

KERALA VETERINARY AND ANIMAL SCIENCES UNIVERSITY, POOKODE

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ANNUAL REPORT 2017-18

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Kerala Veterinary & Animal Sciences University
Pookode, Wayanad

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ANIL X IAS
Vice Chancellor (i/c)

Message



I am pleased to present the Annual Report of Kerala Veterinary and Animal Sciences University for the year 2017-18. The report brings together the academic, research, entrepreneurship and extension activities, and physical infrastructure during the year.

This year, the University has been recognised by the Chancellor as the best Emerging Young University for its outstanding contributions in terms of academic performance, teaching, pedagogy methods, students' profiles and governance. The University continues to offer quality education and training that meets the expectations of the livestock and dairy industry and the general populace. This is evident from the variety of programmes on offer, which are built within curricula and prepared in consultation with the stakeholders. Spectacular accomplishments like start-ups, student entrepreneurship, village adoption programmes, launch of technology business incubation centres are highly appreciable. Plans are well advanced across campuses for enhancements to our infrastructure, teaching and research facilities and other initiatives to positively impact the student experience.

The good performance of the University is attributed to the commitment and dedication of staff who worked tirelessly to support management in achieving University objectives. An increased focus on interdisciplinary collaborations with global institutions and Universities are a priority of the University to scale up its benchmark of efficiency and performance to make it really Centre of excellence comparable to the best in the field.

Faithfully Yours

Pookode
16th August 2018

Faithfully Yours

Anil X. IAS

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About the University

Kerala Veterinary and Animal Sciences University established by law of the Kerala state (Act 3 of 2011) is a public funded University with headquarters in Pookode, Wayanad. The landed assets of KVASU come to about 866.52 acres. The powers of the University are vested in its authorities –the Management Council Chaired by the Chancellor, the Board of Management (Board) and Academic Council chaired by the Vice Chancellor and its officers. The ex-officio members include the Chancellor, Vice Chancellor, Registrar, Finance Officer, Directors and Deans. The academic staff comprise of Professors, Associate Professors and Assistant Professors apart from research fellows and scholars at various phases of instruction or research. The functions and powers of these officers are defined in the University Act. The University now has faculty occupancy of 77%, 2240 students and the academic activity is supported by an administrative cum farm staffing of nearly 300.

The territorial jurisdiction of the University extends to the whole of the state of Kerala. The University encompasses three faculties- the Faculty of Veterinary and Animal Sciences, the Faculty of Dairy Science and Faculty of Poultry Science; with eight constituent colleges-

- College of Veterinary and Animal Sciences, Mannuthy, Thrissur
- College of Veterinary and Animal Sciences, Pookode Wayanad
- College of Dairy Science and Technology, Mannuthy, Thrissur
- College of Dairy Science and Technology Pookode Wayanad,
- College of Dairy Science and Technology, Chettachal Thiruvananthapuram
- College of Dairy Science and Technology, Kolahalamedu, Idukki
- College of Avian Sciences and Management, Thiruvazhamkunnu, Palakkad
- College of Food Technology, Thumburmuzhy, Palakkad

The University has one affiliated college, Sarathi Institute of Veterinary & Animal Sciences, Thaliparamba, Kannur.

The University has wide network of instructional and research farms spread throughout the state, which include the instructional livestock farms attached to College of Veterinary and Animal Sciences, Pookode and Livestock Farm and Fodder Research & Development Scheme at Mannuthy, Livestock Research Station, Thiruvazhamkunnu, Palakkad, University Poultry and Duck Farm, Mannuthy, Centre for Pig Production and Research, Mannuthy, Goat and Sheep Farm, Mannuthy, Cattle Breeding Farm, Thumburmuzhy and Base Farm, Kolahalamedu. KVASU hosts the All India Co-ordinated Research Project on Poultry, Centre for Advanced Studies in Poultry Science and Centre for Advanced Studies in Animal Breeding and Genetics at Mannuthy. The recent development in the inter-disciplinary initiatives of the University is the establishment of five schools and seven centres, an emerging academic feature of importance. They are School of Bio-Energy studies and farm waste management, School of Applied Production and Biotechnology, School of Zoonosis, Public Health and Pathobiology, School of New Media and Research, School of Animal Nutrition and Feed Technology, Centre for Animal Adaptation to Environment and

Climate Change studies, Centre for Ethno pharmacology, Centre for Livestock Development and Policy Research, Centre for Small Laboratory Animal Production, Central Instrumentation Laboratory and central store. Centre for Wildlife Studies and Centre for One Health Education, Advocacy, Research and Training (COHEART) are located at Pookode, Wayanad. The Centre for Livestock Policy Research is located in Thiruvananthapuram, the State capital along with Regional Research Training Centre. The University offers its services through Teaching Veterinary Clinical Complex at College of Veterinary and Animal Sciences, Pookode, Peripheral Veterinary Clinic and Entrepreneurship Centre, Kakkavayal, Wayanad, Veterinary Hospital at Kokkalai, Thrissur and Veterinary Hospital Complex at Mannuthy. Products from University Meat Plant and Dairy Plant at Mannuthy offers quality assured livestock products to public. The products developed as part of KVASU Start up project are being marketed under the brand 'kasavu'.

Our mandate:

A reading of the Act and Statutes bestows the responsibility of leading the State with innovative research and education in Animal agriculture and Veterinary sciences including all supporting and allied subjects including management and policy sciences. An added aspect is the responsibility to train farmers to enhance productivity and profit in animal agriculture, promote factor productivity by entrepreneurship acting individually and as concerns, if necessary by forming companies. Focus on entrepreneurship; actable research and commercialization of research productivity are the innovative aspects of institutional design.

Funds and funding

KVASU is funded primarily by the legislature of the state of Kerala as grants in aid in its annual budgets. Apart from Govt. of Kerala, KVASU receive funds from Indian Council for Agricultural Research (ICAR), Externally Aided Projects from other agencies and internal revenue of the University.

Academic activity:

The University has introduced a score plus academic programmes resulting in its enrollment jumping to 2240 from a mere 687 in 2011 when it was formed.

Course									
CVAS Mty	CVAS , Pkd	CVAS Mty	CVAS, Pkd	CDST Chettachal	CDST Kolhalamedu	CFT Thumbur muzhy	CASM Thiruvazh amkunnu	Affiliated college	Total
862	768	254	71	68	19	64	119	15	2240

The BVSc and AH programme providing a much in need shortage set of professionals in India has been enhanced to 260 seats (140+120) by mustering faculty strength and augmenting facilities by utilizing Rs 5 crores in 2014-15. The B Tech programme in dairy science has an intake capacity of total 100 seats spanning four campuses (40+20+20+20). A third major undergraduate

programme has been commenced in poultry production and management (PPBM) with an intake capacity of 50 at Thiruvazhamkunnu and 25 at Pookode. The BTech. Food Technology has intake capacity of 20 seats.

Collaborations

KVASU signed MOU with National Institutes viz. Kerala State Council for Science Technology and Environment- Biomedical Research, biotechnology, bioinformatics and Climatology, Kerala Forest Research Institute- Wildlife Studies and Conservation Medicine, Kottackal Aryavaidyasala- Medicinal Plant Research - Ethno Veterinary Medicine, National Meat and Poultry Processing Board- Man Power Development and Training, Department of Biotechnology, Government of India, Bhabha Atomic Research Centre-Preservation of Meat and Meat Products by Irradiation, Amrita University- Technology enabled learning.

The University has been able to develop healthy liaisoning and strong rapport with state level institutions like Animal Husbandry Department, Dairy Development Department, NABARD and established collaborations with State Planning Board and Kerala State Council for Science Technology and Environment. The University has collaboration for academic, research and extension programmes with institutions of international reputation such as University of Edinburgh, University of Western Australia (UWA), and University of Calgary. Three workshops and a National Conference on New Teaching Methodologies in Veterinary education focusing on Problem Based Learning (PBL) were conducted in collaboration with these institutions. The students and faculty exchange programmes were conducted. KVASU is an active partner in the World Wide Universities Network on “Global Food Security”. Livestck Farm, Thiruvazhamkunnu farm of KVASU has been identified as one among three farms selected for the study, the others being the Rothamstead farm in UK and the Pingelly farm in Western Australia. KVASU becomes a partner in the Global Innovation Initiative from 2014 to 2016 and gets fund for faculty exchange to University of Bristol, University of Wisconsin USA in addition to organizing workshops in India.

NABL/ISO Accredited Labs of KVASU :

KVASU-Labs are implementing the ISO standard, "General Requirements for the Competence of Testing and Calibration Laboratories, ISO/ IEC IIOZS: 2005" for obtaining accreditation by NABL. The systems as mandated by the standard have been adopted in the selected labs.

Water Testing Laboratory, Dept. of Veterinary Public Health, COVAS, Mannuthy
Central Instruments Laboratory, CVAS, Mannuthy
Feed Analytical Laboratory, Dept. of Animal Nutrition, CVAS, Mannuthy
Food Quality Assurance Laboratory, Dept. of Veterinary Public Health, CVAS, Pookode
Molecular wildlife forensic and disease diagnostic laboratory, Pookode
Feed Analysis Lab, Dept. of Animal Nutrition, CVAS, Pookode
Molecular wildlife forensic and disease diagnostic laboratory, Pookode
Feed Analysis Lab, Dept. of Animal Nutrition, CVAS, Pookode

From the Office of Vice Chancellor

The functions and duties of the Vice Chancellor are defined in Section 13 of the Act 2010. The Vice Chancellor shall exercise general control over the affairs of the University and shall be responsible for the due maintenance of discipline in the University.

Sri. Anil Xavier I.A.S

Secretary Department of Animal Husbandry, Government of Kerala as Vice Chancellor
(i/c)(From 04/10/2016 onwards)

He shall be Ex-officio chairman of Management Council, Board of Management, and Academic Council. He shall ensure that all the provisions of the Act, the statutes, and the Regulations are observed and shall have all the powers necessary for that purpose.

He shall correspond on policy matters with Governments in the Centre and state, offices of His Excellency the Chancellor, Hon'ble Vice-Chancellor of other Universities, High Government officials and other dignitaries.

The office of the Vice-Chancellor also plans for the development of various University units and aids advice to the Faculty Deans and construction wing to carry out expansion and modification plans, University physical structure, identify areas of academic development such as identify new courses and academic programmes and implementing them in various faculties.

In addition to the statutory functions, the office of the Vice-Chancellor shall also function as a facilitator or arbitrator for grievances and redressed by registering and preferring complaints to the Grievance Redressed Committee and also the University Appellate Tribunal.

Vice Chancellor has in exercise of duties attended several conclaves, meetings and programmes representing the University with Hon'ble Chancellor, Hon'ble Pro Chancellor, Agricultural Production Commissioner and with UGC, ICAR, Indian Veterinary Council and AIU and several funding agencies like NABARD, RIDF etc.,

Vice Chancellor was keen and resolute for continued collaboration with International Universities like University of Calgary Canada, University of Edinburgh UK, University of Connecticut US, Universities of Bristol and Leeds, England and Western Australian University in several fields of Academics and Research.

Vice-Chancellor has exercised his Statutory powers in restructuring of Non-teaching staff positions and re appropriating various cadre sanctioned posts to constituent colleges and stations of the University.

Vice Chancellor was so instrumental in gaining continued accreditation to the University, CoVASMannuthy and CoVAS Pookode from ICAR.

Vice Chancellor is taking steps to continue ventures in collaboration with several Organizations like KSIDC limited, National Dairy Development Board, MILMA and KottakkalAryaVidyasala etc. He has been spear heading and instrumental in collaboration of activities with the said organizations in respective fields during this period.

Vice-Chancellor was keen and perseverant in maintaining number of seats in various courses in existing as well as the new colleges like College of Avian Sciences and Management at Thiruvazamkunnu, Dairy Science CollegeCettachal, Thiruvananthapuram and College of Food Technology, Thumboormuzhi

Office of the vice chancellor

The office of the Vice-Chancellor consists of the Private Secretary to Vice-Chancellor, usually in the cadre of Assistant Registrar, Officer on Special Duty to the Vice-Chancellor (normally Assistant/Associate Professor) other staff supporting them such as Assistant, Personal Assistant, Class IV, etc.,

From Registrar's Office

The Kerala Veterinary and Animal Sciences University came into existence in 14th June 2010 as per the Act (3 of 2011) of State Legislature of Kerala. The Headquarters of the University is at Pookode, Lakkidi P.O., Wayanad District. The University award degrees (F-9-13/2011 (CPPP1/PU) dated 12-08-2011) as per the UGC Act 1956. The Indian Council of Agricultural Research and the Veterinary Council of India have also recognised UG/PG education, research and extension programme of the University.

The function and duties of the Registrar is defined in the section 14 of the Act 3, 2010. Registrar is the Chief Administrator and Vigilance Officer of the University, Custodian of records, common seal and such other property of the University as the Management Council and Board of Management entrust him. The administrative hierarchy of the Registry is as follows:

Registrar>Joint Registrar>Deputy Registrar>Assistant Registrars – Labour Officer>Section Officers>Assistants.

Periodic motivation trainings for all categories of Officers, Staff and Labourers have been arranged. Heterocategory working groups formed with Scientists, Administrative & Technical Staff and Labourers for formulation and implementation of Revolving Fund Project for revenue generations are functioning. In the adopted tribal colony - Narangakandi, Wayand programmes for their empowerment are continuing. A model small holder integrated farming system for self-sufficiency of families is under propagation. The Integrated University Management System for e-governance of University is continuing its implementation.

University has been chosen as the recipient of the ***“Emerging Young University Award for the year 2016-17”*** in lieu of the exemplary achievements in the relevant parameters specified by the Selection Committee. These range across a diverse set that comprehensively reflect the quality and scope of delivery of higher education by the Universities and include Academic Performance, Teaching, Pedagogy Methods, Students’ Profiles and Academic Governance among others. University has received the prize money of Rs. 1 Crore together with a citation and trophy being the Award from Shri. Justice (Retd.) P. Sathasivam, Hon’ble Governor of Kerala & Chancellor of the Universities of Kerala on 16th January 2018.

Details of the meeting of the various University authorities held during 2017-18

Meetings of the Board of Management held during the period 2017-18			Meetings of the Management Council held during the period 2017-18	
Sl. No.	No. of the Meeting	Date	No. of the Meeting	Date
1	52 nd Meeting	29-06-2017	24 th Meeting	30-06-2017

2	Special Meeting	18-08-2017		Special Meeting	18-08-2017
3	53 rd Meeting	29-08-2017		25 th Meeting	30-08-2017
4	Special Meeting	09-11-2017		Special Meeting	09-11-2017
5	54 th Meeting	01-12-2017		26 th Meeting	01-12-2017
6	55 th Meeting	27-03-2018		27 th Meeting	27-03-2018
Board of Management : 6 Nos, Management Council : 6 Nos					

Meetings of the Academic Council held during the period 2017-18		
Sl. No	No. of the Meeting	Date
1	22 nd Academic Council	29.06.2017
2	23 rd Academic Council	30.11.2017

Finance Wing

The University has received an amount of Rs.77.122 Crore as Non Plan grant from Government for the Financial Year 2017-18. University has incurred a total expenditure of Rs.91.344 Crore towards Salary, Wages, Pension and for other essential items under Non Plan. The details of expenditure incurred under Non Plan are furnished below.

1	Salary and wages	54,99,82,475
2	Labourers Pension	1,87,34,706
3	General Pension	15,26,10,398
4	Other expenditure	19,21,16,421
TOTAL		Rs.91,34,44,000/-

An amount of Rs.14,22,26,000/ has been met from Internal revenue to meet the essential Non Plan expenditure of the University apart from Grant –in-Aid received.

The details of fund received under Plan, ICAR Development Grant, RIDF,EAP,NAIP etc..are detailed below.

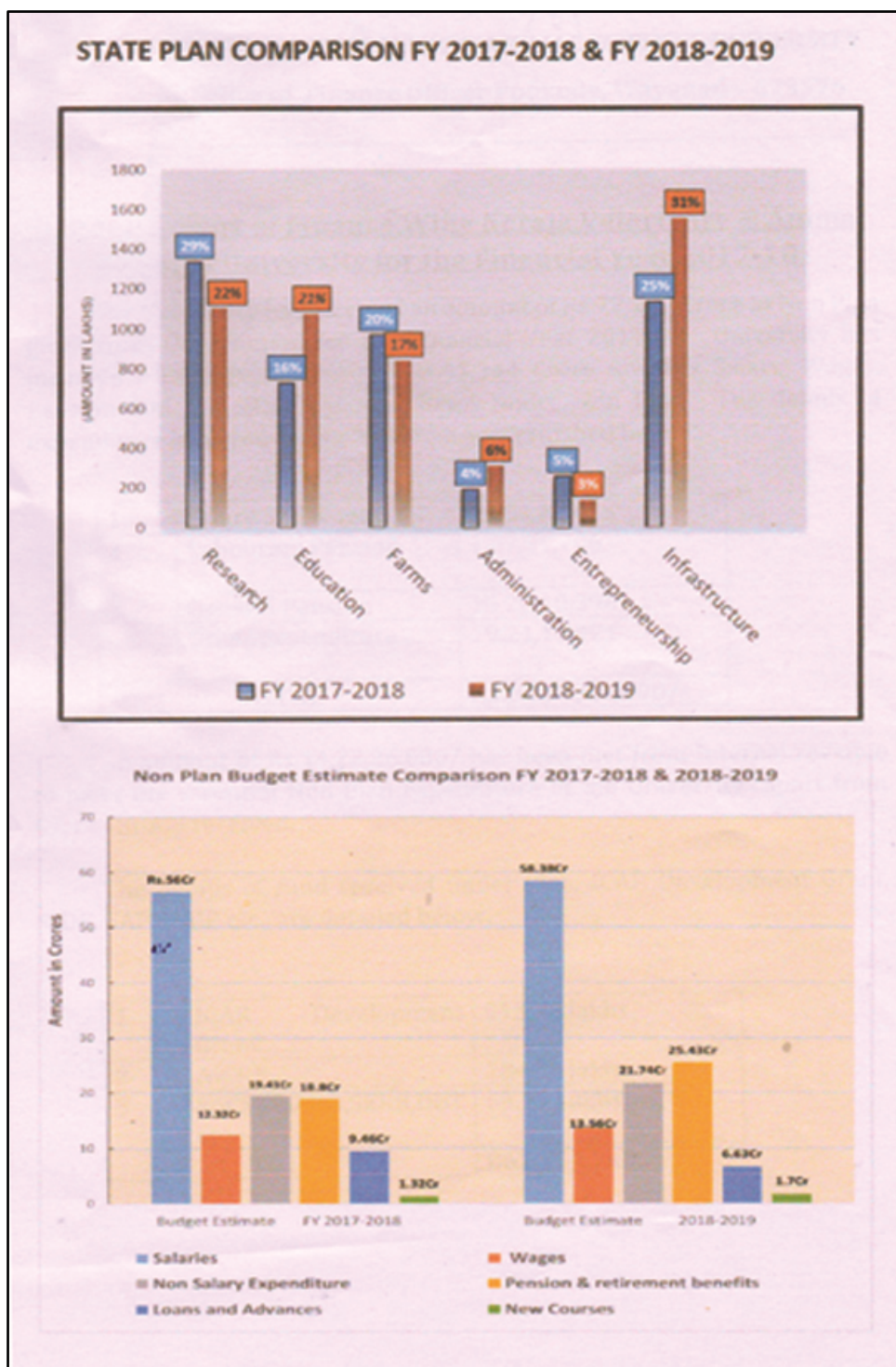
1	ICAR Development Grant	513.58 lakhs
2	AICRP	284.38 lakhs
3	KSCSTE, AHD, SERB, DBT etc.	64.29 Lakhs
TOTAL		862.25 Lakhs

The particulars of Provident Fund and other Welfare fund disbursed are shown below.

1	WFBS	1,02,959
2	WWFS	38,114
3	FBS	2,84,744
4	WFS	1,07,281
5	GPF closure	3,71,36,712
6	GPF Advance	3,97,53,294
7	WPF Closure	41,26,456
8	WPF Advance	1,05,89,943

University has received an amount of Rs. 34.25 Crores towards Plan fund for the Financial Year 2017-18 and 8 Crores was allocated in E-Lams.

As per the revised budget estimate total annual receipt of the University is Rs.179.89 Crore and estimated expenditure is Rs.202.04 leaving a deficit of Rs.22.15 Crore. University has imparted training programmes on the new accounting format –AIMS to all station heads and administrative staff during the period. A comparison on Non Plan and State Plan budget estimate for the years 2017-18 and 2018-19 are also enclosed here with.



DIRECTORATE OF ACADEMICS AND RESEARCH

The Directorate of Academics and Research is headed by the Director (Academic and Research) and is assisted by an Associate Director of Research, one Joint Registrar, two Assistant Registrars, two Section Officers, ten Section Assistants and two Computer Assistants. A separate wing under the Controller of Examinations is also functioning under the Directorate and is supported by the staff of the Academic section. The Directorate deals with all the academic activities of the University as well as research programmes. A Monitoring and Evaluation Cell with a convener and supporting staff also is functioning under the Directorate for the close monitoring and evaluation of various projects run by the faculty in the University.

Academic programmes (2017-18)

The Kerala Veterinary and Animal Sciences University (KVASU) offers Doctoral, Postgraduate, Undergraduate, PG Diploma, Diploma and Certificate programmes in various disciplines under the Faculty of Veterinary and Animal Science, Dairy Science and Technology and Poultry Science, in addition to various Technology Enabled Distance Learning Programmes. Altogether there are 40 courses offered by the University including the conventional courses.

1. Academic Programmes in various colleges

a. College of Veterinary & Animal Sciences, Mannuthy

1. PhD Programme in Veterinary and Animal Sciences
2. PhD Programme Climate Change in Animal Agriculture
3. M.V.Sc Programme.
4. M.Sc. in Biostatistics
5. M.Sc. in Quality Systems in Dairy Processing
6. M.Sc. in Bio-Chemistry and Molecular Biology
7. M.Sc.in Applied Microbiology
8. M.Sc. in Animal Biotechnology
9. M.Sc. in Animal Science
10. B.V.Sc& AH Programme
11. Post Graduate Diploma in Climate services in Agriculture
12. Post Graduate Diploma in Climate services
13. Diploma in Laboratory Techniques
14. Diploma in Poultry Production
15. Diploma in Dairy Science
16. Diploma in Feed Technology

b. College of Veterinary & Animal Sciences, Pookode

1. PhD Programme in Veterinary and Animal Sciences
2. Ph.D. Programme in Biosciences
3. M.V.Sc Programmes
4. B.V.Sc& AH Programme
5. BSc. Poultry Production and Business Management
6. M S Wildlife Studies

7. Post Graduate Diploma in Veterinary Cardiology
8. Post Graduate Diploma in Veterinary Anaesthesiology
9. Diploma in Dairy Science
- c. College of Dairy Sciences & Technology, Mannuthy, Thrissur**
 1. M. Tech (Dairy Technology, Dairy Microbiology and Dairy Chemistry)
 2. B.Tech (Dairy Technology)
- d. College of Dairy Sciences & Technology, Pookode, Wayanad**
B.Tech (Dairy Technology)
- e. College of Dairy Science & Technology, Chettachal, Thiruvananthapuram**
B.Tech (Dairy Technology)
- f. College of Dairy Science & Technology, Kolahalamedu, Idukki**
B.Tech (Dairy Technology)
- g. College of Food Technology, Thumburmuzhy, Thrissur**

B.Tech (Food Technology)

- h. College of Avian Sciences & Management Thiruvazhamkunnu, Palakkad**
B.Sc Poultry Production & Business Management
- i. Sarathi Institute of Veterinary & Animal Sciences, Thaliparamba, Kannur (Affiliated college)**

Diploma in Dairy Science

Technology enabled distant learning programmes (Offered by the University faculty)

1. Post Graduate Diploma in Livestock Agri Entrepreneurship and Food Safety and Security Management
2. Post Graduate Diploma in One health
3. Post Graduate Diploma in Informatics and Management
4. Post Graduate Diploma in Ethnopharmacology
5. Post Graduate Certificate Programme in Farm Journalism
6. Post Graduate Certificate in One Health
7. Post Graduate Diploma in Toxicologic Pathology
8. Post Graduate Diploma in Food Safety and Quality Assurance
9. Post Graduate Diploma in Therapeutic Management of Infectious Diseases of Pet Animals and Pet Birds
10. Post Graduate Certificate Course in Veterinary Homeopathy
11. Post Graduate Certificate in Community based disaster Management
12. Diploma in Integrated Farming Systems

Certificate Programmes

1. Certificate course in Animal Handling
2. Certificate course in Livestock Production
3. Certificate programme in Histologic and Anatomy Museum techniques

2.Total Seats, student enrolment and student strength (2017-18)

Sl.No	Course name	Total Admitted
1	Ph.D.	19
2	M.V.Sc	111
3	M.Tech.	9
4	M.Sc. in Quality Control in Dairy Industry	6
5	MS in Wildlife Studies	3
6	M.Sc. in Biochemistry and Molecular Biology	15
7	M.Sc. in Applied Microbiology	4
8	M.Sc. in Animal Biotechnology	4
9	B.V.Sc & A.H	216
10	B.Tech (Dairy Technology)	73
11	B.Tech (Food Technology)	18
12	B.Sc Poultry production and Business Management	73
13	P.G. Diploma in Veterinary Anesthesia	2
14	Diploma in Poultry Production	15
15	Diploma in Laboratory Techniques	20
16	Diploma in Dairy Science	88
17	Diploma In Feed Technology	2

Technology enabled distant courses

Sl. No	Course name	Total Admitted
1.	Post Graduate Certificate Course in Veterinary Homoeopathy	39
2.	PG Diploma in One health	33
3.	PG Diploma in Therapeutic Management of Infectious Diseases of Pet Animals and Pet Birds	25
4.	P.G. Diploma in Ethno pharmacology	2
5.	PG Diploma in Food Safety and Quality Assurance	10
6.	Diploma in Dairy Entrepreneurship	2
7.	Post Graduate Diploma in Poultry Entrepreneurship	2
8.	Post Graduate Diploma in Dairy Entrepreneurship	1

Number of Academic Council Meetings held: - 2

1. 22nd Academic Council on 29.06.2017
2. 23rd Academic Council on 30.11.2017

Results Published (2017-18)

Ph.D. Programmes	- 7
MVSc Programmes	- 46
MS/ MSc Programme	- 14
B.V.Sc Programmes	- 112
B Tech Programmes	- 38
Post Graduate Diploma Programme	- 69
Diploma Programme	- 87
Post Graduate Certificate Programme	- 5
Certificate Programme	- 78

Scholarships awarded

Ph.D.:- Senior Research Fellowship @ Rs.5000/- per month to all student admitted except deputed candidates and Research grant @ Rs. 50000/-

1. M.V.Sc & M.Tech:- Junior Research Fellowship @ Rs. 4000/- per month to all students admitted except deputed candidates and Research grant @ Rs, 25000/-
2. M.Sc/MS:- Assistantship @ Rs. 5000/- to two students in each discipline or proportionate to number of students admitted.
3. KVASU Merit Scholarship:- @ Rs. 1500/- per semester for encouraging 10% meritorious under graduate students to prosecute their studies in the university.
4. KVASU Merit cum Means Scholarship:- @ Rs. 20,000/- per annum, KVASU has been awarding KVASU Merit Cum Means scholarship to economically backward and meritorious UG students other than SC/ST of the KVASU.
5. Internship allowance and Study Tour allowance are also provided to the students.

Residency Programme

M.V.Sc./M.Tech. cum Residency Programme was conducted in subjects which comes under the areas of Clinical, Para clinical, Livestock and Poultry Production and Dairy Technology. Sr. Residency can be extended to 4th and 5th year based on the recommendation from the Head of hospital and Dean concerned and approval from KVASU. The students will be paid fellowship at the following consolidated rates.

- First year (1st and 2nd semester) Rs. 20,000/- per month
- Second year (3rd and 4th semester) Rs. 25,000/-per month

- Third year (5th and 6th semester) Rs. 30,000/-per month
- Fourth year Rs. 35,000/-per month
- Fifth year (Optional) Rs. 40,000/- per month

Number of resident positions will be allotted as per requirement of the Heads of Departments and only on completion of programme of existing residents in those departments.

Commenced a certificate programme in commercial dairying.

Participated in the Chancellor's Award and Emerging Young University Award and won the "Best Emerging Young University Award – 2017".

Participated in the National Institutional Ranking Framework and positioned in the 100-150 roll band.

Research activities (2017-18)

1. Research Policy

The university has its own research policy. The research priorities include increasing productivity of livestock, Enhancing poultry productivity, Improvement of animal genetic resources, Improving nutritional base, Molecular diagnostic and vaccine development, Biotechnology, Improving reproductive efficiency, Disease monitoring and surveillance, Companion animals, Zoonoses, Wild life, Value addition of products and Livestock entrepreneurship. It promotes multidisciplinary research and instill quality in research through competition among faculty. Also focuses on research that promotes sustainable and profitable animal production systems, quality veterinary services, assures food safety and security, animal welfare and ethics and disseminates modern scientific knowledge and skill.

2. Research projects and funding-

The following are the ongoing External Aided Projects (EAPs) in the University funded by different agencies

Sl. No	Funding agency	Total number of projects	Total Outlay (in lakhs)
1.	ICAR	08	593.32
2.	KSCSTE	07	67.48
3.	RKVY	03	1223.05
4.	AHD	03	32.84
5.	ATMA	02	22.17

6.	NABARD	01	8.30
7.	DTRA	01	70.61
8.	DST-SERB	01	37.73
	TOTAL	26	2055.50

Also, there are 34 ongoing revolving fund projects in the University with total seed money of Rs.118.94 lakhs (Rupees one hundred eighteen lakhs and ninety-four thousand only).

3. State plan funding

An amount of Rs.46 crores was sanctioned for the University towards state plan projects for 2017-18 under the following components and an amount of Rs.34.25 crores has been released for the year 2017-18.

Sl No.	Source	Amount Sanctioned for the Year 2017-18 (amount in Lakhs)	Amount Released for the Year 2017-18 (amount in Lakhs)
1	Research	1333.00	880.875
2	Education	725.00	725.00
3	Farms	966.00	805.375
4	Infrastructure	1130.00	639.875
4	Administration	190.00	178.750
5	Entrepreneurship	256.00	195.125
	Total	4600.00	3425.00

4. ICAR Funding

a) ICAR Development Grant (2017-18)

Year	Instalment	Amount (in lakh)
2017-18	First Instalment	31.11
	Second Instalment	82.52
	Third Instalment	72.58
	Fourth Instalment	234.70
Total		420.91

Major share of ICAR Development Grant (2017-18) has been allotted to the colleges under the University for carrying out various development programmes.

b) ICAR Development Grant-Library Strengthening (2017-18).

