29th Annual Report 2017 - 18

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PREFACE

In India, livestock rearing is one of the integral components of rural economy. The livestock sector is an important sub sector towards economy and employment opportunities. The contribution of livestock sector to the total GDP of the country was nearly 4.5 per cent during 2015-16. India produced about 165.4 million tonnes of milk during 2016-17 with a growth rate of 6.4 per cent. With regard to the state production, Tamil Nadu produces 7.5 million tonnes of milk which accounts for 4.6 percent of total milk production in the country.

With regard to meat production, 7.4 million tonnes of meat has been produced in India during 2016-17 with annual growth rate of 5.21 per cent, of which the poultry 3.46 million tonnes (46.76 per cent), followed per cent). Tamil Nadu produced 0.57 million tonnes of meat with the annual growth rate of 5.20 per cent during 2016-17 accounting to an extent of 7.76 per cent of meat production in the country. India stands 5th in the total Poultry meat production in the world. With regard to egg production, India stands 3rd in the world with 88 billion eggs during 2017-18 while 10.8 billion eggs are produced in Tamil Nadu alone and ranks 2nd in total egg production in the country.

Although India holds the number one position in milk production in the world, its milk productivity remains one of the lowest as compared to many leading countries of the world. Low productivity of animals with higher genetic potential can be primarily feeding. The decline in milk production and climate change and is highest in crossbred change as they are more hardy and robust. In their home tract, TANUVAS has established and currently centres towards establishment of Kangayam, Pulikulam and Alambadi progress.

The services rendered by various Veterinary institutions to the growth potential of livestock produce namely milk,

Veterinary and Animal Sciences University

PREFACE

to enhance the productivity of animals and protect the animals from vagaries of weather and climate change. The University imparts both undergraduate and postgraduate education through its six constituent colleges. TANUVAS is in the forefront in the conduct of various research activities in the area of production, health and in the development of transferrable technologies. The University has ten Research farms / Stations and 12 Laboratories to carry out research and generate novel technologies. TANUVAS has implemented 38 new research projects sponsored by various International, National and State funding agencies under BBSRC, UK, SEPPIC, France, Bill and Melinda Gates Foundation, USA, NADP, ICAR, AHDF under NLM, NPBB; DST; DBT; NABARD; TANII, TNLDA, TNSCST and private agencies during 2017-18.

TANUVAS has obtained a grant of Rs.28 crores from ICAR, New Delhi under

Education Programme (NAHEP) funded by the World Bank for the project on Institutional Development Plan of TANUVAS to improve infrastructure and human resource under competitive mode.

TANUVAS has a total of 26 outreach centres comprising of 20 Veterinary University Training and Research centres, three Farmers training centres and three Krishi Vigyan Kendras to empower farmers and rural youth and to double their income in line with the development goal set by Govt. of India. The Government of Tamil Nadu is providing liberal grants for the research initiatives of the University, which are focussed towards the upliftment of farmers, landless labourers and unemployed youth.

The Animal Mobile Medical Ambulance (AMMA) for rural Veterinary Care in Tamil Nadu with ten numbers of specially designed animal ambulances with

gynaecological conditions and to transport sick and recumbent animals with a toll

districts namely Kancheepuram, Madurai, Tiruchirapalli, Thanjavur and Namakkal.

I place on record several salient achievements of this prestigious institution and are presented as highlights in this report. The Deans of various colleges and the Directors of various Directorates along with the Heads and faculty of their respective units have provided inputs for the preparation of Annual Report. I also

of the Directorate of Research for systematic compiling and editing of this report which will serve as a ready reckoner for researchers,

VICE-CHANCELLOR
Tamil Nadu Veterinary and
Animal Sciences University
Chennai – 600 051

ACKNOWLEDGEMENT

It gives me immense pleasure in bringing out the Annual Report (2017-18) of the University. I am sure that the untiring progress of the animal husbandry sector in outset, the support of the authorities from the Government of Tamil Nadu and Government of India is gratefully acknowledged. The guidance and suggestions of the Board of Management and other statutory councils in identifying the goals and to prioritize and implement the same is duly acknowledged.

On behalf of the University, I express my sincere gratitude to Animal Husbandry, Dairy and Fisheries department, Government of Tamil Nadu and State agencies, State Planning Commission (SPC), Tamil Nadu Innovation Initiatives (TANII), Tamil Nadu Livestock Development Agency (TNLDA), Tamil Nadu State Council for Science and Technology (TNSCST) and Animal Husbandry, Dairy and Fisheries Department, Government of India, Indian Council of Agricultural Research (ICAR), Department of Animal Biotechnology (DBT), Department of Science and Technology (DST), NABARD, Ministry of Ayush for their continued support. The University also extends its sincere thanks to Bill and Melinda Gates foundation, USA and BBSRC, UK for entering into research collaborations with TANUVAS. Sincere thanks are also due to Nutreco, Netherlands, Jubilent Life Sciences Limited, Noida and AVT Natural Products Limited for their collaborations. Grants sanctioned to the University have provided the much needed impetus to carry out research and accomplish several milestones.

The suggestions, encouragement and support provided by the Vice-Chancellor has helped to scale newer heights and I place on record my sincere thanks. Activities of the University are diverse and could not be completed without the cooperation duly acknowledged. I wholeheartedly of the Directorate of Research for their support in bringout the 29th Annual Report of TANUVAS. I hope that this report would be useful for policy makers, researchers, the livestock sector in the state and in the

Dr. T.J.Harikrishnan

Director of Research

EXECUTIVE SUMMARY

Tamil Nadu Veterinary and Animal Sciences University (TANUVAS), since its establishment in 1989, has been a torch-bearer for education, research and extension activities in veterinary and animal sciences, basic sciences and food sciences in India. TANUVAS is recognized as an institution having strong faculty for academic and research collaborations in veterinary and animal sciences, basic

TANUVAS has six constituent colleges at Madras Veterinary College, Chennai; Veterinary College and Research Institutes at Namakkal, Orathanadu and Tirunelveli; College of Food and Dairy Technology, Koduvalli, Chennai and College of Poultry Production and Management at Hosur.

Further, the university has 10 Research Stations for production oriented research; 20 Veterinary University Training and Research Centres, three Farmers Training Centres, three Krishi Vigyan Kendras and one Agricultural Technology Information Centre for the outreach programmes and 12 service providing laboratories viz. Central University Laboratory, Viral Vaccine Research Centre, Bacterial Vaccine Research Centre, Zoonoses Research Laboratory, Pharmacovigilance Laboratory for Animal Feed and Food Safety, Translational Research Platform for Veterinary Biologicals, Laboratory Animal Medicine Unit, Poultry Disease Diagnostic and Surveillance Laboratory, Animal Feed Analytical and Quality Assurance Laboratory, Avian Disease Laboratory, Veterinary University Training and Diagnostic Centre and Centre for Stem Cell Research and regenerative medicine for taking care of the health needs of livestock and poultry.

1. EDUCATION

degree course through its constituent colleges viz., Madras Veterinary College, Chennai; Veterinary College and Research Institute, Namakkal, Veterinary College and Research Institute, Orathanadu and Veterinary College and Research Institute, Tirunelveli, besides B.Tech (Food Technology) and B.Tech (Dairy Technology) at College of Food and Dairy Technology, Koduveli and B.Tech (Poultry Technology) at College of Poultry Production and Management, Hosur. In addition,

at Madras Veterinary College, Chennai and Veterinary College and Research Institute, Namakkal. Like wise, M.Tech and Ph.D

Food and Dairy Technology, Koduveli.

During the period under report, 452

programmes (372 B.V.Sc and 80 B.Tech) and 160 students to post graduate programmes (103 M.V.Sc and 57 Ph.D) of the University.

Scholarships

TANUVAS extends monetary assistance to the students to pursue their undergraduate and postgraduate programmes through various State and Central Government agencies. During the reporting period, 1613 students were awarded scholarships to the tune of ₹ 247.04 lakhs.

Endowments

Various endowments are instituted by State Government, philanthropists, intellectuals, academicians and animal

TANUVAS to excel in their performance and o the academic and research activities of the University. During the reporting period, 11 endowments were instituted.

Student Amenities

To shape the career and to expand knowledge in various spheres of animal and food Sciences, the following student-friendly facilities are provided.

Library

TANUVAS has libraries in all its constituent colleges with good collection of books and journals. In addition, CD-ROM databases have been procured and used for information retrieval. A video library is functioning with 196 video lessons for use available include digitized theses, electronic surveillance system and archives unit.

Computer Centre

The Computer Centre and the Internet Animal Husbandry Statistics and Computer Applications in all colleges provide a comprehensive computing, browsing and e-mailing facilities and networking infrastructure to improve learning among capability among faculty members. The UG and PG students are given hands-on training in computer applications.

Bioinformatics Centre

Realising the growing needs of information for scientists working in centres, Universities and Industrial corporations, BTIS sponsored by Department of Biotechnology is functioning at TANUVAS. This centre not only provides and online information retrieval service to research scholars and scientists of TANUVAS but also to the scientists/research scholars of other States.

University Students Counseling and Placement cell

To create and enhance career opportunities to Veterinary and Food Sciences graduates, a separate "University has been established in the University. This cell maintains a computerised database of Veterinary and Food Sciences graduates and postgraduates. With the help of this database, the Cell provides a list graduates/ postgraduates to the recruiting agencies for employment opportunities.

Faculty Development

For Continuing Professional Development to TANUVAS faculty, 37 Summer Institutes / Trainings / Seminars / Workshops were conducted. Further, 622 Summer Institutes/Workshops, Symposia, Seminars etc. within and outside the country. Apart from this, the University has provided orientation programmes for the new faculty members, management training for senior faculty and administrative training for non-

2. RESEARCH

TANUVAS has bagged 38 research projects sponsored by various International, National and State funding agencies under BBSRC, UK; SEPPIC, France; Bill and Melinda Gates Foundation, USA; ICAR; DST; DBT; NADP, NLM, NPBB under

AHDF; NABARD; TANII, TNLDA, TNSCST and private agencies at a total budget of Rs.5839.03 lakhs during 2017-18. Altogether, 157 research projects, with a total outlay of Rs.17,280.60 lakhs are in operation at TANUVAS. Apart from these, 76 plan schemes to the tune of Rs.8,359.90 Lakhs funded by Govt. of Tamil Nadu were also in operation.

Major projects implemented during 2017-18 include "Establishment of Kangayam

and "Establishment of Genetic Resource Centre for conservation of the Pulikulam

of Rs.450 lakhs under NADP; "One health approach for animal and public health to

and "Development and standardization of a novel DIVA (marker) vaccine against Newcastle disease to augment production

Nadu under Tamil Nadu Innovation Initiatives (TANII) at a total budget of Rs. 712 lakhs; DBT-TANUVAS Canine Research Network at a total budget of Rs. 676.04 lakhs; Translational Research Platform for Veterinary Biologicals (Phase II) at a budget of Rs. 1077 lakhs and Bill and Melinda Gates Foundation sponsored project on Accelerating bovine tuberculosis control in developing countries-India at a budget of Rs. 190.43 lakhs. TANUVAS has been selected by ICAR in 2018 for Institutional Development Plan (IDP) under the National Agricultural Higher Education Programme (NAHEP) to the tune of Rs. 2820.10 Lakhs. Of the 73 State Agricultural Universities in India, TANUVAS is one of the

support to improve its infrastructure and human resource.

Breed registration is an important step in documenting the vast animal genetic resources of the country and in this context TANUVAS continues to identify and characterize the animal genetic resources of the state. During 2017-18, TANUVAS facilitated the registration of Salem Black goats by National Bureau of Animal Genetics Resources (NBAGR), the nodal agency of Indian Council of Agricultural Research, New Delhi and also released two new chicken varieties, Nandanam Broiler 3 and TANUVAS Native Chicken (Aseel) for

3. TECHNOLOGIES

To promote entrepreneurship in Animal Husbandry and Veterinary Sciences, TANUVAS has established a Section 8 company, Veterinary Incubation Foundation @ TANUVAS through funding from Entrepreneurship Development Institute, Govt. of Tamil Nadu for Rs. 235 lakhs, the

country with the aim to target students

sciences, life sciences and other related technology areas.

With the establishment of Translational Research Platform for Veterinary Biologicals at TANUVAS, transfer of technologies for development and commercialization has gained momentum. Technologies ready for transfer from Translational Research Platform for Veterinary Biologicals (TRPVB) include Nano-IVMEC Shampoo, A1/A2

CPV and Rabies antibody detection kit for the detection of Rabies and CPV antibodies simultaneously in dogs and Teat spray, a value added product. Other than biologicals, TANUVAS has also forayed into areas of

of rural farmers. A total of 59 livestock

designed and developed at University Innovation and Instrumentation Centre (UIIC), Madhavaram were sold to livestock farmers during the year 2017-18.

4. PATENT

The University has been encouraging its faculty and students to protect their intellectual property and convert their

for transfer to relevant stakeholders and

patents during 2017-18.

5. LINKAGE WITH UNIVERSITIES / INSTITUTIONS

TANUVAS continues to strengthen its linkages with National and International Institutions. A Memorandum of Understanding was signed with Washington State University and Oklahoma State

Animal Sciences University, Bangladesh and ICAR-Central Institute of Brackish water

6. CLINICAL ACTIVITIES

through Veterinary Teaching Hospital, and Emergency Critical Care Unit at Madras Veterinary College; Peripheral Veterinary Hospital at Madhavaram, Veterinary Teaching Hospitals at Veterinary College

of 2,11,358 animals were treated during 2017-18.

A total of 91 international students including 5 students from Virginia-Maryland Regional College of Veterinary

Veterinary and Animal Sciences University, Bangladesh and fourteen students from Kelantan University, Malaysia have undergone internships in clinical subjects during the period under report.

7. EXTENSION

TANUVAS has a good Extension Education system with a network of peripheral outreach centres viz. 20 Veterinary University Training and Research Centres, 3 Farmers Training Centre and 3 Krishi Vigyan Kendras spread across the state. During the reporting period, a total of 2,214 on campus

conducted through the peripheral outreach

TANUVAS is the only veterinary

the Farmer FIRST Project with an objective of doubling the farmer's income and this project is being implemented in six villages. Further, TANUVAS has also developed mobile apps viz., Training Calendar and

how to farmers.

Distance Education

courses for Veterinarians to update their skills on latest technologies in veterinary

15 skill development courses and 11 self-employment courses in various animal

distance education mode to bolster livestock and poultry production thereby enhancing

the rural income through livestock activities. During the reporting period, 752 candidates

under distance education

8. AWARDS AND RECOGNITIONS

Scientists and students of TANUVAS have received wide recognition for their

veterinary and animal sciences, basic sciences and food sciences. Young Scientist Award; Dr. N.S. Ruprah Memorial award; Dr.V.S. Alwar Memorial Award; Mrs. Saraswathy Anandan Memorial Best Ph.D thesis award; Outstanding Reviewer Award; Young Poultry Veterinarian Award; Dr. S. Damodaran Award; K.P.C. Nair Cash Award; Dr.Vaithilinigam Rathnasabapathy Award; Sinthanai Sigaram award; Tamil Nadu Scientist Award (TANSA) – 2015; IPSA – Ayurvet Award 2016; Mid career excellence award and Special Fellowship Award – 2017 are few of the notable awards received by our faculty. Apart from these, Indian Institute of Technology, Chennai has

of Library Sciences of Madras Veterinary

Library and Information Science.

9. PUBLICATIONS

During the period under report, TANUVAS faculty members have published

19 books / manuals.

1. INTRODUCTION

HISTORICAL PERSPECTIVE

Veterinary Education in Chennai began in 1876 in an Agricultural School at

courses. Later in 1902, sensing the need for veterinarians, Mr. Fuller, the then Secretary to Government of India, Civil Veterinary Administration advised the Government of Madras to commence classes in Veterinary Education.

Following the decision to establish a Veterinary School at Madras, Major

to Civil Veterinary Department, Madras to carry out the task of establishing Veterinary College at Madras. The Madras Veterinary School was opened in the year 1903 in a

situated about 175 yards from SPCA on a monthly rent of Rs.60/- with Major W.D.Gunn as the part-time Principal.

Madras Veterinary College (GMVC), a three year course with 20 students on roll as on 01.01.1903.

Major W.D.Gunn, Superintendent, Civil Veterinary Department of Madras

Agriculture to allot a land in a more central location nearer to SPCA instead of Saidapet. Further, he also added that the course may be of three years duration with the mode of instruction being English instead of Tamil or Telugu.

The Government of Madras accepted the proposal and accorded permission to locate the Veterinary Institute at Vepery and to name the Institute as Government Veterinary Institute. Since the rented building could not be provided with all facilities, the Government decided to construct a permanent building on Vepery High Road. Upon the construction of red brick building with terrace roof, high arches and minarets in 1904, the Madras Veterinary School moved to its new premises. The red brick building, a striking example of Indo-Saracenic architecture was designed by Mr. Henry Irwin and built by Mr. P. Masilamony Moodaliar. Based on the recommendation of the Royal Commission on Agriculture, the college was upgraded to impart degree in Veterinary science and

the robust growth of the institution, the Government of Madras decided to bifurcate and constitute a separate Department of Veterinary Education and Research and transferred certain units hitherto under the control of Animal Husbandry Department to the Department of Veterinary Education and Research (DVER). Upon bifurcation, Madras Veterinary College, Livestock

Research Station at Nandanam and Sheep Breeding Research Centre at Sandynallah were brought under the control of DVER.

INTRODUCTION

Tamil Nadu Agricultural University (TNAU), MVC became a constituent college of TNAU in the year 1976. Realizing the need for another Veterinary College, the Government of Tamil Nadu started Veterinary College and Research Institute at Namakkal in the year 1985 which also became a constituent College of TNAU.

of education and research in Veterinary and Animal Sciences, the Government of Tamil Nadu announced the formation of Tamil Nadu Veterinary and Animal Sciences

Asia on 20th
at Chennai for the development of Veterinary and Animal Sciences and for furthering the advancement of learning and prosecution of research in Veterinary and Animal Sciences.

Upon formation of TANUVAS, the two constituent colleges at Chennai and Namakkal became constituent colleges of TANUVAS. In addition, the research

Nandanam, outreach centres at Coimbatore, Dharmapuri, Erode, Nagercoil, Namakkal,

Tirunelveli, Tiruppur, Tiruchirapalli and Vellore; Farmers Training Centre at Kancheepuram and Krishi Vigyan Kendra

TANUVAS.

Veterinary Education which was started as one of the subject in the Agricultural School at Saidapet in 1876 has over the years grown by leaps and bounds and presently Tamil Nadu Veterinary and Animal Sciences University has become a premier Veterinary University in the country.

The following are the mandate of Tamil Nadu Veterinary and Animal Sciences University:

undergraduate, post-graduate and

Veterinary and Animal Sciences and Food Sciences

To carry out research in livestock and poultry production, protection and value addition of products

To disseminate knowledge on important technologies to line departments and farming community for the sustenance and growth of livestock and poultry in the State through extension programmes

HIGHLIGHTS OF THE YEAR 2017-18

"TANUVAS KPM Gold" a crossbred pig variety well adapted to the local agro-climatic conditions of Tamil Nadu, having remarkably high disease resistance and less than three percent pre-weaning mortality developed under

by the Hon'ble Minister for Animal Husbandry, Govt. of Tamil Nadu on 30.06.2017.

The Hon'ble Chief Minister of Tamil Nadu, Thiru Edappadi K. Palaniswami inaugurated the Centre for Stem Cell and Regenerative Medicine at Madras Veterinary College (MVC); Feed

and administrative Building of Bargur

conferencing from the Secretariat, Chennai on 04.08.2017. The buildings were constructed at a total cost of Rs.8.715 crores.

The 9th Clinical Case Conference on "Farm and Companion Animal Practice for Veterinary Students was conducted at MVC on 03.08.2017 and 04.08.2017. A total of 429 undergraduate and postgraduate students from seven states of the country and Malaysia presented the clinical cases with respect to farm and companion animals, small

avian species. The Hon'ble Minister for Animal Husbandry, Govt. of Tamil Nadu participated in the valedictory function, released the compendium of abstracts clinical cases and distributed the prizes to the students.

An International Workshop on "Avian

the Department of Animal Husbandry, Dairying and Fisheries (DAHDF), Government of India; TANUVAS and

United States Department of Agriculture (USDA) along with Southern Regional Disease Diagnostic Laboratory (SRDDL), Bengaluru at MVC, Chennai from 04.09.2017 to 08.09.2017. A total of 35 participants from all over the country

The Nineteenth Convocation of TANUVAS was held at MVC on 07.09.2017. Hon'ble Governor of Tamil Nadu and Chancellor of the University Thiru. CH. Vidyasagar Rao presided and conferred degrees and diplomas to 289

candidates in person and 143 candidates in absentia and administered the pledge to the students.

The Joint Directors' Meeting of the Department of Animal Husbandry was held at Madras Veterinary College on 14.09.2017. The technologies / products namely Nano Heal, Nano Dermal Cream, Masti Guard-Teat protect, etc. to improve animal health and productivity developed at Translational Research Platform for Veterinary

Biologicals (TRPVB) were showcased during the meeting. Thiru Udumalai K. Radhakrishnan, Hon'ble Minister for Animal Husbandry and Thiru K. Gopal. I.A.S., Principal Secretary, Department of Animal Husbandry, Dairying and Fisheries, Government of Tamil Nadu were appraised of the technologies showcased by TRPVB.

Thiru. Udumalai K. Radhakrishnan, Hon'ble Minister for Animal Husbandry and Thiru. Sellur K. Raju, Hon'ble Minister for Co-operation, Government

of Tamil Nadu visited the various units of College of Poultry Production and Management, Hosur on 23.09.2017.

instituted by the Government of Malawi to work on curriculum and structure

development for Mombera University, in Mzimba district of Malawi visited TANUVAS from 02.10.2017 to 15.10.2017.

Dr. James H.A. Maida and members Prof. Leonard A. Kamwanja, Dr. Wilfred Lipita, Fency C. Chigwa and Ms. Fanny Mthunzi as members held discussion with administrative and

constituent units of TANUVAS.

Tamil Nadu Veterinary and Animal Sciences University celebrated

on 10.11.2017. Thiru. Dindigul

C. Sreenivasan, Hon'ble Minister for Forests, Government of Tamil Nadu released the new chicken varieties of Tamil Nadu, Nandanam Broiler 3 and TANUVAS Native Chicken (Aseel) and conferred best farmer awards and distributed inputs to the needy farmers. Thiru. Udumalai K. Radhakrishnan, Hon'ble Minister for Animal Husbandary Govt. of Tamil Nadu released the farmers technical workshop manual and distributed the best college, best outreach centre and best research station awards.

During 2017-18, The All India Council for Technical Education (AICTE), New Delhi approved the B.Tech (Poultry

by the College of Poultry Production and Management, Hosur.

Tamil Nadu Veterinary and Animal Sciences University in collaboration with

(ASTS), New Delhi, TNAU, Coimbatore

'Award Ceremony' for the conferment

to Prof. M.S. Swaminathan, Eminent Agricultural Scientist at the Anna Auditorium, MVC on 10.12.2017. Shri M. Venkaiah Naidu, Hon'ble Vice-President of India conferred the award to Prof. M.S. Swaminathan and in his address commended Prof. M.S. Swaminathan as one of the living legends who has shown the world how research can reach the farmers and transform their lives.

The 'Salem Black' goat breed of Tamil Nadu was approved as a breed by the

was issued with accession number

by the National Bureau of Animal Genetic

Resources, Karnal, Haryana. Thiru. Radha Mohan Singh Hon'ble Union Minister of

Baguthampalayam village, Sathyamangalam Taluk, Erode district was held on

Thiru K.C.Karupannan, Hon'ble Minister for Environment and Thiru Udumalai K. Radhakrishnan, Hon'ble Minister for Animal Husbandry, Government of Tamil Nadu participated in the Boomi Pooja and laid the foundation stone.

