. Haematological examination, diagnostic procedures, from a well established Central Clinical laboratory of Madras Veterinary College

6.4.6. Supervision of students in PG/PhD programmes: Number of students being supervised by Faculty in case of Masters/Ph. D Programme (as per ICAR/UGC guidelines). Mention the realistic figure /number of qualified faculty in relation to the intake of students, as per the guidelines in the matter.

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	VPP	8	5

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): Mention the feedback mechanism (duly supported by the documents) from different stakeholders of the degree programme. What action the University has taken in last five years to address the issues raised in the feedback?

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

Ph.D. Programmes

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
VPP (Ph.D)	1	-
2015-2016		
VPP (Ph.D)	2	**50**
2016-2017		
VPP (Ph.D)	4	-
2017-2018		
VPP (Ph.D.)	3	**33**
2018-2019		
VPP (Ph.D.)	3	-
2019-2020		
VPP (Ph.D.)	3	-
2020-21		
VPP (Ph.D.)	2	-
2021-22		
VPP (Ph.D.)	-	-

6.4.9. ICT Application in Curricula Delivery: The ICT is now integral part of the teachingprogramme. ICAR has also been promoting the use of ICT in teaching and practical. Mention whether the Degree Programme is meeting the expectations. If there is any shortfall, it shall be clearly mentioned.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

Ph.D. in Veterinary Pathology

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

Ph.D
in
Veterinary Pharmacology and Toxicology

DEPARTMENT OF VETERINARY PHARMACOLOGY AND TOXICOLOGY
MADRAS VETERINARY COLLEGE

6.4. Self Study Report for Ph.D in Veterinary Pharmacology and Toxicology

6.4.1. Brief History of the Degree Programme

M.V.Sc programme was started in 1958 and Ph. D in 1979. The postgraduate education was started after understanding the huge potential for research in the subject Pharmacology and Toxicology. The outgoing graduates will suit the need for R&D in Drug discovery and Toxicology. So far more than 50 students have completed and have secured research positions in industries and academics. Some of the students have taken of teaching position.

Salient Achievements

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree	Boys	Girls	Total
Ph.D in VPT	-	-	-

2. **International recognitions / collaborations : Nil**

II. Research

The significant research achievements from this institution during this period are furnished below:

- Developed assay method for Oxytetracycline in chicken meat.
- Established resistance pattern against E. coli isolated from poultry.
- Standardized assay method for Chlorpyrifos residue using Gas Chromatography.

III. Clinical - NIL

- **Additional state of art facilities under clinical services:** Nil
- **Ambulatory Services:**

IV. Extension: Nil

V. Human Resources Development

The international and national awards won by staff of this institution are provided below:

- Awards and honours: NIL
- Overseas visit: NIL
- Training of staff: NIL
- Conferences/ seminars/ symposia/ training programmes / workshops organized during this period

SI.No.	Programmes	No. of beneficiaries
1	Pharmaceutical meet for outgoing UG students	135

6.4.2. Faculty Strength

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/other regulatory bodies
Professor	1	1	0	-
Associate Professor	2	0	2	-
Assistant Professor	7	5	2	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	Veterinary pharmacology and Toxicology	6	2	0

6.4.4. Classrooms and Laboratories

- One laboratory for UG practical (Pharmacy)
- One Laboratory for UG practical (Toxicology)
- One class room for practicals
- One seminar hall for PG class
- One Laboratory with cell culture, analytical instrument and ultrasound scanner for PG and Ph. D research.

6.4.5. Conduct of Practical and Hands-on-Training: It is important to have a sound grasp of the theory that underlies any professional degree. But there are some skills that can only be learned through hands-on -practice. It is important that much of the learning material in any given course should be provided in a way that allows students to get as involved as possible to increase their knowledge and abilities. Clearly mention how far students are getting desired practical and hands-on-training as per the curriculum and meeting above mentioned requirements.

- Besides lectures students are given demonstration on animal handling and drug administration in laboratory animals.

6.4.6. Supervision of students in PG/PhD programmes

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	VPT	5	4

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): Mention the feedback mechanism (duly supported by the documents) from different stakeholders of the degree programme. What action the University has taken in last five years to address the issues raised in the feedback?

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

Ph.D. Programmes

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
VPT (Ph.D)	1	-
2015-2016		
VPT (Ph.D)	3	-
2016-2017		
VPT (Ph.D)	-	-
2017-2018		
VPT (Ph.D.)	3	**33**
2018-2019		
VPT (Ph.D.)	3	-
2019-2020		
VPT (Ph.D.)	1	-
2020-21		
VPT (Ph.D.)	2	-
2021-22		
VPT (Ph.D.)	-	-

6.4.9. ICT Application in Curricula Delivery: The ICT is now integral part of the teaching programme. ICAR has also been promoting the use of ICT in teaching and practical. Mention whether the Degree Programme is meeting the expectations. If there is any shortfall, it shall be clearly mentioned.