Year	Instalment	Amount (in lakh)
2017-18	First Instalment	27.00
	Second Instalment	32.00
Total		59.00

Out of this, a total amount of Rs.58.6 lakhs (approximately) has been utilized for the purchase/subscription of Printed Books, Printed Journals, e-Journals and e-books and for digitalization and customization of University Library.

c) Other ICAR Grants

ICAR has also released funds to disburse the following Scholarships to students.

1. National Talent Scholarship - Rs.9.05 lakhs
2. Student READY/RAWE/Internship - Rs.7.02 lakhs
3. Merit-cum –Means (MCM)Scholarship - Rs.0.21 lakhs
4. ICAR Junior Research Fellowship(JRF) - Rs.3.24 lakhs

5. RKVY Funding

The following three projects under RKVY have been submitted to the Government for revalidation for the year 2018-19.

1. Establishing a poultry breeding farm for backyard chicken production at Thiruvazhamkunnu with the balance outlay of Rs.773 lakhs (on going)
2. Improvement on rural livelihood security by establishment of satellite piggery unit in Wayanad District with the balance outlay of Rs.70 lakhs. (on going)
3. Establishment of elite Malabari goat breeding unit for dissemination of superior germplasmwith the outlayof Rs.68.65 lakhs.(New)

6. Organizational Support extended to conduct the following Seminars and conferencesfrom the Office of DAR

1. National Workshop on ‘Ethics and Welfare Concerns in Research for Human and Animal Health’ at CVAS, Pookode.
2. Third Annual Convention of Association of Meat Scientists and Technologists at CVAS, Mannuthy.

3. Veterinarian Convention -2017 at CVAS, Pookode.
4. Seminar on ‘Human Animal Conflicts in Kerala – from Problem Status to Solutions’ at CVAS, Mannuthy.
5. Seminars for Farmers at CVAS, Mannuthy

7. Publications

1. Journal of Veterinary and Animal Sciences-2017(Vol.48, issue I)
2. Guidelines to Prevent research misconduct
3. Academic Programmes-2017-18.

8. NABL

Reassessment of the following NABL labs under the University have been done successfully.

1. Food Quality Assurance Laboratory (CVAS, Pookode)
2. Feed and Fodder Laboratory (CVAS, Pookode)
3. Quality Control Laboratory (Water Policy) (CVAS, Mannuthy)
4. Central Instrumentation Laboratory (CVAS, Mannuthy)
5. Feed Analysis Laboratory (CVAS, Mannuthy)

9. MoU Signed

The University has signed the following MoU related research matters during 2017-18.

1. MoU with the University of Minnasota , USA, as a part of the implementation of the DTRA project entitled “Surveillance and Molecular Epidemiology of especially dangerous respiratory viruses in commercial and backyard poultry and migratory waterfowl in India”
2. MoU with ICAR-Central Research Institute for Dry land Agriculture (CRIDA), Hyderabad as a part of the implementation of the project entitled “Updating the District based Agricultural Contingency Plan” sanctioned by the Department of Agriculture and Cooperation, Ministry of Agriculture and Farmers Welfare, Government of India.

ഇൻഫ്രാസ്ട്രക്ചർ ഡെവലപ്മെന്റ് വിംഗ്

കേരള വെറ്ററിനറി സർവ്വകലാശാലയുടെ പൂക്കോട് കാമ്പസിൽ സ്ഥിതി ചെയ്യുന്ന ഇൻഫ്രാസ്ട്രക്ചർ ഡെവലപ്മെന്റ് വിംഗ് സർവ്വകലാശാലയുടെ അടിസ്ഥാന സൗകര്യങ്ങളുടെ നിർമ്മാണം, പരിപാലനം, വിഭാവനം, വികസനം എന്നീ കർത്തവ്യങ്ങൾ നിർവ്വഹിച്ചു വരുന്നു. എക്സിക്യൂട്ടീവ് എഞ്ചിനീയർ നേതൃത്വം വഹിക്കുന്ന പ്രസ്തുത ഓഫീസ് സാങ്കേതിക ഭരണ വിഭാഗങ്ങളിൽപ്പെട്ട ജീവനക്കാർ ഉൾപ്പെടുന്നു. മണ്ണുത്തി കാമ്പസിൽ സ്ഥിതി ചെയ്യുന്ന ഇൻഫ്രാസ്ട്രക്ചർ ഡെവലപ്മെന്റ് വിംഗ് പൂക്കോട് കാമ്പസിൽ സ്ഥിതി ചെയ്യുന്ന ഇൻഫ്രാസ്ട്രക്ചർ ഡെവലപ്മെന്റ് വിംഗിന്റെ ഒരു ഭാഗമായി നിലകൊള്ളുന്നു.

സർവ്വകലാശാലയുടെ ചില പ്രവൃത്തികൾ കേന്ദ്ര പൊതുമരാമത്ത് വകുപ്പിനെ ഏൽപ്പിച്ചത് പൂർത്തീകരിച്ചു. ബി.എസ്.എൻ.എൽ - ന്റെ സിവിൽ വിഭാഗം അവരെ ഏൽപ്പിച്ചിട്ടുള്ള പ്രവൃത്തികൾ പൂർത്തീകരിച്ചു വരുന്നു. സർവ്വകലാശാലയുടെ എഞ്ചിനീയറിംഗ് വിഭാഗവും കേരള പൊതുമരാമത്ത് മാനദണ്ഡങ്ങൾക്ക് വിധേയമാക്കി കൊണ്ട് പ്രവൃത്തികൾ നടത്തി വരുന്നു. പൂക്കോട്, മണ്ണുത്തി കാമ്പസുകളിൽ ജല/വൈദ്യുത വിതരണ പ്രവൃത്തികളും നടത്തിക്കൊണ്ടിരിക്കുന്നു. 2017 - 18 വർഷത്തിൽ താഴെ വിരിക്കുന്ന പ്രവൃത്തികൾ പൂർത്തീകരിച്ചിട്ടുള്ളതാണ്.

പൂക്കോട് കാമ്പസിൽ, വിവിധ വകുപ്പുകളുടെ കെട്ടിട പുനരുദ്ധാരണവും അറ്റകുറ്റപ്പണികളും പുതിയതായി നിർമ്മിച്ച സി.ഡി.എസ്.ടി ക്ലസ്റ്റ് മുറിയുടെ വൈദ്യുതീകരണം, 20 കെ.വി.എ/15 കെ.വി.എ ഡീസൽ ജനറേറ്റർ സെറ്റിന്റെ വിതരണവും, സ്ഥാപിക്കലും, ഐ.സി.എ.ആർ. ഗ്രാന്റുപയോഗിച്ച് ലേഡീസ് ഹോസ്റ്റലിനു സമീപം വിദ്യാർത്ഥികൾക്ക് താമസസൗകര്യം ഒരുക്കൽ, സർവ്വകലാശാലയുടെ വിവിധ വകുപ്പുകളിൽ ഫാബ്രിക്കേഷൻ പ്രവൃത്തി ചെയ്തൽ, ലേഡീസ് ഹോസ്റ്റലിന് സമീപത്തുള്ള പ്രീ ഫാബ്രിക്കേറ്റഡ് വില്ലയ്ക്ക് ചുറ്റുമതിൽ നിർമ്മാണം, വിവിധ വകുപ്പുകളിലെ കെട്ടിടങ്ങളുടെ നവീകരണം, സർവ്വകലാശാല വിൽപ്പന കേന്ദ്രത്തിന്റെ നവീകരണ പ്രവൃത്തികൾ, വിദ്യാർത്ഥികളുടെ ഹോസ്റ്റലിൽ ഫർണിച്ചർ നൽകൽ, കാമ്പസിലെ തെരുവു വിളക്കുകളുടെയും 400 കെ.വി.എ സബ്സ്റ്റേഷന്റെയും അറ്റകുറ്റപ്പണികൾ മുതലായവ നടപ്പു വർഷത്തിൽ പൂർത്തീകരിച്ചിട്ടുണ്ട്. കൂടാതെ ടൈപ്പ്, v/2, v/3 & v/4 എന്നീ ക്വാർട്ടേഴ്സുകളിൽ ഒന്നാംനില നിർമ്മാണ പ്രവൃത്തികൾ, ആൺകുട്ടികളുടെ ഹോസ്റ്റലിന്റെ ഡൈനിംഗ് ഹാളിന്റെയും അടുക്കളയുടെയും നവീകരണ പ്രവൃത്തികൾ, ടൈപ്പ് ക, ടൈപ്പ് കക ക്വാർട്ടേഴ്സുകൾ, മിൽക്കിംഗ് യൂണിറ്റ് കെട്ടിടം എന്നിയുടെ ഒന്നാംനില നിർമ്മിക്കൽ, അക്കാദമിക് ബ്ലോക്ക് 2 - ൽ 2, 3 ഭാഗങ്ങളുടെ മേൽക്കൂരയുടെ കേടുപാടുകൾ തീർക്കൽ പണി വളർത്തു കേന്ദ്രത്തിന്റെ ഷെഡ് നിർമ്മാണം എന്നീ പ്രവൃത്തികൾ പുരോഗമിച്ചു വരുന്നു.

സർവ്വകലാശാലയുടെ മണ്ണുത്തി കാമ്പസിൽ വി.കെ.ഐ.ഡി.എഫ്.റ്റി കോളേജ് കെട്ടിടം, ടി.വി.സി.സി (ഗ്രൗണ്ട് ഫ്ലോർ) കെട്ടിടം, എ.ഐ.സി.ആർ.പി/ടി.വി.സി.സി കെട്ടിടത്തിന്റെ സിവിൽ പ്രവൃത്തിക്കും ഫാബ്രിക്കേഷനും പണി ഫാമിന്റെ നവീകരണ പ്രവൃത്തികൾ സി.പി.പി.ആർ കെട്ടിടത്തിന്റെ നവീകരണ പ്രവൃത്തികൾ, ജലവിതരണ പ്രവൃത്തികൾക്കുള്ള പൈപ്പ് ലൈൻ/പമ്പിംഗ് സ്റ്റേഷൻ എന്നിവയുടെ നവീകരണം, ടി.വി.സി.സി കെട്ടിടത്തിനടുത്തുള്ള കാമ്പസ് റോഡിന്റെ ഉപരിതലം പുതുക്കൽ, ക്ലസ്റ്റർ ടൈപ്പ് കെട്ടിടങ്ങൾ, സെൻട്രൽ ഇൻസ്ട്രുമെന്റേഷൻ ലാബ് എന്നിവയുടെ ഇലക്ട്രിക്കൽ റിപ്പയർ പ്രവൃത്തികൾ, ലേഡീസ് ഹോസ്റ്റലിനടുത്തുള്ള പ്രീഫാബ്രിക്കേറ്റഡ് വില്ലയുടെ ചുറ്റുമതിൽ നിർമ്മാണം, എൻ.സി.എൽ - നു വേണ്ടി ഹോഴ്സ് ജമ്പിംഗ് ലൈൻ & എൻട്രി ഗേറ്റ് എന്നിവ പൂർത്തീകരിച്ചിട്ടുള്ളതാണ്.

കൂടാതെ പി.ജി ലേഡീസ് ഹോസ്റ്റലിൽ മെസ്സ് ഹാളിന്റെ മേച്ചിൽ ജീറ്റ് മാറ്റൽ, വെയ്സ്റ്റ് ഡെസ്പ്പോസൽ മാനേജ്മെന്റ് സിസ്റ്റം, ഡയറി സയൻസ് ഡിപ്പാർട്ട്മെന്റിലെ വിവിധ റിപ്പയർ പ്രവൃത്തികൾ കാമ്പസ് റോഡുകളുടെ അറ്റകുറ്റപ്പണികൾ മുതലായവ നടപ്പിലാക്കി വരുന്നു.

തിരുവാഴാംകുന്ന് കാമ്പസിൽ ഹാച്ചറി കെട്ടിടം, മനുവർ ഷെഡിന്റെ നിർമ്മാണം, ട്രെയിനിംഗ് ഹോസ്റ്റലിന്റെ നിർമ്മാണം, കന്നുകാലി ഗവേഷണ കേന്ദ്രങ്ങളിൽ എക്സിപ്പിരിമെന്റൽ ചിക്കൻ ഷെഡ് നിർമ്മാണം, മനുവർ സ്റ്റോർ നിർമ്മാണം, എൽ.ആർ.എസ് കെട്ടിടത്തിന്റെ റിപ്പയർ പ്രവൃത്തികൾ, ലാബ് നവീകരണം, കാത്തിരിപ്പ് കേന്ദ്രത്തിന്റെയും, ക്യാർട്ടേഴ്സിന്റെയും റിപ്പയർ പ്രവൃത്തികൾ ലാബിന്റെ അലുമിനിയം പാർട്ടീഷൻ പ്രവൃത്തിക്കും, സീലിംഗ് ചെയ്യലും, ടവർ സീലായുടെ നിർമ്മാണം, കിണർ നിർമ്മാണം എന്നീ പ്രവൃത്തികൾ പൂർത്തീകരിച്ചു. കന്നുകാലി ഷെഡിന്റെ നവീകരണ പ്രവൃത്തികളും എലിവേറ്റഡ് ചിക്കൻ ബ്രീഡിംഗ് ഷെഡിന്റെ നിർമ്മാണവും പുരോഗതിയിലാണ്.

തുമ്പൂർമുഴി കാമ്പസിൽ ഫോഡർ പ്രൊട്ടക്ഷൻ പ്രവൃത്തികൾ പൂർത്തീകരിച്ചു. സി.എഫ്.റ്റി കെട്ടിടത്തിന്റെ രണ്ടാം നില നിർമ്മാണം, വൈദ്യുതീകരണ പ്രവൃത്തികൾ, മൂന്നാം നിലയിൽ ജി.ഐ ജീറ്റ് റൂഫിംഗ് ചെയ്തത്, 3 ക്യാർട്ടേഴ്സുകളുടെ റിപ്പയർ പ്രവൃത്തികളും പുതിയ റൂഫിംഗ് നൽകൽ എന്നീ പ്രവൃത്തികൾ പുരോഗതിയിലാണ്. കൂടാതെ, പുതുതായി ആരംഭിച്ച സി.എഫ്.ടി കോളേജിനാവശ്യമായ സൗകര്യങ്ങൾ ഒരുക്കി വരുന്നു.

കോലാഹലമേട് ബേസ്ഹാമിൽ നിലവിലുള്ള കന്നുകാലി ഷെഡിന്റെ നവീകരണ പ്രവൃത്തികൾ, ഫീഡ് സ്റ്റോറിന്റെ മേൽക്കൂര നിർമ്മിക്കൽ എന്നീ പ്രവൃത്തികൾ പൂർത്തീകരിച്ചു. നിലവിലുള്ള ട്രെയിനിംഗ് സെന്ററിന്റെയും, താമസസൗകര്യങ്ങൾക്കുള്ള കെട്ടിടത്തിന്റെയും നവീകരണ പ്രവൃത്തികൾ നടന്നു വരുന്നു.

തിരുവനന്തപുരത്തെ ബയോ സയൻസ് പാർക്കിലെ സർവ്വകലാശാല കെട്ടിടം, വിവിധ കാമ്പസുകളിലെ ഡിപ്പാർട്ട്മെന്റിന്റെ നവീകരണം തുടങ്ങിയവ നടന്നു കഴിഞ്ഞിട്ടുണ്ട്. പൂക്കോട്, മണ്ണുത്തി കാമ്പസുകളിലെ ചില നിർമ്മാണ പ്രവൃത്തികൾ നിർമ്മിതി കേന്ദ്ര, വയനാട്, തൃശൂർ എന്നീ ഏജൻസികളെ ഏൽപ്പിച്ചിട്ടുണ്ട്.

പ്രസ്തുത വർഷത്തിൽ ഏകദേശം 12 കോടി രൂപയുടെ വികസന നിർമ്മാണ പ്രവൃത്തികൾ നടത്തിയിട്ടുണ്ട്. വിവിധ സ്രോതസ്സിൽ നിന്നുള്ള ഫണ്ട് ഉപയോഗിച്ച് സർവ്വകലാശാലയുടെ വിവിധ കാമ്പസുകളിൽ പുതിയ നിർമ്മാണവും പുനരുദ്ധാരണവും നടത്തുവാൻ പദ്ധതി രൂപകല്പന ചെയ്തു വരുന്നു.

Works at Mannuthy Campus (AEE-II)					
Sl. No.	Name of work	Source of fund	Est. amount in Lakhs	Date of completion	Work Status
1	Supply and installation of 200KVA Diesel generator for the SANFT Mannuthy	Plan Project 2015-16	30	24.04.17	Work completed
2	Availing of KSEB connection to the Prefab units (9nos.) at covas , Mannuthy	CE'S Office	0.56	28.06.17	Work completed
3	Providing fencing for yard and waiting shed for gents & ladies and repairs to Haystore building and Renovation of sterilization room at AI centre, CoVASMannuthy	114-89-0003-6417	9.2	08-01--18	Work completed
4	Strengthening of Instructional Farms for Kerala Veterinary & Animal Sciences University (KVASU) at Mannuthy, Thrissur. SH: - Providing IEI, fittings to Pigfarm.	ICAR Mega seed Project	2.18	13.09.17	Work completed
5	Supply and Installation of 200KVA Diesel Generator for the SANFT, Mannuthy-Side covering work to the panel board area	Plan Project 2015-16	1.7	17.09.17	Work completed
6	Providing electrification at AI centre CoVAS, Mannuthy	114-89-0003-6417	0.5	19-01.18	Work completed
7	ICAR development of the strengthening the Library– CoVAS,Mannuthy	ICAR Development Grant 2016-17	0.98	17.03.18	Work completed
8	Construction of horse jumping line and entry gate for NCC,	Plan 2017-18	4.8	04.05.2018	Work completed

	CoVAS, Mannuthy.				
9	Earthing and electrical works for the installation Electron Microscope at Central Instruments Laboratory, CoVAS, Mannuthy	Plan (2016-17) DAR-Installation of electron Microscope at Central Instruments Laboratory	0.9	17.03.2018	Work completed
10	Providing new compound wall around the pre fabricated unit installed near to the ladies hostel Covas, Mannuthy	ICAR GRAND	6.25	26.04.2018	Work completed

Works at Kolahalamedu					
Sl. No.	Name of work	Source of fund	Est. amount in Lakhs	Date of completion	Work Status
1	Proposed International Training centre and renovation of existing residential building at Base farm, kolahalamedu	State plan 2016-17	100	6 months 14.08.2018	Work in progress
2	Base farm, kolahalmedu – state plan scheme 2016-17 providing roofing to the calf shed(except existing feed)	State plan 2016-17	1.52	01.03.2018	Work completed
3	Construction of a toilet for the new parking area identified at western campus of base farm, Kolahalmedu	State Plan 2017-18	4.5	03.06.2018	Work in progress
4	State Plan Project 2016-17- Establishment of an ecofarm at base farm, Kolahalamedu by up keeping / remodelling the existing animal sheds to improve housing facilities	State Plan Project 2016-17	9.5	12/10/2017	Work completed

Works at Thumburmuzhy					
Sl. No.	Name of work	Source of fund	Est. amount in Lakhs	Date of completion	Work Status
1	Providing GI Sheet roofing for the roof area third floor of the CFT Building, Thumburmuzhy	State plan project 2016-17	25	3 months	Progressing
2	Electrification to the 2 nd floor of CFT building, Thumburmuzhy	State plan 2016-17	11.5	1 Month	Work in Progress
3	Providing new roofing and urgent maintenance work to 3 nos of Residential quarters at CBF, Thumburmuzhi	ICAR Development	10	4/11/2018	Work Completed
4	Construction of a Food Processing Unit for College of Food Technology Thumburmuzhy	State plan project 2016-17	100 lakhs	6 months	Work in Progress
5	KVASU-IDW-proposed vertical extension (second floor)to the CFT Buildingat Thumburmuzhy	Plan Project 2016-17	75	9 months	Work in Progress
6	KVASU-IDW-Urgent rectification works to Prefabricated Villas at various stations in KVASU	RIDF	7.1	15.01.18	Work completed

Work At Mannuthy Campus (AEE-1)					
Sl. No.	Name of work	Source of fund	Est. amount in Lakhs	Date of completion	Work Status
1	KVASU- IDW- Civil works to be undertaken CPPR, at COVAS, Mannuthy	6.33 ICAR mega seed on Pig project	11.67	3/19/2018	Work in progress

2	KVASU- IDW- Civil & fabrication works to be undertaken AICRP and TVCC at COVAS, Mannuthy	ICAR Plan project 2016-17	6.9	18.01.18	Work completed
3	KVASU- IDW- Renovation Works of CPPR Office Building at KVASU, Mannuthy	Plan scheme 2016-17	10	3 months	Work in progress
4	KVASU-IDW- Maintenance of water supply system (Hostels) - Replacing the old pumping line from KVASU ground to in front of Priyadarsini Ladies Hostel at CV&AS, Mannuthy	State Plan 2016-17	3	22.12.17	Work Completed
5	Providing interlocking paver blocks 7 tarring the road from entrance to new annex hostel etc. And strengthening of front compound wall, Providing drain covering slabs to the Priyadarsini hostel at CV&As, Mty	ICAR Grant 2016-17	11.25		As per the minutes dtd.21.12.2017 this amount is clubbed with amount 5 Lakhs GI Sheet roofing to LH Mannuthy. This total amount Rs.16.75 Lakhs and new estimate prepared and tendered with the work vide Agt.No:44/EE/2017-18 dtd.26.02.2018 (Item No.8)
6	Renovation work of meat technology construction of fuel store ,vehicle shed, plastering old existing compound wall, vitrified flooring extend east side compound wall etc. in meat technology unit	State plan project 2016-17	12.5	3 months	Work in progress

7	GI sheet roofing to the mess hall of PG Ladies Hostel at COVAS, Mannuthy.	ICAR Grant 2016-17	16.75	3 months	Work in progress
8	Urgent Electrical Maintenance/ Repairs of Cluster Types Hostel Buildings blocks 2,3 &4 and Restoring the KSEB individual connections to each Blocks	EFC	3.25	3/24/2018	Work Completed
9	Waste disposal management system , petty repairs,clearing the periphery of CDST Hostel building at Mannuthy campus	Repair and maintenance of hostels in Mannuthy campus	2.5	45 days	Appendix A in progress Appendix B completed.
10	UPDF,mannuthy Rat proof flooring repair & maintenance work in the poultry farm shed no.6	H/C:116-69-0007-6364	10	1 month	Selection notice issued on 24.03.20(Extent the time up to 2 months as per request of Prof.&Head.
11	Repair and retarring of road near TVCC building at CoVAS, Mannuthy.	State plan Project 2016-17	13.2	1 month	Work completed
12	Re-taring of external campus road patch work for popholes, tackcoat, 2.5mm pre mix carpet seal coat etc.. from farm gate to water tank at CoVAS Mannuthy	EFC(Campus development-D/8)	15.25	30 Days	Work completed
13	Urgent Repairs of water supply line of Animal Science block at KVASU Mannuthy	State Plan 2015-16	2.85	05.04.2018	Work completed
14	Re-wiring of CPPR administrative office building (Ground floor)and culvert construction at mannuthy	AICRP,MEGASEE D AND PLAN 2016-17	2.18	30 days	

15	Installation of street lights in Mannuthy Veterinary campus	State plan project 2016-17	7.4	23.05.2018	Work completed
16	KVASU-IDW, Mannuthy- Laying Vitrified tiles, Painting Administrative office and Farm office Buildings.	H/A:117-69-0008-1406 H/A:117-69-0008-6213	5.1	26.05.2018	Work completed
17	Laying pipe line from Priyadarshini hostel to flats	Maintenance of water supply system	3.3	17.05.2018	Work completed
18	Construction of Fenced boundary wall at CPPR, Mannuthy	H/C:117-69-0008-6212 H/C:117-69-0008-6637	7.2	30 days	Works started
19	KVASU-IDwing, Mannuthy- Construction of VKIDFT building at Mannuthy Campus – internal Partition	State plan project	37.65	45 days	Works started
20	Construction of an open well at CoVAS, Mannuthy	EFC-D8	13.5	2 months	Works started
21	Urgent repair works of Getns & Ladies toilet in CPPR at KVASU, Mannuthy	State plan project 2017-18	1.35	31.05.2018	Work completed

B – Projects Entrusted to BSNL			
Sl. No	Name of Work	Estimate (Amount in Lakhs)	Status
1	Construction of Teaching Veterinary Clinical Complex (TVCC) at CoVASMannuthy (GF +portion of FF)	1224.96	Completed
2	Construction of elevated Duck Breeder Shed RKVY project at KVASU Campus, Thiruvazhamkunnu	125	Civil work completed

4	Construction of HATCHERY building at KVASU Live Stock Research Station (RKVY project) at Thiruvazhamkunnu	130	Completed
5	Construction of Farmers training Centre at KVASU Live Stock Research Station (RKVY project) at Thiruvazhamkunnu	210	Completed
6	Construction of Chicken Brooder Shed (Deep litter) RKVY project at KVASU Campus, Thiruvazhamkunnu	172	Work in progress
7	Construction of Biomedical Sciences & Learning Centre for KVASU at Life Sciences Park at Kazhakootam, Trivandrum.	310	Work Completed
8	Construction of FF of TVCC, Mannuthy	165.51	Work Started
C – Projects entrusted to CPWD			
Sl. No	Name of Work	Amount (In Lakhs)	Status
1	Construction of building VKIDT for Kerala Veterinary and Animal Sciences University (KVASU) at Mannuthy, Trissur	2285	Completed

Status of Works D- Works Undertaken by Nirmithi Kendra <u>Works at Pookode campus</u>					
Sl No	Name of work	Source of fund	Estimate Amount in Lakhs	Date of completion	Status of work
1	Construction of class room above clinics at CoVAS, Pookode.	EFC	92	8/30/2018	AS issued & fund transferred to Nirmithi Kendra
2	Extension of class room above Clinics at CoVAS, Pookode	EFC	59	8/30/2018	AS issued & fund transferred to Nirmithi Kendra
3	Construction of Basket ball court at CoVAS, Pookode	State paln Project 2016-17	1E+06	5/15/2018	AS issued & fund transferred to Nirmithi Kendra

4	Civil modification of the existing operation theatre at Clinical Complex – CoVAS, Pookode.	State plan Project 2016-17	2.1	6/17/2018	AS issued & fund transferred to Nirmithi Kendra
5	Renovation to the Chandragri Auditorium. KVASU Pookode	State plan 2016-17	6.7	7/2/2018	AS issued & fund transferred to Nirmithi Kendra
<u>KOKKALAI</u>					
1	Renovation works to veterinary critical care unit and sales counter at UVH, Kokkalai	Prof & Head UVH, Kokkalai.	7	7/30/2018	Work entrusted to Nirmithi Kendra, Thrissur.vide order no:KVASU/IDW/G/50 454/2018 Dtd.21.03.2018.
2	Maintenance and special repairs to the residential quarters at Kokkalai	Prof & Head UVH, Kokkalai.	4	9/25/2018	-do-
<u>Works at Mannuthy Campus (AEE-I)</u>					
1	Repair and maintenance of rabbit breeding station (shed no. II-providing new RCC roof) at KVASU, Mannuthy	State plan project 2016-17	10	9/30/2018	Work entrusted to Nirmithi Kendra Thrissur
2	Urgent repair works of Gents and ladies Toilet in CPPR at KVASU, Mannuthy	State plan project- 2017-18	1.35	30 days	Work entrusted to Nirmithy Kendra,Thrissur
3	construction of compound wall with gate along NH from farm gate to sales counter at mannuthy campus phase 2	ICAR	21	9/30/2018	Work entrusted to Nirmithy Kendra,Thrissur
4	Various Petty repairs at Vechur cattle farm at CoVAS,Mannuthy.	State plan	7.5	9/30/2018	Work entrusted to Nirmithy Kendra,Thrissur
5	Renovation of the 3 rooms allotted to Vechur farm from the old KAU engineering wing area at KVASU,Mannuthy	State plan 2016-17	3	6/30/2018	Work entrusted to Nirmithy Kendra, thrissur

6	Construction of KVASU/IDW academic Staff College at Mannuthy Campus	RIDF	83	15 Months 30-09-2018	A/S issued and Fund Transferred to Nirmithy Kendra,Thrissur.
Mannuthy Campus (AEE-i/c)					
1	Construction of double bay cricket cage for the physical education department CoVAS Mannuthy	State Plan 2016-17	3.3	7/25/2018	Work entrusted to M/S Nirmithi Kendra,Thrissur.
2	Construction of New toilet Vitrified tile flooring of Two rooms and maintenance of gymnasium room in physical education department CoVAS Mannuthy	State Plan 2016-17	2.5	7/25/2018	Work entrusted to M/S Nirmithi Kendra,Thrissur.
3	Providing cover slab to drainage of play ground at Mannuthy	State Plan 2016-17	1.2	7/25/2018	Work entrusted to M/S Nirmithi Kendra,Thrissur.
4	ULF&FRDS –Renovation and maintenance of Farmers Facilitation centre and farmers Lounge of ULF at KVASU,Mannuthy.	Sate plan Project 2016-17	7	7/25/2018	Work entrusted to M/S Nirmithi Kendra,Thrissur.
5	ULF &FRDS Modification works at Buffalo farm ULF,at KVASU,Mannuthy.	Sate plan Project 2016-17	291790	7/25/2018	Work entrusted to M/S Nirmithi Kendra,Thrissur.
6	Improvement of infrastructural facilitation centre of AI centre,Bull&buck station Mannuthy	State plan project 2015-16	15	7/25/2018	Work entrusted to M/S Nirmithi Kendra,Thrissur.
7	Construction of Gate way infront of KVASU-Mannuthy.	Dean, Mty - Construction of Gate way infront of CVAS, Mty	15.5	11/25/2018	Work entrusted to M/S Nirmithi Kendra,Thrissur.

8	Construction of compound wall from Gateway of Nadathara Road Mannuthy and completion works of Gate way.	Dean- Mty Construction of Compound wall from Farm Gate to Nadathara road, Mty.	24	11/25/2018	Work entrusted to M/S Nirmithi Kendra,Thrissur.
9	Maitenance of Meat technology unit in Mannuthy.	Directly transferred to Nirmithi Kendra	20	6 Months After getting advance fund.	Work entrusted to M/S Nirmithi Kendra,Thrissur.
10	Construction of Quarters for staff/ Traineees for Meat tchnology unit at Mannuthy campus.	Directly transferred to Nirmithi Kendra	80	15 Months after getting advance fund	Work entrusted to M/S Nirmithi Kendra,Thrissur.
11	Establishment of Directorate and Farms and farm advisory centre, Mty	22.60(TSB) - Establishment Directorate of farms & farm advisory centre at Mty 10.00 - Repairs & Maintenance of SABS building allotted to directorate of farms.	32.6	9 Months	Work entrusted to M/S Nirmithi Kendra,Thrissur.