ORGANISATIONAL SETUP

CHANCELLOR
(Hon'ble Governor of Tamil Nadu)

PRO-CHANCELLOR
(Hon'ble Minister for Animal Husbandry, Govt. of Tamil Nadu)

VICE-CHANCELLOR

REGISTRAR
Managing the property and investment, custodian of records, convening meeting of the boards and academic council

DEANS OF COLLEGES
Education and progress of students of veterinary and animal sciences, basic sciences and food sciences

CONTROLLER OF EXAMINATION
Academic records and examinations

DIRECTOR OF RESEARCH
Coordination of research programmes

DIRECTOR OF CLINICS
Coordination of clinical programs and hospital management

DIRECTOR, CENTRE FOR ANIMAL PRODUCTION STUDIES
Coordination of all animal production programmes

DIRECTOR OF DISTANCE EDUCATION
Coordination of distance education programmes & skill development

DIRECTOR OF EXTENSION EDUCATION
Coordination and integration of extension education activities

DIRECTOR, CENTRE FOR ANIMAL HEALTH STUDIES
Coordination of animal health programmes

ESTATE OFFICER
Maintenance of estate and infrastructure facilities

FINANCE OFFICER
Supervision of university funds

OFFICERS OF THE UNIVERSITY

Chancellor	Th. Ch. Vidyasagar Rao Th. Banwarilal Purohit Hon'ble Governor of Tamil Nadu
Pro-chancellor	Th. P. Balakrishna Reddy Th. Udumalai K Radhakrishnan Hon'ble Minister for Animal Husbandry, Government of Tamil Nadu
Vice-Chancellor	Dr. S. Thilagar (upto 10.12.2017) Dr. T.J. Harikrishnan (i/c from 11.12.2017 to 25.01.2018) [Th. K. Gopal, IAS., Principal Secretary to Government, Govt. of Tamil Nadu and Dr. N. Vishnu Vardhana Rao, Member, Board of Management of TANUVAs as Members]
Registrar	Dr. P.Mathialagan (upto 28.08.2017) Dr. T.J. Harikrishnan (i/c from 29.08.2017)
Controller of Examination	Dr. S. Balasubramanian
Dean, Madras Veterinary College	Dr. C. Balachandran (upto 31.07.2017) Dr. S.N. Sivaselvam (i/c from 01.08.2017 to 31.10.2017) Dr. K. Kumanan (i/c from 01.11.2017)
Dean, Faculty of Basic Science, Madras Veterinary College	Dr.K. Kumanan (upto 31.05.2017) Dr.K. Kumanan (i/c from 01.06.2017 to 06.06.2017) Dr. L. Gunaseelan (from 07.06.2017)
Dean, Veterinary College and Research Institute, Namakkal	Dr. L. Gunaseelan (upto 06.06.2017) Dr. G.A. Balasubramaniam (i/c from 07.06.2017)
Dean, Veterinary College and Research Institute, Orathanadu	Dr. K.N. Selvakumar
Dean, Veterinary College and Research Institute, Tirunelveli	Dr. M.Thirunavukkarasu
Dean, Faculty of Food Science, College of Food and Dairy Technology, Koduveli	Dr. D.Baskaran
Dean, College of Poultry Production and Management, Hosur	Dr. K.Mani
Director of Research	Dr. T.J. Harikrishnan
Director of Clinics, Madras Veterinary College	Dr.S. Balasubramanian (i/c from 01.04.2017)
Director, Centre for Animal Production Studies	Dr.V.Ramesh Saravana Kumar
Director, Centre for Animal Health Studies	Dr.P.I. Ganesan (upto 31.05.2017) Dr. K. Kumanan (i/c from 01.06.2017)
Director of Extension Education	Dr.N.K.Sudeep Kumar
Director of Distance Education	Dr. S.A. Asokan (upto 31.08.2017) Dr. N.K.Sudeep Kumar (i/c from 01.09.2017) Th. K. Velmurugan (upto 31.07.2017) Dr. K. Kumanan (i/c from 01.08.2017 FN to 08.08.2017) Th. K.Balakrishnan (from 09.08.2017) Er. S. Kuppusamy

BOARD OF MANAGEMENT

Class-I Ex-officio Members

Vice-Chancellor and Chairman	Dr. S. Thilagar (upto 10.12.2017) Dr. T.J. Harikrishnan (i/c from 11.12.2017 to 25.01.2018) [Th. K. Gopal, IAS., Principal Secretary to Government, Govt. of Tamil Nadu and Dr.N.Vishnu Vardhana Rao, Member, Board of Management of TANUVAS as Members]
Principal Secretary to Government, Animal Husbandry, Dairying and Fisheries Department, Govt. of Tamil Nadu	Th. Gagandeep Singh Bedi, IAS., (upto 08.06.2017) Th. K. Gopal, IAS., (from 09.06.2017)
Addl. Chief Secretary to Government, Finance Department, Govt. of Tamil Nadu	Th. K. Shanmugam, IAS.,
Secretary to Government, Law Department, Govt. of Tamil Nadu	Th. S.S.Poovalingam
Director of Animal Husbandry and Veterinary Services, Govt. of Tamil Nadu	Th. T. Abraham, IAS., (upto 14.05.2017) Th. P. Senthilkumar, IAS., (from 15.05.2017 to 20.09.2017 FN) Tmt. S. Jayanthi, IAS., (from 20.09.2017 AN to 12.02.2018 FN) Th. C. Kamaraj, IAS., (i/c from 12.02.2018 AN – 07.03.2018) Th. A. Gnanasekaran, IAS., (from 08.03.2018)
Registrar and Member Secretary	Dr. P.Mathialagan (upto 28.08.2017) Dr. T.J. Harikrishnan (i/c from 29.08.2017)

BOARD OF MANAGEMENT

Class-II Other Members

Prof. (Dr.) Rishendra Verma

Th. C. Balakrishnan
S/o. Th. Chinnasamy Gounder, 68/2, Goundachipudhur Road, Elleys Nagar (P), Dharapuram (T), Tiruppur

Dr. S. Rukmangadhan
Managing Director, Surabhi Hatcheries and Surabhi Breeding Farms, G2C/12, Puliakulam Road, Coimbatore

Tmt. Krishnammal Jegannathan

Dr. N. Vishnu Vardhana Rao
N. No. 11, O.No.35-B, Railway Colony 3rd Street, Nelson Manickam Road, Chennai

75, Santhome High Road, Chennai

Veterinary Assistant Surgeon, Mobile Veterinary Dispensary,
Veterinary Hospital Campus, Kallakurichi

M.L.A. - Vacant

Dr. B. Mahendran
Additional Director (Retired), No.31/31, CMS Nagar, Cumbum, Theni District

Dr. M. Sundaralingam.
379/A, 1st Main Road, Natesan Nagar, Virugambakkam, Chennai

ACADEMIC COUNCIL

Class-I Ex-officio Members

Vice-Chancellor and Chairman	Dr. S. Thilagar (upto 10.12.2017) Dr. T.J. Harikrishnan (i/c from 11.12.2017 to 25.01.2018) [Th. K. Gopal, IAS., Principal Secretary to Government, Tmt. S. Jayanthi IAS., / Th. A. Gnanasekaran, IAS., Vardhana Rao, Member, Board of Management of TANUVAS as Members]
Principal Secretary to Government, Animal Husbandry, Dairying and Fisheries Department, Govt. of Tamil Nadu	Th. Gagandeep Singh Bedi, IAS., (upto 08.06.2017) Th. K. Gopal, IAS., (from 09.06.2017)
Director of Animal Husbandry and Veterinary Services, Govt. of Tamil Nadu	Th. T. Abraham, IAS., (upto 14.05.2017) Th. P. Senthilkumar, IAS., (from 15.05.2017 to 20.09.2017 FN) Tmt. S. Jayanthi, IAS., (from 20.09.2017 AN to 12.02.2018 FN) Th. C. Kamaraj, IAS., (i/c from 12.02.2018 AN – 07.03.2018) Th. A. Gnanasekaran, IAS., (from 08.03.2018)
Registrar	Dr.P.Mathialagan (upto 28.08.2017) Dr. T.J. Harikrishnan (i/c from 29.08.2017)
Dean, Madras Veterinary College	Dr. C. Balachandran (upto 31.07.2017) Dr. S.N. Sivaselvam (i/c from 01.08.2017 to 31.10.2017) Dr. K. Kumanan (i/c from 01.11.2017)
Dean, Veterinary College and Research Institute, Namakkal	Dr. L. Gunaseelan (upto 06.06.2017) Dr. G.A. Balasubramaniam (i/c from 07.06.2017)
Dean, Veterinary College and Research Institute, Orathanadu	Dr. K.N. Selvakumar
Dean, Veterinary College and Research Institute, Tirunelveli	Dr. M.Thirunavukkarasu
Dean, Faculty of Food Science, College of Food and Dairy Technology, Koduveli	Dr. D.Baskaran
Dean, College of Poultry Production and Management, Hosur	Dr. K.Mani
Dean, Faculty of Basic Sciences, Madras Veterinary College	Dr. K. Kumanan (upto 31.05.2017) Dr. K. Kumanan (i/c from 01.06.2017 to 06.06.2017) Dr. L. Gunaseelan (from 07.06.2017)
Director of Research	Dr. T.J. Harikrishnan
Director of Clinics	Dr. S. Balasubramanian (i/c from 01.04.2017)
Director of Extension Education	Dr. N.K.Sudeep Kumar
Director of Distance Education	Dr. S.A. Asokan (upto 31.08.2017) Dr. N.K.Sudeep Kumar (i/c from 01.09.2017)
Director, Centre for Animal Health Studies	Dr. P.I. Ganesan (upto 31.05.2017) Dr. K. Kumanan (i/c from 01.06.2017)
Director, Centre for Animal Production Studies	Dr. V.Ramesh Saravana Kumar

ACADEMIC COUNCIL

Class – II Other Members

Dr. Cecilia Joseph
Professor and Head, Department of Clinics, MVC, Chennai

Dr. S.N. Sivaselvam (upto 31.10.2017)
Professor and Head, Dept. of Animal Genetics and Breeding MVC, Chennai

Dr. V.Appa Rao
Professor and Head,
Dept. of Livestock Products Technology (Meat Science), MVC, Chennai

Dr. Thanga Tamil Vanan
Professor and Head, Dept. of Livestock Production Management, MVC, Chennai

Dr. G.Sarathchandra
Professor and Head, Pharmacovigilance Laboratory for Animal Feed and Food Safety, Madhavaram, Chennai

Dr. M.R. Purushothaman

Dr. K.Balasundaram

Dr. A. Kumaravel
Professor, Dept. of Veterinary Anatomy and Histology, MVC, Chennai

Professor and Head,
Dept. of Veterinary Animal Husbandry Extension Education, MVC, Chennai

Dr.P.Shamsudeen
Professor, College of Poultry Production and Management, Hosur

Dr. B. Ramesh Kumar
Dean, Rajiv Gandhi Institute of Veterinary Education and Research, Puduchery

Dr. A.P. Usha
Director of Farms, Centre for Pig Production and Research, Mannuthy, Thrissur, Kerala

Dr. T.S. Chandrasekhara Rao
Dean, Faculty of Veterinary Science, Sri Venkateswara Veterinary University, Tirupathi

PLANNING BOARD

Chairman (Vice-Chancellor)	Dr. S. Thilagar (upto 10.12.2017) Dr. T.J. Harikrishnan (i/c from 11.12.2017 to 25.01.2018)
	Department, Govt. of Tamil Nadu, as Chairman, Tmt. S. Jayanthi /
	Dr. N. Vishnu Vardhana Rao, Member, Board of Management of TANUVAS as Members]
(Registrar)	Dr. P. Mathialagan (upto 28.08.2017) Dr. T.J. Harikrishnan (i/c from 29.08.2017)
Members	Director of Animal Husbandry and Veterinary Services
Persons of high Academic standing	**Dr.A.S.Rajendran** Principal Scientist (Animal Nutrition), ICAR Southern Regional Research Centre, CSWRI Mannavanur (Post), Kodaikanal – 624 103
the Board (not more than eight)	**Dr.D.Kathiresan** Dean College of Veterinary Sciences and Animal Husbandry, Central Agricultural University, Selesih – 796 014, Aizawl, Mizoram
	Dr.A.R.Thirunavukkarasu Former Principal Scientist
	48/3, Sri Krishna Apartments, IInd Main Road, Gandhi Nagar Adyar, Chennai – 600 020
	Thiru. M.Mahalingam
	Th.R.Aravindan No. 241, 39th street, 8th Sector, K.K.Nagar, Chennai - 600 078

FINANCE COMMITTEE

Chairman (Vice-Chancellor)	Dr. S. Thilagar (upto 10.12.2017) Dr. T.J. Harikrishnan (i/c from 11.12.2017 to 25.01.2018)
	(Th. K. Gopal, IAS., Principal Secretary to Government,
	Chairman, Tmt. S. Jayanthi / Th. A. Gnanasekaran, IAS.,
	Vardhana Rao, Member, Board of Management of TANUVAS as Members]
	Th. K.Velmurugan (upto 31.07.2017) Dr. K. Kumanan (i/c from 01.08.2017 FN to 08.08.2017) Th. K.Balakrishnan (from 09.08.2017)
Members	Principal Secretary to Government, Animal Husbandry, Dairying and Fisheries Department Addl. Chief Secretary to Government, Finance Department
Board Member	Dr. S. Rukmangadhan Managing Director Surabhi Hatcheries and Surabhi Breeding Farms,
	Puliakulam Road, Coimbatore - 641037

RESEARCH COUNCIL

Chairman (Vice-Chancellor)	Dr. S. Thilagar (upto 10.12.2017) Dr. T.J. Harikrishnan (i/c from 11.12.2017 to 25.01.2018)
	Department, Govt. of Tamil Nadu, as Chairman, Tmt. S. Jayanthi / Dr. N. Vishnu Vardhana Rao, Member, Board of Management of TANUVAS as Members]
(Director of Research)	Dr. T.J. Harikrishnan
Members	Registrar Director of Animal Husbandry and Veterinary Services
	Heads of Research Stations Project Co-ordinators
Members	Vacant
Pro-Chancellor) **Two Specialists of eminence**	
Three progressive farmers in Animal	Vacant
Members	Dr. S. Prathaban, (upto 31.07.2017) Prof. and Head, Dept. of Veterinary Clinical Medicine, MVC., Chennai
Chancellor)	Dr. M.R. Purushothaman,
	Dr. J. Johnson Rajeswar
	Tirunelveli
	Dr. B.Mohan,
	Dr. D. Ramasamy, Professor, CFDT, Koduvalli
	Dr. P.Shamsudeen, Professor College of Poultry Production and Management, Hosur

EXTENSION EDUCATION COUNCIL

Chairman (Vice-Chancellor)	Dr. S. Thilagar (upto 10.12.2017) Dr. T.J. Harikrishnan (i/c from 11.12.2017 to 25.01.2018)
	Department, Govt. of Tamil Nadu, as Chairman, Tmt. S. Jayanthi / Dr. N. Vishnu Vardhana Rao, Member, Board of Management of TANUVAS as Members]
(Director of Extension Education)	Dr.N.K.Sudeep Kumar
Members	Registrar Director of Animal Husbandry and Veterinary Services
	Three Regional Joint Directors of Animal Husbandry Professors of Extension Education
Members	Thiru. R.B. Govindaprabu Coimbatore
Pro-Chancellor)	Thiru. M. Palanisamy
Three Progressive farmers in Animal	Karur Thiru. C.S. Thiyagarajan Sivagangai
Members	Dr. M.J. Chandre Gowda Principal Scientist (Agri. Extn)
Vice-Chancellor) - Two Eminent persons	ATARI, ICAR, Zone VIII Bengaluru
	Dr. P.J. Rajkamal Retd. Professor of A.H. Extension Kerala Veterinary University, Kerala
Two Professors from	Dr. J. Johnson Rajeswar Professor and Head Dept. of Veterinary Microbiology
	Dr. B. Mohan Professor and Head Dept. of Animal Nutrition

BOARD OF STUDIES

FACULTY OF VETERINARY AND ANIMAL SCIENCES

Chairman (Dean,	Dr. S. Prathapan (upto 31.07.2017) Dr. K.N. Selvakumar
Members	Other Deans within the faculty Deans of other faculties All Directors of the University The Senior Heads of Departments of the Teaching Institutes of the faculty concerned
Elected Members Two Associate Professor	Dr. S. Arunkumar Dr. R. Thangathurai
Professors	Dr. M. Ranjith Kumar Dr. V. Suresh Kumar Dr. M. Arthanari Eswaran Dr. K. Kanagarajadurai
Nominated External experts (Two experts in the concerned subjects)	Dr.M.S. Vasanth Dean, Veterinary College Karnataka Veterinary, Animal and Fisheries Sciences University, Hebbal, Bengaluru Dr.M. Sivakumar, Professor and Head, Department of Veterinary Anatomy, Rajiv Gandhi Institute of Veterinary Education and Research, Kurumbapet, Puducherry

FACULTY OF BASIC SCIENCES

Chairman	Dr.K. Kumanan (upto 31.05.2017)
Basic Sciences)	Dr.K. Kumanan (i/c from 01.06.2017 to 06.06.2017) Dr. L. Gunaseelan (from 07.06.2017)
Members	Other Deans within the faculty Deans of other faculties All Directors of the University and Heads of the Department of Faculty of Basic sciences
Elected Members One Associate Professor	Dr. S. Meignanalakshmi
Professors	Dr.V.S. Vadivoo Dr.G. Senthil Kumar Dr.B. Jayavarathan Dr.M. Veeraselvam
Nominated External experts (Two experts in the concerned subjects)	Dr.M. Chinnadurai, Director, Centre for Agricultural and Rural Development Studies, Coimbatore Dr.M. Mutha Rao, Professor, Department of Gynaecology and Obstetrics College of Veterinary Sciences, Sri Venkateswara Veterinary University, Prodathur – 516 360

FACULTY OF FOOD SCIENCES

Chairman (Dean,	Dr.D.Baskaran
Members	Other Deans within the faculty Deans of other faculties All Directors of the University and Senior Heads of the Department of the Faculty of Food sciences, Dept. of Livestock Products technology (Dairy Science), Livestock Products technology (Meat Science), Dept. of Poultry Science and Poultry Research Station.
Elected Members	Dr. Rita Narayan
Two Associate Professors	Dr. S. Suresh Kumar Dr. G. Raj Manohar, Dr. P. Selvan, Dr. B. Karthikeyan, Dr.C.Vasanthi
Nominated External experts (Two experts in the concerned subjects)	Dr. P. Sudhakara Reddy Registrar (Retd.) Sri Venkateswara Veterinary University, Tirupati – 517 502 Dr. K. Thangavel, Professor and Head, Centre for Post-Harvest Technology, Tamil Nadu Agricultural University, Coimbatore – 641 003

CONSTITUENT UNITS OF THE UNIVERSITY

Constituent colleges	Madras Veterinary College, Chennai
	Veterinary College and Research Institute, Namakkal
	Veterinary College and Research Institute, Orathanadu
	Veterinary College and Research Institute, Tirunelveli
	College of Food and Dairy Technology, Koduveli
	College of Poultry Production and Management, Hosur
Instructional / Research Farms	Post Graduate Research Institute in Animal Sciences,
	Sheep Breeding Research Station, Sandynallah
	Poultry Research Station, Madhavaram, Chennai
	Livestock Farm Complex, Madhavaram, Chennai
Centres of Advanced Studies	Veterinary Clinical Medicine, Madras Veterinary College, Chennai
	Poultry Science, Veterinary College and Research Institute, Namakkal
Centre of Excellence	Animal Biotechnology and Immunology, Madras Veterinary College, Chennai

Laboratories	Central University Laboratory, Madhavaram, Chennai
	Viral Vaccine Research Centre, Madhavaram, Chennai
	Bacterial Vaccine Research Centre, Madhavaram, Chennai
	Zoonoses Research Laboratory, Madhavaram, Chennai
	Pharmacovigilance Laboratory for Animal Feed and Food Safety, Madhavaram, Chennai
	Translational Research Platform for Veterinary Biologicals, Madhavaram, Chennai
	Laboratory Animal Medicine Unit, Madhavaram
	Poultry Disease Diagnostic and Surveillance Laboratory, Namakkal
	Animal Feed Analytical and Quality Assurance Laboratory, Namakkal
	Avian Disease Laboratory, Thalaivasal
	Veterinary University Training and Diagnostic Centre, Madurai
	Centre for Stem Cell Research and Regenerative Medicine, MVC, Chennai
Outreach Centres	
Veterinary University Training and Research Centres (20)	Coimbatore, Dharmapuri, Dindigul, Erode, Karur, Melmaruvathur, Nagercoil, Cuddalore, Rajapalayam, Salem, Thanjavur, Tiruppur, Tiruchirapalli, Vellore, Villupuram, Krishnagiri, Thiruvannamalai,
Farmers Training Centres (3)	Kancheepuram, Theni and Thiruvallur
Krishi Vigyan Kendras (3)	

2. RESEARCH

TANUVAS is involved in strategic planning of research endeavours, establishment of linkages with research organizations at national and international levels, research monitoring of various projects / schemes through internal and external mechanisms and research documentation. The research programmes on thrust areas are undertaken through external funding for scientists of this University in conducting various research programmes led to

entrepreneurs and the society at large. The and excellence of the

International organizations / agencies.

A total of 157 research projects, with a total outlay of Rs.17,280.60 lakhs sponsored by various funding agencies, were in operation at TANUVAS during 2017-18 in the faculty of Veterinary and Animal Sciences, Basic Sciences and Food Sciences. The abstract of the same is furnished below:

RESEARCH PROJECTS IN OPERATION

Sl. No.		No. of Projects	Budget (Rs. in lakhs)
1	Indian Council of Agricultural Research (ICAR), New Delhi (100% funding - 30 projects and 75% funding - 5 projects)	35	2100.28
2	Department of Biotechnology (DBT), New Delhi	23	2123.06
3	Department of Science and Technology (DST), New Delhi	30	3500.22
4	Department of Animal Husbandry, Dairying and Fisheries, Government of India, New Delhi (National Livestock Mission; National Programme for Bovine Breeding and National Agriculture Development Programme)	20	3114.86
5	National Bureau of Animal Genetic Resources (NBAGR), Karnal	1	58.50
6	National Bank for Agricultural and Rural Development (NABARD)	9	2006.72
7	Directorate of Oil seeds Development, Hyderabad	1	150.00
8	Indian Council of Medical Research, New Delhi	1	17.85
9	Ministry of AYUSH, New Delhi	2	91.62
10	Ministry of Food Processing Industries, New Delhi	4	360.45
11	Government of Tamil Nadu (TANII, State Planning Commission, TNLDA and Other Tamil Nadu Government Agencies / Departments)	18	3254.81

12	Other Private Agencies M/s. Jubilent Life Sciences Ltd.,Noida AVT Natural Products Ltd., Kerala M/s. Sihil Pharma, Chennai M/s. Saraswathi Foundations, Thoothukudi	5	21.37
13	International Agencies BBSRC, UK Queens University, Belfast SEPPIC, France Bill and Melinda Gates Foundation, USA M/s Evonik (SEA) Private Ltd, Singapore Nutreco, The Netherlands	8	480.86
	Grand Total	**157**	**17280.60**

tune of Rs.5839.03 lakhs during 2017-18.