- For better understanding of the pharmacology important concepts are taught using computer aided learning. In this specific software that contains tutorial mode and examination mode with appropriate visual and interactive features are used.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

Ph.D. in Veterinary Pharmacology and Toxicology

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

Ph.D
in
Veterinary Physiology

DEPARTMENT OF VETERINARY PHYSIOLOGY
MADRAS VETERINARY COLLEGE, CHENNAI

6.4. Self Study Report for Ph.D in Veterinary Physiology

6.4.1. Brief History of the Degree Programme

Veterinary Physiology, a foundation subject of Veterinary science was taught to the students as early as 1903 in Dobbin hall. Genesis of Veterinary Physiology department dates back to 1930. In 1960, this department was upgraded as postgraduate department for the award of M.V.Sc., degree and in 1984 it was recognized for Ph.D., programme

Objectives

Education

- To offer courses in Veterinary Physiology for undergraduate and postgraduate students and to introduce innovative educational technologies in teaching and evaluation for undergraduate and postgraduate students.

Research

- To undertake research on thrust areas with an aim to unravel the novel physiological mechanisms thereby improving the productivity of domestic animals.

Salient Achievements

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree (Veterinary Physiology)	Boys	Girls	Total
Ph.D	1	2	3

2. **International recognitions / collaborations**

II. Research

- Novel biomarkers have been identified for hepatic and renal injury which helps in early diagnosis
- Canine fertility biomarker – Osteopontin have been identified which helps to mark out the hypofertile dogs from the fertile ones.

III. Clinical

Research on Clinical Physiology have been collaborated with Veterinary Clinical Complex of MVC, Chennai.

- **Additional state of art facilities under clinical services:**Nil
- **Ambulatory Services:** Nil

IV. Extension: Not Applicable

V. Human Resources Development

The international and national awards won by staff of this institution are provided below:

- Awards and honours:

Dr.S.Eswari, Professor received the best oral presentation award in the Session V- Molecular, cellular and systems Physiology for optimizing health and production in Society of Animal Physiologists of India and ICAR-CSWRI- Avikanagar, Rajasthan during the XXVIII Annual Conference of SAPI and National symposium on Physiological approaches to address environmental challenges for increasing animal productivity and farmers income.

- Overseas visit: Nil
- Training of staff:

- Dr.S.Eswari attended an International workshop on Livestock Gene Editing on 7/8/2019 at Madras Veterinary College, Chennai.
- Dr. G. Suganya attended an International workshop on Livestock Gene Editing on 7/8/2019 at Madras Veterinary College, Chennai.
- Dr.S.Eswari attended a Workshop on Intellectual property rights – IPR on 5/9/2019 at Madras Veterinary College, Chennai.
- Dr. G. Suganya attended an Refresher course in "Biomedical Science" 12/11/2019 to 25/11/2019 at UGC – HRDC, University of Madras, Chennai.
- Dr.S.Eswari attended a DST sponsored training on "General Management Programme for Women Scientists" from 02/12/2019 to 13/12/2019 at Administrative Staff College of India- ASCI, Hyderabad.
- Dr. V. Leela attended a Sensitization workshop on NAHEP component 2 activities and Implementation of Academic Management System from 19/12/2019 to 20/12/2019 at Madras Veterinary College, Chennai.
- Dr. S.Eswari attended a Sensitization workshop on NAHEP component 2 activities and Implementation of Academic Management System from 19/12/2019 to 20/12/2019 at Madras Veterinary College, Chennai.
- Conferences/ seminars/ symposia/ training programmes / workshops organized during this period

SI.No.	Programmes	No. of beneficiaries
--	-	

6.4.2. Faculty Strength

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/other regulatory bodies
Professor	-	-	-	-
Associate Professor	2	2	-	-
Assistant Professor	6	2	4	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	Veterinary Physiology	4	6	0

6.4.4. Classrooms and Laboratories: (Kindly provide the details in bulleted text)

- Physiology undergraduate lectures are being handled exclusively in a vast spacious comfortable gallery with LCD facility
- Undergraduate Practical sessions are being handled in the Physiology laboratory which is well furnished with sufficient required equipment as per MSVE 2016 curriculum.
- There are four batches of approximately 32 students per batch per practicals and lecture being handled in two batches of approximately 65 students per batch.

6.4.5. Conduct of Practical and Hands-on-Training

- Students are regularly being taken to Veterinary Clinical Complex for the demonstration of blood collection, Blood transfusion techniques, rumen liquor collection, demonstration of ruminoreticular motility, Demonstration of ECG, Blood Pressure recording, Spirometry, Saliva collection in animals, Semen collection, and usage of Ultrasound technique in Reproductive Physiology.