Directorate of Entrepreneurship

The Directorate of Entrepreneurship headed by the Director (Entrepreneurship) has Publications, Training, Entrepreneurship, Capacity building and knowledge transfer, Media and Informatics, Technology Enabled Distance Learning as major divisions. One Assistant Professor, one Assistant Registrar, one section officer, two University Assistants, one typist and one Class IV employees constitute the rest of the faculty. The Course coordinator takes care of the technology enabled distance learning courses of the Directorate.

Directorate of Entrepreneurship with headquarters at Pookode, Wayanad focus on capacity building of farmers, entrepreneurs and extend services through outreach programmes, developing model farms, supporting self-help groups in improving production and productivity of livestock. This division also conducts need based researches in different fields, workshops, exhibitions and seminars on behalf of the University. The Publication Division at Mannuthy, Thrissur coordinate the publication works of University publications. Technology enabled Distance Learning Centre coordinates the conduct of various distance learning courses of the University. School of New Media and Research, 24X7 Veterinary Services e- Vet connect, Central Hub for Video Conferencing are the other services provided by the station. The Centre for Livestock Policy Development and Research at Thiruvananthapuram act as an intermediary between the headquarters of University and the Government focusing on the policy issues and the training centre a focus on capacity building. The academic staff college associated with directorate focus on career advancement programmes of the faculty and other advanced training programmes. The directorate launched the technology business incubation division in the Mannuthy campus during this year, with main focus on student entrepreneurship and start ups.

The Directorate plays a vital role in commercializing new ideas and raising productivity and employment in all sectors, specially benefitting the farming community. The University student-focused activities include the Student Entrepreneurship Scheme, educating students in cultivating a startup business idea, teaching them basic strategies like estimating costs and writing a project proposal/ business plan etc. 20 per cent attendance relaxation and 4 per cent grace marks are provided for students who pursue entrepreneurship and innovation during their studies. The Entrepreneurship division gives major emphasis to entrepreneurship development, extension, knowledge dissemination, distance learning and awareness programmes.

Trainings/ workshops/seminars and conferences

1. Organised three day workshop on impact off climate change on livestock based livelihood systems in association with NABARD and BIRD at hotel Garuda, Thrissur during 24th, 25th and 26th April 2017.
2. Conducted 10 educational seminars in association with leading dailies on higher education avenues after Plus 2 and graduation.

3. The faculty participated in the 3 days National Workshop on “Augmenting Animal Productivity through Emerging Technologies to Ensure Food Security in the Era of Climate Change” on 06th and 07th July, 2017 at Namakkal
4. Regional Research and Training Centre, Thiruvananthapuram conducted need based training programme for Veterinary officers of the Department of Animal Husbandry at Kerala State Veterinary Council building, Peroorkada on the topic “Skill development in clinical competencies”. Sixty officers were deputed by the Department of Animal Husbandry for the training on 16-08-2017 & 17-08-2017.
5. In continuation with the series of training programmes for the Livestock stake-holders, Regional Research and Training Centre, Thiruvananthapuram conducted training for the Kudumbasree beneficiaries of Samagra Goat Village Scheme at Community Hall of Athiyanthoor Grama Panchayat on 21-08-2017. Technical session on Scientific Goat Rearing was held. Fifty beneficiaries of the scheme attended the training programme.
6. The faculty has represented KVASU in the Livestock Sustainability and Global Challenges Workshop at University & Literary Club, 20 Berkeley Square, Bristol BS8 1HP from 18 – 20 September 2017 jointly organized by BBSRC, WUN and Global farm Platform.
7. Conducted precision farming workshop in Thrissur and Palakkad district
8. The three months obligatory orientation training programme for the Senior Assistant Directors of Animal husbandry department was organized by the Directorate of Entrepreneurship, KVASU from 3rd July to 3rd October 2017. Handbook depicting the recent advancement in research and technology in the university was released by Director, Academic and Research, during the programme. 22 officers from 14 districts of the State participated in the training.
9. The faculty attended training on NAARM with respect to Kasturi initiative of Tata Chemicals Society for Rural Development (TCSR) in association with a-IDEA, NAARM. In continuation to the discussion for the Training of Trainer's (TOT program) for the program coordinators, scheduled on 20th-22nd Nov, 2017 at GyaanPeeth, a-IDEA, Centre for Agri-innovation, ICAR, NAARM, Hyderabad, the faculty had initial discussions with a-IDEA of NAARM for the collaborative work.
10. National seminar on ‘Food Adequacy and Climate Change: Strategies for Sustainable Food Production’, held at Hotel Dream City auditorium, Pattikkad on November 3rd and 4th. A documentary on the activities of the Meat Technology Unit of the University for the last 25 years was released in the event.
11. The faculty attended training on NAARM with respect to Kasturi initiative of Tata Chemicals Society for Rural Development (TCSR) in association with a-IDEA, NAARM. In continuation to the discussion for the Training of Trainer's (TOT program) for the program coordinators, scheduled on 20th-22nd Nov, 2017 at GyaanPeeth, a-IDEA, Centre for Agri-

innovation, ICAR, NAARM, Hyderabad, the faculty had initial discussions with a-IDEA of NAARM for the collaborative work.

12. Regional Research and Training Center conducted training programme on Research Methodology for University faculty at IMG Thiruvananthapuram from 20.11.2017 to 24.11.2017
13. Facilitated 2 days training on Milkobike developed by IDMC of NDDDB. The project envisages self-employment for milk technicians who would like to take up milking as part time job. The milkobike was demonstrated to 7 selected candidates out of 14 applicants.
14. Attended and presented papers in 2 International conferences
15. ASCAD training on Laboratory techniques and handling of modern diagnostic equipments for veterinary technicians was organized by Directorate of Entrepreneurship and funded by Department of Animal Husbandry, Govt. of Kerala began at CoVAS, Pookode on 5th March 2018.
16. Attended the MANAGE-University Alliance launching programme for Advancing Agricultural Extension and Advisory Services and National Workshop on “Agricultural Extension: Time to Change”– MANAGE – February 14-16, 2018

Entrepreneurship development programmes

1. Organised skill development training on candle and soap making from 19th to 30th June 2017 for the tribal youth of Chembatty, Priyadarsini and Narangakandy tribal colonies as part of state plan (2016-17) project on ‘livelihood enhancement of Wayanad tribal colonies through need based package of inputs’ in association with Rural Self Employment Training Institute.
2. The Directorate of Entrepreneurship as part of livelihood enhancement of selected tribal colonies, distributed backyard poultry (gramashree birds) to the eighteen tribe families of Priyadarsini tribal colony, Pookode on 16th July 2017.
3. As part of the precision livestock farming project, season wise survey and screening of parasitic incidence was conducted in the Kodakaramapanchayat of Aadugramam project. As part of precision farming, the farmers were provided orientation training for good calf rearing and project has initiated through selection of 30 calves for strategic feeding trial
4. The seminar on Career guidance for tenth and eleventh students of Jawahar Navodaya Vidyalaya and Ekalavya Model Residential School was held at Kabani auditorium of Kerala Veterinary and Animal Sciences University, as part of the Wayanad 2030 tribal development project of the Directorate on 16th August 2017.
5. Organized productivity enhancement programme for Dairy based Women self help groups of Idukki, Kottayam, Ernakulam and Thrissur district

6. Organized series of block wise orientation training programme (6 no.s) on “Entrepreneurship building” for the members of Kannur goat producers company supported by the Kannur Kudumbasree and KVASU in September 2017.
7. As part of Precision farming project at ArpookaraKottayam, one day seminar and the serum samples evaluation for the trace mineral assay was conducted on 14th September,2017
8. Organised animal welfare camp and seminar at Sugandagiri on 23rd September 2017 associating with MILMA office sugandagiri benefitting the tribal farmers. 65 farmers attended the programme.
9. Skill development training on ‘aluminum fabrication’ for the tribal youth of selected tribal colonies which started from 25th September 2017 is being facilitated by the Directorate of Entrepreneurship of KVASU in coordination with the Rural Self Employment Training Institute as part of Plan project on tribal development.
10. Organized skill development training programme on value added meat and milk product for tribal entrepreneurs on 10th and 11th October 2017. Twenty tribal women entrepreneurs participated in the training programme.
11. Organized training on Precision farming in collaboration with Kodakara Panchayath Aadukarshakasangam project and Veterinary Hospital Kodakara on 13th October 2017 at KodakaraPanchayath hall. KodakaraGramapanchayath President Mr. P R Prasadana inaugurated the function. Honorable University Registrar Dr.Joseph Mathew presided and presented the award for the best Goat farm in the project area to Mr.ThomasPaliakkara. During the programme Feed and Medicine were distributed to members of Commodity Interest Groups.
12. Organized training programme on “egger nursery and commercial poultry rearing” for 10 entrepreneurs of Mannarmala Milk and Agro Producers Co. Ltd. on 4th and 11th November 2017.
13. Organized two days training on “Commercial Goat Farming” on 15th and 16th November, 2017 at University Goat Farm, Mannuthy. Seventeen farmers/entrepreneurs participated in the programme.. Field visit was arranged to a Goat Farm at Thiroor having 125 goats, maintained by Chaldean Seminary.
14. Organized two days trainings on commercial goat farming at University goat and sheep farm, Mannuthy on 13th and 14th December, 2017. Eleven farmers/entrepreneurs participated in the programme. The training programme was inaugurated by dr. Joseph Mathew, Registrar, KVASU, presided by dr. A.P. Usha, Director of farms and Dr. T.V. Aravindakshan, Director, CASAGB delivered the felicitation. Training manual entitled ‘Aaduvalarthalaadayathinum swayamthozhilinum’ was released during the occasion.

15. Handled a class on Dairy cattle management for entrepreneurs at Rural Self Employment Training Institute, Puthurvayal on 18th December 2017.
16. Conducted one day training programme for dairy entrepreneurs on 8th January 2018 at Tenjipalam, Kadakkattupara, 80 farmers attended and participated in the technical sessions

Exhibitions/fairs

1. Participated in MathrubhoomiKarshikmela at Payyannur: KVASU participated in Mathrubhoomikarshikamela from 1st April to 5th April 2017 at New Bus stand ground, Payyannur. University stall showcasing the activities and innovations was arranged as part of the fair.
2. Organised exhibition as part of Thrissurpooram: An exhibition pavilion was set up as part of Thrissurpooram on 20th April 2017. The exhibition showcased the research, academic, entrepreneurship and extension activities of the University. KVASU's publications and products were available for sale in the stall. Director of Entrepreneurship Dr. T.P. Sethumadhan, Dean, CDST, Mannuthy Dr. G. Girish Varma attended the programme.
3. Participated in MathrubhoomiKarshikmela at Vaikom, Kottayam from 27th September to 3rd October 2017: University stall showcasing the activities and innovations was arranged as part of the fair.
4. KVASU participated in the "Karma 2k17"- an educational fair on science and technology, at Government technical High School, Mananthavady, Dwaraka on 24th and 25th November 2017. Smt. T. Ushakumari, President, Wayanad District Panchayath, inaugurated the fest. The exhibition stall highlighted the activities and achievements of the University.
5. Celebrated the world environment day on 5th June, Monday at the University headquarters. Director of Entrepreneurship inaugurated the programme by planting coconut, mango and orange trees in presence of officers and employees of the University.
6. KVASU participated in the 40th Agri-HortiFlowershow scheduled from Jan. 20th to 28th at Sri. Vadakkumnathan Temple Maidanam, Thrissur. The Flowershow inaugurated by Hon'ble Minister for State on Agriculture, Shri. V.S. Sunilkumar. A special counter for entrepreneurship development was set up in the Stall in all days. University opened a counter to collect water samples for water quality testing and provided advisory services.
7. KVASU participated in the "MESMERIC 2018", an educational exhibition on science and technology in connection with the silver jubilee celebration of WMO English Academy, at WMO English school, Muttil, Kalpetta on 27th January 2018. The exhibition stall highlighted the activities and achievements of the University.
8. "DISHA"- 2018 from 6th to 10th January 2018 at K. Karunakaran memorial Town Hall Thrissur.
9. Flower show 2018, From 20th to 28th January 2018 at Sri Vadakkumnathan Ground, Thrissur.

10. Karshakasree (Malayalamanorama) karshikamelaorganised at Thodupuzha from 7th to 11th February 2018.
11. One-day workshop and expo Prebav-2018 was organized in view of supporting entrepreneurs, students, researchers, industries and banking in poultry sector. The exhibitions was conducted on 29 th and 30 th April 2018. Academia-industry meet PREBAV (Poultry Research Entrepreneurship Banking Agri Venture 2018) was organized at college of Avian Sciences and Management to support student entrepreneurship programme in the area of hatchery management, broiler Production, layer production, waste management, ornamental bird rearing breeder production, Equipment and medicine manufacturing and feed production. Experts from industry interacted with the students and industry expo was conducted. Job fare also convened.



Minister visiting Poultry pavilion of the university at PREBAV2018



12. KVASU participated in Thrissurpooram exhibition and bagged first prize under minor pavilion award in the thrissurpooram exhibition. The exhibition was organised by the directorate for 40 days and was visited by more than 100,000 visitors. Publications and models of the farms and innovations of the university were exhibited.

Outreach

13. Precision farming trial at Chittur bock concluded: Precision farming trial on calves of 4-5 months of age with special calf ration incorporating corn steep liquid concludes in Chittur after 45 days trial. The female calves gained weight of about 18 kg during this period.

14. Precision farming programme on parasitic control of goats concluded: The survey of parasitic prevalence in 19 wards of Kodakara Panchayat, Aadugramam project for the three seasons in the year 2017 concluded. The prevalence has been reported, and control programme initiated.
15. The Directorate of Entrepreneurship as part of livelihood enhancement of selected tribal colonies distributed 22 goat and eleven goat cages to the tribe families of Chembatty tribal colony, Vythiri on 15th December 2017, Priyadarsini tribal colony Pookode on 16th December and Narangakandy tribal colony (adopted colony of KVASU) on 21st December 2017.
16. Conducted SAMRAMBHAKATHVA MITHRA, five days farmers outreach programme of KVASU envisaged to impart outreach trainings for entrepreneurs in dairying facilitating knowledge/technology exchange programmes enabling capacity building for entrepreneurs. The inaugural training programme of this series was held during 5th to 9th of March 2018 at Divine farm, Chalakudy.
17. Farmers' outreach programme conducted at Paniyely Poru, Perumbavoor from 12th to 16th of March 2018
18. District Ksheerasangam at Nettithozhu, Idukki on 16/02/18
19. Conducted farmers' Seminar on Anaplasma control in cattle and feed distribution programme was conducted at Peringottukara on 6/3/2018.
20. Implemented precision farming at flood prone area of Arpukkara village at Kottayam on 16/03/2018 in view of identifying the block making feasibility of river grown hyacinth with corn steep liquid.
21. Summer season parasitic screening camp was conducted at Kodakara on 19.03.2018 in connection to the seminar on parasitic control in goats.
22. A Seminar on "mastitis control in cattle" and feed distribution to the beneficiaries of the project was conducted at Peringottukara on 23/03/2018.
23. Assessment of feasibility of incorporating palm seed husk on rations of growing heifer's preliminary discussion and method demonstration to farmers of precision farming group of Chittur block was conducted on 02/02/2018.
24. An evaluation and monitoring programme for strengthening Start-up villages was conducted at Pullazhi on 21/02/2017.
25. A seminar on "Opportunity for livestock product developing and marketing" was conducted at Cherpu on 12/03/2018.
26. Conducted medical health camp in tribal colonies Priyadarsini tribal colony on 24th April 2018, Chembatty of Vythiri Panchayath on 25.4.2018, Narangakandy tribal colony on 30th April 2018 as part of tribal development project. 160 members attended the camp.

Entrepreneurship and Start-Up

1. Kerala Veterinary and Animal Sciences University launched Start up village project at Cherpu, Thrissur. An orientation seminar for 50 entrepreneurs was held at Sopanam auditorium, Cherpu on 15th July 2017. The programme was held in order to create awareness among entrepreneurs about the strategy to be followed for implementing the startup village. Cherpustart up will promote value addition, digitalization and market centred approach while protecting the interests of producers. Entrepreneurs can expect up to 40 percent premium price when compared to the prevalent rate in the market. This system will integrate agriculture, livestock, poultry and fisheries sector and implement good agricultural practices. The products will be marketed as safe to eat products under the label KASAVU.
2. The core implementation committee meeting on Start up village project of KVASU was held at Peerumade Taluk on 5th August 2017. Smt. E. S. Bijimol MLA was the chief guest of the function. One day workshop on implementation process of Start up village project was held at KVASU Mannuthy campus on 11th August 2017 in which Grama Panchayat Presidents and Officials from Peerumade Taluk participated.
3. Organized market oriented programme for students under experiential learning programme
4. The directorate has initiated collaborative discussion with NAARM to establish Technology Business Incubator at the KVASU university on 26th August 2017 at NAARM Hyderabad
5. An awareness programme on Incubation - startup - Entrepreneurship intended for all Scientists, Staff and Students of all Colleges, KVASU was conducted at Mannuthy and Pookode. The programme was inaugurated by Dr. Joseph Mathew, Registrar, KVASU on 06-02-2018, at Pookode.
6. Launched Technology Business Incubation centre: Kerala Veterinary and Animal Sciences University launched the Technology Business Incubation centre under the Directorate of Entrepreneurship. TBI center was inaugurated by Hon'ble Vice Chancellor, Sri. Anil X. IAS at Mannuthy on 7th March, 2018. The sensitization workshops for the students on innovation and incubation was conducted at COVAS Pookode on the same day.



ICT

1. Directorate organized demonstration of mobile app at Cherthala Veterinary hospital in association with ATMA club and AHD on 29th August 2017. The faculty from the Directorate has handled session on Precision livestock farming- demonstration of mobile APP at SAMETI, Trivandrum on 14th September, 2017.
2. Advisory call centre facilities at CLDPR, Trivandrum and E Vet connect, Mannuthy
3. KVASULEAP has been updated for the year 2016-17 and applications are available to the public.

Other activities

1. University participated in National University Film Making Competition launched by UGC: The Directorate produced a short film on “ragging awareness” as part of National University Film Making Competition launched by UGC to spread awareness on ragging amongst students. The short film was sent to UGC on 28th November 2017
2. Organized and hosted the curtain raiser programmes, a forerunner to the 30th Kerala Science congress 2017 on 10th January 2017 at University headquarters. The programme was presided by Director (Entrepreneurship). Scientists from MS Swaminathan Research Foundation and KSCSTE led various sessions.

Publications

1. Printed and distributed 3000 Organizers, 3500 Students data book and 3500 Wall Calenders.
2. Published a text book “ Colour atlas of hoof care in dairy cattle” with ISBN number
3. Published a book “വെച്ചുർ പശു” പരിരക്ഷണപദ്ധതി: ഒരു അവലോകനം with ISBN number

Distance Learning Centre, Directorate of Entrepreneurship, Camp Office, Mannuthy

1. Distance- Learning Centre Ongoing Courses
 - a. Post Graduate Diploma in Dairy Entrepreneurship (PGDDE)
 - b. Post Graduate Diploma in Poultry Entrepreneurship (PGDPE)
 - c. Diploma in Dairy Entrepreneurship (DDE)
 - d. Diploma in Poultry Entrepreneurship (DPE)
 - e. Diploma in Commercial Dairying Kurryottumala Hi-tech Dairy farm
3. Registration & orientation programme of first batch of Diploma in Commercial Dairying was conducted on 11-12-2017, at Hi-tech dairy farm, Kurryottumala.
4. First Semester exam of Diploma in Dairy Entrepreneurship, PG Diploma in Poultry Entrepreneurship and PG Diploma in Dairy Entrepreneurship was conducted from 3rd to 8th May 2018

COLLEGE OF VETERINARY AND ANIMAL SCIENCES, MANNUTHY



College of Veterinary and Animal Sciences, Mannuthy was commissioned as the Government Veterinary College on August 1st 1955 at the campus of the Central Agricultural Farm of the erstwhile Travancore-Cochin State holding 450 acres of land of which 190 acres was with the Animal Husbandry Department. The college that initially began with five composite departments and 71 students has today grown to house 21 departments and over 950 students. Students are admitted to the College through the annual CBSE NEET examination. As on 1.4.2018 there are 111 teachers drawing salary from the Office of the Dean, CVAS, Mannuthy

Year Wise Student Strength

Year of study	Admission	Semester	Total	Male	Female
			BVSc& AH		
1 st Year	2017	-	129	54	75
1 st Year (Re-repeat)	2015	1	2	2	0
2 nd Year (Repeat)	2015	3	17	13	4
2 nd Year	2016	-	141	54	87
3 rd Year	2015	5	143	57	86
4 th Year	2014	7	131	45	86
5 th Year	2013	9	92	24	68
Internship	2012	-	88	35	53
Total			743	284	459

Year of study	Admission	Semester	Total	Male	Female
			MVSc		
1 st Year	2017	2	73	23	50
2 nd Year	2016	4	51	20	31

3 rd Year	2015	6	59	21	38
	2014	8	7	2	5
Total			190	66	124

Year of study	Admission	Semester	Total	Male	Female
			Ph.D		
1 st Year	2017	2	15	7	8
2 nd Year	2016	4	10	5	5
3 rd Year	2015	6	3	3	0
4 th Year	2014	8	5	4	1
5 th Year	2013	10	1	1	0
	2012	12	2	1	1
Total			36	21	15
Grand Total			969	371	598

Total strength of UG, PG & Ph.D Students = 969 (M 371 + F 598)

Infrastructure facilities

Lecture classes for B.V.Sc. & AH programme, Credit and defense seminars of Master's and Doctoral programme are scheduled and conducted at the smart class rooms. Power and logistical back up is ensured by assigning an officer- in- charge for the smart class room, who looks after the finer details of the functioning of the smart class rooms. Examination hall with permanent seating arrangement for all batches of students

Academic student amenities created

Increased the floor area and facilities of the examination hall.

Non- Credit Compulsory Courses

Tracking Programmes have been developed to allow students to exercise more control over the specific direction of their profession and motivate them for self-teaming through virtual classroom, distant learning, internet etc. The areas identified include Feline Medicine, Cryobiology of Gametes, Neurosciences, Clinical/ Interventional Nutrition, Dermatology/integument Science, Alternate Veterinary Medicine, Ophthalmology, Anesthesiology, Small Animal Critical Care, Non-Mammalian Medicine, Sports Animal Medicine and Drug designing. These will be Non Credit courses but shall be mentioned in the Degree Transcript along with the grades obtained.

Study Circles- Each student of B.V.Sc. & A.H. degree course enrolls himself/herself for at least two Study Circle activities during the B.V.Sc. & A.H. degree course out of the proposed Study

Circles such as Livestock and Livelihood Study Circle, Production Systems Study Circle, Ecosystems and Livestock Study Circle, Equine Study Circle, Canine Study Circle, Diagnostic Study Circle, Alternate Animal Use Study Circle, Fun/Sport Animal Study Circle and Law and Veterinary Science Study Circle..

Entrepreneurial Training: Each student of B.V.Sc. & A.H. degree course undertakes one of the activities of Entrepreneurial Training as listed below. Goat Production, Sheep Production, Pig Production, Broiler and Egg Production, Pet Production, Dairy Production, Meat Production and Processing, Fish Production, Feed Production-Mineral Mixture, Milk Products, Food safety-residue Analysis, Clinical Investigatory laboratory, Quality Control-Evaluation (Microbial), Shoeing and Shoe Manufacture, Production of Diagnostic, Pharmaceutical Formulations

This training is aimed at developing entrepreneurial skill for self-employment. The university/college shall provide interest free loans out of a revolving fund (not less than Rs. 3.00 lakhs in a college) to students groups (team of up to five students), technical support and infrastructure for these activities. Inputs, day-to-day work and financial accounting is undertaken by the students. The profits/loss, if any, is kept/borne by the students. However, in case of loss, the Dean of the college through the Entrepreneurship Committee consisting of four faculty members (at least one subject matter specialist) evaluates the reasons of such loss and provides compensation in case it is found that the loss has been inadvertent.

Student awards

Sl. No.	Name	Name of recognition	Year	From where received
1	Dr. Nayana Kumara	Third prize for oral presentation in companion animal-noninfectious disease	2017	ISVM
2	Dr. Smitty Johnson	First prize- Companion small animal session	2017	9th TANUVAS Clinical Conference
3	Dr. Rakshitha.P	First prize- Companion small animal session	2017	9th TANUVAS Clinical Conference
4	Dr.Raheema. S	Second price- Farm Animal session	2017	9th TANUVAS Clinical Conference
5	Vaisakh	First prize- Companion small animal session	2017	9th TANUVAS Clinical Conference
6	Dr.Azhaguraja M	1 st Prize	2017	9th Clinical Conference, Chennai
7	Dr Annie Navomi	Merit certificate	2017	World environment day essay writing competition , Lloyd

				Law college
8	Murali Krishna	3 rd Place -Show jumping-Novice category	2017	Republic Day Competitions

Library

Library space with list of holdings

Library and Information Centre, College of Veterinary and Animal Sciences supports learning, teaching, and research activities of the College of Veterinary and Animal Sciences, Mannuthy. The Library is well equipped with modern facilities and resources in the form of online/offline databases, e-books/journals, thesis, reports etc. Library uses 'Koha' open source software for the effective management of the information documents. Barcoded lending system is being followed for speedy transaction.

The documents presently available in the library are as shown below:

Books (Text Books, Reference Books, Books for general reading etc.)	24432
Thesis (MVSc /PhD)	1498
Bounded Back volumes of Journals.	5914
Wiley online journals- 12	1997-2014
E-books (onlinelibrary.wiley.com)	183
E-Books (www.taylorfrancis.com)	63
On-line Journals/e-contents through CeRA	3951
CABI Vet CD	1971-2013

Other facilities and services

- Book bank scheme for SC/ST students
- Book bank lending scheme for UG,PG and Ph.D Students
- Orientation Programme to freshers
- Over-night reference loan
- CCTV based Security Surveillance System

DEPARTMENT OF ANIMAL BREEDING AND GENETICS

Research Projects

Sl. No.	Title of the scheme	Name of the funding agency	Outlay	Completed/Ongoing
1	Field Progeny Testing Scheme	ICAR (75%) & State Plan 2017-18 (25%)	72 Lakhs	Ongoing
2	AICRP on Malabari Goat Improvement	ICAR (75%) & State Plan 2017-18 (25%)	44 Lakhs	Ongoing
3	Genetic Diversity Analysis of cattle genetic groups of Kerala using microsatellite markers	KSCSTE (Sanctioned, Fund to be transferred)	16.88 Lakhs	Ongoing
4	Addressing the Production Challenges of Native Goat Breeds of Kerala through Genomic Approach	AHD		Ongoing
5	Conservation centre for Vechur and Kasargod cattle	State Plan 2017-18	50 Lakhs	Ongoing
6	Establishment of a germplasm repository for domestic animal diversity of Kerala	State Plan 2017-18	10 Lakhs	Ongoing
7	Popularisation of Integrated Small Holder Rabbit Farming in Kerala	State Plan 2017-18	30 Lakhs	Ongoing
8	Characterization, expression and polymorphism analysis of candidate genes affecting production, reproduction and disease resistance in native cattle and goat breeds of Kerala for sustainable improvement and development of native breeds.	State Plan 2017-18	9.625 Lakhs	Ongoing
9	Enhancing milk production potential of genetically superior cows through scientific intervention for producing better progenies	State Plan 2017-18	10 Lakhs	Ongoing

10	Selective identification of elite duck farming clusters of Kerala for the strengthening of <i>in situ</i> conservation and multiplication of the duck varieties in their breeding tract	State Plan 2017-18	10 Lakhs	Ongoing
11	Ensuring breed purity and augmenting marketing facilities for dairy products and byproducts from indigenous dwarf cattle maintained by farmers of Kerala	State Plan 2017-18	12 Lakhs	Ongoing
12	Centre for Advanced Studies in Animal Breeding and Genetics	State Plan 2017-18	10 Lakhs	Ongoing
13	Strengthening of School of Applied Animal Production and Biotechnology	State Plan 2017-18	10 Lakhs	Ongoing

Publications

Sl. No.	Authors/ Editors	Year	Title	Book/ Research article/Popular article	Details of publication
1	Dr. Manoj M, Dr. Bimal C B, Dr. Anilkumar K, Dr. Thirupathi Venkatachalapathy and Dr. T V Aravindakshan	2018	VechurPasuPariraksha napadhathi – oruavalokanam	Book	KVASU ISBN: 978-81-937459-0-8
2	Radhika, G., Raghavan, K.C., Mercey, K.A., Sunanda, C. and Rojan, P.M	2018	Assessment of Genetic Diversity in Goat Genetic Groups of Kerala, India using Morphobiometric Markers	Research Article	<i>Indian Journal of Animal Research.</i> 52(3) : 331-336
3	M. Manoj, G.S.L.H.V. PrasadaRao and T.V. Aravindakshan	2017	Seasonal influence on conception rate in Vechur and Kasargod dwarf cows.	Research Article	<i>Journal of Agromereology</i> 19: 123-125.