Sl. No.	Title	Coordinator		Budget (Rs. in lakhs)
I. Sponsored Research Projects				
1	Research Station at Erode District	S. Jayachandran	NADP-GoI	250.00
2	Establishment of genetic resource centre breed of Tamil Nadu - Pulikulam	S. Sivaseelan	NADP-GoI	200.00
3	Additional Funding For the Ongoing Animal Mobile Medical Ambulance For Rural Veterinary Care In Tamil Nadu	S. Balasubramanian	NADP-GoI	50.00
4.	Establishment of Carcass Utilization Plant	V. Appa Rao	NLM-GoI	200.00
5.	Field performance recording programme	V. Jeichitra	TNLDA under NPBB	39.22
6.	Field performance recording programme	R.Arumugam	TNLDA under NPBB	14.27
7.	Technological empowerment of tribal farmers through adoption of TANUVAS technologies in Tamil Nadu	J. John Kirubaharan	ICAR	116.04
8.	spermatozoa in bovine using novel integrated proteomic and genomic approach	K.G. Tirumurugaan	DBT	45.79
9.	Translational Research Platform for Veterinary Biologicals – Phase II	G. Dhinakar Raj	DBT	1077.47

Sl. No.	Title	Coordinator		Budget (Rs. in lakhs)
	DBT – TANUVAS Canine Research Centre & Networks			
10.	Development of canine distemper virus like particles and evaluating its potential for use as vaccine candidate	G. Dhinakar Raj	DBT	676.04
11.	Development and validation of Point-of- a neglected but important infection with zoonotic potential	M. Raman		
12.	Mass sterilization of dogs using single intravasal injection of functionalized polymers	P. Sridevi		
13.	 contraceptive vaccines based on E-coli-expressed recombinant canine and porcine zona pellucida proteins to inhibit fertility in female dogs	M. Raman		
14.	Diagnosis of immune mediated diseases, lymphoma and canine parasitic diseases and establishment of platelet banks for therapy	G. Dhinakar Raj		
15.	Developing recombinase polymerase assay based diagnostics for detection of pathogenic leptospires	K. Senthil Kumar		
16.	Screening of B and T cell lymphoma chemotherapeutic regimen	M. Chandrasekar		
17.	Canine Parvo virus 2b vaccine candidate - evaluation towards regulatory compliances	G. Dhinakar Raj		
18.	Development of point of care diagnostic typing modalities for major blood groups and therapeutic canine blood components for critically ill dogs	G.R. Barnidharan		
19.	Development and evaluation of a recombinant canine distemper virus vector using reverse genetics technology for use as a multivalent vaccine delivery system for dogs	R.P. Arvindh Babu		
20.	 chromatographic test as a point-of-care diagnostic test for *Babesia gibsoni* and *E-canis* infection in dogs	P. Azhahianambi		
21.	Canine Project monitoring unit	S. Balasubramanian		

Sl. No.	Title	Coordinator		Budget (Rs. in lakhs)
22.	Validation of molecular diagnostics and vaccine for classical swine fever	K. Kumanan	DBT	34.96
23.	Creation of seed hub centre for for pulses	K. Velmurugan	Dir. of Oilseeds Development, GOI, Hyderabad	150.00
24.	Development and standardization of a novel DIVA (marker) vaccine against Newcastle disease to augment production from poultry	J. John Kirubaharan	TANII	166.50
25.	One health approach for animal and public health to augment food safety and productivity	G. Ravikumar	TANII	545.00
26.	Bioelectricity and biohydrogen production by using slaughter house waste rumen	S. Meignanalakshmi	TANII	19.80
27.	Genetic evaluation of draught animal power of Umblachery breed in Cauvery Delta zone	K. Jagadeesan	TNSCST	13.01
28.	Status of nitrate content in animal forages and water and early warning system to	C. Kathirvelan	TNSCST	4.05
29.	Sustainable livelihood for desi bird farmers through technological interventions in Tiruchirapalli district	P. Mathialagan	NABARD	10.00
II. Infrastructural Projects				
30.	Construction of academic blocks at College of Food and Dairy Technology	D. Baskaran	NABARD	1400.00
31.	Construction of Large Animal IP (in strengthening the referral hospitals of TANUVAS to address rural veterinary care in Tamil Nadu	S. Balasubramanian	NABARD	576.50
32.	Understanding the emergence of variant infectious bronchitis virus in chickens in UK and India : shared control strategies	V. Gowthaman	BBSRC, UK	28.00
33.	Targeted parasitic control in livestock for small tropical farmers	M. Raman	Queens University, Belfast	3.60
34.	Accelerating bovine tuberculosis control in developing countries-India (Ab^{TB} CD)	K. Kumanan	Bill and Melinda Gates Foundation, USA	190.43

Sl. No.	Title	Coordinator		Budget (Rs. in lakhs)
II. Consultancy Projects				
35.	and performance of layers	P. Vasan	Nutreco, The Netherlands	16.62
36.	JubiDOL on the metabolic energy sparing added to the broiler feed and production performance of commercial broilers	G. Srinivasan	Jubilent Life Sciences Ltd., Noida	3.63
37.	of antibiotic growth promoter replacer on improving nutrient utilization, production and health performance in broilers	D.Thirumeignanam	Jubilent Life Sciences Ltd., Noida	4.05
38.	additive in commercial broilers	N. Karthikeyan	AVT Natural Products Ltd., Kerala	4.05
	Total			**5839.03**

Apart from 157 Research projects, 76 Rs. 8359.90 lakhs funded by Government of Tamil Nadu are also in operation.

Research Collaborations

The University maintains close liaison with various National and International Institutions to exchange information and to in the faculty of Veterinary and Animal Sciences, Basic Sciences and Food Sciences for dissemination.

Research Project Approval Committee

The RPAC with the Director of Research as the Chairman, the Deans and Directors concerned and technical experts as members periodically scrutinizes all the research of TANUVAS and forward the proposals to various funding agencies with the approval of the Vice-Chancellor, TANUVAS.

During the reporting period, 38 RPAC meetings were conducted, of which 93 project proposals were approved and sent to various funding agencies for funding.

Research Council

The Research Council of TANUVAS is the policy making body on all the research activities carried out in the University with the Vice-Chancellor as its chairman and Director of Research as its Member-Secretary. The Research Council shall consider and make recommendations in respect of:

Identifying thrust areas and formulation of research programmes and projects

implementing research projects

Linking teaching, research and extension education and facilitating the research workers

Orienting research activities to meet the needs of the farming community

Analyze the reports of on-going/ by the scientists concerned

Husbandry / Veterinary Sciences Research which may be referred by State / Board of Management / Vice-Chancellor or any other authorities of the University/Agencies

RESEARCH HIGHLIGHTS

ANIMAL PRODUCTION

Performance **White Yorkshire X Desi crossbred pigs under farm conditions**	Evaluation of individual and sow performance traits of Large White Yorkshire X Desi crossbred pigs using and average daily gain and the maternal heritability estimates were 0.161, 0.085 and 0.062, respectively. The 75 per cent Large White Yorkshire pigs were found to scope for improvement.
on performance traits of Madras Red sheep under farm conditions	The heritability estimates of production and functional traits in Madras Red sheep were found to be low (<0.1) (medium, 0.1-0.3). Estimates of genetic correlations among body weight traits were positive and high. The estimated mean breeding value (EBV) for production and functional traits were positive with low magnitude.
Developing **methane mitigation** **cerevisiae to ruminants** **ration**	The minimum dose of coconut oil and *S. cerevisiae* at 1.6 % + 0.8 X 10^7 CFU in combination decreased the maximum methane (ml) per 100 mg of truly digested substrate by A feeding strategy was developed by supplementing MCFA through coconut oil at 104 ml/ animal/ day and *S. cerevisiae* at 2.4 X 10^{11}/ animal/ day in 60:40 ratio of paddy straw and concentrate based ration which was reduced the methane emission by 8.09% in indigenous
inclusion of chocolate waste on **performance in Japanese quails**	Chocolate waste could be included up to 15 % in Japanese and reduce the cost of production.

supplementation on growth performance and lipogenic gene expression in broiler chickens	75% higher supplementation than the recommended dietary level of arginine in the broiler diet, resulted in improved weight gain, reduced abdominal fat content and increased intramuscular fat content with lower lipoprotein lipase mRNA expression in broiler chickens.
Evolving feeding methane emission using essential oils for ruminants	Supplementation of essential oils viz., garlic oil @ 1.7 ml + peppermint oil @ 0.7 ml was evolved as a feeding strategy to reduce the methane emission by in vitro and in vivo
Usefulness of bio-accelerator in composting materials	Addition of urine along with bio-accelerator to the manure In areas, where coir pith is available, the same shall be added at the rate of 25 per cent along with urine and bio-accelerator in the manure to achieve desirable results in
fresh and frozen performance of goat kids	characteristics. early stages and improve the growth performance. may be given even though the performance would be less

nanoselenium, **and Lactobacillus to produce functional chicken meat**	acid ration of 1:1.89 was produced by supplementing 0.15 mg/kg and L. salivarius @ 1012cfu/ kg feed.
Reducing the ammonia level in **chemicals and herbs**	(*Yucca schigidera*) extract and herbal saponin - SAPODO) The birds fed with yucca extract, SAPODO and the birds moisture, pH, ammonia value, total bacterial count and
propionate and the **as growth promoters on the production performance and meat** **broiler chicken**	of salts of organic acids like calcium propionate and sodium butyrate replacing lincomycin 4.4 ppm and BMD the commercial broiler chicken. The water holding capacity (WHC) of meat was Supplementation of salts of organic acids enhanced increased lightness (L*) and decreased redness (a*) and yellowness (b*).

hormone receptor genes and their association with reproductive

The study was undertaken to investigate the genetic polymorphism of *MTNR1A, FSHR, LHR* and *ER* by PCR-RFLP and PCR-SSCP and their association with reproduction traits so as to use them as candidate genes in

At the *MTNR1A* / *Hpa*I locus, three genotypes *viz*., *CC, CT* and *TT* , *C* and *T* alleles were 0.478 and 0.522 respectively in the pooled population.

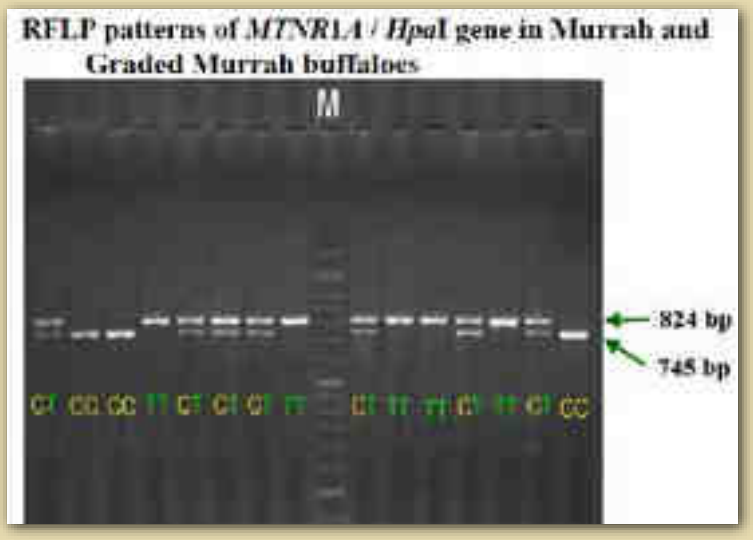
MTNR1A /*Hpa*I locus. The distribution of *MTNR1A* /*Hpa* revealed a heterozygosity value of 0.505 which was almost

population.

calving and fourth calving interval was recorded in

Individuals with the *CT* and *TT* genotypes had shorter age *CC* genotype.

CC genotype had shorter fourth calving interval than *CT* and *TT*



Turmeric oil as an antibiotic substitute for commercial broiler chicken

Turmeric oil (TO) given at 0.025 and 0.050% levels in day

antibiotic fed group. Dietary supplementation of turmeric

(Rs. 0.32 and 1.03/kg live weight gain respectively) when compared to antibiotic supplemented group.

Sperm kinematics

frozen thawed Boer crossbred buck semen

universal (Tris egg yolk glycerol - TEYG) and synthetic semen extenders (Bioxcell or Triladyl) on kinematics of Boer cross bred buck spermatozoa before and after freezing.

The study recommended TEYG extender for the extension of Boer crossbred buck semen due to its ability to maintain the structural integrity, plasma membrane integrity and motility of sperms and good fertility rate.

The macroscopic, microscopic, biochemical analysis and

with TEYG extender.

TEYG may be used for cryopreservation of Boer crossbred buck semen in order to maximize the fertility rate in does

characteristics and

incorporated with millets

Pearl millet at 15%, Finger millet at 15% and Kodo millet

chemical and sensory properties.

prepared with millets maintained the physicochemical,

values, lower fat content and lower cost of production.

Assessment of the antioxidant potential incorporated chicken meat balls

paste (12% level) and gooseberry powder (2% level) could

properties.

Among these, the gooseberry powder had the relative advantage of higher DPPH scavenging activity, minimal microbial counts with organoleptically superior product than other two preparations of gooseberry added chicken meat balls.

Chicken meat balls incorporated with gooseberry powder as natural antioxidant could be stored up to 60 days under frozen (18±1°C) storage.

Impact of Mega sheep seed project on Mecheri sheep performance and farmers livelihood

The per cent pre-weaning, post-weaning, adult and

calculated per adult sheep was Rs. 4504.94, Rs. 4509.90 and

Rs. 3329.25 and Rs. 3348.82, respectively in corresponding

There was an improvement in body measurements, growth traits, reproduction parameters and survivability in Mecheri lambs due to introduction of superior germplasm

RESEARCH HIGHLIGHTS

(*Alium sativum*) and Nilavembu (*Andrographis paniculta*) on production and immune performance of commercial broiler

A biological experiment was conducted in commercial

(5 or 10g per kg) and nilavembu (1 or 2g per kg) in all combinations.

Supplementation of garlic and nilavembu generally improved body weight gain. Supplementation of 10g garlic and 2g nilavembu showed higest weight gain and feed conversion ratio.

Newcastle disease virus was observed in birds fed with 10g garlic and 2g nilavembu per kg of feed.

of inhibition against *Staphylococcus aureus*, *E. coli* and *Klebsiella sp.* Nilavembu extract showed the zone of inbition against *Staphylococcus aureus* and *Klebsiella sp.*

Evaluating the performance of broiler rabbits fed on vegetable oils

Reproductive performance was studied among Soviet Chinchilla Rabbits and the results revealed that among all the treatment groups, palm oil supplemented group (T_3)

and also it registered higher percentage of successful

gain (449.67 ± 38.89 g) during gestation.

Palm oil supplementation (2 per cent) in rabbit diet was

growth, reproduction and high return over feed cost.

Augmenting milk production

TANUVAS GRAND supplementation in Tirunelveli District

in dairy cows where it increased the digestibility and regularized the appetite of dairy cows, improved the dung consistency, regularized the oestrus cycle and improved the conception rate. Sub-acute rumen acidosis

milk yield was increased by 0.5 - 1.00 ltr without changing feeding practices.

Bioconversion

vermicompost

after optimization of C: N ratio to 25:1 to 35:1. Compost recipe with C: N ratio of 25: 1, 30: 1 and 35:1 were formed with coir pith waste and farm yard manure. Eight windrows were formed for pre-composting.

favourable in terms of pathogen reduction property. Precast cement rings were used as vermibed and earthworm *Eudrilus eugeniae* was employed as primary agents of decomposition. Vermicomposting work was done for a period of 90 days with initial feed substrate of 50 kg on dry weight basis and moisture of the vermin-bed was maintained at 70-75 per cent. The economics of vermicompost making was worked out.

During pre-composting, pH, EC, and TDS declined and were within acceptable levels. TKN% increased during pre-composting and resulted in decrease in C: N ratio. Feed substrate to vermicompost ratio was higher in T8 (FYM alone C/N 25%) followed by T7 (FYM+BPL C/N 35%), T3 (BPL C/N 35%), T6 (FYM+BPL C/N 30%),T2 (BPL C/N 30%).

successfully converted into vermicompost by optimizing C: N ratio to 30:1 or 35:1 with carbon materials like coir pith favours earthworm survivability.FYM as such or C: N ratio optimized to 30:1 or 35:1 favours vermicomposting.

Mathematical modelling of growth performance in Large White Yorkshire pigs

The pooled mean body weights at birth, 56, 120, 180 and 240 days of age were 1.40±0.05, 7.74±0.06, 25.24±0.15, 41.54±0.03 and 75.84±0.12 kgs respectively for LWY pigs.

performance was analysed in LWY pigs.

Richards models.

Validation studies

KemTRACE broiler

trace minerals on the performance of commercial broilers

Metal propionate form of organic mineral

mineral supplementations on growth performance, immune response in commercial broilers. In addition, it

other organic mineral supplementations

AICRP on Post Harvest Engineering

Collagen extracted from chicken skin and subjected

calorimetry and thermogravimetry revealed that the collagen sheets with combination of Collagen: Carboxy methyl cellulose: Chitosan of 85:10:5 had good tensile strength.

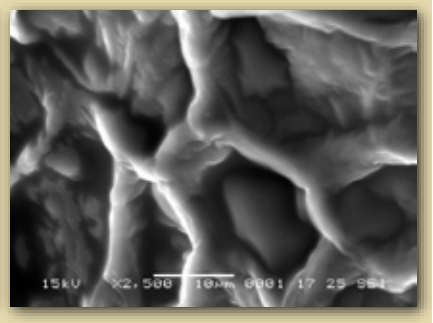
A technology to extract collagen and chondroitin sulphate

of animal by-product and also decrease environmental pollution.

power rating of the heater of the solar drier is around

around 60% more economical than in a hot air oven.

(x500)
Bar = 50 µm



(x2500)
Bar = 10 µm

from chicken skin

skin showing regular and uniform networking of porous and honey-comb like structures on the surface)

Preparation of barbecued pork from low value head meat

The cost economics indicated that replacing 25% pork lean meat with low value head meat for preparing barbecued pork can reduce the cost of the product by Rs. 26.64/kg.

Value added barbecued pork can be prepared by replacing

the sensory characteristics, which is also having good

Evolving a suitable live and carcass grading

(Capra hircus)

The grades evolved for live animals namely G-1 (6-15 months). G-2 (15-24 months), G-3 (25-36 months) and G-4 (Above 36 months of age) denoted that grade G-1 had the ideal age for good meat yield.

because the age, G-2, G-3 and G-4 were very old and meat

Detection of food borne pathogens in

A total of 80 chicken products were screened out of which, 4 samples (3 fast food samples and one street food sample) were found to be positive for *Escherichia coli*, 24 samples (16 fast food samples and 8 street food samples) were found to be positive for *Staphylococcus aureus*.

Microbiological analyses before and after cooking revealed that all the organisms were thermally destructed with core temperature above 72°C.

Nutritive value of fresh and cooked meat of livestock

and cooked meat of both livestock and poultry species in respect of pH values, water holding capacity, shear force, instrumental colour values and cholesterol content.

springiness, cohesiveness, gumminess and chewiness were higher in cooked meat. The crude protein content of both fresh and cooked breast meat samples of the poultry

glutamic acid was higher compared to other amino acids in all species of livestock and poultry.

Evolving a suitable live and carcass **Indian sheep** ***(Ovis aries)***	sheep breeds based on chest girth for live animals, while the dressing percentage of the carcasses were predicted by carcass length, and the carcass weight was predicted from live animal body measurements using hip width. Grading method for carcass was evolved based on age 8 to 12 kg), grade B (3 to 20 months, 6 to 8 kg), grade C (21 to 30 months, 12 to 15 kg), grade D (above 30 months, above 15 kg) and grade E (not coming under other grades) respectively which will serve as source of grading of sheep in Indian condition and also avoid the fraudulent practices by middle man.
Development	combination of fruit pulp, prebiotics, calcium and vitamin D. acceptability.
Studies on **peptides isolated from**	Casein phosphopeptide was isolated by enzymatic hydrolysis of fermented milk using trypsin. The antibacterial activity of CPP and lactoferrin was determined using four pathogens viz., *E.coli, B.cereus, S. aureus* and *S. enteritica.*
Detection of food borne bacterial pathogens in	The study was conducted to compare culture method and multiplex PCR method for diagnosis of pathogens viz., *Staphylococcus aureus* and *Bacillus cereus.* screening of pathogens.
Development of functional low fat ice cream using millets	Millet ice cream were prepared by using pearl millet and sorghum and fruits viz., Jack fruit and musk melon. The functional low fat ice cream prepared with millet (10%) and fruit (15%) has higher acceptability.

enriched functional chocolate using chia seed variants	The antioxidant activity of chocolate developed with chia analysed by DPPH scavenging method. The functional chocolate could be stored up to 180 days
Development of noodles	lowest glycemic index with maximum shelf life of 180 days
Decontamination (*Curcuma longa*) on chicken meat	concentration and contact time combinations revealed that 30% turmeric treatment lower the *Campylobacter jejuni*
Development of fruit enriched ice cream and in vitro assessment for their functional properties	extracts viz., jamun, grape, amla, kiwi and dragon fruits. Fruit enriched ice cream samples were found to retain the functional properties during the entire period of storage for 180 days at -23°C.
Studies on shelf life enhancement of pomegranate arials *(Punica granatum)* atmosphere packaging	The shelf life of pomegranate arials *(Punica granatum)* The overall acceptability of pomegranate arials was found CO2, and 85% N2 gas composition
Development of vitamin D and calcium	at 500 mg per litre of ice cream mix was acceptable by -23°C.

ANIMAL HEALTH

Evaluation of virus like particle vaccine against a fatal viral disease of dogs in target species

Virus like particle vaccine against a fatal viral disease of dogs has been developed in baculo virus vector using the novel insect cell line model

fermenter scale. Total of 8.0 mg protein was recovered from 2 liters of culture

Dog trials done at M/s. Palamur, Hyderabad revealed that

response even in the face of maternal antibodies

Development of a novel production

the *peste des petis* ruminants (PPR) vaccine

A BHK21 adapted vaccine for PPRV was developed for use in sheep and goats to protect against PPR disease. This vaccine is scalable in fermenters and hence would result in cost reduction compared to existing vaccine in Vero stationary cell culture system

A local isolate of PPRV was passaged in BHK21 cell line and further adapted to BHK suspension cells

The candidate vaccine was tested in goats which showed complete protection

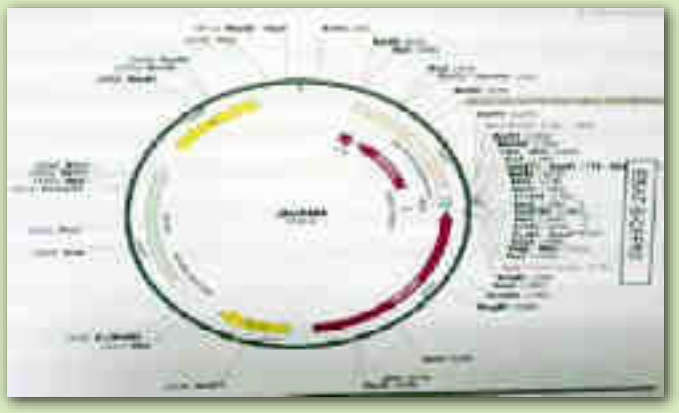
indicated elicitation of protective immune responses in vaccinated small ruminants

Development of recombinant BCG vaccine and diagnostics for TB

Bovine TB Kit developed at TRPVB was validated at APHA, UK for its performance. It showed a sensitivity of

and ExDIVA antigen

Evaluated the BCG KO strains of University of Surrey in SCID and Balb/c mice for its safety. Based on the mortality and clinical signs, KO#1 and KO#2 were observed to be safest followed by KO#3 with survival percentage of 100, 100 and 85.71 respectively.



Development of recombinant virus – like particle based diagnostics for the detection of Newcastle disease virus and infectious bursal disease virus

Lateral Flow Immuno Assay (LFA) has been developed with IB1, IB2 and IB3 chimeric VLPs.

Yeast expressed recombinant IBDV partial VP2 was

hyper immune sera.

Chimeric VLP-based ELISA and LFA tests were developed and validated with limited number of IBDV

Chimeric VLPs were used as capturing antigen in an indirect ELISA for detection of IBDV antibodies

assay (LFA) with IB1, IB2 and IB3 chimeric VLPs were used for rapid detection of IBDV antibodies in sera samples.

RESEARCH HIGHLIGHTS

Controlling enteric

host microbiota interactions, risk assessment and

management interventions

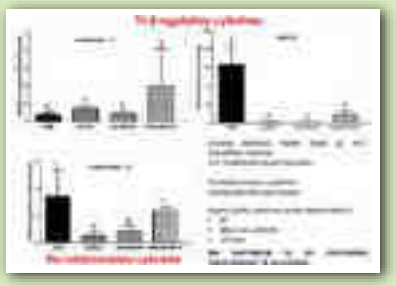
Gut microbiome analysis revealed dominance of Super antigen producing genera such as *Bacteroidetes* (45.7%) followed by *Firmicutes* (36%). More functional proteins such as amino acids and derivatives were present in

intervals.

In the experimental study conducted on immune response across breeds, levels of Th-2 regulatory cytokine of IL-3 was higher in Kadaknath and Aseel followed by Nicobari

in Kadaknath and Nicobari followed by Aseel.

response of Indigenous chicken breeds such as Aseel, Kadaknath and Nicobari through challenge studies using Coccidia provided a higher Innate Immune response in Indigenous chicken.



for detection of

cellulosae revealed protein bands at 20, 25, 55 and 250 kDa with the major protein bands recognized at 55 and

protein bands at 25, 35, 45 and 250 kDa. The E/S antigen

antigen for immunoassays.

Enzyme immuno transfer blot (EITB) using excretory

cysticercosis in pigs and human beings.

diagnosis of cysticercosis both in pigs and human beings using both the antigens.

Evaluation of bovine digesta from slaughter house waste as organic fertilizer and for bioremediation of pesticide and

polluted soil

Bovine digesta from slaughter house waste has been evolved as organic fertilizer

A novel bioremediation method to treat tannery and

New organic fertilizer from waste and a novel method of bioremediation using waste has been achieved.

Pot experiment for evaluation of bovine digesta as organic fertilizer in sunflower plant (90th day)

Lane: 1 Bovine digesta 150%* (in triplicates), Lane 2: Bovine digesta 125%* (in triplicates), Lane 3:Bovine digesta 100% * (in triplicates), 4: Bovine digesta 75% * (in triplicates) where*

control, Lane 6: Urea control and Lane 7: Control.

an inactivated classical swine fever virus vaccine

The immunogenicity trial of inactivated PK-15 cell adapted classical swine fever virus (CSFV) vaccine adjuvanted with single and double emulsion was conducted in pigs. The inactivated CSFV vaccine with single emulsion adjuvant could generate and sustain the serum CSFV antibody levels until 180 dpv.

The inactivated CSFV vaccine with double emulsion adjuvant was capable of eliciting an early immunity as indicated by a good level of antibody response and maintained the threshold levels only up to 90 dpv indicating a need for booster vaccination at 90 days.

In addition, the vaccine also induced an early antigen

live CSFV vaccine which is a clear indication of early protection

Development of novel molecular diagnostics and improved vaccine for duck plague virus

Duck plague virus glycoprotein genes viz. gC, gD, gE, gG, UL42 and UL 55 were cloned and expressed in the prokaryotic system.