6.4.6. Supervision of students in PG programmes

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	VPY	3	3

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.)

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

Ph.D Programmes

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
VPY (Ph.D)	-	-
2015-2016		
VPY (Ph.D)	-	-
2016-2017		
VPY (Ph.D)	-	-
2017-2018		
VPY (Ph.D)	-	-
2018-2019		
VPY (Ph.D)	3	-
2019-2020		
VPY (Ph.D)	1	-
2020-21		
VPY (Ph.D)	1	-
2021-22		
VPY (Ph.D)	1	-

6.4.9. ICT Application in Curricula Delivery

- PPT mode of Delivery for routine teaching
- Mobile Apps for educating UG and PG students in Zoonotic pathogens
- Video lessons specifically in teaching practicals are utilized in the department

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

Ph.D. in Veterinary Physiology

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

Ph.D
in
Veterinary Preventive Medicine

DEPARTMENT OF VETERINARY PREVENTIVE MEDICINE
MADRAS VETERINARY COLLEGE

6.4. Self-Study Report for Ph.D in VETERINARY PREVENTIVE MEDICINE

6.4.1. Brief History of the Degree Programme

Objectives

- To impart knowledge on Preventive Medicine at UG & PG level.
- To undertake research on infectious diseases of animals.
- To impart knowledge on Preventive medicine at PG level
- Sero- epidemiology of Brucellosis in Dairy Animals

Salient Achievements

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree	Boys	Girls	Total
Ph.D in Veterinary Preventive Medicine	1	1	2

2. **International recognitions / collaborations**

II. Research

The significant research achievements from this institution during this period are furnished below:

- In prospective analysis, the reported prevalence of CPE, CD and rabies were 74.65, 84.33 and 56.03 per cent whereas in retrospective study 66.20, 84.33 and 75.31 per cent reported, respectively.
- Prediction analysis with metrological parameters showed maximum temperature to be significant risk factor in CPE and CD epidemics.
- Two Brucella spp. Namely B.mel *melitensis* and *B. suis* were cultured using Brucella broth and Brucella selective medium with supplement and seven isolates (*B. melitensis* – 4 and *B. suis*-3) were obtained.
- LPS extracted from *B. suis* and *B. melitensis* showed considerable humoral and cell mediated immune response in a considerable manner in both mice and goats.
- Dogs which received prime-boost dose resulted in maintaining the protective titre in all immunized dogs on dpv180 with a mean titre of 7.09±0.83.
- Since the level of maternal derived antibodies even in puppies born to vaccinated bitches are insignificant at 10 to 12 weeks of age, the immunization strategy against rabies in puppies warrants the advancement of priming age with one booster vaccine at a suitable interval of 3 to 4 weeks to achieve the population immunity in view of effective containment of rabies spread

III. Clinical

Kindly provide the details such as research collaboration with other clinical departments : Nil

Additional state of art facilities under clinical services

- Hospital service
- Infectious Disease Unit (IDU)

Description	MVC	TOTAL
	Clinics (IDU)	
Number of dogs treated	Parvo viral enteritis	1760
	Canine distemper	396
	Total	**2156**

IV. Extension

- "Free Anti- Rabies vaccination camp" conducted on 20.2.2020 and pamphlets named "Veri noyai thaduppom" were distributed to dog owners.

V. Human Resources Development

The international and national awards won by staff of this institution are provided below:

Awards and honours:

- Dr. B. Nagarajan, Professor and Head, is awarded Excellence award for Excellence in Clinical Medicine, Management and Training by Indian Association for the Advancement of Veterinary Research (IAAVR), in 20th Indian Veterinary Congress, MVC, Chennai , 21-22 February, 2020.
- Dr. P.Revathi Ph.D scholar awarded with Best Poster award at International conference on "Current Scenario of Future Strategies of Disease control for augmenting Livestock and Poultry Productivity under Changing climatic conditions" in November 20-22, 2019 at VCRI, Namakkal.