4	Naicy, R. T. Venkatachalapathy, T.V. Aravindakshan, K.C. Raghavan, M. Mini and K. Shyama.	2017	cDNA cloning, structural analysis, SNP detection and tissue expression profile of the IGF1 gene in Malabari and Attappady Black goats of India	Research Article	<i>Journal of Genetics.</i> 96, 307–312
5	Naicy, T R. T.Venkatachalapathy, T.V. Aravindakshan, K. C. Raghavan, M. Mini and K. Shyama	2017	Association of a novel single nucleotide polymorphism at the exon-2 of Insulin-Like Growth Factor 1 (IGF1) gene with phenotypic variants in goats	Research Article	<i>VeterinarskiA rhiv.</i> 87: (4), 457-472.
6	AnjanBehra, R. T. Venkatachalapathy, T.V. Aravindakshan.	2017	Identification of novel single nucleotide polymorphism at thyroid hormone responsive (THRSP) gene of native goat breeds of India	Research Article	<i>Small Ruminant Research.</i>
7	S. K. Dash, A. K. Gupta, Avtar Singh, A K Chakravarty, M. Manoj and Virendra Kumar.	2017	Threshold analysis of indicator traits for involuntary disposal in Holstein Friesian crossbred cattle	Research Article	<i>Indian Journal of Animal Sciences.</i> 87(1): 128– 130
8	Marykutty Thomas and Syamala K.	2017	Sensitivity and specificity of the famacha system in attappady black goats of Kerala	Research Article	<i>Indian Journal of Small Ruminants.</i> 23 (2): 204-207.
9	Radhika G., Aravindakshan T.V., Jinty S and Ramya K	2017	Evaluation of Genetic diversity, Population structure and relationship between legendary Vechur cattle and Crossbred cattle of Kerala state, India	Research Article	<i>Anim. Biotech.</i> 29 (1) : 50-58 (

Training Programme Organized

Sl no	Training programme
1	10 days training on Basic Molecular Biology Techniques and Introduction to Bioinformatics Tools (July 17 to 26, 2017)
2	14 days training on “Molecular Biology and Bioinformatics tools for Advanced Life Science Research” From 19-10-2017 to 1-11-2017

Awards And Honors

01	Dr. JamunaValsalan	DST-SERB Early Career Research Award
02	Dr. ThirupathyVenkatachalapathy	Best oral paper award- National Seminar on Food Adequacy & Climate Change: Strategies for sustainable food production

Distinguished Visitors

01	Dr. J Radhakrishnan, IAS, Principal Secretary, Health and Family Welfare Department. Govt of Tamil Nadu.	
02	Dr. AnoukSchurink, Scientist, Wageningen, Netherlands	

Outreach Programmes

01	Dr. G. Radhika	Resource persons for training: Goat rearing training at LMTC, Malampuzha October, 2017.
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Other Activities

<ul style="list-style-type: none">• Provided 10 Vechur animals and 150 doses of Vechur and Kasargod semen to registered farmers through the plan project at Vechur Farm, CASAGB, Mannuthy• Provided 5163 doses of crossbred bull semen, 19.2 tons of cattle feed and 750 kg mineral mixture to beneficiary farmers through ICAR-FPT scheme• Provided 25 bucks, 5.3 tonnes of goat feed, 1528 kg goat feed supplements, 26 weighing balances, 100 measuring tapes and 200 liters of tickicide to beneficiary farmers through AICRP Goat scheme• Provided the seed material to launch satellite rabbit breeding units at Kunnamkulam, Kodappanakunnu, Angamaly, Kuriottumala under Animal Husbandry Department, Govt Kerala.		
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DEPARTMENT OF ANIMAL NUTRITION

Research Projects

Sl. No.	<i>Title of the scheme</i>	<i>Name of the funding agency</i>	<i>Outlay</i>	<i>Completed/Ongoing</i>
1	<i>Effect of Essential oils on rumen metabolism and methane production assessed in vitro</i>	<i>State Plan</i>	<i>4 lakh</i>	<i>Completed</i>
2	<i>Developing Milk Urea nitrogen standards for cross bred cows in the state</i>	<i>State Plan</i>	<i>3 lakh</i>	<i>Completed</i>
3	<i>Improving Livestock productivity by increasing compounded concentrate feed production -SANFT</i>	<i>State Plan</i>	<i>25 lakh</i>	Completed
4	<i>Strengthening of new schools and centers of research- CSLAP</i>	<i>State Plan</i>	<i>10 lakh</i>	Completed
5	<i>Revamping of SABS</i>	<i>State Plan</i>	<i>20 lakh</i>	Completed
6	<i>Establishment of pet food manufacturing unit under KVASU</i>	<i>State Plan</i>	<i>10 lakh</i>	Completed
7	Preparation of complete feed blockssing locally available unconventional/ ayurvedicyprodcts for dairy cattle	State Plan	29.75 lakh	Ongoing
8	Strengthening of new schools and Centres 1. School of Animal Nutrition and Feed Technology 2. Centre for small laboratory animal production	State Plan	26.25 lakh	Ongoing
9	Revamping of Small Animal Breeding station	State Plan	13.125 lakh	Ongoing

Publications

Sl. No.	Authors/ Editors	Year	Title	Book/ Research article/Popular article	Details of publication
1	Jasmine Rani K, Shyama K., Chithrimal C.R. and Ally K	2018	Effects of Fennel Seeds on Biochemical and Haematological Parameters of Wistar Albino Male Rats Fed on High Fat-Diet	Research Article	<i>Indian Journal of Natural Sciences : 8 (46).2018</i>
2	Arathy Saseendran and K. Ally	2017	Effect of Dietary Supplementation of Carnitine on Serum Lipid Profile of Large White Yorkshire Pigs Fed High Fat Diet	Research Article	<i>Indian Vet. J., June 2017, 94 (06) : 27 – 29</i>
3	BijuChacko, K. M. Syam Mohan, K. Ally, K. Shyama, K. S. Anil and C. T. Sathian	2017	Effect of paddy straw plus nonforage fiber sources based complete rations with different levels of neutral detergent fiber on hemato-biochemical and mineral profile of lactating dairy cows.	Research Article	<i>Veterinary World, 10(7): 836-842</i>
4	BijuChacko, K.M. Syam Mohan, K. Ally, K. Shyama, K.S. Anil and C.T. Sathian.	2017	Performance Enhancement of Lactating Dairy Cows by Dietary Inclusion of Neutral Detergent Fibres	Research Article	<i>Indian Vet. J., December 2017, 94 (12) : 45 - 48</i>
5	BijuChacko, K.M. Syam Mohan, K. Ally, K.	2017	Effect of paddy straw based complete rations with different levels of neutral detergent fibre on	Research Article	<i>Indian J Anim. Sci .87(8): 1000-1004.</i>

	Shyama, K.S. Anil and C.T. Sathian.		microbial protein synthesis in dairy cows during early and mid- lactation		
6	Banakar, P., Ally, K., Lokesh, E., Saseendran, A., Dominic, G., &Jaafar, J ma	2017	In Vitro Assessment of Nutritive Value of Unconventional Feed Resource as Livestock Feed.	Research Article	<i>International Journal of Livestock Research, 7(6), 159-169</i>
7	George Dominic., Ally K., Murali P., Maya Arun., Anil K S.andGangade vi P	2017	Effect of feeding high energy diet on the plasma biochemical profile and reproductive performance of lactating crossbred cows	Research Article	<i>Applied biological research 19(1): 109-113.</i>
8	ArathySaseend ran, Banakar P.S, Ally K, G. Rajkumar, ChithrimaSeet hal C.R. and G. ayaprakash.	2017	. The Importance of Dietary Inclusion of Animal fats in Swine nutrition.	Research Article	<i>Indian farmer. .4(1): 72-74</i>
9	Raseel, K., Chacko, B., Sunanda, C, Dildeep, V and Abraham, J.	2017	Nutrient evalation of energy rich unconventional feeds available in Wayanad,	Research Article	<i>International Journal of Science and Nature, 9(1) 2018: 117-118.</i>
10	Sreekutty, P.S., Senthilmuruga n, S., Dildeep., V., BijuChacko and Balusamy, C., Shanlax	2017	Chemical composition of cashew apple waste	Research Article	<i>International Journal of Veterinary Science, 5(1) 2017:1-3</i>

Training Programme Organized

Sl no	Training programme
1	One day seminar for farmers regarding modern feed manufacturing technology
2	Three day training on feeding and compounded feed preparation for 10 kudubhasree workers of Idukki district

Awards And Honors

01	Dr. Ajith K.S	Second prize in Poster presentation at XVII biennial conference of Animal Nutrition Society of India held during February 1-2 at College of Veterinary Science and Animal husbandry, Junagadh Agricultural University
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Distinguished Visitors

01	Honorable Minister for Animal Husbandry Adv. V S Sunilkumar, MLAs Adv. Rajan&Smt. Bijimol
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Other Activitiess

The department is having three stations working under it

I.Small Animal Breeding Station (SABS) & Centre for small laboratory

animal production (CSLAP)

II. Feed Analysis Laboratory

III School of Animal Nutrition and feed technology (SANFT)

Inauguration of 2T/h

automatic feed mill on 6/7/17



Exhibition –Farmers seminar 6/7/17



VETERINARY CLINICAL MEDICINE, ETHICS AND JURISPRUDENCE

Research Projects

No.	<i>Title of the scheme</i>	<i>Name of the funding agency</i>	<i>Outlay</i>	<i>Completed/ Ongoing</i>
1	<i>Study of diseases of street dogs in connection with animal birth control</i>	<i>State Plan</i>	<i>4.5 lakhs</i>	<i>Completed</i>
2	<i>Investigations to control Metabolic disorder and infertility in crossbred cattle</i>	<i>State Plan</i>	<i>6 lakh</i>	<i>Completed</i>
3	<i>Augmenting Biotechnology and molecular biology in KVASU</i>	<i>State Plan</i>	<i>1.5 lakh</i>	<i>Completed</i>
4	<i>Outreach programme on Ethnoveterinary medicine</i>	<i>ICAR</i>	<i>55 lakh</i>	<i>Ongoing</i>
5	<i>Field level metabolic profile during transition period using glycatedHb, Serum fructosamine and blood gas analysis in cattle</i>	<i>Animal husbandry department, Kerala</i>	<i>4.654 lakhs</i>	<i>Ongoing</i>
6	<i>Field level metabolic profile during transition period using glycatedHb, Serum fructosamine and blood gas analysis in cattle</i>	<i>Animal husbandry department, Kerala</i>	<i>5.2 lakhs</i>	<i>Ongoing</i>
7	<i>Establishing a Diagnostic protocol for disseminated intravascular coagulation in animals</i>	<i>State Plan</i>	<i>2.625 lakhs</i>	<i>Ongoing</i>
8	<i>Blood transfusion facility in farm animals</i>	<i>State Plan</i>	<i>4.375 lakhs</i>	<i>Ongoing</i>

Publications

Sl. No.	Authors/ Editors	Year	Title	Book/ research article/Popular article	Details of publication
1	DeepaChirayath, Krithiga K and	2018	Scrotal vascular hamartoma in a Dachshund- A case	Research Article	<i>The Indian veterinary Journal ,</i>

	Dileepkumar KM.		report		95(10) 68-70
2	DeepaChirayath	2018	Gastric dilatation due to foreign bodies in gastrointestinal in a Doberman puppy	Research Article	The Indian veterinary Journal 95(10) 89-90
3	DeepaChirayath, Alex P. C. Usha N Pillai, George s, Ajithkumar S and panicker VP	2017	Identification of <i>Brugia malayi</i> In dogs in Kerala India	Research Article	<i>Tropical Biomedicine</i> , 34 (4) 815-821
4	DeepaChirayath, Alex P. C. and Usha N Pillai,	2017	Immunoblotting analysis of canine <i>Brugia malayi</i> microfilarial antigens	Research Article	<i>Tropical Biomedicine</i> , 34 (4)804-814
5	Arthi A Tresamol PV and DeepaChirayath	2017	Puppy strangles and its successful therapeutic management	Research Article	<i>Indian Journal of Canine Practice</i> 39 (1) 91-92
6	Ambily V. R and UshaNarayanapillai	2017	Dermatophilosis in a Holstein Freisan Cow and its sucessful medical management	Research Article	<i>Journal of Vterinary Research and Animal Husbandry</i>
7	Ambily V. R. , DeepaChirayath and UshaNarayanaPillai	2018	Diagnosis and Medical management of paralytic ileus in a Labrador dog	Research Article	<i>Indian J. Sci. research</i>

Training Programme Organized

Sl. No.	Training programme
1	Recent concepts in diagnosis and treatment of metabolic diseases of transition cow” on 23-12-2017 sponsored by AHD & KVASU at Mannuthy
2	Animal Health cum infertility camp at Milk SocietyCherumkuzhy, Anthikkad and kaiparambu for 100 farmers

Awards And Honors

01	Dr. MadhavanUnny	ISVM 2017 award for Poster Presentaion
02	Vishnurabhav RB	First price in Clinical Conference 2017 held at TANUVAS Chennai-

Other Activities

- Dr.Usha N. Pillaia acted as Board Member for the CAS Interview -Professors- TANUVAS on 27-07-
- Dr.MadhavanUnnyassociated with the Disease investigation team for HF Bull at KLDB, Mattupetty



DEPARTMENT OF LIVESTOCK PRODUCTION MANAGEMENT

Research Projects

Sl. No.	Title of the scheme	Name of the funding agency	Outlay	Completed/Ong oing
1	Prevalence of Aflatoxin in Cattle Feed in Thrissur district	State plan		Completed

Publications

Sl. No.	Authors/ Editors	Year	Title	Book/ Research article/Popular article	Details of publication
1	Sivakumar, S., Suraj P. T.,	2018	Physiological variation in dairy	Research Article	<i>Indian Veterinary Journal</i> 95 (3): 23-

	Yasotha A. and Jayashree Phukon		cows under various housing types during summer in Tamil Nadu		25.
2	Mohammed Shejir R., Sabin George, Anil K.S. AbeenaB., GeorgeSherin K and Sunanda C.	2017	Comparative Study of the Quantity and Composition of Biogas Production using Cattle , Buffalo and Goat Excreta	Research Article	<i>International Journal of Livestock Research: pp252-259</i>
3	Justin Davis, Anil, K.S., Joseph Mathew, Suraj, P.T., Ally,K. and Ramnath, V	2017	Mineral profile of hybrid napier grass under slurry irrigation	Research Article	<i>Int. J. Adv. Res. Biol. Sci. 4(3): 119-126</i>

Other Activities

<p>Consultancy –</p> <ul style="list-style-type: none"> • Discussion of faculty with new prospective livestock entrepreneurs – 60 • Discussion on problem solving at existing dairy, goat and pig farms – 45 <p>Consultancy for Dairy farm with 25 cows and established and started, purchase of cows, design of shed, disease prevention- technical support given</p> <ul style="list-style-type: none"> • Farmers classes – • Conducted 6 trainings on Housing of Goats. • 15classes for farmers have been conducted in different parts of Kerala • Extension Articles Published – • Popular articles in Malayalam in leading Newspapers and Farm Publications – 95no's
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DEPARTMENT OF LIVESTOCK PRODUCTS TECHNOLOGY

Research Projects

Sl. No.	Title of the scheme	Name of the funding agency	Outlay	Completed/ Ongoing
1	Development of biomass briquettes using straighter house waste	ATMA, Thrissur	12.573 lakhs	Completed

2	Development and quality analysis of certain novel shelf stable meat products	State plan	5 lakh	Completed
3	Development of computer aided designs of abattoirs and meat processing plants for entrepreneurship and outreach programmes	State plan	5 lakh	Completed
4	Standardization of packaging technique for fresh and processed meat and poultry for medium scale entrepreneurial adoption	State plan	10 lakh	Completed
5	Technology development for value added ready to eat egg, chicken, egg-chicken products for adoption on a cottage scale production	State Plan	100 Lakhs	Ongoing
6	Establishment of an ISO certified facility for production of wholesome meat and meat products	State Plan	10 Lakhs	Ongoing

Publications

Sl. No.	Authors/ Editors	Year	Title	Book/ Research article/Popular article	Details of publication
1	Prajwal, S., Vasudevan, V.N., Irshad, A., Sathu, T., Gunasekaran, P. KuleswanPame and Poobal, P	2017	Prediction of sensory tenderness of beef muscles having different collagen characteristics using Warner-Bratzler shear force	Research Article	<i>Int. J. Env. Sci. Technol.</i> 6(2): 1123-1133.
2	Prajwal, S., Vasudevan, V., Sathu, T., Irshad, A., and Sunanda, C	2017	Characterization of Buffalo Meat Using Principal Component Analysis	Research Article	<i>Int. J. Livestock Res.</i> 7(7): 251-260.
3	Prajwal, S., Vasudevan, V., Sathu, T., Irshad,	2017	Antibiotic residues in food animals: Causes and	Research Article	<i>The Pharma Innovation.</i>

	A., Nayan Kumar S.R. and KuleswanPame		health effects		6(12): 1-4.
4	Pame, K., Sathu, T., Vasudevan, V. N., Prajwal, S., and Gunasekaran, P	2017	A Study on the Effect of Physico-Chemical Characteristics, Palatability and Storage Quality of Kibbles Incorporated With Slaughter House By-products for Canine.	Research Article	<i>Int. J. Livestock Res.</i> 7(8), 228-237.
5	Vasudevan V.N., Kuttinaryanan P. Sathu, T. Irshad, A. and Prajwal S	2017	Association of a novel single nucleotide polymorphism at the exon-2 of Insulin-Like Growth Factor 1 (IGF1) gene with phenotypic variants in goats	Research Article	<i>VeterinarskiA rhiv.</i> 87: (4), 457-472.
6	Sunil B., Irshad, A. Vasudevan, V.N. and Sathu. T	2017	Climate Change and sustainable food production.	Book	<i>Excel India Publishers, New Delhi</i>
7	Sunil B., Irshad, A. Vasudevan, V.N. and Sathu. T	2017	Threshold analysis of indicator traits for involuntary disposal in Holstein Friesian crossbred cattle	Research Article	<i>Indian Journal of Animal Sciences.</i> 87(1): 128–130

Training Programme Organized

Sl no	Training programme
1	10 days training on Basic Molecular Biology Techniques and Introduction to Bioinformatics Tools (July 17 to 26, 2017)
2	14 days training on “Molecular Biology and Bioinformatics tools for Advanced Life Science Research” From 19-10-2017 to 1-11-2017

Awards And Honors

01	Dr. Sathu T	Best research paper-first (oral), international multidisciplinary Research foundation at Goa,India
02	Dr. Sathu T	Best research paper-first (oral) AMST
03	Dr. V. N. Vasudevan	Best oral Presentation Prize AMST

VETERINARY MICROBIOLOGY

Research Projects

Sl. No.	Title of the scheme	Name of the funding agency	Outlay	Completed/Ongoing
1	Development and evaluation of multiplex PCR assay for detection of major avian respiratory pathogens	State Plan	7.5 lakhs	Completed
2	Immunogenicity and safety of oil adjuvant and live vaccine against New duck disease in Kerala-A comparative study	State Plan	5 lakhs	Completed
3	Comparison of rapid antibody detection kit and ELISA for the detection of bovine leptospirosis	State Plan	5 lakh	Completed
4	Addressing the Production Challenges of Native Goat Breeds of Kerala through Genomic Approach	State plan	1.5 lakhs	Completed
5	Isolation and genotype characterization of the Infectious bronchitis virus isolates from Kerala, India	DST-SERB	<i>35 lakh</i>	Ongoing

6	Field oriented screening of brucellosis and related infertility management in bovine in Thrissur and Wayanad districts	State Plan	17.5 lakh (allocated 4 lakhs)	Ongoing
7	Antibiotic resistance in veterinary practice- A representative study	State Plan	8.5 lakh	Ongoing

Publications

Sl. No.	Authors/ Editors	Year	Title	Book/ Research article/Popular article	Details of publication
1	Chacko, N., Sankar, S., Balan, R., Lal, L and Mini, M	2018	Characterisation and virulence gene profiling of <i>Pasteurella multocida</i> from Japanese quail	Research Article	<i>Indian. J. Anim. Hlth</i> 56 (2):291-294
2	Ambily, R., Athulya, E.P and Mini, M	2017	Periodontitis in Dogs- A review	Research Article	<i>Trends Biosci</i> 10(19):3344-3346
3	Ambily, R and Mini, M	2017	Incidence of systemic aspergillosis in Japanese quails (<i>Coturnix coturnix japonica</i>) in a private farm	Research Article	<i>Trends Biosci.</i> 10(14): 2593-2595
4	Sankar, S., Chandran, A., Reshma, P. S., Lal, L and Mini, M	2017	Molecular detection of porcine circovirus 2 from post weaning multi-systemic wasting syndrome in pigs	Research Article	<i>Trends Biosci</i> 10(14):3142-3143
5	Koulath, R., Priya, P. M., Mani, B.K., Mini, M and Pillai, U. N	2017	Comparison of different diagnostic test to detect feline panleukopenia virus among cats in Kerala, India	Research Article	<i>Indian. J. Anim. Res.</i> 51(2):347-349

6	Reshma, P. S., Ambily, R., Shanthala, H., Nair, S. S., Soumya, R., Vasant, K., Roshin, M.R., Aiswarya, N and Mini, M	2017	Isolation and molecular detection of <i>Corynebacterium pseudotuberculosis</i> from a case of umbilical abscess in a kid	Research Article	<i>Int. J. Sci. Env. Technol.</i> 6(5):2827- 2832
7	Sheikh, M. A., Priya, P. M., Mini, M and Kumar, V.K.	2017	Outer membrane protein A (Omp A) based polymerase chain reaction (PCR) for the detection	Research Article	<i>Int. J. Sci, Env. Technol.</i> 6(4): 2694-2699
8	Roshin, M. R., Sankar, S., Reshma, P. S., Aiswarya, N., Lal, L and Mini, M	2018	A case report on the simultaneous detection of New castle disease and salmonellosis from an outbreak in a pigeon loft in Thrissur district, Kerala	Research Article	<i>Trends Biosci.</i> 10(31):6641- 6642
9	Balan, R., Mini, M., Priya P. M., Joseph S. and Sankar S.	2017	Detection of mammalian –like group a rotavirus in diarrhoeic poultry using RNA- PAGE in Kerala, India state, India	Research Article	<i>Indian. J. Anim. Res</i> 10.18805/ij ar.B-3415

Awards And Honors

01	Dr. M. Mini	Best lady Veterinarian- Indian Veterinary Association, Kerala
02	Dr. Priya P.M	1st place in poster presentation, Indian Poultry Science Association
03	Dr. Surya Sankar	1st place in poster presentation Indian Veterinary Association, Kerala

Distinguished Visitors

01	Students and faculty of Dept of Biology, James Madison University, Harrisonburg, USA.
02	Students and faculty of Dept. of Medical Microbiology, School of Medical Education, Kottayam

DEPARTMENT OF POULTRY SCIENCE

Publications

Sl. No.	Authors/ Editors	Year	Title	Book/ Research article/Popular article	Details of publication
1	P Ponnuvel, P Anitha & Binoj Chacko	2018	Effect of low energy-protein and low phosphorus diets on the production performance of layer chicken	Research Article	<i>International journal of Advanced Research in Biological Sciences, Volume 5, Issue 1-2018</i>
2	T G Soma, Binoj Chacko, P Anitha, S Sankaralingam & K Ally,	2017	Effect of different levels of Aflatoxin B1 on egg production of breeder Japanese Quails (Coturnix coturnix japonica)	Research Article	<i>JIVA Vol 15, issue 2, August 2017 page no 20-24</i>
3	P Ponnuvel, P Anitha & Binoj Chacko	2017	Pictorial guide for Poultry Science matrices	Book	
4	Dr. Harikrishnan S	2017	Kadakkathennakarin kozhy	Popular article	

Training Programme Organized

Sl no	Training programme
1	Training on Egger nursery and poultry farming for farmers at CAS in Poultry Science, Mannuthy from 13-03-2018 to 14-03-2018

2	Training on Current trends in Quail farming for Farmers at CAS in Poultry Science, Mannuthy from 19-03-2018 to 20-03-2018
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DEPARTMENT OF VETERINARY ANATOMY AND HISTOLOGY

Research Projects

Sl. No.	<i>Title of the scheme</i>	<i>Name of the funding agency</i>	<i>Outlay</i>	<i>Completed/Ongoing</i>
1	Comparative Histological and immunohistochemically studies on the pancreas of Malabari and Attappadi Black breeds of goats	State Plan	3.5 lakhs	Completed
2	Comparative studies on Gut Associated Lymphoid Tissue (GALT) in domestic fowl and duck at different ages	State Plan	5 lakhs	Completed
3	Anatomical causes of infertility in crossbred dairy cows: structural and molecular studies on reproductive system	Animal Husbandry Department, Kerala	10.8 lakhs	Ongoing

Publications

Sl. No.	Authors/ Editors	Year	Title	Book/ Research article/Popular article	Details of publication
01	Lucy K. M., Indu V. R., Patki H. S. Leena, C., Surjith, K. P., Fathima, R. and Ashok, N	2017	Comparative Anatomy of Wild Mammals	Book	Jaya Publishing House Delhi. (ISBN. 978-93-86110-62-6). 202p.
02	Indu V. R. Lucy K. M., Ashok, N. Maya, S. and Gleeja V.L.	2017	Histomorphology and scanning electron microscopy of	Research Article	<i>Indian J. Anim. Res.</i> 51 (3) 2017 : 464-468

			the pharyngeal tonsil in goats		
03	Maya, S., Ashok, N., Lucy, K.M., Sreeranjini A.R., Indu, V.R., Sumena K.B. and Sunilkumar, N.S.	2017	Microanatomy of sebaceous glands in deer, goat and sheep	Research Article	<i>JIVA</i> . 2017. pp.25-29
03	Dr S Harikrishnan Dr N S Sunilkumar	2017	Kozhivalarthal meghalayilesa dhyadhakal-Keralathil	Popular Articles / Technical Report	Karshakan December 2017 Issue PP- 52-54
04	Dr. K.M.Lucy	2017	Effective technical writing-characteristics and skills	Popular Articles / Technical Report	Compendium of Refresher programme on reshaping scientific communication in building entrepreneurship. Pp- 75-79.
05	Dr. Maya, S.	2017	Veterinary collegileinnale kalilooode'	Popular Articles / Technical Report	'Reminiscences'. Souvenir of Fest in Meadows. Veterinarians State Convention. pp. 64-72

Training Programme Organized

Sl no	Training programme	Faculty
01	Three months obligatory training program for Assistant Directors of Animal Husbandry Department held from 03.07.2017 to 03.10.201	Dr KM Lucy –Course Director

Awards And Honors

01	Dr A R Sreeranjini	Best oral paper award in the 9 th Keala Veterinary Science Congress- Nedumbassery on 11 and 12 November 2017
02	DrIndu V Raj	Best oral paper award in the 9th Keala Veterinary Science Congress- Nedumbassery on 11 and 12

		November 2017
03	Dr K B Sumena	Best paper award in the IAVA conference held at Bhubaneswar, Orissa during December 21 to 23, 2017
04	Dr. S. Maya	Certificate of Appreciation as “Member of Scientific Advisory Board” of International Journal of Livestock Research (eISSN 2277-1964) in year 2017-18

Outreach Programmes

01	Dr. K..M..Lucy	In Connection with DISA 2018 and state level school youth festival an awareness class for the higher secondary and vocation higher secondary students and parents about the courses of KVASU
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DEPARTMENT OF VETERINARY BIOCHEMISTRY

Research

Sl. No.	Title of the scheme	Name of the funding agency	Outlay	Completed/ Ongoing
1	Molecular characterization of lactoferrin of indigenous goat breeds of Kerala	State Plan	Rs. 4 lakhs	Completed
2	Molecular characterization of genes associated with type 2 diabetes in dogs	State Plan	Rs. 2.5 lakhs	Completed
3	Development of DNA barcoding for wild life forensics	State Plan	Rs. 2.5 lakhs	Completed
4	Investigation of therapeutic and bio-preservative potentials of lactoferrin of Vechur cow milk	Animal Husbandry Department, Government of Kerala	15.29 lakhs	Ongoing
5	Metabolic profiling of transition dairy cows	State Plan	7 lakhs	Ongoing
6	Anti-neoplastic potentials of goat milk lactoferrin	State Plan 2017-18	10 Lakhs	Ongoing

Publications

Sl. No.	Authors/ Editors	Year	Title	Book/ Research article/Popular article	Details of publication
1	R. Lakshmi and K. K. Jayavardhanan	2017	Expression of TLR4 Gene in Spontaneous Bovine Sub-Clinical and Clinical Mastitis Caused by Escherichia coli	Research Article	<i>Int. J. Pure App. Biosci.</i> 5 (1): 99-103.
2	R. Lakshmi and K. K. Jayavardhanan	2017	Sequence characterization and phylogenetic analysis of 'TLR4' gene in vechur cattle.	Research Article	<i>J. of Anim. Res.</i> 7(2).
3	R. Lakshmi and K. K. Jayavardhanan	2017	Relative Expression of TLR9 Gene in Natural Sub-clinical and Clinical Cases of Bovine Mastitis caused by Escherichia coli.	Research Article	<i>Int. J. Curr. Microbiol. App. Sci.</i> 6(5): 1753-1758
4	R. Lakshmi and K. K. Jayavardhanan	2017	Comprehensive Sequence Analysis of TLR Genes in Vechur Cattle.	Research Article	<i>Int. J. Pure App. Biosci.</i> 5 (3): 225-230
5	R. Lakshmi, K. K. Jayavardhanan and J. Thanislass	2017	Toll like receptor-4 gene expression assay in mastitis caused by Staphylococcus aureus in crossbred cattle	Research Article	<i>Int. J. Chem. Studies</i> 5(4): 154-156.
6	R. Lakshmi and K. K. Jayavardhanan	2017	Quantitation of TLR-2 mRNA Expression in Bovine Mastitis Caused by E. coli	Research Article	<i>Int. J. Biochem. Res. & Rev.</i> 17(3): 1-5.
7	R. Lakshmi, K. K. Jayavardhanan and J. Thanislass	2017	Expression of TLR2 gene in bovine mastitis associated with Staphylococcus aureus	Research Article	<i>J. Entomol. and Zool. Studies.</i> 5(4): 1467-1470.
8	R. Lakshmi, K. K.	2017	Staphylococcus aureus Elicit an Increased	Research Article	<i>Int. J. Livestock Res.</i> 7 (8), 167-172.

	Jayavardhanan and J. Thanislass		Expression of TLR9 Gene to the Innate Immune Response in Bovine Mastitis		
9	Anisha J. Perumbilly, Shynu M. and K. K. Jayavardhanan	2017	Evaluation of oxidative status in transition dairy cows.	Research Article	<i>Int. J. App. and Pure Sci. & Agr.</i> 3(7): 114-118.