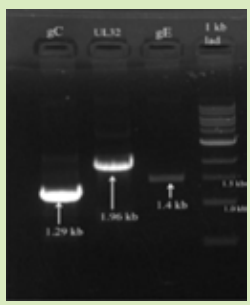
DPV gE was found to be a good candidate based on their ability to bind with DPV antibodies.

test for duck plague virus antigen as well as antibody detection was evolved.

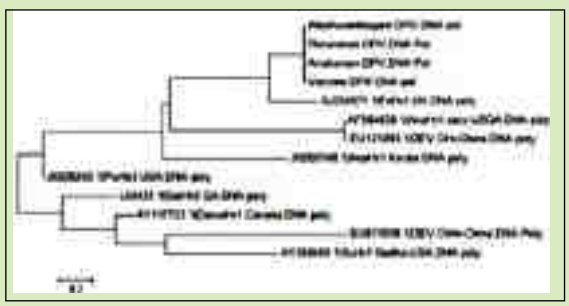
Molecular epidemiology of duck plague virus based on

the spread of the disease in Tamil Nadu.

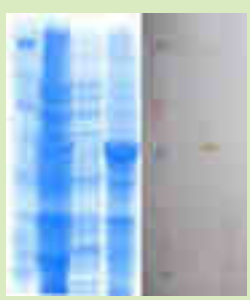
developed for DPV antigen and antibody detection at



Agarose gel picture showing amplicons of gC, UL 32 and gE genes



Phylogram of the DPV DNA polymerase gene for



SDS-PAGE analysis (10%) recombinant gE protein of DPV crude cell lysates (~51 kDa)and western blot

VDRL plate showing latex agglutination test sensitized with gC protein done with a positive and

Molecular characterization of infectious

immunomics of its major

A total of 22 samples out of 26 samples screened were positive for ILT virus, which was characterized

ectodomain of gD was expressed successfully in prokaryotic *(Escherichia coli)* as well as eukaryotic *(Pichia pastoris)* expression system. The immunogenicity of eu-rgD was assessed through immunization trial in SPF chicken model. This antigen could also be explored as a potential immunogenic antigen for recombinant vaccine development.

Development of entomopathogenic fungal bioformulation for control of ticks

A total of 12 isolates of entomopathogenic fungi *Beauveria bassiana:* B1 to B7 (7 isolates), *Metarhizium anisopliae:* M1 to M4 (4 isolates) and *Isaria fumosorosea:* I1 (1 isolate) were screened from soil as well as tick cadavers and characterized based on the growth rate, spore densities, spore viability and enzyme activity (chitinase and protease) and found that the highest values were observed in B1, B2, M1 and M2 isolates.

Among the four isolates, the highest percentage of mortality (100%) was observed in B2 isolate against *Rhipicephalus sanguineus* and *Haemaphysalis bispinosa* followed by 90 % mortality against *Rhipicephalus microplus*. Highest mortality (80%) was observed in M1 isolate against *Hyalomma anatolicum* ticks at concentration of 108 conidia /ml in 10% soya oil suspension on 14 day post inoculation (dpi).

Both these entomopathogenic fungi could be used as mycopesticides in oil formulation.

of HN protein gene of mesogenic Newcastle disease virus

Samples such as proventriculus, caecal tonsils, spleen and brain were collected from layer birds suspected

Chennai districts. Out of eight positive isolates, three were characterized as mesogenic by Intra-cerebral Pathogenecity Index and Mean Death Time.

The two mesogenic isolates TN/NKL/F1 and TN/NKL/S2 were found to have 99% homology with Komarov and 93% homology with R2B.

benzimidazole resistance in *Haemonchus contortus* of sheep in North Eastern zone of Tamil Nadu

in the North Eastern zone of Tamil Nadu screened by

gastrointestinal parasites predominantly strongyles.

predominance of *H. contortus*

H. contortus out of the 446 larvae screened, giving a positivity rate of 89.69 percent.

H. contortus

resistant (rS) genotype.

to 65.5 per cent and that of susceptible allele varied from 34.5 to 49.5 per cent.

Resistance to benzimidazoles in Vellore and Thiruvannamalai districts and susceptibility to benzimidazoles in Kancheepuram and Tiruvallur districts were observed.

Diagnostic and

and post-mortem

sepsis in dogs

Elevated procalcitonin level recorded in septic animals that died during later stages, correlated well with clinical presentation, hematobiochemical analysis, critical

reliable prognostic marker of bacterial sepsis that can be

Comparative evaluation of cellular and serological diagnosis of *Mycobacterium avium* subspecies paratuberculosis (map) infection in small ruminants

Johnin PPD were 85.00 and 90.00 per cent respectively.

Prevalence of MAP infection was 10.31 and 42.19 per cent by SID using commercial Johnin PPD and i-ELISA.

Evaluation of the compounds in the reversal of anthelmintic resistance in *Haemonchus contortus*

Thiabendazole resistance to *Haemonchus contortus* by egg hatch assay was 36% with ED50 value of 0.247 and 64% susceptible with ED50 value 0.070. Ivermectin resistance and susceptible by larval migration inhibition assay was 41% and 59% respectively.

of ivermectin and thiabendazole by compounds viz. Verapamil, Loperamide, Quercetin, Kaempferol, Phloretin, Curcumin was observed which was dose-dependent.

Reduced intracellular glutathione (GSH) was higher in both TBZ and IVM resistant populations compared to susceptible population of H. contortus. VRP and LPM reduced the GSH level and the levels increased

decreased with time.

Expression of P-glycoprotein was higher in resistant population by 2.37 fold with beta actin and 2.18 fold with GAPDH than the susceptible population of H contortus.

Designing and lure-and-kill traps for *Musca domestica*

acrylic olfactometer bioassay.

Colour preference evaluation in a dodecagon maze

preferred colour followed by black, green, yellow and blue while white was least preferred.

with antioxidant butylated hydroxyl toluene (FMPB) pellet in glue trap bioassay, whereas in chemotactometer bioassay the order of preference was FMP pellet followed by FMPB and FM pellets.

pellets in poultry unit, trap catches were almost similar

density in poultry units was observed after placement of delta traps for six weeks continuously.

Characterization of extended –Spectrum *Escherichia coli* and Salmonella in foods of animal origin

Prevalence of *E.coli* and Salmonella in meat samples marketed in retail outlets of Chennai was higher which indicated poor hygienic practices followed during slaughter, transport and distribution.

Phenotypic characterization of the isolates for Extended spectrum and lactomase (ESBL) resistance indicated that majority of the isolates showed multiple mechanisms of resistance.

compared to those reported in other countries indicating the indiscriminate use of antibiotics in animal production in our country.

Gastrointestinal ruminants with special reference to parasitic diseases

Overall prevalence of GI parasites in small ruminants was found to be 83.43 per cent. The prevalence GI parasites was more in Tiruvallur district (90.16 per cent) followed by Kanchipuram district (90.00 per cent) and Chennai (80.65 per cent).

Gross pathology showed multiple small to large, round to

intestine in animals infected with oesophagostomiasis. Immature paramphistomes were deeply embedded in the mucosa of duodenum adjacent to the Brunner's glands.

Histopathology showed moderate amount of lymphocytolysis in Peyer's patches, partial to complete necrosis of villi, extravasation of RBCs into the tissue, full length necrosis and fusion of villi in bunostomosis.

Understanding of *Culicoides* borne diseases (CBDs) in wild and domestic ruminants

Twenty sites were designated for collection of *Culicoides*

of wild ruminants and domestic livestock.

The following *Cuilcoides*

C.arakawae, *C.orientiails* and *C.plainwing*.

Logistics for collection of *Culicoides* species at the interface of wild ruminants and domestic livestock were developed.

Detection of bluetongue virus in vector based on NS1

of dogs with special reference to immunological diseases

A total number of 133 dogs with skin disorders were taken up for pathological study. The gross lesions encountered were erythema, alopecia, macula papular eruptions,

In histopathology, all allergic dermatitis, parakeratosis,

was noted in the dermis. In autoimmune diseases, intra epidermal pustules in pemphigus foliaceus cases, endothelial swelling, invasion of endothelium by polymorphonuclear leucocytes and necrosis in vasculitis case and vacuolar degeneration in follicular basal cells in dermatomyositis cases were observed.

Immunohistochemistry showed intense, granular deposition of IgG in the intercellular spaces. Direct

emission for epidermal IgG autoantibodies. Telogen hairs

biomarkers as

detection of renal

The study revealed higher occurrence of renal disease in

urea was observed in renal diseased dogs but highly

and phosphorus in serum, saliva and urine was observed in renal failure dogs when compared to control group dogs.

Establishment of

molecular screening

inherited disorders and parentage

through molecular diagnostic assays and all the animals were found to be negative for the disorders.

With respect to parentage analysis, a total of 96 bull calves inducted for frozen semen production were tested

the microsatellite markers.

Molecular genetic assays have been standardized and

Assessing insecticide resistance

(Musca domestica)

concentrations of dichlorvos and cypermethrin was

residual contact methods.

In dichlorvos bioassay, mild to moderate level resistance was observed in topical and residual contact methods,

had developed tolerance to this drug.

exhibited mild to moderate level resistance in topical and residual contact methods in three farms. While the remaining two populations showed susceptibility to cypermethrin in both bioassays.

Primers designed to amplify three genes of *Musca domestica* viz., AchE, VSSC and CYP6D1 which confer resistance to organophosphates and synthetic pyrethroids produced 609, 335 and 732 bp amplicons.

observation of the bioassay with intermediate level of resistance to OPC in two farms and pyrethroids in three farms.

selected regions of Tamil Nadu

A total of 150 respondents were selected from two

Thanjavur and Coimbatore districts to study the human

The data were collected by using well structured and pre tested interview schedule and statistical tools viz., average, percentage, Kruskal-Wallis, Friedman test and

Porcine Circo virus 2 from clinical specimens

molecular methods

primers was undertaken from blood and aborted tissues

of 420 bp. Out of 36 samples tested, 24 samples were found to be positive for PCV2.

Molecular diagnosis of PCV2 using clinical samples of pigs was achieved.

A novel protection

probiotic bacteria in chicken

Two encapsulated probiotic consortiums were developed

An indigenous ABT Mini Encapsulator V500 was designed and fabricated to encapsulate large volume of probiotic organisms in the laboratory condition.

The probiotic supplemented group when challenged against virulent fowl cholera antigen, exhibited reduction in the mortality rate compared to commercial probiotic treated and control groups.

immunity by increasing number of macrophages and also stimulating the secretion of various Th1 and Th2 cytokines and had a potential in triggering elevated level of humoral antibody response in NDV vaccinated groups compared to control groups.

At the end of 5th week of age of broiler chicken, the probiotic treated group exhibited 150--200 gm weight gain per bird compared to control group without probiotic feeding.

Probiotic treated meat samples were free from any antibiotic residues and suitable for human consumption.

Microencapsulation technique to improve

probiotic bacteria in chicken

The *in vitro* spleen mononuclear cells were used as

immunomodulatory potential.

The viability of encapsulated probiotics at room temperature and at 4°C was studied.

Probiotic supplemented group when challenged against *eimeria oocyst*, showed reduction in shedding of oocyst and reduction in severity of lesions in the digestive tract.

Molecular studies on enteric

captive star tortoises *(Geochelone Elegans)*

such as Chennai Snake Park Trust, Guindy, Arignar Anna Zoological Park, Vandalur and Sri Chamarajendra Zoological Gardens, Mysuru.

The endoparasitic prevalence was assessed with the faecal samples collected from captive Star Tortoises reared at various captive facilities. Only two types of endoparasites were observed such as Strongyles (57.50%) and Coccidia (25.00%).

tortoises such as *E. coli, Klebsiella spp., Enterobacter spp., Salmonella spp., Citrobacter spp.* and *Proteus spp.*

The polymerase chain reaction (PCR) was performed *E. coli, Salmonella spp., Salmonella enteritidis* and *S. typhimurium* from direct faecal samples and also from cloacal swabs through culture enrichment.

parasitic fauna and enteropathogens in captive phesants

The study was carried out with captive pheasants reared at Arignar Anna Zoological Park, Vandalur and P.K.R. Farms, Calvin Estate, Injambakam, Chennai.

detect the parasitic stages in droppings *Strongyle* and *Capillaria sp.,* were found predominantly in samples collected.

Further, the prevalence of *E.Coli* and *Salmonella* were

of *Peste des petits ruminants* virus in clinical samples of

molecular methods targeting Nucleoprotein gene

The presence of PPRV in clinical samples was demonstrated by RT-PCR targeting the nucleoprotein (N) gene, yielding an amplicon of 350 bp. Out of the 36 samples tested, 20 samples were found to be positive for PPRV

Molecular diagnosis of PPRV using clinical samples of sheep and goats was achieved.

Clinicopathological evaluation of Johne's disease in small ruminants

were the typical clinical signs observed in JD positive animals.

Corrugations of mucosal surfaces of small intestine, enlargement of mesenteric lymph nodes, serous atrophy of pericardial fat, atrophy of subcutaneous adipose tissue

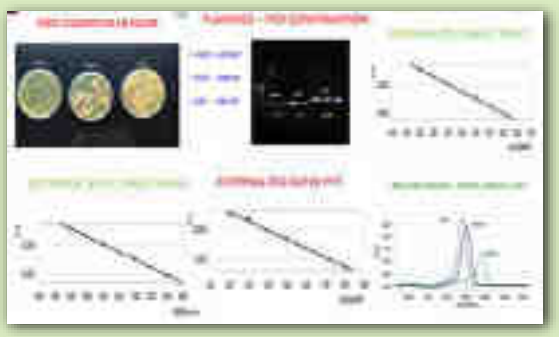
small ruminants.

Gradual decrease in haemoglobin, packed cell volume, total proetin, albumin and cholesterol levels noticed with the progression of JD.

recorded in JD positive **paratuberculosis** animals. and treatment of JD positive animals with monensin was unsuccessful in preventing the disease progression and excretion of MAP.

Quantitative disease virus in chickens

The feather and blood samples were collected from 25 commercial



which 14 were revaccinated with bivalent vaccine, six

vaccinated with bivalent vaccine at hatchery.

SYBR green based real time PCR was used for absolute

feathers increased until 21 dpv and thereafter decreased

28dpv.

monovalent vaccine and higher in non-revaccinated

RESEARCH HIGHLIGHTS

bacterial pathogens of bovine mastitis and therapeutic management in Namakkal

Prevalence of clinical and subclinical mastitis was 29.95 and 23.12 per cent respectively.

E.coli (82.35%) and *S.aureus* (42.85%) were found to be predominant in clinical and subclinical mastitis.

High prevalence in clinical and subclinical mastitis was found in left hind (57.4 and 71.4%) for *S. aureus*, right hind (14.8 and 6.89%) for *E.coli* and left fore and right hind (34.3 *K.pneumoniae.*

in mastitic cases under ethnoveterinary cum antibiotic treatment when compared to that under antibiotic treatment alone.

Prevalence of clinical and subclinical mastitis was 29.95 and 23.12 per cent respectively and overall prevalence of

Nuc gene* of *S. aureus

Kudineer Chooranam

Pretreatment with Nilavembu Kudineer Chooranam

water before immunization with oral pellet vaccine against Newcastle Disease Virus (NDV) and injection with SRBC

positive control.

The cell mediated immunity assessed by cutaneous delayed hypersensitivity test by injecting PHA-P and

pretreatment @ 1.0 ml/Kg and levamisole treatment.

The assessment of production performance revealed that treatment with NKC @ 1.0 ml/Kg of drinking water before vaccination improved the overall performance of the birds.

CLINICS

Predictive – prognostic studies and therapeutic evaluation of nano-paclitaxel in of dogs	mammary tumour. Tumour size regression in response to chemotherapy was high in dogs treated with Nano-Paclitaxel compared to Doxorubicin with Cyclophosphamide and Paclitaxel. Changes in the values of the prognostic biomarkers PCNA and MMP9 were useful in assessing the response to chemotherapeutic drugs. increasing the overall survival period in both categories I and II than Doxorubicin with Cyclophosphamide and Paclitaxel in the treatment of canine mammary tumour.
Spectral and colour	liver, when compared to spectral Doppler. Among the serum biochemistry parameters, NEFA, apolipoprotein B100 and glucose were superior and
Echocardiographic evaluation of with mitral valve disease and dilated	Tricuspid valve regurgitation was the gold standard non-invasive echocardiographic parameter used for diagnosing the pulmonary hypertension and assessing the severity of pulmonary hypertension secondary to MVD and DCM. than the regular therapy in controlling pulmonary hypertension. Post-capillary pulmonary hypertension plays a prognostic and DCM.
or sex enrichment of bull semen	Flow cytometry was capable of analyzing multiple semen parameters in relation to fertility. Conventional methods of sex sorting such as swim up and percoll density gradient help to seperate around 65% of X and Y sperms each. The purity of sex sorted commercially procured frozen was

Evaluation of disseminated Intravascular Coagulation in dogs with Ehrlichiosis and Babesiosis

Disseminated Intravascular Coagulation (DIC) accounted for nearly 30% of all the dogs with ehrlichiosis and babesiosis. Non-overt DIC was more in dogs with babesiosis and overt DIC was more in canine ehrlichiosis.

Hypergammaglobinopathy is seen in dogs with non-DIC

than PT in DIC due to ehrlichiosis and babesiosis.

Fibrinogen and SFMC are the diagnostic markers for non-overt DIC due to ehrlichiosis and babesiosis. D-Dimer and

DIC due to ehrlichiosis and babesiosis.

overt DIC due to ehrlichiosis and babesiosis. Enoxaparin

to ehrlichiosis and babesiosis.

the excellent prognostic markers for dogs with DIC due to ehrlichiosis and babesiosis.

Contrast enhanced

canine hepatic tumours

Canine clinical contrast enhanced ultrasound is feasible in day to day clinical practice with no major clinical

in the arterial phase and parenchymal phase as well as based on time intensity values.

MiRNA and miRNA 375 can be judiciously used in liver tumour in dogs for early detection of tumours.

In comparison, contrast enhanced ultrasonography is a

Contrast enhanced ultrasonography along with liver enzymes test was found to be useful in the evaluation of progress of liver tumours.

***In-vitro* studies**

spermatozoa

The motility, live percentage and acrosomal integrity of the epididymal spermatozoa at 5, 10 and 20 min following treatment with 0.5, 1.0 and 2.0 mg dose levels of polymer SMA clearly indicated the loss of functional competence of canine spermatozoa on treatment with polymer Styrene Maleic Anhydride (SMA).

Contrast enhanced and renal doppler in dogs

CEUS is a valuable tool which can be judiciously used to to kidney which precede kidney damage.

CEUS results showed that AUC, AUC1, AUC2 could distinguish early kidney disease animals from middle and end stage animals. This suggests that AUC, AUC1, AUC2 may be a sensitive marker for evaluation of early renal injury in early stage kidney disease group's animals.

Increased AUC2 represented decreased clearance of renal blood perfusion, which could contribute to enhanced chronic kidney disease animals could experience stronger renal perfusion caused by a decreased clearance of blood perfusion. In addition, early-stage chronic kidney disease urine proteins compared to middle stage.

Ultrasonographic and radiographic assessment of fracture healing of long bones in canines

Extent of soft tissue damage and haematoma formation following fracture, soft tissue entrapment between fracture fragments and organization of haematoma were visualized as early as 28 days in ultrasonography whereas radiographic changes were appreciable only after the onset of mineralization of callus.

A time dependant increase in vascularity at the fracture reduction was noticed under doppler ultrasonography. Early diagnosis of osteomyelitis, earlier implant removal and early ambulation of patient could be achieved by periodic monitoring of fracture cases by radiography and ultrasonography.

Cutaneous wound healing with silk loaded silver nano-particles in dogs

Chitosan-loaded silver nanoparticle gel in animals, rapidly augmented the granulation tissue formation as indicated tissue proliferatin, proper collagenisation and complete re-epithilzation of open wounds.

and perineal

obstructive urolithiasis in sheep and goats

Normal urination through penile urethra was noticed after mean period of 14 days (range 9-20 days) in case of tube cystostomy. Foley's catheter was removed after complete dissolution of calculi and normal urination noticed in the urethra in case of tube cystostomy. Infant feeding tube catheter was removed after normal urination noticed in the perineal urethral opening in case of perinealurethrostomy. The animals were provided with a feeding schedule to prevent the recurrence of urinary calculi.

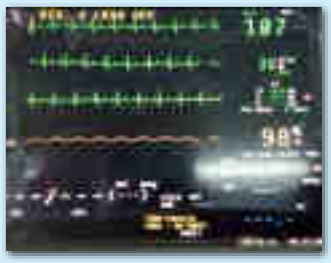
Anaesthetic regimen for surgical management of

insult in bitches

Propfol and ketamine produced safe, smooth and excellent induction after premedication with midozolam in pyomteric bitches with renal insult.

maintenance.

Anesthetic, cardiovascular parameters, respiratory function revealed both ketamine and propofol were safe induction agents in midozolam premedicated bitches with pyometra and co-morbid renal insult.



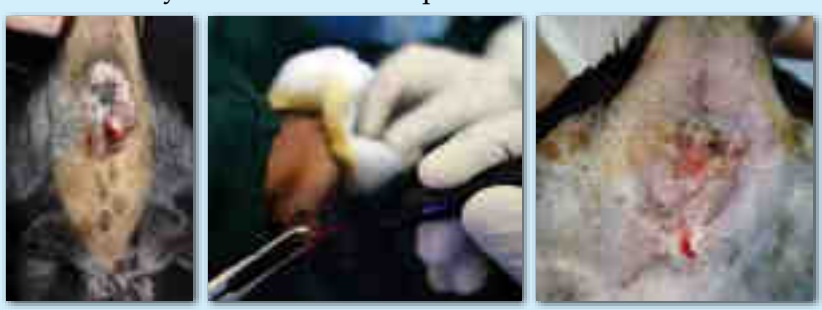
Surgical management of perianal tumours using carbon dioxide laser in canines

The mean surgical time in minutes, mean intra operative

carbon dioxide laser group.

The carbon dioxide laser for perianal tumors in dogs was

recovery with reduced complications.



Perianal Tumor CO2 Laser Ablation and post operative healed tissue

RESEARCH HIGHLIGHTS

Spinal stapling and plating for the management of vertebral fractures, subluxation and luxation in cat

Spinal stappling with K-wire and cerclage wire provided stabilsation of vertebral column had been done by tension band wiring with intra-lesional engraftment of allogenic adipose tissue derived mesenchymal stem cells on spinal cord.

derived because of limitations in the number of animals.

Spinal Stapling Lumbar Vertebrae

Spinal Stapling Thoracic Vertebrae

Aetiopathogenesis, diagnosis and management of posterior capsular cataract extraction in dogs

An improved vision grade score was observed in dogs treated with mitomycin C than those treated with cyclosporine A and heparin sodium.

1st th th

Biomechanical and clinical outcome

The biomechanical study in fracture cases treated with

plates in the management of supra-

plateconstruct revealed maximum strength, optimum

femur in dogs

The supracondylar plate was found to neutralize all the biochemical forces acting at the distal end of the femur in animals treated for supracondylar fracture and able to provide early return to function.

of ovulation using

in heat synch than double synch protocol (P<0.01).

protocol in crossbred

double synch protocol than heat synch (P<0.05). Higher conception was recorded in both treatment groups but

condition

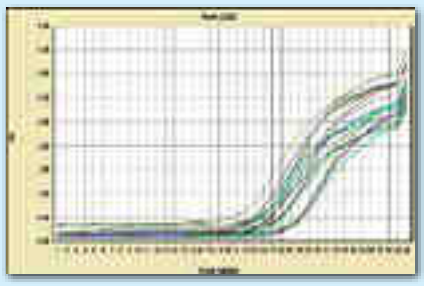
and lower cost, heat synch can be suggested as treatment protocol to improve the conception rate of crossbred cows

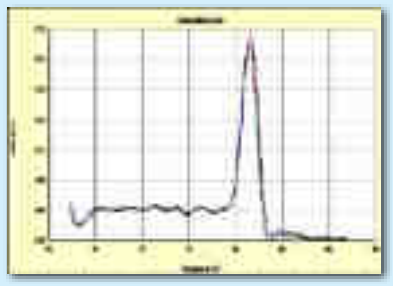
of OAS1 and MX1 genes in peripheral

Higher expression of OAS 1 at early pregnancy and their down regulation in later stages suggests its abundance in early pregnancy, further indicating it as a good candidate for early pregnancy marker.

The expression of OAS 1 gene was higher than MX 1

early pregnancy than MX 1.





Macro- and micro-anatomical studies on the hippocampus of adult Madras Red sheep

The cytoarchitecture of the hippocampus appeared as a seven layered structure enclosing the dentate gyrus within it, on its inferior side. It appeared like a comma

and glial cells forming a curvature over the dentate gyrus. The cornu ammonis of the hippocampus was divided into four distinct regions in cross section as CA1, CA2, CA3, and CA4 segments which showed variation in the arrangement and thickness of the layers observed.