Overseas visit:

- Dr. B. Nagarajan, Professor and Head attended 44th World Small Animal Veterinary Association Congress & 71st Canadian Veterinary Medical Association convention in Toronto, Canada, from 16.07.2019 to 19.07.2019

Training of staff:

- Dr. B. Nagarajan, Professor and Head attended 44th World Small Animal Veterinary Association Congress & 71st Canadian Veterinary Medical Association convention in Toronto, Canada, from 16.07.2019 to 19.07.2019
- Dr. T. Devi, Assistant Professor, attended 21 days CAFT programme on " Advances in disease diagnosis and treatment protocols in health management of farm and pet animals " at Department of Veterinary Clinical Medicine, Madras Veterinary College from 01.08.2019 to 21.08.2019.
- Dr. T. Devi, assistant Professor, has attended one day workshop on"Intellectual Property Rights" on 05.09.2019
- Conferences/ seminars/ symposia/ training programmes / workshops organized during this period

SI.No.	Programmes	No. of beneficiaries
1.	ASCAD one-day workshop Programme on "Epidemiological Surveillance of Bovine Brucellosis" sponsored by Chief Epidemiology Officer, Veterinary Epidemiology Centre, Saidapet, Chennai-35 on 5.12.2019	65 Veterinary Assistant Surgeons
2.	Dr. B. Nagarajan has conducted "Pre conference workshop on small animal Dermatology" on 29.08.2019 for PG Students (16) from different colleges of India	16 PG students

6.4.2. Faculty Strength

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/ other regulatory bodies
Professor	-	-	-	-
Associate Professor	1	1	0	-
Assistant Professor	3	2 and 1*	0	-

* Dr. K.Shoba, Professor has been transferred from CUL and shown against the post of Assistant Professor from 1.08.2019 to 30.06.2020

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	Veterinary Preventive Medicine	1	1	2

6.4.4. Classrooms and Laboratories

One UG class room, One PG class room, 2 functional laboratories were sufficient to meet the course curricular requirement

- Major equipment available in Laboratory : Thermocycler, Cooling Centrifuge, ELISA reader, Autoclave, Hot air Oven and Deep freezer,
- 2015-16 Theory – 2 courses -2 batches and 2016-17 theory 1 course -2 batches

6.4.5. Conduct of Practical and Hands-on-Training:

Hands on training could be given to PG students and no practical class was in the curriculumfor UG students in Veterinary Preventive Medicine during 2019-20.

6.4.6. Supervision of students in PG/PhD programmes

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	VEP	2	1

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.)

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

Ph.D. Programmes

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
VMD(P) (Ph.D)	-	-
2015-2016		
VMD(P) (Ph.D)	2	-
2016-2017		
VMD(P) (Ph.D)	1	-
2017-2018		
VMD(P) (Ph.D)	-	-
2018-2019		
VMD(P) (Ph.D)	1	-
2019-2020		
VMD(P) (Ph.D)	2	-
2020-21		
VMD(P) (Ph.D)	2	-
2021-22		
VMD(P) (Ph.D)	1	-

6.4.9. ICT Application in Curricula Delivery

- All the student lecture halls are provided with interactive display board and LCD projectors for effective delivery of lectures by the faculty members
- In addition, smart class rooms are also available with state of art education technology facilities viz. Touch screen smart board, Integrated Public Address System and fully air conditioned smart class rooms to provide the best ambience for learning process.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

Ph.D. in Veterinary Preventive Medicine

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

Ph.D
in
Veterinary Public Health

DEPARTMENT OF VETERINARY PUBLIC HEALTH AND EPIDEMIOLOGY
MADRAS VETERINARY COLLEGE

6.4. Self Study Report for Ph.D. in Veterinary Public Health and Epidemiology

6.4.1. Brief History of the Degree Programme

The Department of Veterinary Public Health and Epidemiology was established during July, 2011 in view of compliance of Veterinary Council of India MSVE regulation for undergraduate degree program (BVSc & AH).

Objective

- To impart value added UG and PG education for immediate and long term application and utility
- To prioritize strategies and develop skills to undertake epidemiological investigations and disease modelling for control and eradication programmes for zoonoses of major public health importance
- To make an objective analysis of contemporary issues such as antibiotic resistance Support for applied research by way of technical cooperation projects
- To offer an effective, outreach-enhanced veterinary public health service

Salient Achievements

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree	Boys	Girls	Total
Ph.D in VPH	1	-	1

2. **International recognitions / collaborations**

II. Research

- DBT- Bill and Melinda Gates foundation- BIRAC project on High resolution genome based tracing of antimicrobial resistant *E.coli* in pork production chain: A One health system study with a fund outlay of Rs 12.15 lakhs under the Principal Investigator- Dr. K.Porteen , Assistant Professor, VPH, MVC

III. Clinical

- The Department coordinated with the clinical unit Under observation of Rabies (UOR) through which the suspected cases of Rabies were monitored throughout the year and annual occurrence of Cases attending clinics were recorded

Additional state of art facilities under clinical services

- Aided in molecular diagnosis of selected Zoonotic pathogens(*Leptospira, Brucella* and *Mycobacterium*)

Ambulatory Services: Nil

IV. Extension:

Vaccination and Health Camps were organized routinely every year at Madras Veterinary College adopted villages in commemoration of

- World Tuberculosis Day
- World Zoonosis Day
- World Rabies Day
- World Environment Day

V. Human Resources Development

- Training Program was organised to train Medical Practioners on Zoonotic pathogens Diagnosis (10 per batch)

6.4.2. Faculty Strength

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/ VCI/other regulatory bodies
Professor	1	1	-	-
Associate Professor	1	-	1	-
Assistant Professor	3	2	1	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	Veterinary Public Health	3	1	0

6.4.4. Classrooms and Laboratories

- Functional laboratories - 2 (Meat and Milk Hygiene lab and Zoonosis lab), wherein VCI has recommended separate laboratories for Meat Hygiene and Milk Hygiene with lab space of 600 sq ft.