DEPARTMENT OF VETERINARY AND ANIMAL HUSBANDRY EXTENSION

Research Projects

Sl. No.	Title of the scheme	Name of the funding agency	Outlay	Completed/ Ongoing
1	Development of base level software of virtual farming and farms to ensure attitudinal change of stakeholders towards livestock farms and farming	State plan	5 lakhs	Completed
2	Structured value chain approach for designing strategies to enhance competitiveness and diversification among buffalo and dairy farmers of Kerala	State plan	8.5 lakhs	Ongoing
3	Strengthening of the elephant study centre, CVAS, Mannuthy for better welfare and conservation of captive elephants in Kerala through efficient healthcare, management systems and participatory capacity building methods	State plan	10 lakhs	Ongoing
4	Augmenting livestock technology delivery through micro level Stake holder oriented experiential learning programme for the students in the adopted villages for establishing a single window total solution providing system in livestock and allied sectors	State plan	5 lakhs	Ongoing

Publications

Sl. No.	Authors/ Editors	Year	Title	Book/ Research article/Popular article	Details of publication
1	P. Reeja George and C.M. Sreelakshmi	2018	Opportunities of the Kasargod cattle system – a descriptive analysis Paper	Paper	<i>International Conference on Emerging Synergies in Agriculture, Food processing Engineering and Biotechnology, Karunya University, Coimbatore February 21-23, 2018</i>
2	P. Reeja George and C.M. Sreelakshmi	2018	Determinants of the extent of adoption of improved practices by keepers of Kasargod cattle	Paper	-----do-----
3	V. Saranya., R.S. Jiji and R. Senthilkumar.	2017	Constraints faced by Farmers in Dairy Sector.	Abstract	<i>Compendium, International Conference on Invigorating Transformation of Farm Extension towards Sustainable Development: Futuristic Challenges and Prospects; 9th to 10th March 2018, Coimbatore. Tamil Nadu Agricultural University. p. 451</i>

Training Programme Organized

Sl. No.	Training programme
1	Organized an exhibition and set up a stall of KVASU – as part of National Livestock and Poultry expo by Dept. of AHD, Govt. of Kerala from 10 to 13th November 2017 at Kollam
2	Organized workshop on “Development of virtual farming module” at CDIT Trivandrum
3	Organized workshop as “Content design for virtual farming” at CVAS Mannuthy for Asst. Directors in AH Department (30.9.17)

Awards And Honors

01	Dr.T.S.Rajeev	Cash award of Rs. One lakh conferred by the Govt. of Chatisgarh for exemplary Veterinary Service rendered to capture elephants- by the order of Hon. High court of Chatisgarh
02	Dr.T.S.Rajeev	Special appreciation, award by “Kootukombanmar elephant welfare forum for elephant Health care services – (January 2017)

Outreach Programmes

01	Dr.T.S.Rajeev	<ul style="list-style-type: none"> Radio Talk and Interviews - “Tamed elephant - why become dangerous and correction needed” – All India Radio- broadcast on 25.4.17 (2.5.17).(Dr.T.S.Rajeev) Conducted a Radio talk cum interview on ‘Elephant and Festivals’ AIR , Ramavarmapuram (28.4.17) (Dr.T.S.Rajeev)
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Other Activities

Dr. T.S. Rajeev handled sessions on		<ul style="list-style-type: none"> ‘Elephant & Children’--Summer Camp SPC, Thrissur – Sandeepani School, Kuttumukku (22.4.17) ‘Elephant ‘ at Chancellors’ Club, Thrissur – (14.5.17) ‘Elephant & Children’-- at ChennaipparaDivyahridayasramam live demo – (28.5.17) ‘Elephant & Children’-- Ollukkara NSS Karayogam – (28.5.17) ‘Elephant and Violence Control’ ThrissurPooram – Class to officers (4,5 May 17) ‘Elephant & Children’-- ‘James Madison University - (30.6.17) Climate change and mitigation
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DEPARTMENT OF VETERINARY EPIDEMIOLOGY AND PREVENTIVE MEDICINE

Research Projects

Sl. No.	Title of the scheme	Name of the funding agency	Outlay	Completed/ Ongoing
1	Surveillance of infectious diseases, their anagement and seromonitoring of vaccination in University farm animals	State plan16-17	16 lakh	Completed

2	Clinicopathological studies on avian colibacillosis in kerala	State plan16-17	3 lakhs	Completed
2	Epidemiological study on salmonellosis and colibacillosis in Thrissur, Palakkad and Malappuram Districts	State plan17-18	6 lakhs (allotted 1 lakh)	Ongoing
3	Surveillance of infectious diseases, their management and seromonitoring of vaccination in University farm animals	State plan17-18	20 lakhs (Allotted 2 lakhs)	Ongoing

Publications

Sl. No.	Authors/ Editors	Year	Title	Book/ Research article/Popular article	Details of publication
1	Vinodkumar K <i>etal.</i>	2017	Genotypic and phenotypic B lactam resistance and presence of PVL gene in Staphylococci from dry bovine udder	Research Article	<i>PLOS ONE</i> 12(11)
2	Arthi A, Tresamol P.V.	2017	Molecular identification of <i>Babesiacanisvogeli</i> and its therapeutic Management with imidocarb	Research Article	<i>Int. J. Agric. Sc& Vet. Med.</i> 5: 87-90
3	AmelDev, P. and P. V.Tresamol	2017	Molecular Detection and Therapeutic Management of Feline Mycoplasmosis	Research Article	<i>IOSR J.Agri.Vet. Sci.</i> 10(2) 83-86
4	P.V. Tresamol Anju Moonjely, Suchithra S. and Siju Joseph	2017	Seroprevalence of Leptospirosis among cattle in and around Thrissur District, Kerala	Research Article	<i>Int. J. Livestock Res.</i> 7(3) 45-48

5	Aarsha Raj, Vinodkumar K Tresamol P.V. Deepa P.M and Latha C	2017	Comparison of efficacy of three cowside tests for the diagnosis of subclinical mastitis in dairy cattle.	Research Article	<i>Imperial Journal of interdisciplinary research. 3 (6) 417-418</i>
6	SukanyaSuku maran& P.V Tresamol	2017	Molecular Confirmation of <i>Anaplasma</i> <i>Phagocytophilum</i> in a German Shepherd Dog	Research Article	<i>Imperial Journal of Interdisciplinary Research</i> <i>Vol-3, Issue-5, 1092-1094</i>
7	Arthi A and P.V. Tresamol	2017	Concurrent microfilariosis and chronic dermatophilosis in a dog	Research Article	<i>Indian J.Canine Pract.9(1)86-88</i>
8	Arthi A and P.V. Tresamol and Deepa Chirayath	2017	Puppy strangles and its successful therapeutic Management	Research Article	<i>Indian J.Canine Pract.9(1)91-93</i>
9	Amel Dev P. and P. V. Tresamol	2017	HemotropicMycoplasmo sis – Emerging Cause of Infectious Anaemia in Dogs and Cats	Review article	<i>Int.J.Curr.Micro biol.App.Sci(201 8) 7(1): 1308- 1311</i>
10	Amel Dev P, Tresamol P.V. Aarsha Raj and Mery Rincy	2017	Molecular detection and Therapeutic Management of Malasseziosis in cattle.	Research Article	<i>Int. J. Livestock Res:8(4)154- 160</i>
11	Arthi,A.,Tresa mol,P.V.,Vino dkumar,K.and Sindhu Rajan	2017	Methicillin Resistant staphylococcal pyoderma in a dog	Research Article	<i>Indian Vet. J94(6):56-58</i>

12	Arthi,A.,Tresamol,P.V.and Justin davis	2017	Diagnosis and Treatment of caprine dermatophilosis-A case report	Research Article	<i>Indian Vet.J.</i> 94(6):54-56
13	V.R. Amulya P.V.Tresamol K.Vinodkumar Bindu Lakshmanan., Rajeev T.S. and Sulficar S	2017	Therapeutic Management of Blood fluke infection in an Indian Elephant-A case Report	Research Article	<i>J.Vet.Anim.Sci.</i> 48(1)92-94

Training Programme Organized

Awards And Honors

1	Dr. Vinodkumar, K	Best paper award in the International conference on “Facing challenges together for sustainable Livestock and Poultry Health-A local initiative for global solutions”-organised by TANUVAS at VC and RI, Namakkal, Tamil nadu
2	P.V. Tresamol	Best poster award in the session of Equine and Pack animal Medicine in The 35 th ISVM convention and Symposium held at VCRI Thirunelveli during 22-24 February 2017
3	P. AmelDev and P.V.Tresamol	Best poster award in the session of Infectious diseases of International conference on “Facing challenges together for sustainable livestock and poultry health-A local initiative for global solutions”In held at VCRI Namakkal during 20-21July 2017
02	Dr.Amrutha V S	Second best poster in 9th Kerala Veterinary Science Congress-2017 in Animal Health Science Session

Other Activities

- **Short course offered by Department** Postgraduate diploma in therapeutic management of infectious diseases of pet animal and petbirds
- Organised free antirabies vaccination camp at UVH Mannuthy and Kokkalai on 6th July 2017
- Dr.P.V.Tresamol was the team member of Field investigation on canine ehrlichiosis at Police Dog Training Academy, Ramavarmapuram, Thrissur on 1/11/2017.

DEPARTMENT OF VETERINARY PARASITOLOGY

Research projects

Sl. No.	Title of the scheme	Name of the funding agency	Outlay	Completed/ Ongoing
1	Study on economic impact of anthelminthetics in enhancing milk production in dairy cattle in three agro-ecological zones of South, Central and North Kerala	State Plan	8.00	Completed
2	Development of a multiplex PCR assay for simultaneous detection of <i>Theileriaorientalis</i> and <i>Anaplasma marginale</i> in cattle	State Plan	7.00	Completed
3	Occurrence of <i>Toxoplasma gondii</i> in human, animals and environmental samples – A One Health Approach	State Plan	7.00	Completed
4	Molecular detection of piroplasms and rickettsiales in goats of Kerala	State Plan	5.00	Completed
5	Augmentation of Biotechnology Research in KVASU	State Plan	1.50	Completed
6	“Standardisation of Copro PCR for detection of <i>Haemonchusspp.</i> in cattle”	State Plan	5.00	Ongoing
7	Investigations on animal reservoirs of Leishmaniosis in Kerala	State Plan	5.00	Ongoing

Publications

Sl. No.	Authors/ Editors	Year	Title	Book/ Research article/ Popular article	Details of publication
1	Jose Jain, Bindu Lakshmanan, Hitaishi V Nagaraj, Jose E Praveena, K. Syamala, and TV	2018	Detection of <i>Babesiacanisvogeli</i> , <i>Babesiagibsoni</i> and <i>Ehrlichia canis</i> by multiplex PCR in naturally infected	Research	Veterinarski Arhiv. 88(2): 215-224

	Aravindakshan.2		dogs	Article	
2	H Shameem,KDevada, B. Lakshmanan, S. Joseph, L.Sabu and AP Usha.	2018	Morphological and molecular characterization of common amphistome species from cattle of South India .	Research Article	Journal of Veterinary Medical Allied Sciences. 2(1):7-11.
3	H Shameem,KDevada and K KJayavardhanan	2018	Immunoprofile of partially purified somatic antigens of G.crumenifer	Research Article	International Journal of Science, Environment and echnology. 7 (1): 284-287
4	NajmaNazar, BinduLakshmanan and Jayawardhanan K	2018	Molecular characterization of human Dirofilaria isolates from Kerala.	Research Article	Indian Journal of Medical Research.146:528-533.
5	Kollannur Jose Jain, BinduLakshmanan, K. Syamala, Praveena, JE and TV Aravindakshan	2017	High prevalence of small Babesiaspecis in canines of Kerala,South India.	Research Article	<i>Veterinary World 10(11): 1319-1323</i>
6	MurikoliNimisha, R. KariyappaPradeep, Prashant S. Kurbet, B.M. Amrutha, Anju Varghese, C.K. Deepa, M.N. Priya, BinduLakshmanan, K.G. Ajith Kumar and ReghuRavindran.	2017	A Retrospective Study based on Clinical Samples	Research Article	<i>International Journal of Current Microbiology and Applied Sciences. 6(11): 2381-2392.</i>
7	BinduLakshmanan, Devada K, Siju Joseph, Aravindakshan TV, and Lucy Sabu	2017	Molecular characterisation of snail borne trematodes in dairy cattle of Kerala	Research Article	<i>Life Sciences International Research Journal 4 (2): 72-75.</i>

8	Hitaishi VN, Jain Jose K and BinduLakshmanan	2018	Molecular evidence of pathogenic <i>Trypanosoma evansi</i> in dogs of Kerala	Research Article	<i>Life Sciences International Research Journal</i> 4(2): 76-78
9	H Shameem, K Devada, B. Lakshmanan, S. Joseph, L. Sabu and AP Usha.		Standardisation of coproantigen sandwich ELISA for early immunodiagnosis of amphistomosis in cattle.	Research Article	<i>Indian Journal of Comparative Microbiology, Immunology and Infectious Diseases.</i> 38(1):10-15

Training Programme Organized

Sl no	Training programme
1	ASCAD sponsored 5 day training for paravet staff of AHD. 13.3.18-17.3.2018
2	14 days training on “Molecular Biology and Bioinformatics tools for Advanced Life Science Research” From 19-10-2017 to 1-11-2017

Outreach Programmes

1	Department faculty handled classes for three months training programme for Assistant Directors of Animal Husbandry Department - from 3/7/17-3/10/17 at College of Veterinary and Animal Sciences, Mannuthy, Thrissur organized by Directorate of Entrepreneurship, KVASU
2	Dr Bindu Lakshmanan was faculty for “Samrabhakathua Mithra” –training for entrepreneurs in livestock sector. Organized by DE ,KVASU at Muringoor Farm, Chalakudy on 8.3.2018
3	Dr Bindu Lakshmanan handled Class on “Parasite control in monsoon season” for selected beneficiaries of Valappadpanchayat at Milk Society on 05/10/2017
4	Dr Bindu Lakshmanan and Dr K Syamala: Handled classes for BSc MLT students from different colleges of Kerala on 15.7.2017 and 22.12.2017.
5	Dr Bindu Lakshmanan was the team member of Field investigation on canine ehrlichiosis at Police Dog Training Academy, Ramavarmapuram, Thrissur on 1/11/2017.

DEPARTMENT OF PHARMACOLOGY & TOXICOLOGY

Research Projects

Sl. No.	Title of the scheme	Name of the funding agency	Outlay	Completed/ Ongoing
1	Identification of mechanisms of anthelmintic resistance in gastrointestinal nematodes of ruminants of northern Kerala and effect of phytochemicals in resistant nematodes	KSCSTE	15 lakhs	Completed
2	Screening of medicinal plants for anticancer activity	State plan		Completed
3	Evaluation of medicinal plants for wound healing activity	State plan		Completed

Publications

Sl. No.	Authors/ Editors	Year	Title	Book/ Research article/Popular article	Details of publication
1	Krishnaprasad G.K., Sujith, S., Preethy John, Priya M N., Devi, S.S., Usha PTA, Surya S. and Gleeja V.L	2018	Anthelmintic activity of fruit extract and fractions of Piper longuminvitro	Research Article	<i>Phcog J.</i> 10: 333-340
2	Reni John, Bibu J.K. and Usha P.T.A	2018	In vitro antioxidant activity of methanol extract of Erythrina variegata stem bark	Research Article	<i>Int. J. Applied Pure Sci. Agriculture</i> , 4: 18-22..
3	Reni John, Krishanprasad G.K., Surya S., Bibu John K., Dhanush K.B. and Usha P.T.A	2017	Acute oral toxicity study of aqueous and methanolic extract of Blumeavirens in Sprague Dawley rats	Research Article	<i>Exploratory Animal and Medical Research</i> , 7(2): 154-158.

Awards And Honors

01	Dr. Bibu John Kariyil	Best poster presentation award in the XVII Annual Conference of Indian Society of Veterinary Pharmacology & Toxicology at College of Veterinary Sciences, Lalalapat Rai University of Veterinary and Animal Sciences, Hisar from 20th to 22nd, December, 2017
02	Dr. Bibu John Kariyil	Best poster award in the National Seminar “Antiproliferative and apoptotic potential of fraction of methanolic extract of Annonamuricata against human breast cancer cell lines” which was awarded the on Application of 4Rs in alternatives to animal testing at JSS College of Pharmacy, Ooty from 15th and 16th September, 2017
03	Dr. Bibu John Kariyil	Best oral presentation award in the International Conference on Herbal and Natural components as the future of Pharmacology and 7th Annual meet of the National Society of Ethnopharmacology organized by Department of Biochemistry, Biotechnology and Bioinformatics, Avinashilingam Institute for Home Science and Higher Education for Women University from 27th February to 1st March, 2017.

DEPARTMENT OF VETERINARY PHYSIOLOGY

Research Projects

Sl. No.	Title of the scheme	Name of the funding agency	Outlay	Completed/ Ongoing
1	Isolation , culture and characterization of goat mammary gland stem/progenitor cells	State plan	5lakh	Completed
2	Molecular characterization of HIF-1α gene of indigenous and cross bred cattle of Kerala	State plan	4 lakh	Completed
3	Physiological evaluation of electrolyte supplementation to ameliorate heat stress in cattle	State plan	2 lakh	Ongoing

Publications

Sl. No.	Authors/ Editors	Year	Title	Book/ Research article/Popular article	Details of publication
1	Ambily T.R, Beena V*, Karthiayini K, Uma R, Ramnath V and Sunanda C	2017	Effect of antioxidant supplementation on haematological parameters of transition dairy cattle	Research Article	<i>International Journal of Science, Environment and Technology, Vol. 6, No 5, 2017, 2785 – 2791</i>
2	M. D. Pratheesh .Nitin E. Gade . Amar Nath .Pawan K. Dubey . T. B. Sivanarayanan . D. N. Madhu . T. R. Sreekumar .Amarpal . G. Saikumar . G. Taru Sharma	2017	Evaluation of persistence and distribution of intra-dermally administered PKH26 labelled goat bone marrow derived mesenchymal stem cells in cutaneous wound healing model	Research Article	<i>Cytotechnology DOI 10.1007/s10616-017-0097-0</i>
3	M.D. Pratheesh, Pawan K. Dubey, Nitin E. Gade, Amar Nath, T.B. Sivanarayanan, D.N. Madhu, Anjali Somal, Indu Baiju, T.R. Sreekumar, V.L. Gleeja, Irfan A. Bhatt, Vikash Chandra, Amarpal, Bhaskar Sharma, G. Saikumar, G. Taru Sharma	2017	Comparative study on characterization and wound healing potential of goat (<i>Capra hircus</i>) mesenchymal stem cells derived from fetal origin amniotic fluid and adult bone marrow,	Research Article	<i>Research in Veterinary Science, Volume 112, 2017,</i>

Outreach Programmes

01	Dr.V.Beena	<ul style="list-style-type: none"> • Radio talk on lactation physiology on 15-02-18 • Took class for the farmers at Milk Society Mannamangalam on Summer Management of Dairy Animals on 13-03-18
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DEPARTMENT OF VETERINARY PUBLIC HEALTH

Research Projects

Sl. No.	Title of the scheme	Name of the funding agency	Outlay (lakhs)	Completed/ Ongoing
1	Occurrence of <i>Toxoplasma gondii</i> in feline, caprine, human and environment samples- A One Health Approach”	State Plan	5.0	Completed
2	Anti-microbial effect of plant derived essential oils and antibiofilm effect of chitosan on Enterohaemorrhagic <i>E.coli</i> (EHEC) on beef carcasses	State Plan	4.0	Completed
3	Strengthening of School- Assessment of prevalence of <i>Vibrio cholerae</i> in water sources and human diarrhoeicfaecal samples from in and around Thrissur District of Kerala	State Plan	10.0	Completed
4	Outreach Programme on Zoonotic Diseases	ICAR	6.75	Ongoing
5	Assessment of the status of antibiotic residues in milk samples in and around thrissur district of kerala	State Plan	5.0	Ongoing
6	Effect of various herbal and chemical sanitizers on quality of drinking water	State Plan	3.0	Ongoing
7.	Strengthening of School- Impact of animal and population dynamics and environment on Leptospira infection in Alappuzha, Kerala	State Plan	6.0	Ongoing

Publications

Sl. No.	Authors/ Editors	Year	Title	Book/ Research article/Popular article	Details of publication
1	C. Sethulekshmi, C. Latha and C.J. Anu	2018	Occurrence and quantification of shiga toxin producing <i>Escherichia coli</i> from food matrices	Research Article	<i>Veterinary World</i> , 11 (2): 104-11
2	K.VrindaMenon, B.Sunil, C. Latha and C. Sunanda	2017	Survivability of <i>Listeria monocytogenes</i> in sea water from coasts of Kerala, India Off Arabian Sea.	Research Article	<i>Pollution Research</i> , 36(3): 588-592.
3	K.VrindaMenon, B.Sunil, C. Latha and Ashok Kumar	2017	. Critical Control Points of <i>Listeria</i> species in two major fish catchment areas, Kerala, India	Research Article	<i>Veterinary Science research Journal</i> , 8(1): 20-25
4.	Joseph, A.P. Latha C. Vinodkumar, V.K. Sathu T and C Latha	2017	An important approach for control of Enterohaemorrhagic <i>Escherichia coli</i> by identification of contaminating sources in beef production line	Research Article	<i>Int. J. Curr. Microbiol.</i> 7: 1921-1929.
5.	Latha, C., C.J Anu, VJ Ajaykumar, B Sunil .	2017	Prevalence of <i>Listeria monocytogenes</i> , <i>Yersinia enterocolitica</i> , <i>Staphylococcus aureus</i> , and <i>Salmonella enterica Typhimurium</i> in meat and meat products using multiplex PCR.	Research Article	<i>Vet. Wld.</i> 10: 927-929.
6	Aarsha Raj, K Vinodkumar, PV Tresamol, PM Deepa, C Latha.	2017	Comparison of Efficacy of Three Cow Side Tests for the Diagnosis of Subclinical Mastitis in Dairy Cattle	Research Article	<i>Imperial J Interdisciplinary Res.</i> 3: 417-418.

7	Muralikrishna P, Sunil B, C Latha, Archana S.N, Savita R.K, Vanitha H.D and Drishya P.	2017	One health approach in bio-medical waste management.	Research Article	<i>Journal of Science, Environment and Technology, 6 : 1090 – 1094.</i>
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Training Programme Organized

Sl no	Training programme
1	The workshop on ‘Culture of Responsibility was organized by the School of Zoonoses Public Health and Pathobiology , in association with the American Society of Microbiology for the post graduate students and staff of Jubilee Mission Medical College, Amala Medical College and Government Medical College, Thrissur at College of Veterinary and Animal Sciences, Mannuthy on September, 18 th 2017.
2	The workshop on ‘Culture of Responsibility was organized by the School of Zoonoses Public Health and Pathobiology , in association with the American Society of Microbiology for the Post graduate and PhD students at College of Veterinary and Animal Sciences, Mannuthy on March, 14 th 2018
3.	Awareness programme and exhibition was organized on World Zoonoses Day, 6 th July, 2017 for farm workers, students and staff of CVAS, Mannuthy.
4	An exhibition on “Know Zoonoses to no Zoonoses’ , awareness class on zoonoses and workshop on techniques in identification of parasites was organized at St Xaviers College, Aluva on March 13 th , 2017.
5.	SVS Training programme conducted on 14 th -15 th September, 2017
6.	One day training for Livestock Inspectors as a part of ASCAD training programme in March, 2018

Awards And Honors

01	Dr. K.Vrinda Menon	best paper award in the National seminar on ‘Food adequacy & Climate Change, Strategies for Sustainable Food Production’ 2017 organised by
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		AMST at Thrissur on 3 & 4 November, 2017
02	Dr. K.Vrinda Menon	first prize for oral presentation in Animal Health Sciences session in the 9 th Kerala Veterinary Science Congress KVSC, 2017
03	Sunil B., Meera B.V., Latha C., Vrinda K M and Muralikrishna P	Best paper award in the National seminar on 'Food adequacy & Climate Change, Strategies for Sustainable Food Production' 2017 organised by AMST at Thrissur on 3 & 4 th November, 2017.
04	Muralikrishna P., Deepa J., Sunil B., Savitha R.K., Vani R., Vrinda K M and Raghavenra V	Best poster presentation in the National seminar on 'Food adequacy & Climate Change, Strategies for Sustainable Food Production' 2017 organised by AMST at Thrissur on 3 & 4 th November, 2017.
05	Muralikrishna P., Kumaraswmy N.P., Vani R., Ajay T.B., Sunil B., Vrinda K.M. & Latha C	Beat Poster award I National seminar on surveillance and control of rabies and other zoonotic diseases held on 28 th September, 2017 at CVAS, Mannuthy
06	Kumarswamy N.P., Muralikrishna P, Deepthi V. and Latha C	Best paper presentation in the National seminar on 'Food adequacy & Climate Change, Strategies for Sustainable Food Production' 2017 organised by AMST at Thrissur on 3 & 4 th November, 2017

Distinguished Visitors

01	Dr R. Zende, Professor and Head, Department of Veterinary Public Health, Bombay Veterinary College visited the quality Control Laboratory as Lead Auditor for NABL final audit on 10/3/18 to 11/3/18.
02	Dr S. Rajagunalan Assistant Professor, Department of Veterinary Public Health, College Veterinary Animal Sciences, Thirunellvelli, October 24 th -26 th , 2017
03	Dr Srinivasa Rao, Assistant Professor, Department of Veterinary Public Health, College Veterinary Animal Sciences, Gannavaram December 4 th -6 th , 2017

04	Dr V A Shanmugha Selvan , Senior Scientist and Head, Dept. Pesticide Residue Division of UPSAI Tea Research Foundation, Valparai, Tamil Nadu visited as Lead Assesor for NABL final audit on 10/3/18 to 11/3/18.
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Other Activities

- The Quality Control Laboratory certified as NABL Accredited Laboratory for water testing (Estimation of Total coliform, *E.coli*, Faecal streptococcal / Enterococccal counts in water) since 2015.
- Revolving fund on ‘Evaluation of quality of food and water quality’ since 2011.
- Guidance and facilities provided for dissertation work for post graduate students – M Sc programmes from other Universities.
- Technical advice provided to farmers
- Involved in taking awareness class for farmers, veterinarians and general public



DEPARTMENT OF SURGERY AND RADIOLOGY

Research Projects

Sl. No	Title of the scheme	Name of the funding agency	Outlay	Completed/ Ongoing
1	Establishment of A State of The Art Large Animal Surgical Teaching Facility in the Department of Surgery and Radiology	RKVY	50 lakhs	Completed

2	Clinical Applications of Porcine Derived collagen graft in veterinary Practice	KSCSTE	16 lakhs	Completed
3	Certificate course on Animal handling in Zoo And Forest	Dept of Zoo & Museum, STD	44.75 lakhs	Completed
4	Maintenance of Healthy Hoof in Dairy Cattle for Production Benefits and Welfare Improvement	KSCSTE	2 lakhs	Completed
5	Evaluation and Prophylactic Management of Laminitis for Enhancing Production in Dairy Cattle	AHD	3.6 lakhs	Completed
6	Field studies on hoof disorders in goats to develop a protocol for its clinical management	ATMA	5.8 lakhs	Completed
7	<i>Early life care of calves and its implication in future milk production.</i>	Dept.of Animal Husbandry, Kerala	13.5 lakh	Ongoing
8	<i>Centre for rehabilitation of stray puppies under end programme</i>	State Plan	2.00 lakh	Ongoing
9	<i>eVetconnect for providing 24x7 Veterinary Services</i>	State Plan	35.00 lakh	Ongoing
10	<i>Revolving Fund project on "Comprehensive Surgical Care"</i>	State Plan	2.00 lakh	Ongoing

Publications

Sl. No.	Authors/ Editors	Year	Title	Book/ Research article/Popular article	Details of publication
1	Anoop S., K.S. Pallavi., Syam K.V. Joyous., T.V. Anilkumar and C.B. Devanand Aravindakshan	2017	Cholecyst Derived Collagen as an extracellular matrix Scaffold graft for the management of corneal ulcer in dogs	Research Article	<i>Ind .J. Vet.Surg</i> 37(2):55-568

2	Anoop,S., Sherin B S., Dileepkumar. K.M., Jinu. J., Syam K.Venugopal and Devanand C.B.	2017	Acute traumatic diaphragmatic hernia and Post Operative Pneumothorax in a Mongrel Puppy.	Research Article	<i>International J. Advanced Biological Research.</i> 7(4).
3	Laiju M. Philip, Abhilash R.S. and Francis Bastin P..	2017	Accuracy of TransvaginalUltraso nography for Early Pregnancy Diagnosis in Attappady Black Goats	Research Article	<i>Malaysian Journal of Veterinary Research.8:</i> 35-41
4	M. Unny, N, Sulficar,S., Anoop, S., Laiju M. Philip , Ambily V.R., Janus,A and Ajithkumar, S.	2017	Upper Respiratory Tract Infection and Guttural Pouch Tympany in a Horse.	Research Article	<i>The North East Veterinarian</i> 17: 38.
5	Abhijith, M.S.,John Martin K.D., Devanand, C.B., Syam K Venugopal, Dileep Kumar K.M., Laiju M Philip and Usha P.T.A	2017	Epidurographic diagnosis of lumbar spinal cord Injury in a lhasapso dog and its successful Managemen	Research Article	<i>International Journal of Science, Environment and Technology,</i> 6: 2412 – 2416.
6	Sudheesh, S. Nair., Devanand, C. B., Anoop. S., and Vasanth Kumar, H.G.	2017	Threshold analysis of indicator traits for involuntary disposal in Holstein Friesian crossbred cattle	Research Article	<i>Indian Journal of Animal Sciences.</i> 87(1): 128– 130
7	Dr. Laiju M Philip	2017	Nallapasuvinalavot hakulamb	Popular article	<i>Karshakasree</i> <i>July 2017 p</i> <i>104-105</i>
8	Dr. Soumya Ramankutty	2017	Obstructive urolithiasis in ruminants-	Research Article	<i>World veterinary Day 2017, Souvenir. P</i> 62-63
9	Dr. MK.	2017	Pachayudepakarnnat tantal-collection of	Book	

	Narayanan		articles		
10	Dr. MK. Narayanan	2017	Hand Book on Animal Handling in Zoo & Forest	Book	
11	Dr. Laiju M Philip	2017	Training manual on prophylactic hoof care in farm animals	Book	

Training Programme Organized

Sl no	Training programme
1	Seminar on Human animal Conflicts in Kerala :from status to Solution on 14-16 June, CVAS, Mannnuthy
2	Experiential training on prophylactic hoof care in farm animals from 21.4.17 – 22 .4.17 and 19.5.17-20.5.17 at CVAS, Mannnuthy

Awards And Honors

01	Dr. Sudheesh S. Nair	Gold Medal and Best Paper Award in the Wild life Surgery Session, ISVS 41 ST Annual Congress
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Other Activities

- DOCUMENTARY:- Kulambinumvenamkaruthal – telecasted by Dooradarshan, Thiruvanthapuram 21st November 2017 (DD Malayalam)
- VI.RADIO TALK :-Footcare in dairy cattle- All India Radio, Thrissur. (March 2, 2017)



DEPARTMENT OF STATISTICS

Publications

Sl. No.	Authors/ Editors	Year	Title	Book/ Research article/Popular article	Details of publication
1	Krishnaprasad GK, Sujith S, PreethyJ, Priya M N, Devi S, Usha P T, Surya S, Gleeja VL	2018	Anthelmintic Activity of Fruit Extract and Fractions of Piper longum L. In vitro	Research Article	<i>Pharmacogn J. 2018; 10(1)</i>

Statistical consultation and analysis is carried out on a continuous basis as per requirement.