All the layers of hippocampus, the ependyma, alveus, stratum oriens, stratum pyramidale, stratum radiatum, stratum lacunosum and stratum molecular were

composed of low cuboidal cells with oval nuclei. Inner to

surface. Third layer stratum oriens consisted of cell bodies of inhibitory basket cells like neurons and horizontal triangular cells. Micrometry of the thickness of the various

was done in all the age groups studied.

Surgical management of wounds in pet birds

The wounds in the variety of species involved in the study program at Avian and Exotic Pet Unit, Teaching Veterinary Clinical Complex, Madras Veterinary College, Chennai

accident wounds, abrasion on the skin and cold abscess.

wounds. Wounds and ailments involving the fracture of

commonly presented with a drooped wing. Vetrap was excellent for providing support to an unfractured but droopy wing that is drooping at the elbow, dragging on the ground.

of genes responsible for congenital deafness and blindness in dog breeds of Tamil Nadu

Amplicon of exon eleven of *SILV* gene was 200bp long and is in par with the expected output as in healthy merle animals but showed no variation in healthy and diseased dogs.

Exon ten of the same gene showed two bands of size 200bp and 500bp for all the samples analyzed. This shows that retrotransposon insertion in exon ten of *SILV*gene observed in merle dogs is not responsible for abnormality in the animals studied.

but a 750bp band was observed for exon 7SDP in all samples.

Clinico pathological evaluation of foreign

6.24 per cent of various medical disease conditions. The predominant clinical signs in traumatic pericarditis were positive venous stasis, distended jugular veins, pyrexia,

abduction of elbow.

wall and diaphragm. All animals with diaphragmatic hernia revealed herniation of reticulum into the thoracic cavity in contrast radiography.

The ultrasonographic imaging in animals with traumatic reticuloperitonitis depicted reticulum surrounded by

peritoneum and reticulum.

Therapeutic ultrasound as an adjunct protocol for teat obstructions in bovine

be 6.7 per cent and higher incidence of teat obstruction

higher incidence was observed in Jersey cross breed cows

revealed the teat obstruction was higher in right fore teat,

mode, intensity of 1.4 Wcm2 for 10 minutes application

teat obstruction.

Ultrasonographic evaluation revealed reduction in teat wall thickness, size of the obstruction, diameter of the teat and length of teat canal and increased width of teat cistern

day post treatment.

Assessment of neonatal intensive care unit for puppies delivered through caesarean section

The Neonatal intensive care unit was found to be excellent for puppies delivered through ceasarian section. The dam was premedicated with dexmedetomidine (intravenously)

dam was then induced with propofol (intravenously)

intubation. Caesarean section surgery was performed through standard operating protocol and immediately after delivery, neonatal resuscitation procedures like prompt clearing of airways, rubbing and blow drying of skin was performed.

The anaesthetic protocol employed was proved excellent

muscle relaxation and faster recovery.

therapeutic protocol for improving conception rate in repeat breeding cows following

An investigation was conducted to study the cytological indices, ultrasonographic changes, and conception rate in various therapeutic protocols.

A total of 72 pluriparous, crossbred cows which failed

with various therapeutic protocols viz., administration

repeat breeding cows.

meglumin (FM) and vitamin E and selenium on day 5 and 12 PAI (Post AI) was found to be the best treatment protocol to augment fertility in repeat breeder cows.

Administration of vitamin E and Selenium on day 5 and 12 PAI following induced oestrus with GnRH at the time of AI resulted in increased overall conception rate in repeat breeding syndrome cows when compared to

EXTENSION

Socio-economic impact on the

scheme on priceless distribution of goats in Tamil Nadu

Husbandry Department and the assessment of socio – economic impact revealed that medium to high level of knowledge impact was observed in feeding, breeding,

productivity impact.

parameters viz, nutritional security of the family, movable assets, immovable assets, repayment of debts, celebration of festivals and improved educational status of children.

led extension initiatives in goat farming in Tamil Nadu

With regard to the awareness, participation and knowledge about various market-led institutions and initiatives, goat farmers had medium level of awareness about various market-led institutions.

Majority of the goat farmers sold their goats to local village traders followed by retail butchers. Only 16.66 per cent of respondents sold their goats directly to consumers

Among the constraints faced by the goat farmers, limited drinking water availability, high cost medicines and treatment, lack of subsidies, lack of technical support at doorstep and middlemen exploitation were ranked as the serious constraints among managemental, socio-economic, infrastructural, technological and marketing constraints respectively.

A socio-economic

rearers

The result revealed that majority of the respondents belonged to old age, joint family, backward community and educated up to primary level. Majority of the respondents

200 numbers) herd size.

The most important constraints expressed by majority

importance were lack of water for drinking, shrinkage of

poor reproduction performance.

delta zone of Tamil Nadu

of Tamil Nadu revealed that majority of the goat farmers belonged to backward community and backyard goat farming yielded a net return of Rs.523.73 per month or Rs.17.52 per day.

The stochastic frontier production function analysis revealed that the variable, labour charges were statistically

loss due to kid mortality was estimated to be Rs.1.04 lakhs per annum and about the 60 per cent of these losses were due to infectious causes. Women were found to involve in feeding management activities like animal feeding, watering, grazing and colostrum feeding for kids.

Shrinkage of grazing land / non-availability of green fodder and community water resources and non-availability of improved breeding bucks were perceived as major constraints in backyard goat farming.

Economic

livestock markets *(shandies)* in Tamil Nadu

Out of 30 selected shandies, about one-half of shandies were conducted in *poramboke* land, followed by waste agricultural land (26.67 per cent) and temple land (10.00 per cent).

The study revealed two marketing channel in livestock market, channel 1 (seller - buyer) and channel 2 (seller – livestock market intermediary – buyer). Based on the

transaction of both large and small ruminants.

market information, poor market sanitary conditions

were the major constraints perceived by the sample respondents.

Sustaining the livelihood of rural weaker sections through innovative technologies of Vellore and Cuddalore districts in Tamil Nadu

had increased by 24% and 16% in Cuddalore and Vellore districts respectively.

Vellore district.

The average feed cost / day / animal / litre of milk was reduced from Rs.25.51 to Rs.13.41 in Cuddalore district and from Rs.14.75 to Rs.8.52 in Vellore district.

of Rs.2070/- in Cuddalore district and Rs.2490/- in Vellore district.

The self employment (entrepreneurial) unit established at both districts for low cost concentrate feed preparation provide an additional income Rs.21000/- and Rs.48000/- in Cuddalore and Vellore district .

Goat farming practices in North-Western zone of Tamil Nadu with special reference to

jointly done by men and women (68.30 per cent), while in traditional farming, majority of the activities were done by women (90.00 per cent).

respondents followed vaccination whereas in traditional farming, only 3.30 per cent of the respondents followed vaccination.

traditional farming, lack of grazing land was perceived as

cent), observable (53.33 per cent), compatible (46.67 per cent) and most trialable (46.67 per cent).

observable (41.67 per cent) and most compatible (35.00 per

3. DEVELOPMENT, TRANSFER AND PATENTING OF TECHNOLOGIES

The following are the technologies developed by the faculty of TANUVAS during 2017-18.

An extraction method for detection of *Bacillus anthracis* DNA by Triple marker multiplex Polymerase chain reaction, a simple and cheaper method for DNA extraction was developed at Zoonoses Research Laboratory, Chennai.

Newer products namely Nano-IVMEC Shampoo, A1/A2 Detect for the

Rabies antibody detection kit for the detection of Rabies and CPV antibodies simultaneously in dogs and Teat spray, a value added product which helps to reduce product wastage were developed at Translational Research Platform for Veterinary Biologicals (TRPVB), TANUVAS, Chennai.

Technology on Development of Vitamin

at Department of Livestock Products

Orathanadu.

Value added Food products namely Milk protein enriched noodles, Fibre enriched noodles, Omega 3 enriched designer chocolate, Millet ice cream and Fruit yoghurt were developed at College of Food and Dairy Technology, Koduveli.

Technology on preparation of barbecued pork from low value head meat has been developed by the Department of Livestock Products Technology (Meat Science), Madras Veterinary College, Chennai.

Vice-Chancellor, TANUVAS

Sl. No.		Department and Scientists involved	Patent Application Number
1.	vaccine for Newcastle diseases	Department of Animal Biotechnology, MVC, Chennai K.Kumanan, K.Vijayarani and A.Uthrakumar	201741037860
2.	ABT Mini Encapsulator V500	Department of Animal Biotechnology, MVC, Chennai M.Parthiban, Divya K Manjari T.S.Saravanan and R.Karunakaran	201741033247
3.	Multiplex PCR primers for detection of fowl oncogenic viruses	Department of Animal Biotechnology, MVC, Chennai M.Parthiban, G.Sathish K.Vijayarani and K.Kumanan	201741038989
4.	A novel transport design for animal Ambulance with hydraulic life to shift sick recumbent animals	Directorate of Clinics, MVC Chennai S.Thilagar, R.Jayaprakash, S.Balasubramanian and Cecilia Joseph	201741043254
5.	TANUVAS Grand Supplement	Department of Animal Nutrition, MVC V.Balakrishnan and R.Murugeswari	
6.	New Generation Milk protein enriched noodle fabrication (NewGenMPE noddle)	College of Food and Dairy Technology, Koduveli D.Baskaran and V. Divya	
7.	from Chia seed variants	College of Food and Dairy Technology, Koduveli D.Baskaran and S. Poorni	

4. EDUCATION

EDUCATIONAL PROGRAMMES

Admission

below:

Courses	Admission strength	during 2017-18	Overall strength during 2017-18	completed during 2017-18
Kashmiri migrants-2)	376	372	1448	241
B. Tech. (Food Technology)	44	34	159	18
B. Tech. (Poultry Technology)	40	35	84	18
B. Tech. (Dairy Technology)	20	11	21	10
Animal Husbandry Dept. - 10)	120	92	175	113
M. Tech. (Food Technology)	10	10	10	9
Ph.D. (Veterinary)	98	52	90	24
Ph.D. (Biotechnology)	5	2	4	-
Ph.D. (Food Technology)	5	3	11	3
M.Phil. (Biotechnology)	8	-	-	-
M.Sc. (Bioinformatics)	10	1	1	-
M.Sc. (Biostatistics)	3	-	-	-
M.Sc. (Biotechnology)	10	-	-	-
PG Diploma (Animal Sciences)	42	2	2	-
MBA (Food and Livestock Business Management)	10	-	-	-
Veterinary Nursing Assistant	50	47	47	47
Total	**851**	**661**	**2052**	

science.

Sl. No.		Enrolment during
1	Small Animal Orthopedics (PGDORT)	-
2	Veterinary Ophthalmology (PGDOPH)	-
3	Small Animal Dermatology (PGDSAD)	-
4	Small Animal Emergency and Critical Care Medicine (PGDECM)	-
5	Ethno Veterinary Practices (PGDEVP)	2

Sl. No.		Enrolment during
6	Feed Manufacturing Technology (PGDFMT)	1
7	Commercial Poultry Production and Management (PGDCPPM)	1
8		-
9	Regenerative Medicine (PGDRM)	4
10	Small Animal Diagnostic Ultrasound (PGDDUS)	10
11	Zoonoses (PGDZ)	2
12	Bovine Infertility and its Management (PGDBIM)	-
13	Wild Animal Disease Management (PGDWADM)	8
14	Veterinary Clinical Laboratory Diagnosis (PGDVCLD)	7
15	Veterinary Endoscopy (PGDVEN)	1
16	Bovine Production Diseases (PGDBPD)	-
17	Advanced Reproductive Biotechnology in Animal Models(PGDARB)	1
18	Acaro-Entomology (PGAENT)	-
19	Dairy Processing and Quality Assurance (PGDDPQA)	1
20	Post Harvest Technology and Quality Assurance of Meat and Meat Products (PGDQAMP)	-
21	Participatory Rural Appraisal (PGDPRA)	-
	Total	**38**

Academic Research

During the year under report, 160 scholars registered for M.V.Sc., M.Tech, M.Sc., and

the award of M.V.Sc., and Ph.D., degrees.

Scholarships

During 2017-18, a total of 1,613 students were awarded scholarships to the tune of ₹ 247.04 Lakhs. The collegewise details are furnished below :

Sl. No.	Name of the College	No. of students	Amount (Rs. In Lakhs)
1.	Madras Veterinary College, Chennai	687	123.04
2.	Veterinary College and Research Institute, Namakkal	319	49.44
3.	Veterinary College and Research Institute, Tirunelveli	176	19.40
4.	Veterinary College and Research Institute, Orathanadu	239	26.04
5.	College of Food and Dairy Technology, Koduveli	125	18.98
6.	College of Poultry Production Management, Hosur	67	10.14
	Total	**1613**	

CONVOCATION

The Nineteenth Convocation of the University was held on 07.09.2017 at Madras Veterinary College, Chennai. Hon'ble Governor of Tamil Nadu and Chancellor of the University, Thiru Ch. Vidyasagar Rao, conferred the degrees and diplomas to 428 students and also distributed various prizes and 78 medals to 32 meritorious students and research scholars.

List of Post graduate students who were awarded the medals

S.No	Name of the student	No. of medals	Name of the course	Name of the subject
1	Manokaran, S	3	Ph.D.	Veterinary Obstetrics and Gynaecology
2	Arulnathan, N	2	Ph.D.	Animal Nutrition
3	Ragunath, B.V.	1	Ph.D.	Livestock Products Technology
4	Arul, S.	1	Ph.D.	Animal Biotechnology
5	Rambabu Kalaka	1	Ph.D.	Veterinary Surgery and Radiology
6	Kalaivani, S.R.	5	M.V.Sc.	Animal Husbandry Economics
7	Nibedita nayak	3	M.V.Sc.	Poultry Science
8	Sarika, N.	3	M.V.Sc.	Veterinary Microbiology
9	Mahesh kumar, G.	2	M.V.Sc.	Animal Genetics and Breeding
10	Punnagaiarasi, A	2	M.V.Sc.	Livestock Products Technology
11	Bharathidasan, M.	2	M.V.Sc.	Veterinary Surgery and Radiology
12	Selvamani, J.	1	M.V.Sc.	Animal Nutrition
13	Sivakumar, D.	1	M.V.Sc.	Veterinary Surgery and Radiology
14	Manivannan, T.	1	M.V.Sc.	Veterinary Pharmacology and Toxicology
15	Visakh viswam	1	M.V.Sc.	Veterinary Physiology
16	Muthukumar, S.	1	M.V.Sc.	Livestock Production and Management
17	Thilagavathi, K.	1	M.V.Sc.	Veterinary Pathology
18	Preena, P.	1	M.V.Sc.	Veterinary Epidemiology and Preventive Medicine
19	Karthika, S.	1	M.V.Sc.	Livestock Products Technology
20	Archana mahapatra	1	M.V.Sc.	Veterinary Anatomy and Histopathology
21	Madeena begum, M.	1	M.V.Sc.	Veterinary Surgery and Radiology
22	Tina Roshini, S.	1	M.V.Sc.	Veterinary Surgery and Radiology

List of Under graduate students who were awarded the medals

S.No	Name of the student	No. of medals	Name of the course
1	Rajamanickam	21	
2	Bhuvana Plakkot	5	

S.No	Name of the student	No. of medals	Name of the course
3	Bosco Jose	5	
4	Sufeesh, S.G.	3	
5	Priya, K.	3	
6	Samapika Sahoo	1	
7	Christina Pauline	1	B.Tech (Food Technology)
8	Bharathi, G.	1	B.Tech (Food Technology)
9	Keerthana Priya, R.	1	B.Tech (Food Technology)
10	Sudha, D.N.	1	B.Tech (Poultry Production Technology)

Endowments

The endowments instituted during 2017-18.

Sl. No.	Name of the Endowment		Purpose	Endowment Amount (Rs.)
1.	Mrs. S.Sivarani Thilagar Award	Dr. S. Thilagar, Vice-Chancellor, TANUVAS	Best outgoing student Orathanadu	1,00,000.00
2.	Mr.P.Sivasankaran and Mrs.S.Vinayagam Award	Prof.Dr.S.Balasubramanian, Controller of Examinations, TANUVAS	Best MVSc student in the discipline of Veterinary Gynaecology and Obstetrics	1,00,000.00
3.	Prof.Dr.S.Peer Mohamed Endowment	Prof.Dr.S.Peer Mohamed, of Vety Surgery and Radiology	Best outgoing student the highest marks in Veterinary Surgery and Radiology at VCRI, Tirunelveli	1,00,000.00
4.	Endowment	Former Director of Extension Education, TANUVAS, Chennai	Best outgoing student of B.Tech (PT)	1,00,000.00
5.	Dr.R.Ramamurthi, Endowment	Mr.R.Prabhakar, Superintendent, Registrar Chennai	Best outgoing PhD with Highest OGPA in the subject Livestock Products Technology (Meat Science)	1,00,000.00
6.	Bow and Baan Technology Solutions Pvt.Ltd., Award	Thiru.Kumaran Jeeva, Director, Bow and Baan Technology Solutions Ltd., Chennai	Best outgoing student the highest marks in Veterinary Anatomy, Veterinary Physiology and Biochemistry at VCRI, Tirunelveli	50,000.00

Sl. No.	Name of the Endowment		Purpose	Endowment Amount (Rs.)
7.	Kumaran Sivaraman Award	Thiru.S.Kumaran, Associate Professor, URF, Madhavaram, Chennai	Best student to encourage more research in the area of Fodder Production and Livestock	2,15,627.00
8.	Dr.S.Elankumaran Memorial Award	1978-84 BVSc batch mates	Best outgoing student the highest marks in Veterinary Microbiology	2,08,646.00
9.	Dr.T.N.Ganesh Travel Grant	Dr.T.N.Ganesh, Professor and Head (Retired), TANUVAS, Chennai	Post Graduate students of Veterinary Surgery and Radiology in TANUVAS	2,00,000.00
10.	IPSA – TN Chapter Award	Dr.S.T.Selvan, President IPSA - TN Chapter and Professor, PGRIAS,	Best outgoing student of BTech (Poultry Technology) of CPPM, Hosur	1,00,000.00
11.	Mr.C.Adaikkan Memorial Award	Dr.A.Vijayarajan, Professor	Best outgoing student the highest marks in Veterinary Gynaecology and Obstetrics at VCRI, Orathanadu	2,00,000.00

STUDENT AMENITIES

Hostel

During the reporting period, a total of 1594 UG and PG students were provided with residential accommodation in the constituent colleges of TANUVAS and the details are furnished hereunder:

Sl. No.	College	No. of Students		
			Girls	Total
1	MVC, Chennai	390	240	630
2		184	143	327
3		130	108	238
4		99	66	165
5	CFDT, Koduveli	51	90	141
6	CPPM, Hosur	62	31	93
	Total	**916**	**678**	

once in four months to review the functioning needs of the students.

University Students Counselling and Placement Cell (USCPC)

The USCPC has an exclusive website (www.tanuvasplacements.ac.in). The to register in the USCPC website so as

to make the placement activity simple and faster.

During 2017-18, Nine Veterinary graduates got placement as SRF/ JRFs in various projects functioning at TANUVAS

Orathanadu / Tirunelveli underwent externship training programme overseas

The placement details of B.Tech (PPT) students are as follows:

Sl. No.		No. of students placed
1	CPF (India) Pvt. Ltd., Vellore	7
2	Big Dutchman, Hyderabad	2
3	VHPL, Virudhunagar	4
4	CARIS Pure Processing Pvt. Ltd., Kancheepuram	1
5	Shanthi feeds, Processing division, Udumalpet	1
6	GLD Poultry farm, Namakkal	1
7	VIRBAC, Namakkal	1

Library

Library facilities are available in all the constituent colleges of TANUVAS.

E-mail, Information Retrieval through CD-ROM and databases are available. These libraries have been networked to national and international agencies so that the readers can have access to the resources of other libraries in the world and *vice versa*.

STUDENT ACTIVITIES

National Cadet Corps - Remount and Veterinary Unit

Madras Veterinary College, Chennai

The Senior division (SD) NCC, consisting of two companies commanded cers, Dr. R. Balamurugan and Dr. A. Elamaran are functioning with 105 SD boy cadets and 46 SD girl cadets. The activities carried out by the NCC cadets for the year 2017-18 are furnished below:

Twenty SW cadets actively participated in 3 km and 5 km running programme of Pinkathon Chennai - 2017 on 02.07.2017 at Island Grounds, Chennai

Annual Training Camp conducted

Vidyaashram, Puzhal, Chennai from 05.10.2017 to 14.10.2017.

17.10.2017 to 31.10.2017.

During 24.11.2017 to 03.12.2017, 3 SD

Annual Training Camp conducted by

University, Chennai.

examination during the year 2017-18.

Veterinary College and Research Institute, Namakkal

cadets. The activities undertaken by the NCC cadets during 2017-18 are detailed below:

Combined Annual Training Camp (CATC) at KSR, Arts and Science College, Tiruchengode from 19.05.2017 to 28.05.2017 and bagged the overall championship award. In the camp, G.Gobi NCC cadet received Gold medal for shooting competition, Prem Chand received Best Cadet award and Logesh

Cadet award.

Combined Annual Training Camp at (CATC) AVS College of Arts and Science, Salem from 17.06.2017 to 26.06.2017.

examination during the year 2017-18.

National Service Scheme

The NSS programme is being implemented in all the constituent colleges of TANUVAS with 750 vibrant NSS student volunteers.

Madras Veterinary College, Chennai

Veterinary health camps were organized

of Kancheepuram district during

animals.

A Veterinary health camp was organized at Kayar Village, Mambakkam, Kancheepuram district in coordination with the NSS unit of Anna University on

World Zoonoses Day was observed on 09.07.2017 by conducting a Veterinary health Camp at Bandikavanoor –

A veterinary health camp was conducted at Pulicat village on 29.07.2017 and 108 animals were treated.

World Rabies Day was observed on 28.09.2017 at Kelambakkam and 26 dogs were vaccinated against rabies.

Veterinary health camps were conducted at Thumbakkam Village, Thiruvallur district and Nallur Village, Kancheepuram on 04.02.2018,

A Blood donation camp was organized and 85 units of blood donated by the NSS volunteers.

VC&RI, Namakkal

Plastics-Clearing programme and Awareness Rally was organized on 28.04.2017 at Government employee rental Quarters, Maruthi nagar, Namakkal and NSS volunteers cleared the plastics in that area.

World Veterinary Day Celebrations 2017 was celebrated on 29.04.2017 and 78 volunteers visited the Sivabakkiam special school for mentally challenged centre, Elanagar, Namakkal and distributed fruits and egg to the children besides organizing.

International Yoga Day was celebrated on 21.06.2017.

NSS volunteers organized World egg day celebrations on 13.10.2017. 76 NSS volunteers along with the NSS

with Poultry Farmers Association and Kemin India Limited distributed 30,000 boiled eggs to general public, children and patients in the Government

Blood donation camp was organized at college campus on 15.11.2017 and 32 NSS volunteers donated 32 units of blood to the blood bank of General Government hospital, Namakkal

In the animal health camp conducted by Kongunadu Engineering College, at

volunteers provided treatment to the animals.

A special camp at Chinna karasapalayam was organized from 22.03.2018 to 28.03.2018. Animal health camp, human health camp, awareness programmes, cultural activities and hands on training on value added products were conducted during the special camp.

Tuberculosis rally was organized on 27.03.2018.

VC&RI, Orathanadu

Blood donation Camp was conducted in collaboration with Thanjavur Medical College on 19.12.2017 and 47 NSS volunteers donated 47 unit of blood.

Dengue awareness camp was conducted on 17.10.2017 and Nilavembu kashayam was distributed for 200 persons (Including 60 students) at College campus.

Tobacco control programme under

Act (COPTA) 2003 was organized on 26.01.2018.

A free eye screening camp with the medical team of Vasan eye care hospital, Thanjavur was conducted on 27.02.2018.

and 20 students having sight problem

further treatment.

With the assisstance of medical team of Government Hospital, Orathanadu, a Health camp, was conducted on

A special camp was conducted from 20.03.2018 to 26.03.2018 at

VCRI, Orathanadu. In this camp, various events like mass deworming, awareness programme on rabies and tuberculosis, play on dengue, general health camp, demonstration on preparation of value added milk and meat products, ethno-veterinary practices, cleaning activities and tree plantation programme were conducted.

Tree Plantation Programme

(21.06.2017)

Dengue Awareness programme
(17.10.2017)

Blood Donation Camp
(19.12.2017)

Tobacco Control Programme
(26.01.2018)

Hospital (28.02.2018)

General Health Check up
08.03.2018

Exhibition on Anaemia –
08.03.2018

Guest Lecture on "Nutrition &
Health" – 08.03.2018

NSS special camp -
Tree Plantation programme

NSS special camp - Cleaning

NSS Special Camp - motivation
Programme for School Students

VC&RI, Tirunelveli

NSS student volunteers organised Awareness programmes, Eye camp, Livestock health camp, Pre-hospital trauma care, breast cancer prevention programme and Rally for freedom

.