Major Equipments available in this Department

- Gel electrophoresis
- Thermocycler
- Class II Biosafety Cabinet (Isolater)
- Inverted microscope
- pH Meter
- Binocular microscope
- Analytical balance
- Dark Field Microscope
- Vortex mixer
- Microplate ELISA reader
- Hot plate with Magnetic stirrer
- CO_2 Incubator
- Centrifuge
- Gel Documentation system

6.4.5. Conduct of Practical and Hands-on-Training

- The students of Under graduate and Post Graduate are given hands on Practices in Milk and meat hygiene(Quality control assay), Zoonosis (Pathogen Screening and Diagnosis) and Environment hygiene(Water analysis, Air quality)

6.4.6. Supervision of students in PG/PhD programmes

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	VPH	3	2

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.)

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

Ph.D. Programmes

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
VPH (Ph.D)	-	-
2015-2016		
VPH (Ph.D)	-	-
2016-2017		
VPH (Ph.D)	1	-
2017-2018		
VPH (Ph.D.)	2	-
2018-2019		
VPH (Ph.D.)	-	-
2019-2020		
VPH (Ph.D.)	-	-
2020-21		
VPH (Ph.D.)	1	-
2021-22		
VPH (Ph.D.)	-	-

6.4.9. ICT Application in Curricula Delivery

- PPT mode of Delivery for routine teaching
- Mobile Apps for educating UG and PG students in Zoonotic pathogens
- Video lessons specifically in teaching practicals are utilized in the department

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

Ph.D. in Veterinary Public Health

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

Ph.D
in
Veterinary Surgery and Radiology

DEPARTMENT OF VETERINARY SURGERY AND RADIOLOGY
MADRAS VETERINARY COLLEGE

6.4. Self-Study Report for Ph.D in Veterinary Surgery and Radiology

6.4.1. Brief History of the Degree Programme

- M.V.Sc program started in 1960 Total completed 230 Candidates
- Ph.D Program in 1988 Total Completed 47 candidates

Salient Achievements

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree	Boys	Girls	Total
Ph.D in VSR	1	1	2

2. **International recognitions / collaborations :** NIL

II. Research

- CT imaging studies for Canine Spine and Brachycephalic Airway Syndrome in dogs
- Wound healing of skin with low level laser in dogs and application of collagen in wound healing
- Equine gas anesthetic protocols for surgical intervention
- Orthopaedic implants for small animals
- CT scan imaging of thoracic diseases in dogs

III. Clinical

- **Additional state of art facilities under clinical services:**
- CT Scan Imaging Service
- **Ambulatory Services: NIL**

IV. Extension

- Provided expert consultation to Arignar Anna Zoological Park for treatment of Wild Animals
- Asian Elephant treatment at Samayapuram
- Expert Consult to imported animals by NDDB for Semen Station at Quarantine Office in Chennai

V. Human Resources Development

The international and national awards won by staff of this institution are provided below:

- Awards and honours:

S.No.	Name of the Staff	Name of Award	Place and Date	Medal/Cash Price/ Citation
1	Dr C Ramani	INSA award	Israel, 2.2.19	Travel grant
2	Dr H Pushkin Raj	Best paper presentation	Navsari, Gujarat.	Gold medal

- Overseas visit: Dr. C Ramani Visited Israel on INSA travel grant for training in Electroretinography
- Training of staff: NIL
- Conferences/ seminars/ symposia/ training programmes / workshops organized during this period

SI.No.	Programmes	No. of beneficiaries
1	WASAVA outreach programme on "Computed Tomography in Veterinary Practice"	20
2	Pre-conference workshop on Principles of Small Animal Orthopedics	20
3	Short Course on "Novel approaches in disease diagnosis via imaging modalities in veterinary clinical practice"	12
4	Small Animal Ophthalmic Surgery	12
5	Soft Tissue Surgery	12
6	Small Animal Diagnostic Radiography	12
7	Small Animal Orthopaedic Surgery	12

6.4.2. Faculty Strength

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/other regulatory bodies
Professor	3	3	Nil	-
Associate Professor	1	1	Nil	-
Assistant Professor	4	4	Nil	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	Veterinary Surgery and Radiology	2	4	0

6.4.4. Classrooms and Laboratories

Mention the number of class rooms and functional laboratoriesavailable for the degree programme and justify if it is sufficient to meet the course curricularequirement. Lists major equipments, laboratories, farm facilities, workshops and other instructionalunits being utilized for the award of the Degree Programme may be given. Mention theory andpractical batches for the Degree Programme.