DEPARTMENT OF ANIMAL REPRODUCTION GYNAECOLOGY AND OBSTETRICS

Research Projects

Sl. No.	<i>Title of the scheme</i>	<i>Name of the funding agency</i>	<i>Outlay</i>	<i>Completed/ Ongoing</i>
1	<i>Multi target therapeutic approach for management of repeat breeding in cattle</i>	<i>ATMA, Department of agriculture</i>		<i>Ongoing</i>
2	<i>Management of infertility in crossbred cattle by invitro production of embryos</i>	<i>State Plan</i>	<i>1 lakh</i>	<i>Ongoing</i>
3	<i>Monitoring and improving the reproductive efficiency of cross bred cattle.</i>	<i>State Plan</i>	<i>1 lakh</i>	<i>Ongoing</i>
4	<i>Strengthening AI centre and Bull Station</i>	<i>State Plan</i>	<i>3 lakh</i>	<i>Ongoing</i>
5	<i>Investigation and management of companion animal fertility”</i>	<i>State Plan</i>	<i>10 lakh</i>	<i>Ongoing</i>

Publications

Sl. No.	Authors/ Editors	Year	Title	Book/ Research article/Pop-ular article	Details of publication
1	R.H. Naveenkumar, C. Jayakumar, G.S. Shravya and C.M. Sudha	2018	Ectopic pregnancy in a malabari doe	Research Article	<i>Indian Journal of Animal Reproduction 38(1): 72-73</i>

2	Jayakumar C., Chinnu P.V., Amritha A. and Unnikrishnan M.P.	2017	Challenges in management of Canine high risk pregnancies with single pup syndrome.	Research Article	<i>Indian Journal of Canine Practice, Vol : 9 (1): 22-26.</i>
3	Shravya G. S., Jayakumar C., Smitty J. and Naveen Kumar R. H.	2017	Mucometra in a persian cat	Research Article	<i>Indian Journal of Canine Practice,): 137- 138</i>
4	Jayakumar. C, Sudha.C.M, Niyaz. E and Naveenkumar.R.H	2017	Unilateral bartholin's gland cyst in a dog	Research Article	<i>Indian Journal of Animal Reproduction 38 (1): 74-75</i>
5	C. Jayakumar, G. Sudha, S. Kantharaj and K. Lakshmikanth	2017	Hydrometra in jamnapari goats - two case reports	Research Article	<i>Indian Journal of Animal Reproduction, 38(1): 72-73.</i>

Awards And Honors

01	Dr. C. Jayakumar	Recipient of University Gold medal for the highest grade point average in Veterinary Gynaecology and Obstetrics during doctoral programme during the ninth convocation of the Karnataka Veterinary, Animal and Fisheries Sciences University held on 7th April 2017.
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Other activities

<ul style="list-style-type: none"> • Dr Unnikrishnan M P, Dr Abhilash, Dr Magnus Paul K, Dr M O Kurian- Handled a session each on “Reproductive management in bovines” for the training programme for Assistant Directors of Department of Animal Husbandry, Kerala on 25th August 2017. • Dr Magnus Paul K, Dr M O Kurian- Handled a session each on “AI in bovines” for the training programme for Livestock Inspectors of Department of Animal Husbandry, Kerala July and August 2017 • Dr Magnus Paul K Handled a session on Successful poultry rearing to farmers at Extension Trainin centre in July 2017 • Dr Unnikrishnan M P- Farmers training on management of goat reproduction during January 2018 • Dr Jayakumar- Training class at Goat and Sheep farm, Mannuthy on “ Reproductive management in goats” as a part of skill development training on “ Commercial Goat

Rearing” for farmers on 19th to 20th April 2017.

- Dr Jayakumar and Dr Magnus Paul K-Subject expert for Infertility camp for bovines at Thekkumkarapanchayath on 15th September 2017.
- Dr Jayakumar Radio talk on “Infertility in cows and correction” at All India Radio broadcasted on 28th March 2018.



UVH &TVCC, MANNUTHY

Research projects

Sl. No.	Title of the scheme	Name of the funding agency	Outlay	Completed/Ongoing
1	Development of new Teaching Veterinary Clinical Complex to impart advanced veterinary health service to farmers in Kerala	State plan	50	Completed
	Universal Veterinary Health Coverage for Optimizing Productivity of Livestock	State plan	10	
	Doorstep Veterinary Services to the Rural Farmers of Selected Villages through Ambulatory Clinic	State plan	15	
	Establishment of canine fertility unit at University Veterinary Hospital, Mannuthy	State plan	15	

Laboratory services

The clinical lab is carrying out the following activities

- Routine faecal sample examination
- Urinalysis
- Blood and buffy coat smear examination
- Skin scrapings and impression smear examination
- Complete blood count
- Serum biochemistry (ALP, ALT, Total protein, Albumin, Bilirubin, Blood Urea Nitrogen, Creatinine, Calcium, Phosphorus)
- Microbial culture and sensitivity

Hostels – facilities infrastructure created and hostel day celebrations

UG ladies hostel

1. Number of students admitted to hostels : 395
2. Hostel facilities : Rooms for accommodating students, Recreation room-4 (TV), Computer Room (with printer and Wi Fi facility), Guest room (4)
3. Hostel Day celebrations: This year celebrated on March 3rd, 2018
4. **New infrastructure created/resources acquired/facilities created:** Purchase of water cooler (PTA fund) for old annex, repair of exhaust of mess, repair of bathroom tiles of main, new & old block of ladies hostel, repair of damaged compound wall of old annex & its roof

PG Ladies Hostel

1. Number of students admitted to hostels : 89
2. Hostel facilities : Rooms for accommodating students, Recreation room (TV), Computer Room (with printer and Wi Fi facility), Guest room (3)
3. Hostel Day celebrations : Along with UG hostel
4. **New infrastructure created/resources acquired/facilities created:** Incinerator for disposal of sanitary napkins, Invertor in the mess hall, repair of roof of mess hall, deep freezer for mess.

UG Men's Hostels

The main hostel has 72 rooms, 12 rooms in each wing (2 wings in each floor with 3 storey) out of that one room is used as Assistant wardens office. The hostel has the facility of wifi, reading room, recreation room and TV room.

New infrastructure created/resources acquired/facilities created

- A Table Tennis table was brought from physical education dept to hostel
- Using Parent Teachers Association fund 17 new fans have been purchased and fitted in various rooms where the old ceiling fans were faulty or non-functional
- Using university funds 25 cots and 42 steel cupboards were purchased

1. Hostel facilities and number of students admitted to hostels

The U.G MEN'S hostel of CVAS, Mannuthy has 72 rooms, 12 rooms in each wing (2 wings in each floor with 3 storeys) out of that one room is used as Assistant warden's office. In the remaining 71 rooms, 202 students are accommodated. Due to lack of space 7 students (2017 batch) are accommodated in 3 rooms of PG block. The hostel has the facility of wifi, reading room, recreation room and TV room.

2. Hostel day celebrations

"MYTH" the Men's hostel day was conducted on April 10th 2018. The inaugural function commenced at 6pm at the Men's hostel campus with Dr.Rejil M,C our alumnus and present deputy collector of Thrissur as chief guest. Presidential address was delivered by Mr.RynuUsman, Hostel secretary and felicitations were offered by Dr. C. Latha, Dr.SudheerBabu, Dr.Harikrishnan S and Mr.Aswin S Warriar. The chief guest has appreciated the creative works of the inmates in bringing up beautiful structures concerned with the theme of the hostel day. Vishnu G Dharan, Joint Hostel Secretary delivered the vote of thanks. The inaugural function was followed by cultural programmes of the inmates. Approximately 800 members including staff, students and laborers of our college have participated in the event. The programme came to an end by 10pm.

Sports, physical education and co curricular activities conducted 2017-18.

Conducted inter class athletic meet and Conducted inter class Chess (M&W) Table Tennis, Volleyball, Shuttle badminton, Football & Cricket (Men)

Infrastructure created

Infrastructure in progress Cricket Nets for practice, Renovation of Health club, Light facilities the indoor shuttle court modified.

AVAILABLE FACILITIES FOR CO CURRICULAR & EXTRACURRICULAR ACTIVITIES

- One Basketball court, one football field, Track & Field for Athletics, Two Table Tennis board,
- Health club, two indoor Shuttle badminton courts, Two Volleyball courts



NCC ACTIVITIES AND REPUBLIC DAY AND INDEPENDENCE DAY CELEBRATIONS KERALA REMOUNT & VETERINARY SQUADRON NCC MANNUTHY, THRISSUR

The NCC unit of our college, imparts training to the cadets in drill, weapon training, firing etc. in weekly parades, with a minimum of 35 parades in a year. The horse riding and equitation training is done on every day morning and evening. As per the new VCI syllabus the Associate NCC Officers are offering compulsory course RV NCC to 1st year and 2nd year students of College of Veterinary and Animal Sciences, Mannuthy and College of Forestry, Vellanikkara.

This year cadets attended Annual Training Camps; Army attachment Camp at RVC Center and College, Meerut and Republic Day Camp - 2018 at New Delhi. The cadets also participated in Social service activities like Eye donation campaign, Tree Plantation, Yoga day celebration, Independence day celebration, Republic day celebration and 'Swachh Bharath activities of campus cleaning at CV&AS, Mannuthy

Brief report on Tree plantation camp held on the World Environment Day

On 05.06.2017, Around 70 cadets of CV&AS, Mannuthy had participated in the Tree Plantation camp held at College of Veterinary & Animal Sciences, Mannuthy and planted around 500 saplings in and around the campus as part of World Environment Day celebration.



Brief report on NCC day celebration held at NCC Directorate, Trivandrum

Ten cadets of our unit had participated in different equestrian events held at the NCC day celebration on 19th and 20th, November, 2017 organised by NCC Directorate of Kerala and Lakshadweep, Trivandrum. The Honorable Chief Minister of Kerala, Pinarayi Vijayan was the chief guest of the function.



REPUBLIC DAY CELEBRATIONS

Dr. C. Latha, Dean, CV&AS, Mannuthy hoisted the flag in 69th Republic day function on 26.01.2018 and delivered the speech



NSS ACTIVITIES

Seven days experiential learning camps were organized for the students of CVAS, Mannuthy under the auspices of NSS unit in March 2018 at Puthurpanchayath, Mannammangalam and ManiyanKinar colony, Panancherypanchayath. Ninety seven student volunteers attended the programme with the objective of conducting a detailed survey to identify the possibilities and problems of animal husbandry of these two panchayats and to gain direct experience from the farmers. The volunteers were directed to visit as many farmers' houses as possible in groups guided by farmer's representative and teachers. The group members were pre-trained to conduct the survey and were asked to observe in detail the farmer premises, their method of management and also to have open ended questions and informal discussions with them. As part of this camp,

a veterinary animal health camps were organized at Mannamangalm, Chennaipara, Puthankadu, Marottichal, Vallur and Murukkumpara on 11.03.2018 with the support of the Mannamangalam Co-operative milk society and experts from College of Veterinary and Animal Sciences, Mannuthy. A medical camp for the residents was held at Mannamangalam society hall on 12.03.2018 with the support of the ALSALAMA eye hospital, Perinthalmanna and College of Veterinary and Animal Sciences, Mannuthy. A farmer student interaction and evaluation session followed the field visit under the leadership of office bearers of milk Cooperative society and LSGs with the subject matter specialists from College of Veterinary & Animal Sciences University.



STUDENTS' UNION ACTIVITIES

The Students' Union was actively involved in organizing programmes in various spheres of interest. Major programmes organized include:

- Blood donation programme: January 16, 2018
- Valentine's Day programme: February 14, 2018
- Interclass games: February 21, 2018-06
- Interclass quiz : February 28 and March 2, 2018
- Interclass arts festival *Ishya*: July 3rd to 8th, 2018
- Onam celebrations *Kelikottu* September 16, 2017
- International Film Festival: November 12th to 13th, 2017
- Iftar party : June 17, 2017
- Reading Day Commemoration: June 19, 2017

COLLEGE OF VETERINARY & ANIMAL SCIENCES, POOKODE



Details of students (UG/DIPLOMA/MVSc/PhD)

Sl. no.	Batch	Number of Students		
		Boys	Girls	Total
1	2013 and earlier Admn.	23	32	55
2	2014 and earlier Admn.	31	44	75
3	2015 Admn.	43	78	121
4	2015 Admn. concurrent	3	4	7
5	2016 Admn.	46	80	126
6	2017 Admn.	33	58	91
7	2015 Diploma (Dairy Science)	14	12	26
8	2016 Diploma (Dairy Science)	15	14	29
9	2017 Diploma (Dairy Science)	16	11	27
10	2015 BSc (Poultry Science)	3	6	9

11	2016 BSc (Poultry Science)	10	15	25
12	2017 BSc (Poultry Science)	14	10	24
13	2016 PG/ PhD	15	17	32
14	2017 PG/ PhD	10	24	34
15	2016 PhD	1	1	2
16	2017 PhD	1	2	3
	Total	278	408	686
	Grand Total	686		

RESEARCH

Sl No.	Project Title	Funding agency	Investigators	Financial Outlay (in lakhs)	Status (completed/ Ongoing)
1	Mapping, Standardisation and Quality evaluation of traditional value added products from meat, poultry and eggs	State Plan Scheme	Dr. Renuka Nayar	3.00	Completed
2	Efficacy of turmeric (<i>Curcuma longa</i>) and curry leaves (<i>Murraya koenigii</i>) on the microbiological and sensory qualities and oxidative stability of comminuted meat products from beef	State Plan Scheme	Dr. Kavitha Rajagopal	2.00	Completed
3	Characterization of dairy effluent microbiota from dairy plants in Wayanad district	State Plan Scheme	Dr. Magna Thomas	2.5	Completed
4	Isolation and identification of lactic acid bacteria with	State Plan Scheme	Dr. Magna Thomas	6.00	Completed

	probiotic potential from raw cow milk in Wayanad district				
5	Identification of the Causative Genes and Mutations Conferring Resistance against Tick Infestation in Cattle	KSCSTE-Science Research Scheme (SRS)-Project	Dr.C.N.Dinesh	30.424	Completed
6	Characterization of Retinol Binding Protein 4 (RBP4) gene in Malabari and Attapady Black goats of Kerala	KSCSTE Best Paper Award Project	Dr. Naicy Thomas,	1.00	Completed
7	A Study on the Morphometric Traits of Desi Cattle of Wayanad District	KSCTE-Student Project	Dr. Rojan P. M	0.1	Completed
8	Differential Expression Profiling of Candidate Genes of Bovine Mastitis	State Plan Project 2017-18	Dr. Muhasin Asaf V. N	5.0	Completed
9	Complete feeds for dairy cows as a solution for the feed and fodder scarcity of Kerala	State Plan Project 2017	Dr. Biju Chacko, Dr. Dildeep. V Dr. S. Senthil Murugan	5.00	Completed
10	Expression profiling of FCR genes in Malabari kids at different sources of protein	State Plan Project 2017	Dr. S Senthil Murugan Dr. Shyama K. Dr. Biju Chacko	7.00	Completed
11	"Identification of Mechanisms of Anthelmintic Resistance in Gastrointestinal Nematodes of Ruminants of Northern Kerala and Effect of Phytochemicals in Resistant Nematode"	KSCSTE	Dr. Sujith, S Co. PI: Dr Deepa, C.K	15.54	Completed on 31-12-2017

12	Centre for Tick and Tick Borne Diseases, Kerala under Scheme for Augmentation of Research and Development (SARD)	KSCSTE	Dr. Reghu Ravindran	18 .0	Completed on 15-4-2017
13	Molecular detection of ticks and tick borne pathogens under Young Investigators Programme in Biotechnology (YIPB)	KSCSTE	Dr. Reghu Ravindran, Dr. Leena Chandrasekhar, Dr. Deepa, C.K.	21.51160	Completed on 15-4-2017
14	Chemical, structural and functional characterization of identified anti-tick lead phytochemicals and optimization of delivery matrix for effective application of natural formulation for the control of acaricide resistant ticks	National Agricultural Science Fund (ICAR-NASF)	D. Sanis Juliet, Dr.Reghu Ravindran Dr. Ajith Kumar K.G Dr. Suresh N. Nair	33.46980	Ongoing
15	Molecular diagnosis of <i>Babesia gibsoni</i> infection in canines	KSCSTE (Best paper award scheme)	Dr. Anju Varghese	1.0	Ongoing
16	Multimedia Extension Unit	NABARD 2017-18	Dr Subin K Mohan	100	Ongoing
17	Detection and molecular characterization of emerging viral pathogens of pigs	2016-2019Kerala State Council for Science, Technology and Environment (KSCSTE), Government of Kerala	PI: Dr. Chintu Ravishankar CoPI: Dr. Koshy John Dr. Reghu Ravindran	29.444	Ongoing
18	Establishment of reference interval for Biochemical parameters in cattle and dogs of Kannur and Kasaragod districts of Kerala.	2016-17		7 lakhs	Completed

19	Establishment of reference interval for Biochemical parameters in cattle and dogs of Kozhikode and Malappuram districts of Kerala.	2017-18		8.75 lakhs	Ongoing
	Detection and antibiogram profiling of Enteropathogenic E. coli (EPEC) isolates from diarrhoeal episodes of human infants and young animals in Northern districts of Kerala	16-17		8.0	Completed
	Studies on Food Borne and Zoonotic Diseases	16-17		10.0	Completed

Significant achievements made in science and technology

Dept. of Microbiology

- Research on canine leptospirosis carried out in the Department as part of the M.V.Sc. research project could identify that *Pyrogenes* is the most prevalent leptospira serovar in Wayanad. This is the first systematic study conducted to assess the prevalence of leptospira serovars in Wayanad.
- Detected the presence of porcine reproductive and respiratory syndrome virus (PRRSV) in pigs in Wayanad.

Dept. of Livestock Products Technology

- Mapping and documentation of traditional meat and egg products from Thrissur
- and Ernakulam districts
- Assessment of the efficacy of turmeric (*Curcuma longa*) and curry leaves (*Murraya koenigii*) on the microbiological and sensory qualities and oxidative stability of comminuted meat products from beef.
- Development of restructured chicken cubes incorporating different proportions of spent chicken meat.

- Parasitology
- Hatching blocking activity of quercetin against ova of ticks
- Cytotoxic effects of amitraz and deltamethrin on the germinative cells of ovary of ticks
- Dept. of Biochemistry
- Serum biochemical parameters of cattle of Kannur and Kasaragod districts were standardised

Dept. of Livestock Production Management

Research:

MVSc- Projects completed during this period

Sl. No.	Name of the Student	Adm No	Major Advisor	Project Title
1	Vijin V.L.	15-MVP -21	Dr. Balusami.C	Evaluation of anti-stress supplements on growth performance of early weaned piglets
2	Jyothi. S.B	15-MVP -23	Dr. John Abraham	Evaluation and comparison of four different types of bio gas plants utilizing livestock waste

Projects completed 1) 'Development of two stage digester bio-gas plant'

2) Model Dung Drying Unit at Pookode'

3) Establishment of kennel

Projects continuing through the year

Externally aided projects

No.	Project Title	Financial year	Funding agency	Investigators (Name of PI followed by Co Pis)	Financial Outlay (in lakhs)	Status (completed / Ongoing)
1	Improvement on rural livelihood security by Establishment of satellite piggery unit in Wayanad district	2017-2018 & 2018-2019	RKVY	PI-Dr.Balusami.C Co-PI Dr. John Abraham Dr. S. Senthil Murugan Dr. C.N. Dinesh	170.0	Ongoing

Significant achievements made in science and technology (in 2-3 bullet points)

- Invented two stage biogas plant with balloon storage with highly improved efficiency of bio-gas production.
- Studies on growth performance proved that inclusions of vitamin E , vitamin C and bamboo leaves extracts in daily diet of piglets improved the growth rate as evidenced by increasing body weight gain
- Temperature and humidity index were positively correlated with body weight and there is no correlation between growth rate and wind velocity and light intensity.
- Overall, bamboo leaves had improved the growth rate by 14 % and performance indices with economic profitability in the weaned piglets.

Publications: research articles/ popular articles/ books/ monographs/ technical reports

1. Jyothi. S. B, John Abraham and Balusami. C (2017) Effect of climate on production and composition of bio-gas from different animal waste. *Invertis Journal of Renewable Energy*, Vol. 7, No. 4. Pp.208-210.
2. Koteresh Prasad, C and John Abraham (2017) Feed intake, performance and economics of Malabari male kids under broiler goat production system. *Indian Journal of small ruminants*. 23 (2) 176-180.
3. Sargison, N.D., Ivil, S.A.J., Abraham, J., Abubaker, S.P.S., Hopker, A.M., Mazeri, S., Otter. O.A., Otter, N (2017) Investigation of productivity in a south Indian Malabari goat herd shows opportunities for planned animal health management to improve food security. *Veterinary Record*. 180 :(11). 278-282.
4. Rajkiran. T. R. Sreenivas, P and John Abraham (2017) Production of Biodiesel from Bio-Waste. *International Journal of Innovative Research in Science, Engineering and Technology*, Vol. 6: (6). 169-174.
5. Koteresh Prasad, C., John Abraham, Balusami, C., Roshin.A. J and Senthil Murugan (2017) Haemato-biochemical profile of Malabari Kids fed Broiler Concentrate Diet. *Indian Journal of Small Ruminants* 2017, 23(1): 94-96.
6. Vijin. V. L, Balusami. C, John Abraham, Roshin Anie Jose and Senthil Murugan.2017. Effect of anti-stress supplementation on Haemato-Bio-chemical Blood profiles in early weaned Piglets. 2017. *Indian Journal of Natural Sciences*. Vol.8 (43) 12651-12652.
7. Siddhartha Savale, Kotresh Prasad, Rijin Sankar, Maruthi S.T and John Abraham. 2017. Scientific Dairy Farming Practices Adopted by Dairy Farmers in Wayanad District of Kerala. *Global Journal of Bio-science and Biotechnology*. Vol. 6(4). 683-686.
8. Kotresh Prasad, John Abraham, Deepandita Barma, R.S. Sagar, S.T. Maruthi and M. Pavan (2017) Management of Coccidiosis in an Organized Goat Farm. *International Journal of Science, Environment and Technology*, Vol. 6, No 2, 2017. 219-227

HRD activities: Seminar / Workshop / Summer Institute / Symposium / Winter School / Training

1. Human Resource Development Training programme “Effect of Motivation on Institutional Development” Organised by Academic Staff College, KVASU, Pookode on 13th March 2018.
2. 2.Training for nominees of CPCSEA organised by the CPCSEA, Ministry of Environment, forest and climatic changes 6th-7th December 2017 at New Delhi.
3. Winter school on “Livestock and Climate Change: Contributory key factors and practical strategies for amelioration” from 1st September 2017 to 21st September 2017 at National Institute of Animal Nutrition and Physiology, Bengaluru.

Awards and honours/ endowments

1. Dr. John Abraham, Assistant Professor received the ‘Excellence in Teaching Award’, awarded by Samagra Vikas Welfare Society, Lucknow. – 2017
2. Dr. Balusami awarded the certificate of appreciation in recognition of an outstanding contributions to quality of research by International Journal of Livestock Research.

Any other activities

Purchased climatic instruments viz., laser meter and lux meter were purchased under ICAR-DG 2017-18

Ph.D in Livestock Production and Management started this year

Additional duties of faculty

Sl No.	Name of the faculty	Additional Duties
1	Dr.Balusami.C, Assistant Professor	In charge of pig farm
2	Dr.John Abraham, Assistant Professor	In charge of Bio diesel plant and Automatic weather station
3	Dr.Sakkariya Ibrahim, Assistant Professor	In charge of equine and rabbit farm , Coordinator for Study circle

Department of Veterinary Public Health

1. Successfully completed NABL Surveillance audit

List of Publications

1. Thomas Naicy*, R.T.Venkatachalapathy, T.V.Aravindakshan, AnuBosewell, M.V. Silpa. 2018. Association of a SacII polymorphism in the Nerve Growth Factor (NGF) gene exon 3

- with growth traits in Indian goats. *Small Ruminant Research*. 158: 19-21. doi.org/10.1016/j.smallrumres.2017.11.009
2. Anu Bosewell, Thomas Naicy*, Thazhathuveetil Aravindakshan, Elizabeth Kurian. 2018. Sequence characterization, structural analysis, SNP detection and expression profiling of SLC11A1 gene in Indian goats. *Small Ruminant Research*. 164: 15-21. doi https://doi.org/10.1016/j.smallrumres.2018.04.012
 3. P. N. Shivakumara, T. V. Aravindakshan, Thomas Naicy, K. Anilkumar, R. Uma. 2018. Molecular characterization and differential mRNA expression profiling of Toll-like receptor-2 gene in Vechur (*Bos indicus*) and crossbred (*Bos indicus* X *Bos taurus*) cattle of Kerala in response to anthrax vaccination. *Meta gene*. 16: 15-20. https://doi.org/10.1016/j.mgene.2018.01.003
 4. T. Naicy, R.T. Venkatachalapathy, Joseph Siju, T.V. Aravindakshan, Elizabeth Kurian, Joan Jose, Anu Bosewell, M.V. Silpa. 2017. Molecular characterization and differential expression patterns of the goat Nerve Growth Factor (NGF) gene during different growth stages. *Meta Gene*. 14, 142-146. doi.org/10.1016/j.mgene.2017.09.004
 5. Thomas Naicy*, Thirupathy Venkatachalapathy, Thazhathuveetil Aravindakshan, Elizabeth Kurian. 2017. Association of a Cac8I polymorphism in the IGF1 gene with growth traits in Indian goats. *Journal of Genetic Engineering and Biotechnology*. 15; 7-11. doi. 10.1016/j.jgeb.2017.04.002
 6. Thomas Naicy*, Thirupathy Venkatachalapathy, Thazhathuveetil Aravindakshan, Kunniyoor C. Raghavan, Mangattumuruppel Mini, Kulangara Shyama. 2017. Association of a novel single nucleotide polymorphism at the exon-2 of Insulin-Like Growth Factor 1 (IGF1) gene with phenotypic variants in goats. *Veterinarski Arhiv*. 87(4): 457-472. doi: 10.24099/vet.arhiv.160229a
 7. Asha Abraham, Thomas Naicy*, Kunniyoor Cheemani Raghavan, Joseph Siju, Thazhathuveetil Aravindakshan. 2017. Evaluation of the association of SLC11A1 gene polymorphism with incidence of paratuberculosis in goats. *Journal of Genetics* 96 (4): 641-646. 10.1007/s12041-017-0820-9
 8. Thomas Naicy*, Thirupathy Venkatachalapathy, Thazhathuveetil Aravindakshan, Kunniyoor Cheemani Raghavan, Mangattumuruppel Mini and Kulangara Shyama. 2017. cDNA cloning, structural analysis, SNP detection and tissue expression profile of the IGF1 gene in Malabari and Attappady Black goats of India. *Journal of Genetics* 96(2): 307-312. doi:10.1007/s12041-017-0762-2
 9. Ranjan, S., Bhushan, B., Gupta, J.P., Asaf, V.N.M., Panigrahi, M., Kumar, A. and Raveendran, R. (2017). Study on Genetic Variation of Microsatellite and Their Association with Mastitis Occurrence in Crossbred Cattle. *Journal of Animal Research* 7(1):127-132.