Two NSS Volunteers actively participated in the National Integration camp-2017 held at Bangalore and

College of Poultry Production and Management, Hosur

A blood donation camp was organized by NSS volunteers in collaboration with Government Hospital, Hosur on 10.01.2018 and a total of 57 units of blood were donated.

A special NSS camp was conducted at Gopanapalli village, Hosur Taluk from 16.02.2018 to 22.02.2018 on the theme

camp.

College of Food and Dairy Technology, Koduveli

was conducted for students by the NSS volunteers on 25.09.2017

Tree Plantation Campaign was

were planted inside CFDT campus

Deworming campaign was conducted by the NSS volunteers at Koduveli village on 16.02.2018 and a total of 400

Student Association Activities

The Student Association is actively functioning at TANUVAS and the salient activities carried out are as follows:

Madras Veterinary College

S. Alimudeen, II year student won the

elocution and essay competition and Miss. S. Jothika, IV year student won the second prize in the Poetry competition of Paventhar Baharathidasan trust on 28.04.2017 at MVC.

in poetry and oratorical competition held on 15.09.2017 and also bagged the second prize in poetry competition on 13.10.2017 in commemoration of Bharat Ratna Puratchi Thalaivar Dr. M.G.R. Centenary Celebration organized by

Tamil Development Department of State Government. He also won the third prize in oratorical and essay competition held on 07.10.2017 organized by Kannathasan Viswanathan Trust.

R. Kavin, and G.Shanmugapriya,

second prize in the essay competition; Mr. M. Shanmugasundaram of I year and Ms. G. Shanmugapriya, IV year

elocution competition respectively in the National Library Week celebrated during 14.11.2017 to 20.11.2017 at MVC.

K. Santhakumar, IV year student won

in English in Pasudhan of natural remedies.

The College Day of Madras Veterinary College was celebrated on 31.01.2018

Veterinary College and Research Institute, Namakkal

Agriculture Education day - 2017 was celebrated on 05.12.2017 in commemoration of birth anniversary

President of India.

Priya K and Vinothini V. received Alembic's Xceft and M.ceft respectively

Student R. Ruthrakumar won the 3rd prize and 2nd prize in the oration competition organized by Namakkal Tamil Sangam and Student Federation of India respectively.

The College day FCRI, Namakkal was celebrated on 02.02.2018

Veterinary College and Research Institute, Orathanadu

Students Gali Venkata Sriharsha and N. Pradheep participated in the National

on 21.12.2017and secured third position.

Muthamizh vizha ws celebrated on 08.02.2018

The College day of VCRI, Orathanadu was celebrated on 09.02.2018.

In the Inter-College competitions

Kumar Jha and K. Rajesh Kumar won

in Quiz competition; Mageshwaran won the First prize in painting competition and K. Dhanus Aadityaa won the second prize in Solo dancing competition.

College of Food and Dairy Technology, Koduveli

The College day was celebrated on 27.01.2018. The cultural programs were conducted in the name of VIRUKSHA –

singing and Dance competitions were conducted and prizes were distributed to the winners.

Sports Activities

The Fourth Dr.Porchezhian Memorial Inter-Professional Hockey Tournament - 2017 was organized at Madras Veterinary College during June-2017 and prizes awarded:

Madras Veterinary College Hockey team - Winners

V. Praveen Kumar, Final year
- Man of the Match

Dr. M. Venkatachalam, II M.V.Sc
- Best Defender

Dr. P. Balaji, Ph.D. scholar
- Highest Goal Scorer

An Inter – Collegiate Volleyball Tourna -ment for women was conducted from 22.06.2017 to 24.06.2017 at Madras Veterinary College. A total of 9 colleges participated in the tournament.

The Volleyball Team of Madras Veterinary College participated in the Inter Collegiate Volleyball Tournament organized by Madras Medical College on 09.09.2017 and 10.09.2017 and secured the fourth place.

The Hockey Team participated in the IIT Tournament held from 20.09.2017 to 23.09.2017 and won the bronze medal.

The Annual Sports day of MVC was organized on 30.01.2018 and the winners are as follows:

Individual athletic championship for men : Suresh, Final year

Sportsman of the year : Praveen Kumar, Final year

Individual athletic championship for woman of the year : M. Pavitra, Final year

M.K Namakkal, participated in the District Level Hon'ble Chief Minister Trophy Badminton Tournament (2017-18) and got selected for the State Level Tournament.

S.Gobi and S.Abishek, Namakkal participated in the 36th Junior National Tennikoit Championship (2017 -18) and secured Singles and Doubles Matches.

secured Gold Medal in the 18th All India Agri Sports Meet (2017-18) from 30th January to 3rd February 2018, organised by University of Agriculture Sciences, Bangaluru.

Namakkal participated in the Chief Minister Trophy Swimming competition from 20th to 23rd February 2018 and secured 5th place in 50 Mts Free style event.

was conducted on 30.01.2018 and the winners are as follows:

Individual Champion among Men – N. Jeyaprakash

Individual Champion among Girls – M. Priya

Orathanadu was conducted on 02.02.2018 and the winners are as follows:

Individual Champion among Men – K. Kathirvel

Individual Champion among Girls – R.P.V.Jeevika

The overall championship was won by Red house

Orathanadu won the First Prize in district level 100 meters backstroke Swimming competition.

Orathanadu won 3rd Prize in district level Table Tennis Tournament.

Orathanadu won State Cadet Judo championship.

Tirunelveli was conducted on 23.01.2018 and the winners are as follows:

Individual Champion among Men – C. Balachandran

Individual Champion among Girls – C. Srividhya

The overall championship was won by Blue house students

Sports day was celebrated on 27.01.2018 at CFDT, Koduveli. All the indoor and outdoor games, group events and athletic events were conducted for both boys and girls.

Sports day was celebrated on 15.02.2018 at CPPM, Hosur. All the indoor and outdoor games, group events and athletic events were conducted for both boys and girls.


AWARD
Prof. M.S. SWAMINATHAN

5. HONOURS / AWARDS

A. Awards for Contribution and Significant activities

Sl. No.				Details of the Award
1	Department of Library Sciences	Mala Award 2017	Institute of Technology, Chennai	Library and Information Science
2	Mecheri Sheep Research Station	Best farm Award		Farm activities
3	Athilakshmy, P.	Young Scientist Award	Veterinary Extension forum	Research work on "Rearing of day old swarnadhara chicks by
4	Balasundaram, K.	Excellence Award	Conference on Food and Agriculture, Dhanbad, Jharkhand	Outstanding contribution in the
5	Bhaskaran Ravi Latha	Dr. N.S. Ruprah Memorial award	Medal / Indian Association for the Advancement of Veterinary Parasitology	Work on Veterinary Entomology and Acarology
6	Bino Sundar, S.T.	Mrs.Saraswathy Anandan Memorial Best Ph.D thesis award	Medal / TANUVAS	Ph.D Thesis entitled "Design *Musca domestica"*
7	Dhinakar Raj G.	Outstanding Reviewer Awards	Amsterdam	Contribution in reviewing articles in the discipline of
8	Divya, B. *et.al.*	Dr.V.S. Alwar Memorial Award	Medal / Indian Association for the Advancement of Veterinary Parasitology	Article entitled "An ecofriendly approach to control brown dog tick *Rhipicephalus sanguineus* using sustained release assembly in Journal of Veterinary Parasitology
9	Gowthaman, V.	Young Poultry Veterinarian Award	Veterinary Poultry Congress	Contribution to Poultry Industry
10	Jagadeesan, K.	Popular Article Contribution Award	New Delhi	Highest Number of Popular Tamil Article

Sl. No.				Details of the Award
11	Jayanthi, N.	Dr. S. Damodaran Award		Case report entitled "Studies on extract in diethylnitrosamine induced hepatocarcino-genesis
12	Jayanthi, D.	Appreciation Award	Collector, Salem	Contribution in "Animal
13	Karthickeyan, S.M.K.	K.P.C. Nair Cash Award	TANUVAS	Contribution in Teaching
14	Krishnamohan Reddy, Y.	Vaithilinigam Rathnasabapathy Award		Contribution to Research
15	Lurthu Reetha, T.			Contribution in Extension Activities
16	Mathialagan, P.	Sinthanai Sigaram award	Kamaraj University	For Outstanding Creative Writings
17	Omprakash, A.V.	Tamil Nadu Scientist Award (TANSA) - 2015	Nadu State Council for Science and Technology	Contribution in Teaching and Research in Veterinary Science
18	Pandian, C.	IPSA – Ayurvet Award 2016	Poultry Science Association	Article - "Ultrasonography features of the ovarian follicles in published in Indian Journal of Poultry Science during 2016
19	Rani, N.	Popular Article Contribution Award	New Delhi	Highest number of popular article published during the year 2017
20	Ravimurugan, T.	Appreciation		Breed Savior Award for Chevaadu and Kilakarasal Sheep from NBAGR
21	Sangaran, A.	Mid career excellence award	Medal / XXVII National Congress of Veterinary Parasitology	Contribution in Veterinary Parasitology
22	Senthil kumar, S.	Special Fellowship Award - 2017	Academy of Environmental Sciences	Contribution in Animal Nutrition
23	Serma Saravana Pandian, A.	Best Reviewer Award	Netherland	Contribution in Article Review
24	Soundararajan C.	Popular Article Contribution Award	New Delhi	Maximum number of popular articles published during the year 2016

Sl. No.				Details of the Award
		Maruthamuthu Mariyayee Memorial Award	Medal / TANUVAS	Contribution in teaching
		Best Writer Award 2018	Nadu Book Publisher Association	Contributions in the discipline of Veterinary Parasitology and Helminthology
25	Srinivasan, G.	District level Appreciation Award	Administration, Virudhunagar	Contribution in Extension Activities
26	Sundaravinayaki, M.	Poetry	New Delhi	Book on 'Muyal Valarppu-
27	Suresh, P.	Excellence in teaching	Conference on Food and Agriculture, Dhanbad, Jharkhand	Veterinary Microbiology
28	Tensingh Gnanaraj, P.	Senior Scientist Award	Science City	Senior Scientist, TANSA
29	Ushakumari, S.	Fellow IAVA award	IAVA	Contribution in Veterinary Anatomy
30	Vasanthi, B.	Telengana Chapter Award	Association of Women Veterinarians	Application and assessment of novel non - animal surrogate for veterinary surgical training

B. Awards for Paper Presentations

Sl. No.			of the event	Title of the work
1	Alagudurai, S.	Best oral presentation	ICAR, ATARI, Bengaluru	Performance of semi spreading drought resistant groundnut variety CO- 6 under rain fed condition
2	Ananda Chitra, M.	Best oral presentation	IAVMI Society	of *Staphylococcus schleiferi* sub species *coagulans* from skin infection of dogs
3	Azhahianambi, P.	Best oral presentation	XXVII National Congress of Veterinary Parasitology	Validation of accumulated degree hours (ADH) based estimation of post-mortem interval in forensic entomology associated medico-legal case
4	Bino Sundar, S.T.	Best oral presentation	XXVII National Congress of Veterinary Parasitology	Evaluation of food lure olfactometry bioassays

Sl. No.			of the event	Title of the work
5	Brindha, K.,*et al.*	Best oral presentation	TANUVAS	Mapping of Culicoides species in and around livestock premises : A predictive tool for bluetongue disease occurrence
6	Dharmaceelan, S.	Best oral presentation	ISVS	Surgical management of diaphragmatic hernia under
7	Hemalatha, S., *et al.*	Best poster presentation	IAVP	Fatal secondary septic peritonitis associated with multiple renal and splenic infarcts in a lhasa apso dog
8	Jothilakshmi, M.	Best oral presentation	TNAU, Coimbatore	Women Empowerment through Livestock based CLGs Technology Delivery through FFS for Clean Milk Production
9	Jyothi Priya, R.	Best poster presentation	Indian Association of Veterinary Pathologists	Advances in diagnosis of emerging and reemerging diseases of avian species
10	Karthikeyan, S.	Young scientist award	Indian Veterinary Extension Forum	Paper presentation on Perceived delivery systems in Namakkal district of Tamil Nadu
11	Krishnakumar, S., *et al.*	Best poster presentation	National symposium on "Animal Health Service Delivery - the Priorities of the professionals for enhancing farmers'	Partially immune, super and persistent duck viral enteritis infection in a Nomadic duck
12	Kumaravel, V.	Best oral presentation	ICAR, ATARI, Bengaluru	Use of TRIU–B to treat infertility in dairy Cows'
13	Madhan mohan,M.	Best oral presentation	Madurai Kamarai University, Madurai	Development of FMD virus like particle vaccine and its
14	Meenalochani, V.	Best oral presentation	Tamil Agricultural	Impact of compound feed in feed management of crossbred cows
15	Mohanambal, K., *et al.*	Best oral presentation	Indian Society for Veterinary Medicine	Ultrasonographic evaluation of traumatic pericarditis in a nine month old heifer
		Best poster presentation	Indian Society for Veterinary Medicine	Photosensitization in a Crossbred Heifer – A case Report

Sl. No.			of the event	Title of the work
16	Murugan, M.S., *et al.*	Best poster presentation	Sri Venkateshwara Veterinary University, Tirupathi	Progressive morphological alteration of *Bacillus anthracis* organized organism within the body of small ruminants
17	Nithya, P.	Best poster presentation	TNAU, Coimbatore	Women entrepreneurial activity case study
18	Prakash, S.	Best young scientist award	Indian Society for Study of Animal Reproduction	Haemodynamic analysis of preovulatory follicle and corpus luteum in natural and induced oestrous cycle in graded Murrah
19	Premavalli, K.	Best oral presentation	Indian Poultry Science Association	Evaluation of growth
20	Punnagaiarasi, A.	Best general Paper	3rd National Tamil Agricultural Science Conference	Sensory evaluation of edible coated panner whey protein concentrate incorporated with cinnamon and ginger oil
21	Puvarajan, B.	Best popular Article	3rd National Tamil Agricultural Science Conference	Health management and critical bio-security measures to be adopted in livestock farming
22	Puvarajan, B.	Best poster presentation	Indian Society for Veterinary Medicine	Causal association of epidemiological risk factors involved in outbreaks of goat pox and sensitivity
23	Raja, S.	Best clinical case presentation	TANUVAS	Prolonged gestation in a jersey crossbred cow: a case report Management of uterine torsion in a cow by simple rolling of dam Management of fetal dystocia in a jersey cross bred cow by percutaneous partial fetotomy
24	Rani, N.	Best oral presentation	International Conference on "Facing challenges together for sustainable livestock and poultry health – a local initiative for global	Comparative evaluation of lemongrass and orange essential oils as a green pesticide against

Sl. No.			of the event	Title of the work
25	Ranjithkumar, M., et al.	Best oral presentation Best poster presentation Best poster presentation	Orissa University of Agriculture and Technology	Hunting for barrier damage and Protozoans in CSF of Epileptic Dogs univariable risk analysis in goats enolase in natural cases of canine distemper encephalomyelitis
26	Ravikumar, K.	Best research paper	Indian Society for Study of Animal Reproduction	on conception in postpartum breeding seasons
27	Saahithya, R., *et al*.	Best poster presentation ICVP consolation award	IAVP	Clinicopathological and molecular detection of cerebral form of Ehrlichiosis in German shepherd Multifactorial disease in a goose – MD, Verminous enteritis, hepatic hemangioma and renal cystadenoma
28	Sasikala, V.	Best paper Presentation	3rd National Tamil Agricultural Science Conference	Migratory duck farming report
29	Senthil Kumar, G.	Best paper presentation	3rd National Tamil Agricultural Science Conference	Role of livestock in poverty alleviation
30	Sivakumar, A.	Best clinical case presentation	TANUVAS	Clinical management of ante partum cervico vaginal prolapse in a crossbred jersey cow
31	Soundararajan, C.	Best poster presentation	XXVII National Congress of Veterinary Parasitology	Prevalence, morphology and morphometry of land snails in southern India
		Best oral presentation	Kerala Veterinary Science Congress	Incidence of clostridial Enteritis in Lories and Lorikeets
32	Suganya, G., *et al*.	Best poster presentation	National Symposium on "Intersectoral approaches to combat zoonoses: Strategies and	Prevalence of parasitic zoonotic diseases among dogs and cats in Chennai

Sl. No.			of the event	Title of the work
33	Sumathi, D., *et al.*	Best oral presentation	Kerala Veterinary Science Congress	Semi-automated peritoneal dialysis is a newer therapeutic option for acute kidney injury in dogs - A case study
		Best oral presentation	Orissa University of Agriculture and Technology	Changes in zinc and copper concentrations in blood in canine demodicosis
34	Tirumurugaan, K.G., *et al.*	Best oral presentation	Indian Association of Veterinary Microbiologists, Immunologists and Specialists in Infectious Diseases	*Peste des petits ruminants virus* infected Epithelial Cells
35	Uma, V.	Best poster award	Indian Veterinary Extension Forum	Enhancing the goat farmers
36	Vasanthi, B. *et al.*	Best oral presentation	Indian Association of Women Veterinarians	Non animal surrogates in Veterinary education and surgical training
37	Vasanthi, C., *et al.*	Best oral Presentation	National seminar and climate change: strategies for sustainable food	of value added carabeef nuggets on chiller storage
38	Veeraselvam, M.	Best oral presentation	Indian Society for Veterinary Medicine	oral pellet vaccine with the herbal (*Phyllanthus niruri)* supplementation on immune response and biosynthesis of serum protein on native chicken
39	Venkatesa Kumar, E.	Best poster presentation	ISVIM	Malignant catarrhal fever in a calf
		Best poster presentation		Babesiosis in a horse

6. DISTINGUISHED VISITORS

Date of visit	Name of the Visitor	Place of visit
07.04.2017	Thiru. Prashanth M. Wadnere District Collector, Tiruvannamalai	Veterinary University Training and Research Centre, Tiruvannamalai
23.05.2017	Dr.Ameer Khusro, Dubai (UAE)	Post Graduate Research Institute in
22.06.2017	Dr.K.V.Nagaraja, Professor, University of Minnesota, U.S.A.	Tamil Nadu Veterinary and Animal Sciences University, Chennai
06.07.2017	Dr. Gaya Prasad, Vice-Chancellor, Sardar Vallabhai Patel University of Agriculture and Technology, Meerut and Dr. V.V.S. Surya Narayana, Principal Scientist, Indian Veterinary Research Institute, Bangaluru	Translational Research Platform for Veterinary Biologicals, Madhavaram, Chennai
20.07.2017	Dr. A. K. Handa, Principal Scientist, AICRP on Agroforestry, ICAR-Central Agroforestry Research Institute, Jhansi	Post Graduate Research Institute in
21.07.2017	Dr. O.P. Chaturvedi, Director, ICAR – Central Agroforestry Research Institute, Jhansi	Livestock Farm Complex, Madhavaram, Chennai
21.07.2017	Dr.Noah D. Pavlisko, Asst. Professor, Virginia Tech, Virginia-Mary land Regional College of Veterinary Medicine, Blacksburg, USA	Post Graduate Research Institute in
26.07. 2017	Dr. Kannan Ganapathy, Senior lecturer, University of Liverpool, UK	Poultry Disease Diagnostic and Surveillance Laboratory, Namakkal
29.08.2017	Thiru P.R.Sundaram, Hon'ble Member of Parliament, Namakkal constituency	Krishi Vigyan Kendra, Namakkal
08.09.2017	Thiru. Udumalai K. Radhakrishnan, Hon'ble Minister for Animal Husbandry, Govt. of Tamil Nadu	Translational Research Platform for Veterinary Biologicals, Madhavaram, Chennai
04.10.2017	Dr.Fanny Mthuzi, University of Malawi, Zomba, Malawi	Post Graduate Research Institute in
27.10.2017	Thiru P. Venugopal, Hon'ble Member of Parliament, Tiruvallur constituency	College of Food and Dairy Technology, Koduveli
23.11.2017	Dr.T.Mourya, Director, NIV, Pune; Dr.S.B.Tatavarthy, Joint Commissioner of Animal Husbandry, Pune Maharashtra, and Dr.Sujata Mohanty, Professor and Head, Stem cell Unit, AIIMS, New Delhi	Madras Veterinary College, Chennai

Date of visit	Name of the Visitor	Place of visit
28.11.2017	Dr. B.N. Tripathi and Dr. Sanjay Barua, National Centre for Veterinary Type Cultures, Hisar	Vaccine Research Centre-Viral Vaccine, Madhavaram, Chennai
09.01.2018	Dr.Udaya Desilva, Associate Professor of Animal Molecular Genetics, Oklahoma State University, Stillwater, USA	Madras Veterinary College, Chennai
08.02.2018	Dr. Kay van der Horst and Dr.Joseph A. Bogan, Global Health Surveillance and Diagnostics, Penn State University, USA	Translational Research Platform for Veterinary Biologicals, Madhavaram, Chennai
27.02.2018	Dr.Marimuthu, BAIF Advisor, Pune	Madras Veterinary College, Chennai
03.03.2018	Thiru H.R.Khanna, Assistant Commissioner (AH), Department of GoI, New Delhi	Tamil Nadu Veterinary and Animal Sciences University, Chennai
03.03.2018	Dr. John Weave, Dr.John Woodfort and Dr.Catlin Holley, World Organization for Animal Health, Australia	Madras Veterinary College, Chennai
22.03.2018	Prof. Sharada Thapaliya, Dean, Agriculture and Forestry University, Nepal	Livestock Farm Complex, Madhavaram, Chennai

7. WOMEN EMPOWERMENT

TANUVAS organized several training programmes especially for rural women to empower them in Animal Husbandry activities. Some of the salient activities of TANUVAS in the area of women empowerment during the reporting period are listed below:

dairy farming, turkey farming and goat farming were organized by **VUTRC, Cuddalore**
farmers including .

programmes on Goat farming, dairy farming and fodder production were organised by **VUTRC, Coimbatore** for

.

training programmes were organised by **VUTRC, Dharmapuri** on dairy cow management, urea enrichment of sugarcane tops, goat farming, pig farming, dairy farming and management, disease Management in ivestock and backyard poultry keeping

programmes on dairy farming, goat farming, desi chicken farming, disease management, clean milk production

VUTRC, Erode
including .

VUTRC, Karur conducted 44 On and

dairy farming and its management,

management, establishment of Korangadu pasture land in Karur

including **801 women.**

programmes on dairy farming with value addition of milk, desi chicken rearing, sheep and goat farming,

rearing were organised at **VUTRC, Dindigul**
including

goat and dairy farming, preparation of concentrate feed for livestock and clean

milk production were organized by

farmers including

VUTRC, Krishnagiri organized 112 On

rearing and management, turkey farming, emu farming, feeding and breeding of sheep and goat, and common breeds and selection of sheep

farmers including **5503 women.**

training programmes on Quail farming for meat production, Intensive system of goat rearing and avenues for animal husbandry and allied activities were organised by **VUTRC, Melmaruvathur 605**

women.

VUTRC, Salem organized 130 On

on desi chicken rearing, goat rearing,

rabbit farming. The total number of

VUTRC, Tiruppur organized 102 On

on goat farming, desi chicken farming, FMD prevention and control, concentrate feed preparation to dairy animals, azolla cultivation, selection of dairy animals, clean milk production, herbal method of control for Foot and mouth disease, urea enrichment of paddy straw and enrichment of sugarcane tops, oral pellet vaccine for

4370 farmers including

trainings on conservation of native livestock and poultry, ethno veterinary medicine (EVM)-A remedy for primary health care of livestock, Dairy Farming with ethno veterinary practices and organic and sustainable agriculture were organized by **VUTRC, Thanjavur**

VUTRC, Tiruvannamalai organized

programmes on preventive measures of foot and mouth disease, goat farming, livestock wealth, desi chicken rearing, Recent advances in goat farming and advanced technologies in green fodder

farmers including **1870 women**.

trainings were organized by **VUTRC,** on Dairy farming with fodder production, sheep and goat farming, and poultry farming with special emphasis

including **1270 women**.

training programmes on livestock farming, backyard poultry farming,

feed computation using locally available feed ingredients, value added milk product preparation and ornamental **VUTRC,**

Vellore
including

VUTRC, Nagercoil organized 57 On farming system, mushroom production, poultry rearing, country chicken farming and value added products including **738 women**. were conducted by

VUTRC, Villupuram organized 58 trainings on poultry rearing, farming with fodder production, sheep reproductive management in dairy and goat farming, and poultry farming on azolla cultivation, preparation of with special emphasis on desi chicken farmers **including 2259 women.**

women.

VUTRC, Ramanathapuram organized training programmes on agriculture, various animal husbandry activities horticulture, animal husbandry and **876** including .

women.

organized 89 **Kancheepuram** organized 44 on-

2116 farmers including . programmes on feeding management in

VUTRC, Perambalur organized 68 On 3151 farmers including **2621 women**.