- UG Practical Lab 1
- Seminar Hall 1
- Class room 1
- Operation Theatre 4

6.4.5. Conduct of Practical and Hands-on-Training

It is important to have a sound grasp of the theorythat underlies any professional degree. But there are some skills that can only be learned throughhands-on -practice. It is important that much of the learning material in any given course should beprovided in a way that allows students to get as involved as possible to increase their knowledgeand abilities. Clearly mention how far students are getting desired practical and hands-on-trainingas per the curriculum and meeting above mentioned requirements.

- One hands on training Pre conference workshop in small animal orthopaedics for students
- Clinical skill development in Veterinary Surgical techniques for small and large animals through practical and VCP course
- Diagnostic Imaging techniques for small and large animals through practical and VCP course

6.4.6. Supervision of students in PG/PhD programmes

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	VSR	9	5

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.)

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

Ph.D. Programmes

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
VSR (Ph.D)	2	-
2015-2016		
VSR (Ph.D)	2	-
2016-2017		
VSR (Ph.D)	2	-
2017-2018		
VSR (Ph.D.)	2	-
2018-2019		
VSR (Ph.D.)	2	-
2019-2020		
VSR (Ph.D.)	2	-
2020-21		
VSR (Ph.D.)	3	**75**
2021-22		
VSR (Ph.D.)	1	**1**

6.4.9. ICT Application in Curricula Delivery

- All the student lecture halls are provided with interactive display board and LCD projectors for effective delivery of lectures by the faculty members
- In addition, smart class rooms are also available with state of art education technology facilities viz. Touch screen smart board, Integrated Public Address System and fully air conditioned smart class rooms to provide the best ambience for learning process.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

Ph.D. in Veterinary Surgery and Radiology

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

Ph.D
in
Wildlife Science

DEPARTMENT OF WILDLIFE SCIENCE
MADRAS VETERINARY COLLEGE

6.4. Self Study Report for Ph.D in Wildlife Science

6.4.1. Brief History of the Degree Programme

The Department of Wildlife Science, the first of its kind among veterinary universities in India, was established on 01.10.1994 at Madras Veterinary College. The main objective of this department is to impart education and training on wildlife with emphasis on wild animal health and management to undergraduate students and Master's research for postgraduate scholars. Doctoral degree was started in 2011 and the Postgraduate Diploma in Wild Animal Disease Management (PGDWADM) (DISTANCE EDUCATION - ONLINE MODE) was initiated from 2012.

Salient Achievements

Since inception, five students have successfully completed their Ph.D., 52 students have completed M.V.Sc. and 29 students have completed their PGDWADM. It is a matter of pride for the department that all the students of the department are well placed in the state departments, State Agricultural and Veterinary Universities, various wildlife-related sectors, NGOs, etc**.**

I. Education

1. Student Output: The output of graduates during the year 2019 - 20:

Degree	Boys	Girls	Total
Ph.D in Wildlife Science	1	1	2

2. **International recognitions / collaborations**

II. Research

- Tigers of Arignar Anna Zoological Park spent most of their time in active behaviours (68%). Amongst the enclosures, the tigers were more active in enriched enclosure (79.68±1.73) and show more of resting behaviour in enclosure simulating to its natural condition (47.47±11.36).
- It was found that enrichments proved to be effective in altering the behaviour pattern as well as in giving the response in form of variation in levels of faecal cortisol metabolites (FCMs).
- It was found that the summer enrichment in combination with predator faeces is found to best for enrichment.
- Non-invasive monitoring of health status of captive wild animals using behavioural recordings and levels of faecal cortisol metabolites (FCMs) would be helpful in designing zoo management programs for captive tigers. Estimation of reproductive steroids was useful in understanding the basic reproductive endocrinology for implication of suitable captive breeding protocols.

III. Clinical

- **Additional state of art facilities under clinical services:** Nil
- **Ambulatory Services:** Nil

IV. Extension

- Technical assistance for treatment of sick King cobra at Arignar Anna Zoological Park, Vandalur – technical assistance was offered in treating of a sick king cobra at Arignar Anna Zoological Park, Vandalur.
- Field investigation – Faculty of this department inspected facilities of Farmers Training Centre, Enathur, Kanchipuram for maintaining of elephants belonging to Sankara Mutt on 28.11.2019 and gave suggestions for construction of shed.
- Clinical Investigation to examine the elephant (Malachi) and formulate the treatment protocol to Animal Disease Intelligence Unit, Madurai on 19.07.2019.