10. G. Radhika, K. C. Raghavan, K. A. Mercey, C. Sunanda and P. M. Rojan (2018) Assessment of genetic diversity in goat genetic groups of Kerala, (India) using morphobiometric markers - Indian J. Anim. Res. , 52 (3): 331-336
11. C.N. Dinesh and Arvind A. Sonwane (2017) Optimized protocol for establishment of primary goat mammary fibroblast and epithelial cell cultures by selective trypsinization, Indian J Small Rumin 23 (2): 261-263
12. M.V. Silpa, T. Naicy, G.Radhika, T.V. Aravindakshan, M. Mini. 2018. Ovarian expression, polymorphism identification and association of SIRT3 gene with production traits in goats. Proceedings of the 30th Kerala Science Congress, Thalassery, Kerala, January 28- 30.
13. Vanishree H., Nisha A.R., Sanis Juliet., Suja Rani, Naicy Thomas, Suresh N. Nair, Mahesh D.M., Devayani, P. 2017. Piperine, a novel efflux pump inhibitor for tetra cyclin resistant Escherichia coli from bovine mastitis. ISVPT, Hissar, December 20-22.
14. Silpa M.V., Naicy T., Radhika G., Aravindakshan T.V., Mini, M. Anu B. 2017. Tissue expression profile and detection of novel SNPs of caprine Sirtuin3 (SIRT3) gene in Malabari and Attappady Black goats. Proceedings of the 8th Kerala Veterinary Science Congress, Ernakulam, Kerala, November 11- November
15. Histogenesis of regular areolae in porcine gestation (*Sus domesticus*). C. V. Rajani, R. V. Prasad and K. V. Jamuna (2017). Indian Journal of Veterinary Anatomy 29(2): 56-58.
16. Architecture of shoulder muscles of sloth bear (*Melurus ursinus*). Annie, V R, K. V. Jamuna, Arun A Sha, R. V. Prasad, V. Girish Kumar, Shruti, **Rajani Chunkkath**, Sunilkumar patil, Manjunath K and Bharath Kumar (2017). Indian Journal of Applied Research 7(11):295-297
17. Protective role of epigallocatechin-3-gallate on arsenic induced testicular toxicity in Swiss albino mice. Pushpa Rani G, J. P. Ravindra, **C. V. Rajani**, M. Sivaram, S. Selvaraju (2017). Biomedicine and Pharmacotherapy 09.151. 685-694
18. Morphological identification of pectoral limb bones of Indian Muntjac (*Muntiacus muntjak*) from domestic ruminants. Chukkath Vijayan Rajani, George Chandy, Maya Sankunny, Kalaripparambath Surjith, Harshad Sudheer Patki and Narayanapillai Ashok Indian J. Anim. Res., Print ISSN:0367-6722 / Online ISSN:0976-0555
19. Micrometrical studies on the inter-areolar region and endometrial glands of porcine placenta (*Sus domesticus*). **C. V. Rajani**, R. V. Prasad and K. V. Jamuna (2017). Proceedings of Kerala Veterinary Science Congress pp. 165-167
20. Occurrence of unilateral Lumbocostal association in a non-descript ox Patki H S, Ashok N Rajani C V and Surjith K P Proceedings of Kerala Veterinary Science Congress pp. 85-87

21. Gross and microarchitecture of the lingual papillae in an Indian elephant Surjith K P, Patki H S, Maya S, Rajani C V, Helna M W and Ashok N Proceedings of Kerala Veterinary Science Congress pp. 380-382
22. Dr.Simi.G - Abstract titled “A Case study on the Improvement in rural poultry production through school poultry clubs in Malappuram district of Kerala” in the Proceedings of the XXXIV Conference of the Indian Poultry Science Association held at Bangalore from 28-30 November 2017
23. Mapping and documentation of traditional meat and egg products from Thrissur and Ernakulam districts.
24. Assessment of the efficacy of turmeric (*Curcuma longa*) and curry leaves (*Murraya koenigii*) on the microbiological and sensory qualities and oxidative stability of comminuted meat products from beef.
25. Development of restructured chicken cubes incorporating different proportions of spent chicken meat.
26. Khanapur, C.S., Nayar, R. and Rajagopal, K.2017. Organic meat- A Review. Ind. J. Natur. Sci. 7(40):12023-12029.
27. Khanapur, C.S., Nayar, R., Divakar, N., Rajagopal, K., Sunanda,C. and Thomas, M. 2017. Quality characteristics of restructured chicken cubes incorporating spent chicken meat. Int. J. Adv. Res. 5(9):521-527.
28. Pavan, M., Nayar, R, Kurian, Y, Sathu, T., Rajagopal, K and Sunanda, C. 2017.Evaluation of antioxidant activity of finger millet and arrow root in chicken nuggets stored under frozen conditions. In: Proceedings of 9thKerala Veterinary Science Congress; 12th to 13th November, 2017, Flora Airport Hotel, Nedumbassery, Ernakulam. Department of Animal Husbandry, Kerala. Pp.346-349. (Full Length article)
29. Khanapur, C.S., Nayar, R., Divakar, N, and Rajagopal, K. 2017. Sensory characteristics of restructured chicken cubes incorporating spent chicken meat. In: national seminar on food adequacy and climate change: strategies for sustainable food production at Thrissur, Kerala. 3-4 November, 2017. Association of Meat Scientists and Technologists. (Abstract)
30. Khanapur, C.S., Nayar, R., Divakar, N, Rajagopal, K. , Sunanda, C., Thomas, M., and James, L. 2017. Sensory characteristics of restructured chicken cubes incorporating spent chicken meat. In: national seminar on food adequacy and climate change: strategies for sustainable food production at Thrissur, Kerala. 3-4 November, 2017. Association of Meat Scientists and Technologists. (Abstract)
31. Khanapur, C.S., Nayar, R., Divakar, N, Rajagopal, K. , Sunanda, C., Thomas, M., and Paulose, C. 2017. Physico chemical and microbiological characteristics of restructured chicken cubes incorporating spent chicken meat. In: national seminar on food adequacy and

climate change: strategies for sustainable food production at Thrissur, Kerala. 3-4 November, 2017. Association of Meat Scientists and Technologists. (Abstract)

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88. Athira, P., Pavan, M., Sathu, T., Vasudevan, V. N., Irshad, A., Sunanda, C., Sharon, A.J, Silpa, S. Comparative Study and Seasonal Variation in Meat Sale from Meat Technology Unit, Mannuthy, Thrissur. Proceedings of National Seminar on Food Adequacy and Climate Change: Strategies for Sustainable Food Production 3-4 November, Thrissur Kerala, 614-616

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HRD activities Seminar Workshop Summer Institute Symposium Winter School Training, Programme Short Courses / Any other programme organized

1. Dr. Sunanda C, Data Analysis using SPSS, 26 May 10-11 2017, (2days) ARIS Cell, CV&AS, Pookode
2. Short term training on “Diagnostic parasitology” under laboratory update programme of KSVC”, Department of Veterinary Parasitology, COVAS, Pookode from 26-2-2018 TO 28-2-2018 Twenty officers from the Department of Animal Husbandry, Kerala Rs.89700/-
3. Short term training on “Diagnostic parasitology” under laboratory update programme of KSVC, Department of Veterinary Parasitology, COVAS, Pookode from 1-3-2018 TO 3-3-2018 Nineteen officers from the Department of Animal Husbandry, Kerala and one Veterinarian working at KAU (temporary posting) Rs.89700/-

Seminar/ Conferences attended

SI No.	Name	Title of the programme	Duration	Location
1.	Dr.Simi.G	i) Orientation Programme at UGC HRDC of Kannur University ii) Advances in poultry production and its impact on changing global scenario iii) XXXIV Annual Conference of the Indian Poultry Science Association held at Bangalore from 28-30 November 2017.	28 days 28-6-2017 to 25-7-2017 21 days 7-2-2017 to 27-2-2017 3 days from 28-11-2017 to 30-11-2017	UGC HRDC, Kannur University CAFT in Avian Sciences, VCRI, Namakkal Bangalore
2.	Dr. Abdul Muneer K	i) Prospects of diversified poultry and its impact in enhancing the rural economy ii) XXXIV Annual Conference of the Indian Poultry Science Association held at Bangalore	21 days 8-11-2017 to 28-11-2017 3 days from 28-11-2017	CAFT in Avian Sciences, VCRI, Namakkal

		from 28-30 November 2017.	to 30-11-2017	Bangalore
3.	Dr.Bimal P. Bashir	Five Day training on ‘Research Methodology’	20 th -24 th November, 2018	IMG, Thiruvananthapuram
4.	Dr. Subin K Mohan	Orientation programme of 28 days on ‘Innovative Pedagogical Strategies’	3 rd to 30 th January, 2018	Academic Staff College, KVASU
5.	Dr Bimal P Bashir	International conference on ‘Innovations and challenges in food processing sector’	9 th and 10 th February, 2018	St. Teresa’s College (Autonomous), Ernakulum
6.	Dr. Bimal P Bashir	Human Resource Development training programme on ‘Effect of Motivation on institutional Development’	13 th March, 2018	CVAS, Pookode and CVAS, Mannuthy
7.	Dr. Bimal P Bashir & Dr Subin K Mohan	Interface meet on Implementation of One Health Surveillance Strategies for control of emerging Public Health threats Organised by COHEART and ISDS	20 th March, 2018	CVAS, Pookode
8.	Dr Subin K Mohan	Refresher Training for extension functionaries	26 th feb to 12 th March, 2018	KAU, Vellanikkara
9.	Dr. Elizabeth Kurian and Dr. Rojan P. M.	- “Human Animal Conflicts in Kerala: from status to solutions,	14th to 16th June 2017	CVAS, Mannuthy
10.	Dr. Rojan P. M.	- 2nd Orientation programme – “Innovative Pedagogical Strategies”,	3rd Jan 2018 to 30th Jan 2018	Academic staff college, Mannuthy,
11.	Dr. Naicy Thomas, Dr. Elizabeth Kurian, Dr. Muhasin Asaf V. N. and Dr. Rojan P. M.	- “Ethics and Welfare concerns in Research for Human and Animal Health”	15th September 2017.	CVAS, Pookode
12.	Dr. Naicy Thomas, Dr. Elizabeth Kurian, Dr. Muhasin Asaf V. N., Dr. C.N.Dinesh and Dr. Rojan P. M.	- “Effective Motivation on Institutional Development”	13th March 2018	CVAS, Pookode

13.	Dr. Naicy Thomas, Dr. Elizabeth Kurian, Dr. Muhasin Asaf V. N., Dr. C.N.Dinesh and Dr. Rojan P. M	. - Interface meet on “Implementation of One Health Surveillance Strategy for control of Emerging Public Health threats”	20th March 2018	CVAS, Pookode
14.	Dr. Muhasin Asaf V. N	CAFT on ‘Application of Omics Tools and Techniques for Agricultural Germplasm Improvement	09/02/2018 to 01/03/2018	ICAR-Indian Agricultural Statistics Research Institute, New Delhi
15.	Dr. E. M. Muhammed	Post-doctoral training at on “Impact of Feed Quality on Enteric Methane Emission from Beef Cattle”	27th March 2017 to 3rd April 2018	Rothamsted research, UK
16.	Dr. Patki Harshad Sudhir	Five Day training on ‘Research Methodology’	20 th -24 th November, 2018	IMG, Thiruvananthapuram
17.	Dr. Rajani C.V. Dr. Patki Harshad Sudhir	32 nd Annual Convention of Indian Association of Veterinary Anatomists and National Symposium	21 st -23 rd December 2017	OUAT, Bhubaneswar
18.	Dr. Harshad Patki Sudhir	Orientation programme of 28 days on ‘Innovative Pedagogical Strategies’	3 rd to 30 th January, 2018	Academic Staff College, KVASU
19.	Dr. Rajani C.V.	National workshop on ‘Academic Writing and Publication’	16 th -17 th February, 2018	Kannur University, Mananthavadi Campus
20.	Dr. Rajani C.V. Dr. Harshad Patki Sudhir Dr. Surjith K.P	Human Resource Development training programme on ‘Effect of Motivation on institutional Development’	13 th March, 2018	CVAS, Pookode and CVAS, Mannuthy
21.	Dr. Rajani C.V. Dr. Harshad Patki Sudhir Dr. Surjith K.P	Interface meet on Implementation of One Health Surveillance Strategies for control of emerging Public Health threats Organised by COHEART and ISDS	20 th March, 2018	CVAS, Pookode
22.	Dr. Renuka Nayar	National seminar on food adequacy and climate change: strategies for sustainable food production at Thrissur, Kerala.	3-4 November, 2017.	Hotel Dream City, Pattikkad, Thrissur
23.	Dr. Kavitha	National seminar on food	3-4	Hotel Dream City,

	Rajagopal	adequacy and climate change: strategies for sustainable food production at Thrissur, Kerala	November, 2017.	Pattikkad, Thrissur
24.	Dr. Kavitha Rajagopal	ICAR sponsored winter school on “Antimicrobial resistance in fish and aquatic environment and its impact on human health	01-12-2017 to 21-01-2017	CIFT, Kochi
25.	Dr. Biju Chacko	1. Participated in Refresher Course on “Reshaping Scientific Communication in the Context of Building Entrepreneurship” held at Academic Staff College of Kerala Veterinary & Animal Sciences University, Mannuthy and organised by the Directorate of Entrepreneurship Kerala Veterinary & Animal Sciences University, Mannuthy	21days from 11-7-2017 to 31-7-2017	Academic Staff College of Kerala Veterinary & Animal Sciences University, Mannuthy
26.	Dr. Biju Chacko	2. Participated in the Two day National Workshop on “Augmenting Animal Productivity Through Emerging Technologies to Ensure Food Security in the Era of Climate Change” held at Veterinary College and Research Institute, Namakkal	2 days from 6-7-2017 to 7-7-2017	Veterinary College and Research Institute, Namakkal
27.	Dr.S.Senthil Murugan	Dreams to reality –Human resource development training program organized by KVASU	1 day 20 th April,17	College of Veterinary and Animal Sciences, Pookode
28.	Dr.S.Senthil Murugan	Recent advances in diagnosis and prevention of Rabies organized by IVA-Pookode chapter	1 day 31 st January, 2018	College of Veterinary and Animal Sciences, Pookode
29.	Dr.S.Senthil Murugan	National workshop on Augumenting Animal productivity through emerging technologies to ensure food security in the era of climate change	6 th -7 th July,2017	Veterinary College and Research Institute, Namakkal
30.	Dr.S.Senthil Murugan	Participated as Moderator to conduct on day workshop on Dairy farmer’s Economic	07 th October,2017	Malabar Regional Co-operative federation ltd

		development in Malabar region”		(MRCMPU) Kozhikode
31.	Dr.S.Senthil Murugan	34 th Indian Poultry Science Association on Innovations for safe and sustainable poultry production	28 th -30 th November 2017	ICAR-NIANP
32.	Dr.S.Senthil Murugan	38 th Kerala Science congress participated and presented poster organized by KSCSTE, Thriuvananthapuram	28-30 th Jan'18	Government Brennen college, Thalassery
33.	Dr. Jinsy V.S.	Orientation programme conducted by UGC-HRDC, Academic staff college of Kannur University	28 days from 21.02.2018 to 20.3.2018	Kannur University, Thavakkara campus, Civil station P.O., Kannur
34.	Dr. Shyama K Dr. Biju Chacko Dr. Senthil Murugan	Interface meet on Implementation of One Health Surveillance Strategy for control of Emerging Public Health threats	20-03-2018	CVAS, Pookode
35.	Dr. Biju Chacko	1. Participated in Refresher Course on “Reshaping Scientific Communication in the Context of Building Entrepreneurship” held at Academic Staff College of Kerala Veterinary & Animal Sciences University, Mannuthy and organised by the Directorate of Entrepreneurship Kerala Veterinary & Animal Sciences University, Mannuthy	21days from 11-7-2017 to 31-7-2017	Academic Staff College of Kerala Veterinary & Animal Sciences University, Mannuthy
36.	Dr. Reghu Ravindran, Dr. Ajith Kumar K. G, Dr. Deepa C.K	HRD- training programme for faculty- “Dreams to reality”	20-04-2017	CVAS, Pookode
37.	Dr. Reghu Ravindran, Dr. Ajith Kumar K. G, Dr. Deepa C.K and Dr. Anju Varghese	Ethics and welfare concerns in research for human and animal health	12-09-2017	COHEART And Department Of Veterinary Pharmacology And Toxicology, CVAS Pookode

38.	Dr. Reghu Ravindran	Advances in risk analysis and GIS based prediction modelling of livestock parasitic diseases	23-10-2017	ICAR-NIVEDI, Bengaluru
39.	Dr. Anju Varghese	XXI National Training Programme on An update on vectors and vector borne diseases	14-11-2017 to 04-12-2017 (21 days)	Veterinary college, Hebbal, Bengaluru
40.	Dr. Ajith Kumar K. G	E- procurement training	12-12-2017 to 13-12-2017	Kerala state IT mission , e-procurement support centre, Kannur
41.	Dr. Reghu Ravindran	30th Kerala Science Congress	28-1-2018 to 30-1-2018	Govt. Brennen College, Thalassery
42.	Dr. Reghu Ravindran	Seminar on “ Recent advances in diagnosis and prevention of rabies”	31-1-2018	IVA, CVAS, Pookode
43.	Dr. Reghu Ravindran, Dr. Ajith Kumar K. G	XXVII National Congress of Veterinary Parasitology and national Symposium on “Technology for sustainable parasite control and readdressal of detection methods a directed for upliftment of rural economy”	12-02-2018 to 14-02-2018	Department of Veterinary Parasitology, Veterinary College, Navania, Vallabh Nagar, Rajasthan
44.	Dr. Anju Varghese	UGC- HRDC training at Kannur University	21-02-2018 to 20-03-2018 (28 days)	Kannur University
45.	Dr. Reghu Ravindran	E- procurement training	5-3-2018 to 6-3-2018	KSITM e procurement helpdesk, Old pension Treasury Building Road, Statue, Thiruvananthapuram
46.	Dr. Reghu	Training programme on “Effect	13-3-2018	CVAS, Pookode

	Ravindran	of motivation on institutional development”		
47.	Dr. Ajith Kumar K. G Dr. Reghu Ravindran	Interface meet on implementation of one health surveillance strategy for control of emerging public health threats	20-03-2018	COHEART, CVAS, Pookode
48.	Dr. R.Kanthanathan	Refresher course in Physical Education	18.01.2018 to 07.02.2018 (21 days)	Bharathidasan University, Trichy
49.	Dr. Vinaya. C. Damu	Refresher course in Physical Education	18.01.2018 to 07.02.2018 (21 days)	Bharathidasan University, Trichy
50.	Dr. R.Kanthanathan, Dr. Vinaya. C. Damu	Presented paper in UGC Sponsored International Conference on Bridging innovations in sports, education and nutrition	8.02.2018 to 09.02.2018 (2 days)	Avinashilingam University, Coimbatore
51.	Dr. R.Kanthanathan, Dr. Vinaya. C. Damu	Attended the HRC training programme for the faculty entitled Effect of motivation on institutional development	13.03.2018	CVAS, Pookode
52.	Dr.V.K.Vinod	XXI National Training Programme on An update on vectors and vector borne diseases	14 11- 2017 to 04- 12- 2017 (21 days)	Veterinary college, Hebbal, Bengaluru
53.	Dr.J.P.Smitha	XXI National Training Programme on An update on vectors and vector borne diseases	14 11- 2017 to 04- 12- 2017 (21 days)	Veterinary college, Hebbal, Bengaluru
54.	Dr. Sunanda C	Human Animal Conflicts in Kerala: from Status to Solutions	14-16 June 2017	CVAS, Mannuthy
55.	Dr. Sunanda C	National Workshop on Ethics and Welfare Concerns in Research for Human and Animal Health.	15 September 2016	COVAS, Pookode
56.	Dr. Suannnda C	National Seminar on Food Adequacy & Climate Change: Strategies for Sustainable Food Production Kerala	3-4 September 2017	Thrissur Kerala

57.	Dr. Suannnda C	Workshop on Support of Implementation of District Plan of Action for Children-Thrissur District.	6 th November 2017	KILA, Thrissur
58.	Dr. Suannnda C	Refresher Course on “Statistical Techniques in Agricultural Research (STAR)”	19 th December 2017 to 8 th January 2018	UAS, Dharwad.
59.	Dr. Suannnda C	XXXIII Orientation Course	21-02-2018-20-03-2018	Academic Staff College, Kannur University
60.	Dr. Prejit	“Workshop on Development of Governance Structure and Roadmap for Establishment of a South Asia One Health Disease Surveillance Network”	11-13 Dec 2017	Bangkok sponsored by FAO

LIST OF AWARDS AND HONORS

1. Dr. G. Nirmalan Trust Award for Best Research Paper 2017 - T. Naicy*, R.T. Venkatachalapathy, T.V. Aravindakshan, G. Radhika, K.C. Raghavan, M. Mini, K. Shyama. 2016. Nerve Growth Factor gene ovarian expression, polymorphism identification, and association with litter size in goats. Theriogenology. 86:2172-2178. doi: 10.1016/j.theriogenology.2016.07.011
2. Dr. Abdul Muneer bagged Appreciation award from IVA
3. Dr. Chintu Ravishankar, Assistant Professor, received the Best Teacher Award of CVAS, Pookode for the year 2015.
4. Dr. C. V. Rajani - Karnataka Veterinary, Animal and Fisheries Sciences University Gold Medal for having secured the highest Grade Point Average in Veterinary Anatomy and Histology subject during Doctor of Philosophy (Ph.D.) for the academic year 2014-15. This gold medal was awarded during the Ninth Convocation of the University held on 07-04-2017. Karnataka Veterinary, Animal and Fisheries Sciences University, Bidar, Karnataka ,Won the Late Shri. L.O. Dhande Memorial Award for best paper in Forensic Anatomy including Archeological study (first author) in the 32nd Annual Convention of Indian Association of IAVA in collaboration with OUAT National Symposium on Advances and Applications of Veterinary Anatomy in Livestock, Pet, Poultry, Lab and Wildlife- Health and Production 21-23rd December, 2017,Bhubaneswar) Indian Association of Veterinary Anatomists
5. Dr. Biju Chacko Received appreciation from Prof. (Dr.) K. Vijayakumar, the Dean, CVAS, Pookode for the excellent service rendered as Assistant Warden, Men’s Hostel, CVAS, Pookode from 7-5-2015 to 21-8-2017 vide appreciation letter dt. 30-8-2017Dean, CVAS, Pookode

6. Dr. Biju Chacko Received appreciation from the Director of Academics & Research, KVASU, Pookode for the excellent work put in as Technical Manager of NABL vide letter of appreciation dt. 25-8-2017 Director of Academics & Research, KVASU, Pookode
7. Dr. Reghu Ravindran Third prize for oral presentation in the XXVII National Congress Of Veterinary Parasitology And National Symposium held at Udaipur, Rajasthan from 12-02-2018 to 14-02-2018, Indian Association for advancement of Veterinary Parasitology (IAAVP)
8. Subin K. Mohan -Appreciation Letter-SP, Kalpetta, Registrar, KVASU, IVA, Kerala
9. Dr. Bimal P Bashir-Appreciation Letter-IVA, Kerala
10. Chetan S. Khanapur, Renuka Nayar, Neethu Divakar and Kavitha Rajagopal Best Paper Award Association of Meat Scientists and Technologists.

Distinguished visitors

1. Dr. Sagar Soyal, Professor, Veterinary Diagnostic Laboratory and Veterinary Population Medicine Department, University of Minnesota, St. Paul, Minnesota 55108, visited the Department on 7th July, 2017
2. Dr. Sunilkumar Mor, Assistant Professor, Veterinary Diagnostic Laboratory and Veterinary Population Medicine Department, University of Minnesota, St. Paul, Minnesota 55108, visited the Department on 7th July, 2017

COLLEGE OF DAIRY SCIENCE AND TECHNOLOGY, MANNUTHY

College of Dairy Science & Technology (CDST), established in 1993 is one of the renowned institutions for Dairy education in the country. The institute facilitates a close interaction between scientists, technocrats, students, farmers, entrepreneurs and other stakeholders involved in milk production, processing, handling and marketing. The academia - industry interactions are also envisaged such that both are mutually benefited. The institute could generate over 450 graduates in Dairy Technology who adorn prime positions in the industry, research institutes and academic fields within and outside the country.

INFRASTRUCTURE FACILITIES

The College of Dairy Science and Technology, Mannuthy is functioning completely in the newly constructed building of its own possession in the Dr. Verghese Kurien Institute of Dairy and Food Technology (VKIDFT). Considering the academic and research mandates of Kerala Veterinary and Animal Sciences University (KVASU) here exist seven distinct departments, and each department has identified various thrust areas of syllabus for the academic pursuit and research schemes. Department of Dairy Microbiology, Dairy Chemistry, Dairy Technology, Dairy Husbandry and Dairy Extension offers need based trainings to farmers, small scale entrepreneurs and other stake holders in the area of value addition. The Dairy Technology department emphasise on formulation and standardization of novel technologies for value addition of milks. Dairy Engineering department is mainly involved in providing consultancy for designing, erection and commissioning of dairy plants throughout the state. The Dairy Chemistry and Dairy Microbiology focus on methodologies for assuring safe and quality products for the public. Dairy Chemistry Department has been rendering services to the public by designing kits and tests for quality analysis of milk and milk products Dairy Microbiology department render services to public by providing proven starter culture. Dairy Business Management Department gives insight on cost accounting, financial and marketing aspects involved in dairy enterprise. Dairy Extension department act as an active link between the field level farmers and scientific community. Dairy Husbandry gives an indepth knowledge on farm animal practices. The new building of VKIDFT will facilitate the aspirants of the industry in the near future.



ACADEMICS

i. Admission Procedure

The college is offering four year professional B.Tech Programme (4 years) and M.Tech (2 years) in Dairy Microbiology, Dairy Chemistry and Dairy Technology. Admission to the UG programme is done based on Entrance Examination conducted by the commissioner of Entrance Examination, Govt of Kerala (KEAM exam) and ICAR Entrance Examination. The admission to PG programme is made through the University entrance exam.

ii. Courses Offered

Sl. No.	Title of the Programme	Level	Duration (Yrs)	Year of Starting	Sanctioned annual intake
1	B.Tech (DSc.&Tech.)	UG	4	1993	40
2	M.Tech (DT)	PG	2	2012	2 regular+ 1resident
3	M.Tech (DC)	PG	2	2017	2regular + 1resident
4	M.Tech (DM)	PG	2	2017	2regular + 1resident

iii. Course Curriculum

UG programme - Department-Wise Distribution of Courses for B.Tech (DSc. & Tech) degree programme

No.	Name of the Department	Credit Hours
1	Dairy Technology	33 (21+12)
2	Dairy Engineering	34 (21+13)
3	Dairy Business Management Dairy Extension & Dairy Husbandry	27 (20+7)
4	Dairy Microbiology	17 (11+6)
5	Dairy Chemistry	17 (11+6)
	Total	128

Non-Credit Courses			
No.	Catalogue No. of course	Name of the course	Credit Hours
1	SREV 1201	Students READY Exposure Visit I -7 days	5 (0+5) *
2	SREV 2201	Student READY Exposure Visit – II -23 days	5 (0+5) *
3	DT 4112	Student READY In-Plant Training	20(0+20)
4	DT 4113	Student READY experiential Learning Module	10(0+10)
		Total	40 (0 + 40)

* - Non credit course (not included in the credit load)

** - Non credit optional course (not included in the credit load)

Total Class room credits (upto VIIth semester) = 128

Total credits for work experience = 30

Total credit load (excluding non credit courses) = 128

Total credits for Non credit courses = 40

PG programme

M.Tech (Dairy Technology/ Microbiology and Chemistry) Course Structure - at a Glance

Major	20
Minor	09
Supporting	05
Seminar	01
Research	20
Total Credits	55

+Non credit compulsory courses – 06

iv. Student Profile

Courses	B.Tech Dairy Technology M.Tech Dairy Technology M.Tech Dairy Microbiology M.Tech Dairy Chemistry
Total Student Strength	213

UG Student Strength (2017-2018)	25
PG Student Strength (2017-2018)	10
Dairy Technology	3+1
Dairy Microbiology	3
Dairy Chemistry	3

Student Details	2017-2018	
	Male	Female
UG		
Students admitted	6	19
Dropped out	Nil	Nil
Appeared for final exam	18	20
Failed to appear for final exam	01	-
PG		
Students admitted	1	8
Dropped out	Nil	Nil
Appeared for final exam	2	1
Failed to appear for final exam	-	-

I. STUDENT SCHOLARSHIPS & GRANTS

Students at College of Dairy Science and Technology receives various scholarships during their degree programme

1. KVASU Merit cum Means (yearly)

Sl. No.	Name of the Student	Course	Amount
1	Averin Stanly T.T	B. Tech	20000/-
2	Sahla Sherin	B. Tech	20000/-
3	Ashna Xavier	B. Tech	20000/-
4	Rameesa .K	B. Tech	20000/-
5	Shebinsha P.K	B. Tech	20000/-
6	Farha .P.T	B. Tech	20000/-

2. Central Sector Scholarship through Direct Benefit Scheme (monthly)

Sl. No.	Name of the Student	Course	Amount
1	Berin B.R	B. Tech	1000
2	Arjun.R.Kottiath	B. Tech	1000
3	Lima Seby .K	B. Tech	1000
4	Treesa Antony	B. Tech	1000

3. ICAR National Talent Scholarship (monthly)

Sl. No.	Name of the Student	Course	Amount
1	Sonerdra Singh Jaroliya	B. Tech	2000/-
2	Subham Kumar T.A	B. Tech	2000/-

4. KVASU PG Scholarship (monthly)

Sl. No.	Name of the Student	Course	Amount
1	Amritha .T.A	M. Tech	Rs.4000/-
2	Farzana Beegum.M.A	M. Tech	Rs.4000/
3	Ajmi .S.Shams	M. Tech	Rs.4000/
4	Dhanya Suresh	M. Tech	Rs.4000/
5	Vandhana .P.S	M. Tech	Rs.4000/
6	Sharath .S	M. Tech	Rs.4000/

1. FACULTY PROFILE

Sl No	Department	Present Status				
		Prof	Asso. Prof	Asst. Prof.	TA	Total
1	Dairy Technology	1 (Special Officer at CFT,Thumbumuzhy)	0	1	7	9
2	Dairy Engineering	1	0	0	5	6
3	Dairy Chemistry	0	0	2	1	3

4	Dairy Microbiology	1 (Special Officer At CDST, Pookode)	0	2	2	5
5	Dairy Husbandry	0	0	1	0	1
6	Dairy Business Management	0	0	0	3	3
7	Dairy Extension	0	0	1	0	1
	Total	3	0	7	18	28

As on 31-5-2018

Administrative: Present status

Category	Sanctioned	Permanent	Temporary	Vacant	Total	Remarks
Administrative Officer	1	1	0	0	1	
Section Officers	2	1	0	1	2	
Office superintendent(HG)	1	1	0	0	1	
Office superintendent	1	0	1	0	1	
Assistants	5	5	0	0	5	
Computer Assistant	1	1	0	0	1	
Clerical Assistant	2	2	0	0	2	1 post is on working arrangement at LRS, Thiruvazhamkunnu
LDV Driver	1	0	2	0	2	
Class IV	5	5	0	0	5	
TOTAL	19	16	3	1	20	

INITIATIVES

i. One Day Awareness Seminar on Quality and Food Safety Management System

The Students Counselling and Placement Cell of the College of Dairy Science and Technology, Mannuthy along with 'Navaneetham' Lecture series and Indian Dairy Association - Kerala Chapter organized a One Day Awareness Seminar on Quality and Food Safety Management System according to ISO 9001 and ISO 22000 on 20.6.2017 at the Seminar Hall of KVASU Dairy Plant. The classes were handled by Mr. Sibymon B, Senior Lead Auditor of TUV-NORD, KSA, who is also an alumnus of CDST.



ii. Workshop on Farmer to Farmer Extension conducted as part of National Milk Day 2017



Under the auspices of the CDST, Mannuthy and Indian Dairy Association, Kerala Chapter, a 'Workshop on Farmer to Farmer Extension' was conducted at the Seminar Hall of KVASU Dairy Plant on 27.11.2017 as part of National Milk Day 2017 (Birthday of Dr. Verghese Kurien, Milk Man of India falling on 26th November, Sunday). Dairy Extension Officers and Dairy Farm Instructors of Dairy Development Department and progressive dairy farmers (25 numbers)

participated in the programme. Dr. P. Sudheer Babu, Dean, CDST inaugurated the programme. Dr. S.N. Rajakumar, Professor and Head, KVASU Dairy Plant offered felicitation. Ms. Smitha. J. Lukose, Assistant Professor (Dairy Chemistry) welcomed the gathering and Mr. Rinu Thomas, Teaching Assistant gave the vote of thanks. The idea of 'Farmer to Farmer Extension (F2FE)' was presented by Mr. Shyam Suraj S.R, Assistant Professor (Dairy Extension) and group



discussion was conducted to arrive at opinions regarding its implementation in dairy sector of

Kerala by the participants. The analysis was presented for documentation. The participants were given certificates and they also visited the University Livestock Farm and Vechur Farm.

iii. CDST organizes one day awareness class on Milk Quality –‘MENMA’



The Department of Dairy Chemistry, CDST, Mannuthy organized one day awareness class on Milk Quality entitled ‘Menma’ for selected highschool students on 20/10/2017 in connection with World Food Day celebrations. The programme aimed to create awareness among adolescent children on importance of milk as a nutrient rich food. The class was inaugurated by the Dean, Dr. P Sudheer Babu. The programme was convened by Ms. Smitha. J. Lukose, Assistant Professor (Dairy Chemistry). Classes were handled on topics related to “Quality of milk and its assessment” by faculty members Dr. Divya M. P, Ms. Indu.B, Ms. Aparna.S V and Ms. Anumol Jijo. Hands on training was given by Ms. Anusha. A.

iv. Induction of B. Tech (Dairy Technology) students



The classes of 2017 batch B. Tech (Dairy Technology) students started at the CDST, Mannuthy on 25.9.2017. The first day included registration of students; followed by CDSTPTA meeting and election of its new office bearers. Dr. P. Sudheer Babu, Dean of the faculty presided over the programme. Officer in charge of Academics, Dr. A.K. Beena explained the academic regulations. Dr. C.T. Sathain, Dr. K.A. Mercey, Mr. Shyam Suraj S.R and Ms. Smitha J. Lukose

addressed the students. PTA awards for the best outgoing students of 2012 batch (Mr. Naveen Jose and Ms. Anjali A.K) were given during the function by the Dean. The orientation programme for the first year students was conducted 26.9.2017. Class was taken by Prof. Joy Mathew, Former Controller of Kerala Agricultural University.

v. 46th Dairy Industry Conference 2018

The 46th Dairy Industry Conference 2018, organized by Indian Dairy Association (SZ) and orchestrated by IDA- Kerala chapter, Dairy Science Faculty concluded on 10th February 2018. The three day conference held at Adlux International Convention and Exhibition Centre from February 8-10 was inaugurated by Adv. K. Raju, Honourable Minister for Animal Husbandry and Dairy Development, Government of Kerala. Dr. R.S. Rajorhia (President, IDA) Dr. R.R.B Singh (Director, NDRI), Mr. Anil X. IAS (Vice Chancellor, KVASU) and Dr.Bandla Srinivas (Secretary, IDA – SZ) were present on the occasion.