3012 farmers including campus training programmes on

890 women.

campus training programmes were conducted by on

including **537 women.**

8. HUMAN RESOURCE DEVELOPMENT

TANUVAS lays emphasis in developing the human resources and the faculty of to enhance their knowledge and skills. The Training programmes / Summer schools / Short-term courses / Workshops organized during 2017-18 are given below:

HRD	National	International
Organization of training programmes / Summer schools / Short term courses / Workshops	33	3
programmes / Summer schools / Short term courses / Workshops	612	10

Madras Veterinary College, Chennai

Title of the Programme	Place	Duration	Sponsoring	No. of Participants
Application of Bioinformatics in Animal Sciences (Workshop)	Bioinformatics and ARIS cell	22.05.17 – 31.05.17	On payment	35
Frozen Semen Production for Laboratory Technicians (Training)	Animal Genetics and Breeding	05.06.17 – 08.06.17	National Dairy Development Board, Karnal	5
Genomic and Proteomic Analysis for improvement of productivity in Farm Animals (Workshop)	Bioinformatics and ARIS cell	10.06.17 – 14.06.17	On payment	27
Information Retrieval System (Workshop)	Bioinformatics and ARIS cell	11.12.17 – 15.12.17	TANUVAS	108
In silico Molecular Modeling and Drug Designing (Workshop)	Bioinformatics and ARIS cell	08.01.18 – 12.01.18	On payment	29
Vetinformatics (Workshop)	Bioinformatics and ARIS cell	12.03.18 – 16.03.18	On payment	22
Advanced imaging and interventional protocols in disease diagnosis and management in farm and pet animal practice (Training)	Veterinary Clinical Medicine, Ethics and Jurisprudence	04.07.17 – 24.07.17	ICAR, New Delhi	18
PACS of Diagnostic Images (Workshop)	Veterinary Surgery and Radiology	24.01.18 – 25.01.18	ICAR, New Delhi	20

Title of the Programme	Place	Duration	Sponsoring	No. of Participants
Updates on clinical diagnostic (Training)	Veterinary Clinical Medicine, Ethics and Jurisprudence	01.02.18 – 21.02.18	ICAR, New Delhi	20
Recent advances in bovine breeding and disease management	Veterinary Gynaecology and Obstetrics	13.02.18 – 15.02.18 19.02.18 – 21.02.18 26.02.18 – 28.02.18	Tamil Nadu Livestock Development Agency, Chennai	20 20 15

Faculty of Basic Sciences, Madras Veterinary College, Chennai

Title of the Programme	Name of the	Duration	Sponsoring	No. of Participants
Level I- Short term specialized training	Animal Biotechnology	01.08.17 – 05.08.17	On payment	1
Level II- Long term overview training	Animal Biotechnology	19.05.17 – 15.06.17	On payment	11
Level III- Project work or in-plant training	Animal Biotechnology	01.12.17 – 28.02.18	On payment	29
Career Orientation (Training)	Animal Biotechnology	27.10.17	TANUVAS	73
Technology enhanced learning in agricultural education (Workshop)	Animal Husbandry Statistics and Computer Applications	11.12.17	Indian Council of Agricultural Research, New Delhi	16

Veterinary College and Research Institute, Namakkal

Title of the Programme	Place	Duration	Sponsoring	No. of Participants
(Training – 4 batches)	Veterinary Gynaecology and Obstetrics	24.04.17 – 23.05.17 16.08.17 – 15.09.17 04.12.17 – 02.01.18 26.02.18 – 27.03.18	Tamil Nadu Livestock Development Agency, Chennai	28 17 21 29

Title of the Programme	Place	Duration	Sponsoring	No. of Participants
Advances in clinical practices of large and small animals (International Clinical Workshop)	Veterinary Gynaecology and Obstetrics	22.06.17 – 23.06.17	TANUVAS	29
Augmenting Animal Productivity Through Emerging Technologies to ensure Food Security in the era of Climate Change (National Workshop)	Animal Nutrition	06.07.17 – 07.07.17	TANUVAS	132
Endoscopy, ultrasound and haemodialysis (Training)	Veterinary Clinical Medicine	17.07.17 – 22.07.17	On payment	5
Facing challenges together for sustainable livestock and poultry health - A local initiative for global solutions – 2017 (International Conference)	Veterinary Preventive Medicine	20.07.17 – 21.07.17	TANUVAS and Private Companies	200
Developments in feed milling technology	Animal Nutrition	26.09.17	On payment	11
and its impact in enhancing the rural economy (Training)	Poultry Science	08.11.17 – 28.11.17	Indian Council of Agricultural Research, New Delhi	28
Ethnoveterinary practices in livestock and poultry (Training to	Veterinary Pharmacology and Toxicology	27.11.17 14.12.17 – 15.12.17 24.01.18 21.02.18 22.02.18	Govt. of Tamil Nadu	50 50 50 50 50
Advances in poultry production and its impact on changing global scenario	Poultry Science	07.02.18 – 27.02.18	Indian Council of Agricultural Research, New Delhi	30
Recent advances in bovine breeding and disease management (Training – 3 batches)	Veterinary Gynaecology and Obstetrics	13.02.18 – 15.02.18 19.02.18 – 21.02.18 26.02.18 – 28.02.18	Tamil Nadu Livestock Development Agency, Chennai	20 22 19

Veterinary College and Research Institute, Orathanadu

Title of the Programme	Place	Duration	Sponsoring	No. of Participants
preparation and presentation of museum specimens in educational institutions	Veterinary Anatomy	26.07.17 – 28.07.17	Tamilnadu State Council for Science and Technology, Chennai	67
Propagation of traditional herbal knowledge in veterinary practices (Training)	Veterinary Pharmacology and Toxicology	10.01.18 02.02.18 15.02.18 – 16.02.18 23.02.18	Govt. of Tamil Nadu	25 25 50 50

Veterinary College and Research Institute, Tirunelveli

Title of the Programme	Place	Duration	Sponsoring	No. of Participants
Ethnoveterinary practices in livestock and poultry (Training)	Tirunelveli	06.12.17 07.12.17 20.12.17 – 21.12.17	Govt. of Tamil Nadu	25 25 25
Recent nutritional strategies to augment production performance	Tirunelveli	07.03.18	NABARD, Chennai	53

Centre for Animal Health Studies, Chennai

Title of the Programme	Place	Duration	Sponsoring	No. of Participants
Laboratory animal handling and management (Training)	Laboratory Animal Medicine	03.05.17 – 05.05.17 19.07.17 – 21.07.17 26.07.17 – 28.07.17 10.01.18 – 12.01.18 05.02.18 – 07.02.18	On payment	10 12 10 10 10
	Vaccine Research Centre-Viral Vaccines	11.09.17 – 16.09.17	On payment	6

Title of the Programme	Place	Duration	Sponsoring	No. of Participants
surveillance and biosecurity (International Workshop)	CAHS	04.09.17 – 08.09.17	Dept. of Animal Husbandry, Dairying and Fisheries, Govt. of India / TANUVAS / Dept. of Agriculture, United States of America / Southern Regional Disease Diagnostic Laboratory, Bengaluru	35
Laboratory animal sciences	Laboratory Animal Medicine	13.09.17 – 23.09.17	On payment	30
Recent perspectives in veterinary forensics (National Workshop)	Pharmaco vigilance Laboratory for Animal Feed and Food Safety	20.11.17 – 22.11.17	Companies	60

Centre for Animal Production Studies, Chennai

Title of the Programme	Place	Duration	Sponsoring	No. of Participants
Urea enrichment of paddy straw and preparation of paddy straw based complete feed blocks	IAN,	12.07.17	M.S.Swaminathan Research Foundation	9

Directorate of Clinics, Chennai

Title of the Programme	Place	Duration	Sponsoring	No. of Participants
TANUVAS 9th Clinical Case Conference on Farm and companion animal practice for veterinary students	Madras Veterinary College, Chennai	03.08.17 – 04.08.17	TANUVAS	429

Directorate of Distance Education, Chennai

Title of the Programme	Place	Duration	Sponsoring	No. of Participants
Management of animal emergencies (Training)	MVC, Chennai	30.10.17 – 04.11.17	World Animal Protection, New Delhi	35

9. EXTENSION EDUCATION ACTIVITIES

information among the rural people is achieved through training programmes, farm visits, exhibitions, radio and television programmes, mass contact programmes, advisory services and through publications (pamphlets and bulletins).

Video / Audio lessons

Video and Audio lessons on livestock and poultry were distributed to the VUTRCs, FTCs, KVKs, Research Stations, Information centres, NGOs and line departments to serve as teaching tools. During the report period, 2522 video lessons were screened

Audio lessons are being sold to the farmers and entrepreneurs through outreach centres.

Continuing Education programmes

Continuing Education programmes are conducted for the University faculty,

Tamil Nadu Co-operative Milk Producers Federation Ltd., Tamil Nadu Livestock Development Agency and National Dairy Development Board. During the year, a total

four training programmes.

Training Programmes

The training programmes on various enterprises viz. dairy farming, sheep and goat farming, pig farming, rabbit farming, poultry farming, agro-forestry, fodder development,

farming, backyard poultry farming, vermi compost preparation, azolla cultivation for livestock feeding, preparation of value added milk and meat products, etc., were

During the period under report, a total of

of 81,046 farmers.

Sponsored Training Programmes

Sponsored training programmes were organized with the coordination of Department of Animal Husbandry,

of Tamil Nadu Government schemes namely "Free distribution of Milch Cows to the poor families in rural

and "Free distribution of poultry to the

University outreach centres. During the reporting period, a total of 51 training

farmers, 211 training programmes

sheep farmers were conducted.

A total of 21 training programmes

farmers and seven training programmes

have been conducted under Tamil Nadu Government scheme entitled "Pudhu Vazhvu Project".

A total of 40 training programmes

184 broiler farmers were organized

under the Tamil Nadu Government scheme on "Poultry Development"

Farmers orientation programme for the

Development Agency were co-ordinated

through the University outreach centres. During the report period, a total of 26

were conducted.

Advisory and Consultancy

The total number of advisory and consultancy services rendered in-person, by post, telephone, e-mail, touch screen and

1,54,697.

Mass Media Coverage

A total of 184 radio programmes and 74 TV programmes were conducted during the reporting period.

Exhibition / Mass Contact Programmes

During 2017-18, 556 exhibitions / mass contact programmes were conducted in which a total of 72,161 farmers participated and 52,100 animals were treated for various ailments.

Foundation Day

TANUVAS Foundation Day 2017 and Livestock and Poultry Farmers Day was organized at Dindigul on 10.11.2017. An

exhibition on seven thematic areas viz. Livestock technology information; Method Showcasing of low cost technologies for livestock and poultry; Post harvest technology demonstration; Live exhibits; Educational opportunities and other activities and comprising of more than 50 stalls were arranged. More than 5000 farmers visited the exhibition.

Kisan Call Centre

The Department of Agriculture and Cooperation, Ministry of Agriculture, Government of India has launched Kisan Call Centre, Level II which is functioning at the Directorate of Extension Education with a

Touch Screen Information Kiosk

Touch Screen Information Kiosk facility has been provided at TANUVAS Extension Software on dairy farming, goat farming, marketing avenues and Right to Information Act-2005 have been installed in the Touch Screen Information Kiosks.

Agricultural Technology Information Centre (ATIC), Kattupakkam

Agricultural Technology Information services and product information through single window delivery system under the Technology Project of ICAR. During the period under report,

A total of 3017 University publications, six ICAR publications and one video lesson were sold

Video lessons on various aspects of added product preparation were visiting ATIC. A total of 1822 farmers period.

Distance Education Programmes

With an aim to provide learning opportunity to farmers, farm women and school through print and online modes through the Directorate of Distance Education. The various

Certificate Courses

Sl. No.	Course title	Medium of instruction	Duration of the course	Mode of	No of candidates enrolled
1	Dairy Farming	Tamil	3 Months	Print mode	1
2	Goat Farming	Tamil	3 Months	Print mode	-
3	Sheep Farming	Tamil	3 Months	Print mode	-
4	Piggery Farming	Tamil	3 Months	Print mode	-
5	Rabbit Farming	Tamil	3 Months	Print mode	-
6	Broiler Farming	Tamil	3 Months	Print mode	-
7	Layer Farming	Tamil	3 Months	Print mode	-
8	Japanese Quail Farming	Tamil	3 Months	Print mode	1
9	Turkey Farming	Tamil	3 Months	Print mode	-
10	Desi- Bird Farming	Tamil	3 Months	Print mode	3
11	Livestock Fodder Production	Tamil	3 Months	Print mode	-
12	Concentrate Feed Preparation	Tamil	3 Months	Print mode	-
13	Hatchery Management	Tamil	3 Months	Print mode	1
14	Value Added Milk Products Preparation	Tamil	3 Months	Print mode	-
15	Value Added Meat Products Preparation	Tamil	3 Months	Print mode	-
16	Waste Disposal Management	Tamil	3 Months	Print mode	-
17	Bio-Security Measures	Tamil	3 Months	Print mode	-
18	Clean Meat Production	Tamil	3 Months	Print mode	-
19	Feed Mill Management	Tamil	3 Months	Print mode	-
20	Animal Welfare	English	6 Months	Print and Online mode	8
	Total				

Skill Development Programmes

Sl.No.		No. of candidates enrolled
1	Dairy Farm Assistant	3
2	Dairy Plant Assistant	2
3	Milk and Milk Products Quality Control Assistant	2
4	Feed Mill Supervisor	2
5	Feed Analytical Technical Assistant	-
6	Livestock Farm Manager	25
7	Poultry Farm Manager	2
8	Hatchery Supervisor	1

9	Poultry Farm Supervisor	-
10	Poultry Breeder Farm Supervisor	-
11	Turkey farming Assistant	2
12	Poultry Vaccinator	-
13	Laboratory Assistant	-
14		-
15		1
	Total	**39**

Self-Employment Programmes

Sl. No.		No. of candidates Enrolled
1	Dairy farming	213
2	Sheep Farming	10
3	Goat Farming	214
4	Fodder and Fodder Seed Production	3
5	Preparation of Fermented Dairy Products	3
6	Livestock Farm Waste Utilization	-
7	Rabbit farming	13
8	Pig farming	22
9	Japanese Quail Farming	10
10	Desi-chicken Rearing	210
11.	Broiler farming	1
	Total	**699**

University Publication Division

The Publication Division of TANUVAS is

and popular publications.

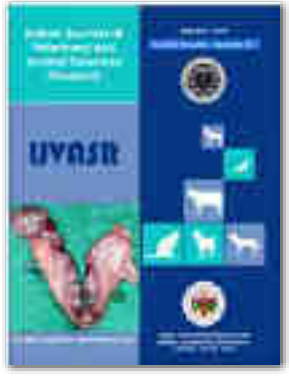
and Animal Sciences Research", a

membership fee is Rs.3000/- and annual subscription is Rs.500/-.

A bi-monthly "**TANUVAS Technical Reporter**

"Kalnadai Kathir", a popular bi-monthly Tamil Journal. The Life membership fee is Rs.1000/- and annual subscription is Rs.100/-

A monthly in English and **"செய்தி மடல்"** in Tamil



10. ACTIVITIES OF RESEARCH STATIONS, OUTREACH CENTRES, SERVICE UNITS AND LABORATORIES

RESEARCH STATIONS

given below.

Post Graduate Research Institute in Animal Sciences, Kattupakkam

Sl.No.	Name of the Unit	Stock as on 31.03.2018	Revenue Generated (₹ in lakhs)
1.			36.74
		143	
		2	
		53	
2.	Sheep		5.47
	Madras Red	229	
3.	Goat		
	Non-descript	57	
	Kanni goat	11	
	Boer X Non-descript	123	
4.	Pigs		20.85
	Large White Yorkshire	280	
5.	Poultry		27.87
	Ostrich	86	
6.	Rabbit		1.12
	New Zealand White	342	
	Soviet Chinchilla	56	
	Total		**92.05**

Mecheri Sheep Research Station, Pottaneri

Sl.No.	Name of the Unit	Stock as on 31.03.2018	Revenue Generated (₹ in lakhs)
1.	Sheep Mecheri sheep	782	21.46
2.	Goat Salem Black	70	
3.	Farm produce		5.50
	Total		**26.96**

Sheep Breeding Research Station, Sandynallah, Ooty

Sl. No.	Name of the Unit	Stock as on 31.03.2018	Revenue Generated (₹ in lakhs)
1.	Sheep		
	Nilagiri	536	
	Sandyno	504	
	Dorset cross	149	17.08
	Garole	9	
	Garole X Sandyno	169	
		225	
	Total		**17.08**

TANUVAS Regional Research Centre (RRC), Pudukottai

Sl.No.	Name of the Unit	Stock as on 31.03.2018	Revenue Generated (₹ in lakhs)
1.		11	1.65
2.	Pigs	6	-
3.	Turkey	81	2.01
4.	Desi Chicken	364	7.49
5.	Sheep	132	-
	Total		**11.15**

Poultry Research Station, Madhavaram Milk Colony, Chennai

Sl. No.	Name of the Unit	Stock as on 31.03.2018	Revenue Generated (₹ in lakhs)
1.		7140	
2.		550	
3.	Turkey	859	
4.	Nandanam broiler II	974	
5.	Nandanam broiler III	1094	
6.	Nandanam chicken IV	1048	
7.	Naked Neck X NC4	646	48.79
8.	Frizzle X NC4	98	
9.	RIR	245	
10.	Aseel	1458	
11.	Aseel Rhodo white cross	88	
12.	Kadakanath	789	
13.	Nicobari	821	

Sl. No.	Name of the Unit	Stock as on 31.03.2018	Revenue Generated (₹ in lakhs)
14.	Gramapriya	243	
15.	Fancy	136	
16.	Naked neck	655	
17.	Naked neck B3 Cross (NNB3)	933	
18.	Guinea fowl	304	
19.	WLH	190	
20.	Geese	41	
21.	Native chicken	186	
	Total		

Kadakanath

Nandanam Broiler 3

Frizzle

Nicobari

INSTRUCTIONAL FARMS

Livestock Farm Complex, Madhavaram Milk Colony, Chennai

Sl.No.	Name of the Unit	Stock as on 31.03.2018	Revenue Generated (₹ in lakhs)
1.			
	Bargur	2	
	Deoni	2	
	Gir	2	
	Kangayam	2	
	Rathi	1	3.44
	Sahiwal	2	
	Tharparkar	1	
	Crossbred	24	
		8	
2.	Sheep		
	Madras Red	2	
	Mecheri	3	
	Tiruchi Black	3	
	Coimbatore	3	
	Sandyno	2	
	Ramnad White	5	
	Vembur	2	-
		2	
	Chevaadu	2	
	Dorset X Nilgiri	2	
	Nilgiri	2	
	Garole	1	
3.	Goat		
	Barbari	4	
	Tellicherry	29	
	Jamunapari	3	
	Sirohi	2	
	Beetal	2	0.66
	Osmanabadi	3	
	Zhakrana	2	
	Salem Black	3	
	Boer	2	
	Kanni Adu	1	
4.	Pigs		
	Large White Yorkshire	112	8.94
	Duroc	3	
5.	Rabbit		
	New Zealand White	62	0.45
	Soviet Chinchilla	57	
6.	Farm produce		12.49
	Total		**25.98**

Livestock Farm Complex, Namakkal

Sl.No.	Name of the Unit	Stock as on 31.03.2017	Revenue Generated (₹ in lakhs)
1.			7.34
	Crossbred	25	
	Kangayam	2	
		6	
2.	Sheep		5.88
	Mecheri	52	
	Tiruchi Black	3	
	Vembur	1	
	Kilakarisal	3	
	Chevvadu	3	
3.	Goat		
	Tellicherry	60	
	Jamunapari	5	
	Salem Black	67	
	Sirohi	1	
	Beetal	2	
	Osmanabadi	5	
	Dorset x Nilgiri	3	
4.	Pig		2.84
	Large White Yorkshire	32	
5.	Rabbit		1.39
	Soviet Chinchilla	169	
	White Giant	94	
6.	Horse	1	
7.	Fodder		0.99
	Total		

Livestock Farm Complex, Tirunelveli

Sl.No.	Name of the Unit	Stock as on 31.03.2017	Revenue Generated (₹ in lakhs)
1.			7.21
	Crossbred Jersey	28	
		4	
2.	Sheep		1.73
	Vembur	25	
	Kilakarsal	50	
	Ramnad White	4	
	Chevvadu	4	
	Mecheri	4	

Sl.No.	Name of the Unit	Stock as on 31.03.2017	Revenue Generated (₹ in lakhs)
3.	Goat		
	Kanni	59	
	Kodi	52	
	Jamunapari	4	
	Tellicherry	2	
4.	Piggery		0.66
	Large White Yorkshire	15	
5.	Poultry		16.74
	Japanese Quail	1273	
	Total		

Livestock Farm Complex, Orathanadu, Thanjavur

Sl.No.	Name of the Unit	Stock as on 31.03.2017	Revenue Generated (₹ in lakhs)
1.	Cow	90	
2		27	
3	Sheep		
		55	
4	Goat		
	Non-descript	54	
5	Pig		
	Large White Yorkshire	41	
7	Poultry		
	Namakkal Chicken – 1	40	54.37
	Nandanam Chicken 4	364	
	Desi Chicken	26	
	Kadaknath	14	
	Japanese Quail	667	
	Guinea fowl	32	
	Turkey	28	
	Duck	12	
	Emu	2	
	Ostrich	2	
	Fancy chicken	25	
	Total		

Central Feed Technology Unit, Kattupakkam

During 2017-18, 245.85 MT of TANUVAS SMART Mineral Mixture and 1356.11 MT of livestock and poultry feed were supplied to various University Research Farms, District Livestock Farms, Private Research Institutes, and public (farmers). The revenue earned by this unit is ₹585.09 Lakhs.

OUTREACH CENTRES

The services rendered by the Veterinary University Training and Research Centres (VUTRCs), Farmers Training Centres (FTCs), Krishi Vigyan Kendras (KVKs), spread over the entire Tamil Nadu during the reporting period are given below:

Location of the Centres	campus Trainings		Clinical activities				Technical Advices given	Mass Contact Programmes
	No. of Trainings	No. of	Specimens	Outbreaks	cases treated	Vaccinations carried out		
Coimbatore	64	1632	65	-	-	2624	29362	3
Dharmapuri	116	3027	841	29	2150	798	3247	4
Dindigul	61	1954	143	70	-	962	3248	2
Erode	58	1363	381	5	-	3577	2929	6
Karur	44	1591	55	1	-	-	3804	1
Melmaruvathur	60	1672	144	10	868	590	1014	7
Cuddalore	95	3522	115	11	133	511	2550	4
Rajapalayam	102	2944	-	-	-	-	2190	1
Salem	130	5862	44	14	91	8608	2821	21
Tiruchirapalli	67	3874	116	-	-	-	3151	5
Thanjavur	52	1451	1	-	-	-	1748	1
Tirupur	102	4370	687	32	-	276	1991	2
Vellore	57	1995	155	-	-	406	2662	2
Nagercoil	57	1722	444	92	-	1122	2913	17
Villupuram	58	2165	60	11	-	-	1960	5
Tiruvannamalai	109	3973	-	-	-	-	2517	-
Krishnagiri	112	5920	-			2702	1176	9
	89	2116					1402	2
Perambalur	68	3012	29	11	-	2491	3495	5
Ramanathapuram	11	929	-	-	-	-	1797	-
VUTDC, Madurai	80	2727	2021	-	-	7651	4800	
Kendras (KVK)								
	158	4835	-	-	-	-	2697	-
Kundrakudi	195	4931	-	-	-	-	2901	9
Namakkal	205	7732	-	-	-	-	25348	-

Tiruvarur	46	959	5	15	-	-	1207	-
Kancheepuram	115	3151	13	-	730	1071	2463	6
Theni	69	1617	117	15	-	-	2539	5
Total	**2380**			**316**	**3972**	**33389**	**117932**	**117**

SERVICE UNITS

The activities of the service units such as Library, Computer Centre, Bioinformatics Centre, hospitals and laboratories are essential for viable functioning of the University. Various activities of these service units in the improvement of this University during the reporting period is given below:

Library

The University has library facilities in all its constituent colleges with large collection of books and journals. In addition, they possess CD-ROM databases.