V. Human Resources Development

The international and national awards won by staff of this institution are provided below:

- Awards and honours:

Sl. No.	Name of the Faculty	Name of the Award / honour	Type of Award / Awarding Body with name of the event	Details of the Award (Title of the thesis / Research article / poster / oral paper presented)
1	Palanivelrajan M	Certificate of Award – Third in the technical session	38th Annual convention of Indian Society for Veterinary Medicine & National Symposium on "Advancement in Veterinary Medicine in Mitigating Challenges to Animal Health" on 5th -7th February, 2020 organized by Veterinary College, KVAFSU, Hebbal, Bengaluru - 560 024, Karnataka	Oral – "Avian Medicine" on the "Scaly Leg in Budgerigars (*Melopsittacus undulatus*)" by Palanivelrajan, M., Sreekumar, C., Sumathi, D. and Pothiappan

- Overseas visit: Nil
- Training of staff:

Sl. No.	Name and designation of the Scientist	Title of the Programme	Duration		Place	Approx. cost involved
			From	To		
1	Palanivelrajan M	CAFT 21 Days National Training Programme on "Advances in disease diagnosis and treatment protocols in health management of farm and pet animals"	1st August to 21st August, 2019		Veterinary Clinical Medicine, Madras Veterinary College, Chennai – 600 007	-
2	Palanivelrajan M	Workshop on "Intellectual Property Rights (IPR)" organized by the Director of Research, TANUVAS, Chennai	05.09.2019		Madras Veterinary College, Chennai – 600 007	
3	Palanivelrajan M	NAHEP Programme IDP of TANUVAS workshop on "Pedagogical tools in modern veterinary education"	19.09.2019 to 21.09.2019		Madras Veterinary College,	

4	Palanivelrajan M	Training Programme on "Endoscopy – Care & Maintenance of Endoscopes for Faculties and Postgraduate students" organized by the Director of Clinics, TANUVAS	27.09.2019	Madras Veterinary College, Chennai – 600 007	
5	Prathipa A	Certificate course on CCLAS 2019 accredited by FELAS	18.09.2019 to 28.09.2019	MVC	Rs.17,700/-
6	Sreekumar C	Training course of "Birdsound recording" at the Wildlife Institute of India	13.04.19 to 16.04.19	Wildlife Institute of India, Dehradun	-Rs.10,000.00
7	Sreekumar, C	Workshop on NAHEP component 2 "Activities and implementation of Academic Management System (AMS)"	19.12.2019 and 20.12.2019	Madras veterinary College, TANUVAS	Nil
7	Sreekumar, C	The International Conference on "Advancement in Veterinary Sciences for wildlife conservation",	13.11.2019 to 15.11.2019	CSIR - Centre for cellular and molecular biology, Hyderabad	Rs.10,000.00

- Conferences/ seminars/ symposia/ training programmes / workshops organized during this period

SI. No.	Programmes	No. of beneficiaries
1	An outreach programme on popularizing the application of Foldscope" as part of the twinning programme of the project with the ongoing Foldscope project in College of Poultry Production and Management (CPPM), Hosur – for the benefit of III B.V.Sc. & A.H. students of Madras Veterinary College, Chennai on 24th July, 2019	130
2	"An outreach programme on popularizing the application of Foldscope" for the benefit of forest/wildlife veterinarians at Anamalai Elephant Camp on 27th and 28th July, 2019	3
3	"An outreach programme on popularizing the application of Foldscope" as part of the twinning programme with the ongoing Foldscope project in College of Poultry Production and Management (CPPM), Hosur on 31st July, 2019	70
4	"An outreach programme on popularizing the application of Foldscope" in MGR college, Hosur on 31st July 2019	200

6.4.2. Faculty Strength

Category	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/other regulatory bodies
Professor	-	-	-	-
Associate Professor	1	1	0	-
Assistant Professor	2	2	0	-

6.4.3. Technical and Supporting staff: The position of the technical and supporting staff of the Degree Programme including farm and field workers need to be mentioned for both sanctioned and in-place.

S.No.	Name of the Department	Technical staff	Supporting staff	Field staff
1	Wildlife Science	1	1	0

6.4.4. Classrooms and Laboratories

Molecular laboratory for DNA sexing of birds and DNA identification of wild animals. The lab is equipped with

1. Thermal cycler
2. Gel documentation system
3. Class II biosafety cabinet
4. pH meter
5. Orbital shaker
6. Heater with magnetic stirrer
7. Autoclave
8. Hot-air oven
9. Binocular microscopes (Two)
10. Laminar Clean air workstation
11. Incubator for bacteriological work

6.4.5. Conduct of Practical and Hands-on-Training

6.4.6. Supervision of students in PG programmes

Each PG / Ph.D. student is continuously supervised and directed by a Chairman / Chairperson identified during the first semester of the course. In addition, two faculties for M.V.Sc. and three faculties for Ph.D. students act as members of the Advisory Committee for each student.

Sl.No.	Name of the Discipline	No. of recognized teachers available	
		PG Teacher	PG Guide
1	WLS	3	4

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.)

After completion of each semester / professional year, the students are encouraged to offer their feedback regarding the course teachers and by the controlling Officer in the form of a questionnaire developed by the University as given in Annexure 1 and Annexure 2.

6.4.8. Student intake and attrition in the programme for last five years: Year wise information on sanctioned strength, actual intake and attrition in the last five years of the Degree Programme, in the tabular form, shall be provided.

Ph.D. Programmes

Name of the Degree Programme	Batch/Number of students in theory class	Attrition (%)
2014-2015		
WLS (Ph.D)	1	-
2015-2016		
WLS (Ph.D)	2	-
2016-2017		
WLS (Ph.D)	2	-
2017-2018		
WLS (Ph.D)	-	-
2018-2019		
WLS (Ph.D)	2	-
2019-2020		
WLS (Ph.D)	2	-
2020-21		
WLS (Ph.D)	1	-
2021-22		
WLS (Ph.D)	-	-

6.4.9. ICT Application in Curricula Delivery

- All the student lecture halls are provided with interactive display board and LCD projectors for effective delivery of lectures by the faculty members
- In addition, smart class rooms are also available with state of art education technology facilities viz. Touch screen smart board, Integrated Public Address System and fully air conditioned smart class rooms to provide the best ambience for learning process.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of UG, PG and PhD Degree Programmes, separately, and to be presented College-wise.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr.R.KARUNAKARAN** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university. Accreditation for the following Post graduate course is requested.

Name of the Degree Programmes accreditation is sought for:

Ph.D. in Wildlife Science

Dr. R. KARUNAKARAN, Ph.D.,
Dean
Madras Veterinary College,
Chennai-600 007.

Annexure

Annexure 1

EVALUATION OF TEACHERS BY STUDENTS

(done after completion of every course)

Name of the Teacher :

Designation :

Department :

Course No., Title & Credit hours :

Start date of the semester :

Closure date of the semester :

(tick in the appropriate column)

S.No.	PARAMETERS	GRADING			
		Excellent (A)	Good (B)	Fair (C)	Poor (D)
1	Delivering subject (objective & coverage)				
2	Use of audio - visual aids				
3	Supply of course materials				
4	Clarity of expression				
5	Interaction with students in the class room				
6	Style of teaching				
7	Summarisation of previous class lectures				
8	Encouraging class room discussion				
9	Accepting suggestions				
10	Impartial student evaluation				
11	Punctuality				
12	Taking care of low performing students				
13	Cordiality with students				
14	Motivation of students				
15	Involvement in student activities				

Total score = {No. of ticks in col. (A) x 3} + {No. of ticks in col. (B) x 2} + {No. of ticks in col. (C) x 1} + {No. of ticks in col. (D) x 0}

Mean score = Total score / 15

Name of the student and signature (optional)

Annexure 2

EVALUATION BY CONTROLLING OFFICER
(after each course or every year)

Name of the Teacher :

Designation and address :

(tick in the appropriate column)

S.No.	PARAMETERS	GRADING			
		Excellent (A)	Good (B)	Fair (C)	Poor (D)
1	Punctuality				
2	Communication skills				
3	Organising ability				
4	Counselling skills				
5	Handling student's problem				
6	Inter-personal relations and team work				
7	Involvement in student activities				
8	Participation in university/ institutional development				
9	Execution of special assignments				
10	Commitment and dedication to job assigned				

Total score = {No. of ticks in col. (A) x 3} + {No. of ticks in col. (B) x 2} + {No. of ticks in col. (C) x 1} + {No. of ticks in col. (D) x 0}

Mean score = Total score / 10

Signature of the Controlling Officer

MEAN SCORES AND RANKING OF TEACHERS BASED ON EVALUATION BY STUDENTS AND CONTROLLING OFFICER

Average mean score obtained of student evaluation* (a)	Average mean score of two annual assessments by controlling officer (b)	Total annual mean score** (c) = (a+b)/2

** if no. of courses is more than one in a year, average of mean scores of different scores is to be obtained and indicated.*

*** score of 2.6 and above - Outstanding teacher; 2.1 to 2.5 - Good teacher; 1.6 to 2.0 - Average teacher; 1.5 and below - Below average teacher*