Services offered by the Libraries of TANUVAS

Lending of books and documents to students and faculty members

Journal reference service

Access to online journals and e-books

Information retrieval through CD-ROM Databases

Reprography / Printing / CD writing

Resource sharing through Madras Libraries Network-MALIBNET and British Council Library

Binding of books and documents

SC/ST Book Bank facility

Student Counseling and Placement cell

Facilities available at TANUVAS Libraries

Online public access catalogue

Digitization of theses

Electronic surveillance system

Archives unit

Stock position of libraries of TANUVAS as on 31.3.2018

Particulars	MVC, Chennai	VC&RI, Namakkal	VC&RI, Orathanadu	VC&RI, Tirunelveli	Koduveli
Stock of books	40,497	12,420	1853	2796	3205
Periodicals and monthly journal	168	66	39	48	15
e-Books	350	69	-	-	-
Journals with online access	139	32	-	-	-
Access to Online Journals through CeRA	2900+	-	-	2800+	-
	18,424	12,501	5,706	6,497	1,486
	1,008	802	-	-	-
Total back volumes	25,925	3,420	-	45	-
Video lessons	196	48	110	55	-

Computer Centre

Activities of the Students Computer Centre, Internet Kiosk and Server station

Husbandry Statistics and Computer Applications of Madras Veterinary College are furnished below:

Hands on training on computer applications to both UG and PG students.

Computer network management and provision of Internet and Intranet services; Facilitating communication

colleges and University and across the colleges and U

A new ASRB Online Examination Centre

Scanning, network Printing, electronic multicopying and digital photography

utilized by various departments.

Periodic updation of TANUVAS website, www.tanuvas.ac.in, for the

with the approval of website updation

One GB net working connectivity

The Student Computer Centre provides a comprehensive environment for computing, browsing, e-mailing and networking, so as to improve the learning activity among students and

research capability among faculty members. The major objectives of TANUVAS computer network are to establish and maintain a campus-wide network, thereby providing the faculty,

computers. The Computer Centre has computer systems for regular usage and an Internet Kiosk for browsing of Net

nts and trainees.

TANUVAS Website (www.tanuvas.ac.in)

TANUVAS website was created with a view to incorporate all the activities of the University under one portal. It has several windows namely history of TANUVAS, structure and governance, constituent units, academic programmes, research resources and services. In the research category, ongoing schemes and salient research

website contents are updated periodically by

Bioinformatics Centre

The Biotechnology Information System (BTIS) of TANUVAS was started during 1990-91 at Madras Veterinary College, Chennai, under the aegis of Department of Biotechnology, Government of India, New

following facilities:

CD ROM Data bases

Broad band (128 Kbps) Internet connectivity from VSNL

information retrieval

A Wetlab facility with Gel Electrophoresis, Digital Electronic Balance, Thermal Cycler and UV-Transilluminator for PG research

Agricultural Research Information System Cell for internet browsing and online information retrieval

During 2017-18, 83 scientists and research scholars of TANUVAS have utilized

A total of 18 students from outside colleges completed their projects. The revenue earned through the students research work was ₹ rainings/ workshops were organized and 108 PG scholars of MVC and 113 scientists teaching

revenue earned through these programmes was ₹ 1,86,000/-.

CLINICAL SERVICES

through Veterinary Teaching Hospital, Emergency Critical Care Unit, Centralized Clinical Laboratory at Madras Veterinary College, Peripheral Veterinary Hospital at Madhavaram, Veterinary Teaching Hospitals at Veterinary College and Research Institute,

Tirunelveli. A total of 2,11,358 cases were treated during 2017-18.

Veterinary Teaching Hospital

Clinical ward training is being imparted to the UG and PG students at TANUVAS Veterinary Teaching Hospitals. Practising veterinarians were given clinical training at the hospitals to update their knowledge

and treatment of various ailments in small and large animals. A total of 12 Army vets were given hands on clinical training at TANUVAS.

Clinical Externship Programme

A tota
Veterinary and Animal Sciences University, Bangladesh underwent Clinical externship training at the various units of Teaching Veterinary

Clinical complexes of TANUVAS for a period of one month from 22.04.2017 to 22.05.2017

Clinical externship training programme

Virginia Maryland Regional College of Veterinary Medicine, USA during July

– August 2017 at the various units of Teaching Veterinary Clinical complexes of TANUVAS.

Fourteen students from University Malaysia, Kelantan underwent clinical practical training programme in companion and large animals at the various units of Teaching Veterinary Clinical complexes of TANUVAS for

a period of one month during August 2017.

A total of 138 students from Bangladesh Agricultural University, Mymensingh, Bangladesh underwent Clinical externship training at the various units of Teaching Veterinary Clinical complexes of TANUVAS for a period of one month from 1510.2017 to 11.11.2017.

Hospital Services

The following are the species-wise clinical cases treated during the year 2017-18:

Description	MVC		VUPH	Clinics VC&RI Namakkal	VCC, VC&RI Tirunelveli	VCC, VC&RI, Orathanadu	TOTAL
	Clinics	RVSS	Madhavaram				
Bovines	10104	403	1345	5914	3801	1139	22706
Canine	99866	7734	14344	11135	9239	3909	146227
Feline	6616	943	280	3133	106	22	11100
	914	55	19	488	53	9	1538
Caprine/Ovine	4562	659	950	3370	7373	4376	21290
Avian	5590	39	966	113	427	1277	8412
Others	697	-	159	158	-	71	1085
Total		**9833**	**18063**		**20999**	**10803**	**212358**

In-patient Facilities

ailments at Madras Veterinary college teaching hospital.

2559 large animals and ten small

in-patients at Veterinary College and Research Institute, Namakkal.

treated as in-patients at Veterinary College and Research Institute, Orathanadu.

treated as in-patients at Veterinary College and Research Institute, Tirunelveli.

animals suspected for rabies is functioning at all the institutions.

Small Animal In-patient unit at MVC, Chennai

Details of prophylactic vaccination carried out

Name of the vaccine	Clinics, MVC, Chennai	Clinics, VC&RI Namakkal	TVCC, VC&RI Orathanadu	TVCC, VC&RI Tirunelveli	VUPH Madhavaram	Total
Anti-Rabies vaccine for dogs	6111	898	409	1146	1868	10432
Distemper, Hepatitis, vaccine for dogs	13693	1518	618	2361	3497	21687
Ranikhet disease vaccine for poultry	2241	-	-	-	-	2241
Total			**1027**	**3507**	**5365**	

Pharmacy

based on prescriptions for treatment of sick animals free of cost. A sum of ₹ 29.06 lakhs was utilized towards the purchase of drugs for MVC teaching hospital at Chennai; ₹ 27.91 lakhs

₹

Orathanadu; ₹ ₹ 9.42 Lakhs for Veterinary University Peripheral Hospital, Madhavaram. Dr. Srinivasan Memorial Fund was

to treat complicated cases.

Referral Units

The following advanced facilities are available at TANUVAS Hospitals:

Madras Veterinary College, Chennai

Ultra sound scanner	Doppler	Slit lamp Biomicroscope
	Holter monitoring system	Vital Sign Monitor
Pulse oximeter	Laparoscopy	Haemodialyser
Radiant warmer	Digital phonocardiograph	C-Arm Fluroscopy
Doppler Blood Pressure apparatus	Endoscopic image documenting system	Operating ophthalmic microscope
Phaco for cataract surgery	Dental scalar	Arthroscopy

Veterinary College and Research Institute, Namakkal

Ultra sound scanner	ECG	Endoscopy
Operating ophthalmic microscope	Dental scalar	Vital Sign Monitor
Large and small animal gas anaesthetic machine	Ventilator	Echo colour doppler

Veterinary College and Research Institute, Orathanadu

Colour Doppler ultrasonogram	X-ray unit

Veterinary College and Research Institute, Tirunelveli

Doppler Ultrasonogram	Electrocardiogram	OT Hydraulic Table
Vital Sign Monitor	Autoclave	Infusion Pump

Cases attended at the referral clinics

The following are the clinical cases examined at the referral clinics of various institutions

Particulars	MVC Chennai	VC & RI Namakkal	VC & RI Orathanadu	VC & RI Tirunelveli	VUPH, Madhavaram	Total
Ultrasonography	3115	1276	1356	744	42	**6533**
Endoscopy	3	67	-	-	-	**70**
ECG	479	168	96	113	6	**862**
Radiology	8294	1106	877	872	149	**11298**
Vaginal Cytology	590	-	334	92	103	**1119**
Echo Doppler	651	-	-	-	33	
Total	**13132**	**2617**	**2663**	**1821**	**333**	**20566**

Theatre Services - Surgeries performed

126 major and 907 minor soft tissue, 174 Orthopaedic and 200 Ophthalmic surgeries were done at Madras Veterinary College Teaching Hospital

272 major and 434 minor soft tissue surgeries were performed at Veterinary College and Research Institute Teaching Hospital, Namakkal

1885 major and 1734 minor soft tissue surgeries were performed at Veterinary College and Research Institute Teaching Hospital, Orathanadu

2826 major and 2463 minor surgeries were performed at Veterinary College and Research Institute Teaching Hospital, Tirunelveli

42 major and 25 minor soft tissue surgeries were performed at Veterinary University Peripheral Hospital, Madhavaram

Emergency and Critical care unit

During the period under report, the details of emergency cases treated at Resident Veterinary Service Section, MVC, Chennai (Round the clock service) and urnished as follows:

Species	No. of cases	
	(RVSS - MVC)	VC & RI, Namakkal
Canine	7734	3903
Bovine	334	1541
Feline	943	2905
	55	59
	659	659
Avian	89	112
Others	46	83
Total	**9860**	**9262**

Infectious Disease Unit (IDU)

This unit is focused on the treatment of important infectious diseases of canine *viz.*, Canine Parvo Viral enteritis (CPV) and Canine Distemper (CD). Since inception, this unit has treated 1731 cases, which includes 1405 Canine Parvo Virus and 326 Canine Distemper cases. Infectious Disease Unit helps in combating such contagious diseases for the welfare of pet and pet owners.

Avian and Exotic Pet Unit (AEPU)

Clinical services like diagnosis, preventive measures against zoonotic diseases, managemental practices, housing and feeding schedules, basic and advanced treatment are provided in this unit. Gender

ation of pet birds through DNA feather sexing is also provided in this unit. The AEPU unit updates knowledge and practical skill for the clinical students of Madras Veterinary College, Veterinary College and Research Institute, Namakkal,

veterinarians through internship and training programmes. A total of 7512 Avian and Exotic pets were treated at Madras Veterinary College and Veterinary University Peripheral Hospital, Chennai. A total of 125, 452 and 952 Avian and Exotic pets were treated at Namakkal, Tiruvelveli and Orathanadu, respectively.

Mobile Veterinary and Ambulatory Services

Veterinary University Peripheral Hospital, Madhavaram, Veterinary College and Research Institute Hospital, Namakkal, Orathanadu and Tirunelveli renders Mobile Veterinary ambulatory Services to the farm and pet animals and also provide exposure on rural veterinary practice to the undergraduate students. During the reporting period, 4,835 livestock / pets were treated by the Mobile Veterinary Ambulatory services

Veterinary Medical Record Section

Computer registration of clinical cases introduced at MVC Teaching Hospital, Chennai during January 1998 is in vogue. The case sheets and clinical slips were formated to computerize the clinical data adopting international code.

Clinical Case Conference 2017

"TANUVAS 9th Clinical Case Conference on Farm and Companion Animal Practice for rd and 4th August 2017. The two days conference focussed on challenging clinical case studies presented by the undergraduate, postgraduate students and internees from India and abroad. A total of 429 undergraduate and postgraduate students from seven states of our country

presented the clinical cases with respect to farm and companion animals related to Medicine,

Hon'ble Minister for Animal Husbandry, Government of Tamil Nadu participated in the valedictory function and released the compendium of abstracts, clinical fact brochures and distributed the prizes in the presence of the Vice-Chancellor, TANUVAS.

Revenue generated

	Revenue generated (` in Lakhs)						
	MVC		VUPH Madhavaram	Clinics VC&RI Namakkal	TVCC, VC&RI, Orathanadu	TVCC, VC&RI, Tirunelveli	TOTAL
	Clinics	RVSS					
Hospital	100.55	9.74	17.27	17.43	6.21	12.14	
Training	-	-	6.50	-		-	**6.50**
Total	**100.55**		**23.77**		**6.21**		

LABORATORIES

TANUVAS has the following research laboratories to serve the needs of livestock and poultry sector.

Centralized Clinical Laboratory

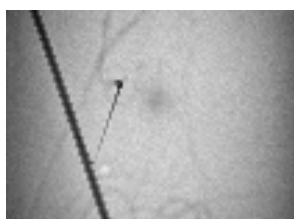
The Centralised Clinical Laboratory with modern facilities caters to the need of diseases. During the period under report a total number of 43,718 clinical materials which includes blood samples for haematology, urine samples for urinalysis, serum samples for biochemistry, Coprology, Skin scrapings, Antibiotic Sensitivity Test and Cytology samples were examined at Madras Veterinary College Teaching Hospital, Chennai, 19,510 at Veterinary College and Research Institute, Namakkal, 1045 at Veterinary University Peripheral Hospital, Madhavaram and 4956 at Veterinary College and Research Institute, Orathanadu. 5503 at Veterinary College and Research Institute, Tirunelveli.

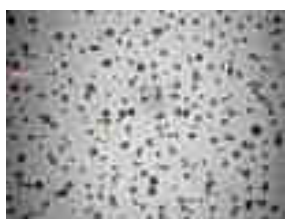
The blood smear examination revealed the occurrence of *Theileria annualata*, *Anaplasma marginale* and *Babesia bigemina* infections in bovine and *Ehrlichia canis* and *Hepatozoon canis* infections in canine. Faecal examination showed the occurrence of *Strongyle sp* and *Coccidia* in small ruminants, *Ancylostoma sp.* in canines and *Strongyles sp* ruminants, *Demodex canis* and *Sarcoptes scabei* in canine. *Malassezia pachydermatitis* infections of the skins were also recorded in dogs. Cytologically, tumours like liposarcoma of skin, mammary adenocarcinomas, mast cell tumour and lymphomas of lymph nodes and spleen tumour were detected. Currently, Centralised Clinical Laboratory has Multispecies Automated Whole Blood Hematology analyzer and semi automated biochemistry analyzer for the analysis of samples.

Central Instrumentation Laboratory

Silver nanoparticle-mag 65000

Gold nanoparticle-mag210000





Nanocurcumin-mag 137000

During the reporting period, a total of 1048 persons including students, research

institutions utilized the laboratory facilities available in this department. A sum of Rs.1,41,633/- has been collected as fee towards screening of samples for electron microscopy and freeze drying.

Central University Laboratory

This Laboratory coordinates with line departments in monitoring animal health and disease surveillance. This laboratory produces and supplies diagnostic reagents and biologicals to the line departments on need basis. The laboratory is involved in investigation of animal diseases and monitoring of animal health in University farms. The unit provides anthrax free

guidance to farmers in the control livestock and poultry diseases. This laboratory conducts need based short term training on animal disease diagnosis. A total of 11,936 samples received from various parts of Tamil Nadu for various livestock and poultry diseases were screened during the period under report. The revenue generated during the reporting period is Rs.10.36 lakhs.

Zoonoses Research Laboratory

A total of 1762 human and 669 animal serum samples from suspected cases were screened by Microscopic Agglutination Test (MAT) for detection of leptospiral antibodies. Out of 1762 human samples tested, 316 (18%) were found positive. Out of the 669 animal samples tested, 334 (50%) samples were found positive. Australis, Autumnalis, Icterohaemorrhagiae and Pamona were the predominant serogroups found in both the samples. The revenue earned during 2017-18 was Rs.9.19 Lakhs.

Vaccine Research Centre – Bacterial Vaccine

During the reporting period, 70,000 doses of Autogenous *Mannheimia haemolytica*

were prepared and supplied to the

One thousand doses of *Pasteurella*

A total of 479 samples obtained from

and the results were communicated.

This unit has generated a revenue of ₹ 51,763/- through sale of vaccine.

Vaccine Research Centre – Viral Vaccine

Bluetongue vaccination (BTV) awareness camps for sheep were organized at Siganeri, Nanguneri Block, Tirunelveli district on 12.10.2017 in association with Dept. of Veterinary

at Samayankudikadu in association with Dept. of Veterinary Microbiology,

on 25.11.2017. A total of 2800 sheep and goat were vaccinated against BTV and TANUVAS mineral mixture was also distributed.

Bluetongue and PPR awareness-cum-vaccination camp was organized at Elavanur Village, Karur district on 09.01.2018 in coordination with VUTRC,

Likewise, Bluetongue and PPR awareness-cum-vaccination camp was organized at Chennimalai, Erode district on 02.02.2018 in coordination with VUTRC, Erode.

Two training programmes on "Cell

students from other colleges through which revenue earned was Rs.60,000/-.

Thirteen students projects were undertaken during the reporting period and the revenue earned was Rs.2,50,000/-

Laboratory Animal Medicine

This is a breeding unit of laboratory animals like rats, mouse and guinea pigs. This unit supplies laboratory animals to research scholars on cost basis. During the period under report, Swiss Albino mice (744), Balb/c mice (548), Wistar rats (1519) and Guinea pigs (111) were sold to researchers and revenue of ₹ 7,66,700/- was generated.

Three training programmes on Laboratory animal handling and

32 research scholars through which revenue earned was Rs.96,000/-

Animal Sciences (CCLAS) was organized as per FELASA (Functions A,

representing Government organizations and private industry from 13.09.2017 to 23.09.2017 and a revenue Rs.6,45,000/- was generated.

Pharmacovigilance Laboratory for Animal Feed and Food Safety

This laboratory is involved in analysis of mycotoxins, pesticides and drug residues in animal feed and food. During the period under report, 4101 samples were analysed for mycotoxins and pesticide residues. The results were communicated to the entrepreneurs / farmers so as to enable them to formulate their animal/poultry feed free from toxic residues. The revenue generated by the analysis of samples during this period was ₹ 20.10 lakhs. The unit also renders diagnotic services in Animal Disease outbreaks pertaining to toxicity (namely Zinc phosphide, Nitrate/Nitrite, Hydrocyanic acid etc).

A National workshop on "Recent

was conducted at MVC, Chennai from 20.11.2017 to 22.11.2017 and 60 persons from private companies and agencies participated.

Animal Feed Analytical and Quality Assurance Laboratory

A total of 23401 samples were received and 53336 tests were carried out at

parameters covering proximate, mineral, adulterants, contaminants and mycotoxins in feed, feed ingredients, and vitamin concentration in premixes were analysed. The results were immediately dispatched by email and SMS to the farmers.

During the reporting period, 105 weather based bulletins (bi-weekly)

and agricultural farmers in Namakkal, Salem, Dharmapuri and Krishnagiri districts of North West Agro-climatic zone of Tamil Nadu.

The revenue generated during 2017-18 was Rs.99.86 Lakhs.

Poultry Disease Diagnosis and Surveillance Laboratory

Haemagglutination test was conducted on 276 samples. Newcastle disease (ND) virus antigen was detected in 246 samples and Infectious Bronchitis virus antigen in 30 samples. A total of 34028 blood samples collected from 86 farms were tested by Haemagglutination Inhibition test. Out of 1792 water samples analyzed 1177 samples (66%) were found to be contaminated with coliforms. 641 feed and clinical samples were tested for microbial analysis, of which 73 (11.38 %), 55 (8.6%), 104 (16.22 %), 22 (3.43%) and 17(2.65%) samples were found to be contaminated with *E.coli, Staphylococcus spp., Clostridium spp., Pasteurella spp* and *ORT* respectively. Out of 587 samples screened for Salmonella organisms, 4 samples were found positive for Salmonella spp. The revenue generated during the year 2017-18 was Rs.6,21,480/-. A total of six training programmes were organized for the poultry farmers and

Avian Disease Laboratory

13,230 serum samples were tested by Haemagglutination Inhibition test for

this laboratory.

A total of 227 post mortem examinations was done in poultry 47

generated during the year 2017-18 was ₹ 1.61 lakhs.

Veterinary University Training and Diagnostic Centre

programmes on dairy farming, goat farming, desi chicken farming, disease management, Integrated livestock

carcasses and preparation of value

farmers including 405 SC/ST

Two training programmes under State Poultry development programme and

of 365 farmers including 109 SC/STs.

A total of eight training programmes on various animal husbandry activities

under Chief Minster's free goat scheme.

A total of 126 post-mortem were carried out and 1977 samples analysed during the reporting period.

25 awareness camps were conducted in association with Department of Animal Husbandry on various livestock farming activities and a total of 2796 livestock

emphasis was given on the importance of deworming, feeding green fodder and mineral mixture to livestock.

A total of Rs.11.92 lakhs has been generated during the reporting period.

11. FINANCE

to a total outlay of ₹28065.20 Lakhs were received from various sources as detailed below :

Sl. No.	Source	(₹ in Lakhs)
1.	Government of Tamil Nadu	23272.97
2.	Agencies of Government of Tamil Nadu	95.11
3.	Indian Council of Agricultural Research, New Delhi	1641.44
4.	Departments of Government of India	1388.97
5.	Other Agencies	89.14
6.	Revenue generated by the University	1577.57
	Total	**28065.20**

Finance and Accounts

Revenue

administering the University are detailed below:

1. Government of Tamil Nadu

Under section 34 of TANUVAS Act 1989, the Government of Tamil Nadu released the following non-lapsable grants to the University.

a. Grant not less than the net expenditure incurred in the year in respect of the activities of the institution of Veterinary and Animal Sciences and allied sciences and such other Government Departments relating to Veterinary and Animal Sciences and allied sciences are transferred to the University.

b. Grant not less than the estimated expenditure on pay and allowances of

services of the University and

c. Grant to meet such additional items of expenditure, recurring and non-recurring, as the Government may deem necessary for the proper functioning of the University.

The State Government has released the following grants during the year 2017-2018.

(₹ in Lakhs)

Non-Plan	12898.35
Plan	8359.90
SIF/TANII Schemes	1088.22
Creation of Capital assets (NABARD)	926.50
Total	**23272.97**

2. Agencies of Government of Tamil Nadu 95.11

3. Indian Council of Agricultural Research, New Delhi

The ICAR has continued to support the University by releasing the following grants during the year 2017-18.

(₹ in Lakhs)

	900.88
	231.72
c. Development grant	508.84
Total	

4. Departments of Government of India

The Departments of Government of India has sanctioned grants for implementing various sponsored research programmes/ schemes during the year 2017-18 as detailed below :

(₹ in Lakhs)

GOI-National Agriculture Development Programme	500.00
GOI-National Livestock Mission scheme	200.00
GOI - Agencies (MoFPI, Ministry of Ayush, DBT, DST)	688.97
Total	**1388.97**

5. Other Agencies 89.14

6. Revenue Generated by the University

By way of fee from services, students fees, sale of farm produce and value added Products, fees for hospital services under plan and Non-plan schemes	**1577.57**
Grand Total Revenue	**28065.20**

Expenditure

The actual expenditure incurred during

are detailed below:

1. Government of Tamil Nadu

(₹ in Lakhs)

Non-Plan (Including pension)	13536.52
Plan	8725.78
SIF/TANII Schemes	1886.32
Creation of Capital assets (NABARD)	926.50
Total	**25075.12**

2. Agencies of Government of Tamil Nadu 114.79

3. Indian Council of Agricultural Research, New Delhi

	955.49
	191.48
Development Grant	495.45
Total	

4. Departments of Government of India

GOI-National Agriculture Development Programme	295.60
GOI-National Livestock Mission scheme	200.00
GOI - Agencies (MoFPI, Ministry of Ayush, DBT, DST)	896.03
Total	**1391.63**

5. Other Agencies 102.30

Grand Total Expenditure 28326.26

Split up of Grand Total Expenditure

Sl. No.	Details	(₹ in lakhs)
1.	Pay and allowances (including pension)	17670.77
2.	Recurring contingencies	5134.93
3.	Library books and Journals	155.02
4.	Non-recurring	5365.54
	Grand Total Expenditure	**28326.26**

12. PUBLICATIONS

Abstract

1.	No. of Research articles	921
2.	No. of Popular articles	761
3.	No. of Books / Manuals	19

Details of selected publications (NAAS rating more than 6) :

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Gowthaman V., S.D. Singh, K.Dhama, P.Srinivasan, S.Saravanan, T.R. Gopala Krishna Murthy and M.A.Ramakrishnan, 2017. Molecular survey of respiratory and immunosuppressive pathogens associated with low pathogenic avian

newcastle disease viruses in commercial

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on the biomass yield and nutritive value of low cost hydroponic fodder maize. Ind. J. Anim. Sci., 87 (11): 1418 – 1419

Ilavarasan R. and Robinson J.J. Abraham,

nutritional composition of three way

at slaughter. Ind. J. Anim. Res., 52(3): 464-469

Jaisree S., R.P.Aravindh Babu, P.Roy and M.G.Jayathangaraj, 2017. Fatal *Peste des Petits* Ruminants disease in Chowsingha. Transboundary and emerging diseases DOI: 10.1111/tbed.12694

Kalpana Devi R., S.Vasantha, A.Panneerselvam, N.V.Rajesh, N.Jeyathilakan and R.Venkataramanan, 2018. *Gastrothylax crumenifer*: Ultrastructure and histopathology study *Microlepia speluncae* (L.) Moore. J. App. Anim. Res., 46 (1):427-434

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