The Conference included 17 technical sessions with 54 speakers on varied subjects of dairying, revolving around the theme ‘Dairying: Sufficiency to Efficiency’. The Exhibition conducted as part of the conference had 124 stalls showcasing the splendour and elegance of Indian Dairy Industry. Milma Chairman Mr.P.T. GopalaKurup was bestowed the Dr.Kurien Award 2018 during the conference. Fellowships and Patron ships were awarded to eminent contributors in the field of dairying. Best women dairy entrepreneurs from the four zones were also awarded.

The programme was conducted under the leadership of Mr. C.P. Charles, Chairman, IDA (SZ) and Dr. P.I. Geevarghese, Chairman, IDA (Kerala Chapter) and former Dean, CDST who was the Secretary General. The faculty and students of the College of Dairy Science and Technology of Mannuthy, Pookode, Thiruvananthapuram and Kolahalamedu; and College of Food Technology, Thumburmuzhy actively participated in planning and organization of the conference. Prolific support was also given by the faculty of the College of Veterinary and Animal Sciences, Mannuthy.



2. STUDENT'S UNION ACTIVITIES

i. Celebrates World Environment Day 2017

Under the auspices of the Students Union - CDST, Indian Dairy Association – Kerala Chapter, National Service Scheme Unit and Dharani Eco Club, World Environment Day was celebrated at CDST, Mannuthy on June 5. As part of the programme a talk on the 'Health and Politics of Environment' was given by **Dr. T.V. Sajeed, Scientist and Head, Forest Health Division, Kerala Forest Research Institute**. Also an interaction was arranged for the students with Ms. MiniforPazhayaattil, Anna Swiss Farm, Ashtamichira who is the State award winner for the Best woman dairy farmer.



ii. CDST, Mannuthy remembers Dr. APJ Abdul Kalam on his second death anniversary

The Students' Union of the CDST, Mannuthy in association with 'Navaneetham' Lecture series organized a meeting to commemorate the second death anniversary of the Visionary Leader and Peoples President Dr. APJ Abdul Kalam at the Seminar Hall of Dairy Plant on 27.7.2017. Dr. G. Girish Varma, Dean addressed the students and offered floral tributes to the ever-inspiring 'Missile man of India'. A commemoration talk on APJ was given by Prof. K.R. Janardhanan, Retired Professor in Chemistry and Former President of Kerala Sastra Sahitya Parishad. Students' Union President Ms. Meghna P.S presided over the meeting. Dr. S.N. Rajakumar, Head, Dairy Plant

presented a memento to the Speaker. Mr. Reji. A.J welcomed the gathering and Mr. Sreerag T.V offered the vote of thanks.

iii. Farmer's Day Celebration

The Students' Union of the College of Dairy Science and Technology, Mannuthy in association with National Service Scheme, Indian Dairy Association – Kerala Chapter, CDSTPTA and Navaneetham – Lecture series organized variety programmes as part of Farmer's Day on 17.8.2017. The programme started at 9.30 am with the cleaning of CDST campus by students and faculty. The death of children at Gorakhpur, UP were condoled by lighting candles.



iv. Wall magazine inauguration

A wall magazine of the Students' Union – 'IDANAZHI' was inaugurated by Dr. S.N.Rajakumar, Head, Dairy Plant and Dr. P.I. Geevarghese, Chairman, IDA – Kerala Chapter. Lecture series was conducted at the Seminar Hall. Class was taken by Dr. Biju.S., Assistant Professor (LPM) of CoVAS, Mannuthy on the topic - 'Evolution of food habits vis-à-vis agriculture and animal husbandry practices'. Ms. Meghna. P.S, President of Students' Union presided over the function. Students' Union members Mr. Advait, Mr. Mohammad Riyas, Mr. Reji and Kum. Rakhendhu Saji spoke on the occasion



v. Release of Students' Magazine

The Students' Magazine 2014 -15 of the College of Dairy Science and Technology, Mannuthy entitled 'KADAMKATHA' was released on 27.11.2017 at the Seminar Hall of the College of Veterinary and Animal Sciences. The release was done by noted writer and short film director, Mr.Rasheed Parackal; by giving a copy to Dr. P. SudheerBabu, Dean of the faculty of Dairy Technology. Ms.Meghana P.S, Students' Union President presided over the function. Mr.Reji

A.J, Joint Secretary welcomed the gathering and Mr.AdwaithK.S., Magazine Editor of present Union gave the vote of thanks. Mr.Aswin.S. Warriar, Staff Editor and Mr.ShyamSuraj S.R, Associate Patron offered felicitations. Mr.Nithin Raj is the Editor of the released magazine.

Prior to the magazine release, an interclass debate competition was conducted in which Mr.Sayanath. H and Ms.Ashna Xavier were the winners. The winners were given prizes and magazine committee members were given certificates. Mr.Rasheed Parackal was honoured by the Dean and the programme ended with a short film ‘Continues’ directed by the chief guest.



3. FACULTY ACHIEVEMENTS

(Awards/ Scholarships/recognition to staff)

- Dr. Sudheer Babu, Dean, CDST, Mannuthy acted as Technical Director of the **expert committee**, Department of animal Husbandry and Dairy, **Government of Kerala** for formulating “Vision 2020”
- The Best Teacher Awards 2016-17 was organized at the College of Dairy Science and Technology, Mannuthy on 10.4.2017. The Award Winners were Ms. Aparna S.V, Assistant Professor (Dairy Microbiology) and Mr. Sandeep B., Teaching Assistant (Dairy Business Management). The award is funded from ICAR grant. In the presence of an impressive gathering at the Seminar Hall of KVASU Dairy Plant, the Dean of the faculty Dr. G. Girish Varma presented the awards to the winners. The selection of best teachers was done through a meticulous process involving the opinion of students and the teacher’s credentials



Oral and Poster Awards

- Aparna Sudhakaran V, Department of Dairy microbiology, College of Dairy Science and Technology, Mannuthy bagged Young Investigator Award (third prize) in the 4th Biennial Conference of Probiotic association of India and International Symposium on Probiotic therapy: Translating to health and Clinical process held on 16-17th February, 2018 at JLN Auditorium, All India Institute of medical Sciences, New Delhi.
- Dr. Ligimol James won First in both Oral and Poster presentation- National Seminar on 'Food adequacy and climate change- : Strategies for sustainable food production''' organized by Association of Meat Scientists and Technologists during 3-4 November 2017, at Hotel Dream City, Pattikkad
- Mrs.Indu.B, Assistant Professor won First prize for poster competition at National Seminar on "Food adequacy and climate change: Strategies for sustainable food production.
- Ms. Aparna Sudhakaran V- Second in Oral presentation- National Seminar on 'Food adequacy and climate change- : Strategies for sustainable food production'"organized by Association of Meat Scientists and Technologists during 3-4 November 2017, at Hotel Dream City, Pattikkad
- Dr. Rana Salva, Teaching Assistant, secured Best Poster Award in Food processing technologies session of National Seminar on Food Adequacy & Climate Change: Strategies for Sustainable Food Production
- Er.Aswin S Warriar, Assistant Professor, Dept. of Dairy Engineering received 'Chartered Engineer' certificate.

4. STUDENTS ACHIVEMENTS

i. Republic Day NCC Camp

Mr. Ammiti Murali Krishna, second year M. Tech (Dairy Technology) student of the College of Dairy Science and Technology stood at the third position in the Show Jumping for Boys at the Inter Directorate Equestrian Competitions held as part of Republic Day NCC Camp 2017 at New Delhi. He also participated in the Prime Minister's Rally.

Three students of the College of Dairy Science and Technology, Mannuthy participated at the Republic Day Camp during the month of January 2018. Mr. Nikhil Antony (2015-BDM-65), Mr. Nikhil. P. Murali





(2015-BDM-66) and Ms. Anjana. M (2015 BDM- 20) participated in the different events of horseriding as part of the camp and got selected for the Prime Minister's Rally. They visited the Honorable President and the Prime Minister of India. The students visited the various landmarks and monuments of the capital territory of India and

exhibited dressage, show jumping, tend pecking etc. in front of the Chief Minister of Delhi and various dignitaries of the Army. The students had proceeded to Delhi after a 3-day camp at Kozhikkodewith a Kerala team of 111 members and after reaching back; visited the Honourable Governor at Raj Bhavan and the State Educational Minister along with other NCC cadets. The hard work and the gracious performance of the students are admired with pride and contentment by the faculty.

ii. **CDST students fetch prizes at AIMA-TMA MANAGEMENT OLYMPIAD 2017**

All India Management Association (AIMA) together with Thrissur Management Association (TMA) conducted 'Management Olympiad' at the Sahrdaya College Campus, Kodakara, Thrissur on 27th and 28th of March 2017. Quiz Competition, Poster Making Competition, Case Study Competition and Business Simulation Competition were conducted as part of the programme. 26 students of the College of Dairy Science and Technology, Mannuthy participated in the programme and secured prizes in the following events.



Quiz Competition

1. Anjumol Jacob and Anne Mary Catherine (2014 batch) – Silver medal
2. Abitha P.K. and Sana Jose (2014 batch) – Bronze medal

Poster Making Competition

1. Aswathy M.R and Kavaya A.K (2014 batch) – Silver medal
2. Jestin Bose and Adhila C.K. (2016 batch) – Bronze medal

iii. **Essay writing competition**

Ms.Keerthi .S. (2015 batch)of CDST, Mannuthy given cash price for getting third position in the Essay Writing Competition conducted as part of the Golden Jubilee Celebrations of the writings of Dr.AravindanVallachira at Prof. Joseph Mundassery Hall, Thrissur on 23.12.2018.

iv. Rashtriya Mahila Kisan Divas 2017 celebrations

Students of the College of Dairy Science and Technology, Mannuthy received first and second prize among two categories at the Debate Competition conducted as part of RashtriyaMahilaKisanDivas 2017 celebrations conducted by KrishiVigyan Kendra, KAU, Vellanikkara. First prize was received by Ms.Anjumol Jacob (2014- BDM- 09) and second prize by Abidha P.K (2014-BDM-02).

5. EXTENSION ACTIVITIES

i. Dairy Fest' – Experiential Learning Programme of 2013 batch started at CDST, Mannuthy

The Experiential Learning Programme of 2013 batch of B. Tech students of the College of Dairy Science and Technology, Mannuthy started. The programme entitled 'Dairy Fest' involves the production and sales of innovative dairy products by the students as part of entrepreneurship development. The sales of the products started at the KVASU sales centre at Mannuthy, which was inaugurated by Dr. S.N. Rajakumar, Professor and Head, KVASU Dairy Plant. The first sale was received by Dr. A.K. Beena, Associate Professor. The programme shall continue for 60 days and also a stall shall be opened at the Pooram exhibition under the auspices of the Directorate of Entrepreneurship, KVASU.



ii. Field Extension Training

With the co-operation of Dairy Development Department, the College of Dairy Science and Technology, Mannuthy organized 7 days Field Extension Training for 2013 batch B. Tech students from 30.5.2017 to 6.6.2017 at Wayanad district. The programme was inaugurated by Sri. P.T. GopalaKurup, Chairman, KCMMF at Kaniyambetta APCOS. The programme consisted of visit and study of Dairy Co-operatives, Dairy Plants, Dairy Extension Service Unit, Student Dairy Clubs, Cattle Feed Plant, Community Radio, Joint Liability Groups, BMC, Meat Plant etc. Also the students participated in organizing Block Ksheerasangamam and World Milk Day, which was inaugurated by Sri. C.K. Saseendran MLA, BoM Member of KVASU. They also took classes for

farmers and made a milk line study to assess the quality of milk from farm to dairy plant. Students understood the diversification of Dairy co-operatives and the role of Information Technology in milk procurement and testing. The students were impressed with the programme and had a worthy learning opportunity of field level extension.



iii. Training on 'Basics of molecular biology techniques'

Revolving fund project 'Starter culture', Department of Dairy Microbiology organized a fifteen days training on 'Basics of molecular biology techniques' for three students of CMS College of Science and Commerce, Coimbatore from 22.05.2017 to 08.06.2017

iv. 2016 batch B. Tech (DT) students of CDST, Mannuthy complete Student READY Exposure Visit I

2016 batch B. Tech (Dairy Technology) students (41 numbers) of the College of Dairy Science and Technology completed 7 days Student READY Exposure Visit I from 4.12.2017 to 10.12.2017. The students were exposed to the production, procurement, processing



and marketing activities of milk and milk products in the state. The students visited different dairy plants of milma – Alappuzha and Ernakulam, Dairy Development Department, KLDB farm Mattupetty, private dairy farms, Kurishumala farm etc. Orientation on the activities of milma was given by Mr.Satheesh, Senior Manager (Marketing), KCMMF and on activities of Dairy Development Department by Mr.Issac Thayyil, Joint Director (Planning) at the Dairy Training Centre, Thiruvananthapuram. Students also visited tourist places. Mr.Shyam Suraj S.R and Ms.Shyama Santhosh guided the students.



v. Palakkad District KsheeraSangamam 2017-18

The students of the College of Dairy Science and Technology, Mannuthy with the support of Indian Dairy Association – Kerala chapter participated at the Palakkad District KsheeraSangamam 2017-18 organized by the Department of Dairy Development at Dhanalakshmi Auditorium, Nenmara, Palakkad on 4.1.2018. The students made a live demonstration of the

preparation of milk products and its exhibition. The programme was conducted as part of the extension activities of the Department of Dairy Technology.

vi. State Ksheera Sangamam

College of Dairy Science and Technology, Mannuthy participated at the State Ksheera Sangamam organized by the State Dairy Development Department from 28.1.2018 to 30.1.2018. The NSS volunteers of CDST helped the organizers for various arrangements of the programme on 27.1.2018 and actively participated in all the programmes like Seminar, Camps, Young Farmers Meet, Women Entrepreneurs Summit, Cattle Show and Dairy Expo during the following three days. The students had established a stall at the Expo to exhibit milk products and effected sales. The programme was organized under the auspices of CDST, KVASU and NSS unit of CDST. 2014 and 2015 batch B. Tech students participated in the programme.



Details of extension activities of individual scientists (other than above)

- Mr. Shyam Suraj S.R. Assistant Professor, Department of Dairy Extension took class for entrepreneurs at the Hands on training organized as part of Experiential Learning Programme at CDST on 25.5.2017
- Dr. Ligimol James, Assistant Professor, Department of Dairy Microbiology took a class on 'Propagation of starter cultures' on 25.05.2017 in the Hands on Training on 'Preparation of

milk products for small scale entrepreneurs ('Unarvu – 2017') organized by Department of Dairy Technology, CDST and IDA (Kerala chapter)

- Eng. Aswin S warrier, Assistant Professor Department of Dairy Engineering took a class on 25.05.2017 in the Hands on Training on '*Preparation of milk products for small scale entrepreneurs* ('Unarvu – 2017') organized by Department of Dairy Technology, CDST and IDA (Kerala chapter)
- Mr. Shyam Suraj S.R. Assistant Professor, Department of Dairy Extension took class for housewives on 1.6.2017 as part of World Milk Day at CDST
- Dr. Divya M.P., Assistant Professor, Department of Dairy Chemistry took a class on 'Methods to analyse milk components-Merits and Demerits ' on 01.06.2017 at Vakeri Milk Society, Wayanad as part of Extension training for 2013 batch and World Milk Day Celebrations organized by College of Dairy Science and Technology and Dairy Development Department.
- Sri.ShyamSuraj, Asst.Prof, Dept.of Extension has taken class to the farmer community in connection with Ponnani Block KsheeraSangamam
- Mr.Aswin S Warriar, Assistant Professor, Dept. of Dairy Engineering delivered a lecture on "Operation and Maintenance of Bulk Milk Coolers " at DTC, Kozhikkode on 04.07.2017.
- Dr. Ligimol James took a class for the trainees of KVASU Dairy Plant on 'Personal Hygiene Practices', on 01.11.2017 at Seminar hall, KVASU Dairy Plant, Mannuthy.

College PTA activities

An Orientation programme was organised by the CDST PTA on 25-09-2017 for 2017 batch B. Tech (Dairy Technology) students

NSS activities

The N.S.S. unit of the College taking all efforts to achieve the objectives laid out under this scheme. Ms. Indu B, Assistant Professor (Dairy Chemistry) was serving as the Programme Officer. Various programmes were taken up under this scheme aimed to improve the social commitment of students and their personality development. The volunteers took earnest steps to educate common people on the need of energy conservation, masking campuses plastic free and keeping the surroundings clean. NSS unit actively participated in all the programmes like Seminar, Camps, Young Farmers Meet, Women Entrepreneurs Summit, Cattle Show and Dairy Expo

COLLEGE OF DAIRY SCIENCE AND TECHNOLOGY, POOKODE

KVASU has taken the initiative to establish Dairy Science and Technology college as its Pookode campus, during the academic year 2015-16 with an intake capacity of 40 students by sharing the facilities of College of Veterinary and Animal Sciences University, Pookode. Once the land is made available, work shall be initiated by the university to establish a separate campus. The college would follow the curriculum and guidelines prescribed by the Indian Council for Agricultural Research (I.C.A.R) for B.Tech (Dairy Science & Technology) programme. The curriculum is designed in such a way that students would get exposure to the entire gamut of operations taking place in professionally managed dairy processing units, that they acquire the required skills set and confidence to work as highly motivated professionals.

The course curricula is prepared as a unique job oriented degree programme which leads to a total development of graduates and make them capable to face various situations in varied field of work. Students are also enriched with entrepreneurial qualities to start their own industry. Additionally, the graduates get acquainted with various facts of professionally managed industries which include Production Management, Raw material purchases, Personnel management, Sales and Marketing by virtue of industrial In-plant training. This helps students to acquire confidence to work as highly professional human resource for Dairy and Food industry.

I.C.A.R has stipulated Minimum Standards for Higher Agricultural Education (MSHAE) in Dairy Technology. For the time being the requirements of the post graduate curriculum are not considered in this statement as they can be taken up when sufficient funds are allotted in subsequent phases. The intake capacity for the B.Tech (Dairy Technology) programme is presently 20 seats owing to the shortage of infrastructure and manpower.

ACADEMICS

Programme Offered

The college is offering four year professional B.Tech Programme. Admission to the UG programme is done based on Entrance Examination conducted by the commissioner of Entrance Examination, Govt of Kerala (KEAM).

Sl. No.	Title of the Programme	Level	Duration (Yrs)	Year of Starting	Sanctioned annual intake
1	B.Tech (DSc.&Tech.)	UG	4	2015	40 students (2016 September onwards it is 20)

Departments:

The College of Dairy Science and Technology has got the following 7 departments:

1. Department of Dairy Technology
2. Department of Dairy Engineering
3. Department of Dairy Business Management
4. Department of Dairy Chemistry
5. Department of Dairy Microbiology
6. Department of Dairy Husbandry
7. Department of Dairy Extension

* 2006 admission onwards Department of Dairy Husbandry and Dairy Extension are included under Department of Dairy Business Management.

Academic Programmes

College of Dairy Science and Technology provides a unique job oriented degree programme in Dairy Science and Technology. The course curricula for B. Tech (Dairy Science & Technology) is prepared in lines with the pattern specified by the Indian Council for Agricultural Research (I.C.A.R), New Delhi. B.Tech (DSc. & Tech.) is a unique job oriented degree programme which leads to the overall development of graduates and make them capable to face various situations in varied field of work. The course is offered for a total duration of eight semesters. The total credits have been apportioned to Dairy Engineering, Dairy Technology, Dairy Chemistry, Dairy Microbiology, Dairy Business Management and Dairy Husbandry disciplines with due weightage for each. The students are also required to undertake a South Indian study tour and an all India study tour as a part of the course curriculum during which the students are required to visit the important institutions and commercial dairy plants across the country. The last semester of the B.Tech programme is set apart for In-plant training and Farm training. Students are exposed to the entire gamut of operations taking place in professionally managed dairy processing units, which help them to acquire the required skills set and confidence to work as highly motivated professionals for the emerging dairy industry. They are also enriched with entrepreneurial qualities to start their own industrial units. For this, they have to successfully complete an 'Experiential Learning Programme' during the seventh semester. All the students are required to undergo hands on training in the experimental dairy plant during the seventh semester and undergo Internship during the final semester. The Internship programme is organized in dairy farms for a period of 35 days and in commercial dairy plants for a period of 70 days. This programme provides every student, the required practical exposure in scientific management of organized dairy farms and also in the operation, maintenance and management of large scale commercial dairy processing units like Amul, Schreiber Dynamix, Mother Dairy, Milma etc.

Course Curriculum

UG programme - Department-Wise Distribution of Courses for B.Tech (DSc. & Tech) degree programme

No.	Name of the Department	Credit Hours
1	Dairy Technology	33 (21+12)
2	Dairy Engineering	34(21+13)
3	Dairy Business Management	27 (20+7)
4	Dairy Microbiology	17 (11+6)
5	Dairy Chemistry	17 (11+6)
	Total	128
*2016 admission onwards Department of Dairy husbandry and Dairy Extension are included under Department of Dairy Business Management		

Non-Credit Courses			
No.	Catalogue No. of course	Name of the course	Credit Hours
1		Student READY Exposure Visit I – 7 days (Summer Break)	5 (0+5)
2		Student READY Exposure Visit -II for 23 days (Summer Break)	5 (0+5)
3	DT 4112	Student READY In- Plant Training	20 (0+20)
4	DT 4113	Student READY Experiential Learning Module	10 (0+10)
		Total	40 (0+40)

* - Non credit course (not included in the credit load)

** - Non credit optional course (not included in the credit load)

Total credits for work experience = 32

Total Class room credits (upto VIIth semester) = 138

Total credit load (excluding non credit courses) = 128

Total credits for Non credit courses = 40

Student Profile

Details	2017	
	M	F
UG		
Students admitted	22	48
Dropped out		0
Appeared for final exam	22	48
Failed to appear for final exam	0	0

Faculty Strength Details

Sl No	Department	Sanctioned Post	Present Status			
			Asso. Prof	Asst. Prof.	TA	Total
1	Dairy Technology	1Prof.+1Asso.prof. +3AP+1AP in food tech.=6	0	0	3	3
2	Dairy Engineering	1Prof.+1Asso.prof. +3AP+1AP in comp.sci.=6	0	0	3	3
3	Dairy Chemistry	1Prof.+1Asso.prof. +2AP =4	0	2	1	3
4	Dairy Microbiology	1Prof.+1Asso.prof. +2AP =4	0	1	2	4
5	Dairy Husbandry	1AP =1	0	0	0	0
6	Dairy Business Management	1Asso.prof.+1AP =2	0	0	1	1
7	Dairy Extension	1AP =1	0	0	0	0
	Total	24	0	3	10	14

Teaching Staff strength as on March 2018

RESEARCH

The college conducts vibrant research activities that results in socially or economically valuable applications. The activities contribute with new knowledge to the various dimensions of the Dairy Industry. The college inspite of severe faculty shortage could manage to take up some good research projects. A few projects are already in the stage of completion. Research is a major activity of the college which goes side by side to teaching.

EXTENSION ACTIVITIES

3.1 Ongoing BIRD Projects (2016 – 2017)

Sl No	Name of the Research Project	Name of department	PI	Funding Agency
1	FERMENTATION FOR VALUE ADDITION	DAIRY MICRO BIOLOGY	Mrs. ARCHANA CHANDRAN	KSCSTE

1. FARMERS TRAINING (FIRST BATCH -APRIL)

A training was given on milk product preparation to 10 rural women cattle farmers of Wayanad district



2. FARMERS TRAINING (SECOND BATCH -MAY)

A training was given on milk product preparation to 10 rural women cattle farmers of Wayanad district



3. FARMERS TRAINING (THIRD BATCH)

A training was given on milk product preparation to 10 rural women cattle farmers of Wayanad district



4. FARMERS TRAINING (FOURTH BATCH AUGUST)

A training was given on milk product preparation to 10 rural women cattle farmers of Wayanad district.



CDST POOKODE ACHIEVEMENTS 2017-2018

1. SANKALP DIVAS ON 02-05-2018



2. WORLD MILK DAY CELEBRATIONS ON 1-6-2017

World milk day was celebrated by visiting Thariyode dairy co-operative society by students and faculty of Cdst pookode. Classes on milk products were taken by students and awards were distributed to farmers



3. WORLD ENVIRONMENT DAY CELEBRATIONS (KURUNTHOTTI) 15-6-2017

Samplings of plants were planted by students followed by cleaning of college premises. Debate was conducted by the students on the topic of conservation of forests. Special lecture was provided by prominent environmentalist

4. IFTHAR 20-6-2017



Students invited a number of faculty and students from CVAS Pookode and officials from KVASU to have evening meal with which Muslims end their daily Ramadan fast at sunset.

5. YOGA DAY CELEBRATION ON 23-6-18

Yoga day was celebrated on 23-6-17 at seminar hall. Eminent yoga Acharya described the qualities and importance of Yoga in daily life. He also trained students in a number of asanas by which they could improve their physical, mental, and spiritual capacity.



5. WORLD HONEY BEE DAY (NECTAR)-19-8-2017

World honey bee day was celebrated on 18-8-2017 by students as a measure to understand the importance and awareness of protecting Bees.



6. ONAM CELEBRATION ON 25-09-2017



Students celebrated Onam festival on 25/09/2017. Floral carpets were arranged in the campus. Various activities and competitions took place among the students of CDST Pookode.

7. INTERCLASS BADMINTON COMPETITION 22-11-2017



8. NATIONAL MILK DAY CELEBRATION 29-11-17

The National Milk Day (NMD) celebrated on 29 November was to mark birth anniversary Dr. Verghese Kurien, father of the White Revolution in India

9. INTER COLLEGE SPORTS (GAMES) ON (11-12-17 TO 13-12-17)



10. INTERCLASS ATHLETIC MEET ON 20-12-2017



**11. INTER COLLEGE SPORTS FOOTBALL AND TABLE TENNIS
ON 22-12-2017 TO 23-12-2017**



12. KSHEERAKARSHAKA SANGAMAM (03-01-2017 TO 05-01-2018)

Exhibition stall for milk products was done on Wayanad district ksheera karshaka sangamam at Sulthan Bathery.



13. INTERCLASS ARTS SARODH 20-01-2018 TO 23-01-2018



14. INTER AGRI SPORTS ON FEB 01 to 03-02-2018

Four students were participated on Inter university sports held at GKVK, Bengaluru



15. STATE KSHEERASANGAMAM AT VADAKARA ON 15, 16 AND 17-02-2018

Active participation of 50 students on State Ksheera Sangamam-2017-18 which was held at vadakara kozhikode



COLLEGE OF DAIRY SCIENCE AND TECHNOLOGY CHETTACHAL, THIRUVANANTHAPURAM

DETAILS ABOUT THE COLLEGE

History:

The Government of Kerala made a budget provision of Rs. 25 lakhs in the financial year 2013-14 for setting up a new Dairy Science College in Chettachal, Nedumangad Taluk (Thiruvananthapuram district). Accordingly the Kerala Veterinary and Animal Sciences University (KVASU) headquartered at Pookode in Wayanad district decided to start College of Dairy Science and Technology (CDST), Chettachal (Vithura). CDST Chettachal, the second college of its kind in the state started functioning on 14.09.2015 at its temporary campus in KELTRON Equipment Complex, Karakulam (Thiruvananthapuram). The College offers 4-year B.Tech (Dairy Technology) programme from the academic year 2015-16 onwards with an intake capacity of 20 students. The course is offered following the curriculum and guidelines prescribed by the Indian Council for Agricultural Research (I.C.A.R) for B.Tech (Dairy Technology) programme.

Admission:

The candidates admitted to the UG course are selected through the Common Engineering Entrance Examination conducted by the Government of Kerala. The candidates should have completed Class XII or its equivalent examination with Chemistry, Physics and Mathematics as optional subjects and should have secured an aggregate of 50% marks or above in these subjects in the qualifying examination. The candidates can choose their option for this course among other graduate courses in Engineering.

Sl. No.	Programme	Level	Duration (Yrs)	Year of Starting	Sanctioned annual intake	Total student strength
1	B.Tech (Dairy Technology)	UG	4 (8 semesters)	2015	20 students	68 students

Note: Sanctioned annual intake temporarily reduced from 40 to 20 students with effect from 2016 admission onwards

Teaching Departments:

The College of Dairy Science and Technology has got the following 6 statutory teaching departments:

1. Dept. of Dairy Technology
2. Dept. of Dairy Engineering
3. Dept. of Dairy Chemistry
4. Dept. of Dairy Microbiology
5. Dept. of Dairy Business Management
6. Dept. of Dairy Husbandry

Academics:

The course curriculum for B. Tech (Dairy Tech.) programme is prepared in lines with the pattern specified by the I.C.A.R, New Delhi. This is a unique job oriented degree programme which leads to the overall development of graduates and make them capable to face various situations in varied field of work. The course is offered for a total duration of eight semesters. The total credits have been apportioned to Dairy Engineering, Dairy Technology, Dairy Chemistry, Dairy Microbiology, Dairy Business Management and Dairy Husbandry disciplines with due weightage for each. The students are also required to undertake an All Kerala Exposure Visit and an All India Exposure Visit as a part of the course curriculum during which the students are required to visit the important institutions and commercial dairy plants across the country. The last two semesters of the B.Tech programme are set apart for Experiential Learning, In-plant training and Farm training. Students are exposed to the entire gamut of operations taking place in professionally managed dairy processing units, which help them to acquire the required skills set and confidence to work as highly motivated professionals for the emerging dairy industry. They are also enriched with entrepreneurial qualities to start their own industrial units as part of the 'Experiential Learning Programme' during the final year. The Internship programme comprising of In-plant training and Farm training is organized in dairy farms for a period of 35 days and in commercial dairy plants for a period of 70 days. This programme provides every student, the required practical exposure in scientific management of organized dairy farms and also in the operation, maintenance and management of large scale commercial dairy processing units like Amul, Schreiber Dynamix, Mother Dairy, Milma etc.

Faculty Status(Regular Faculty as on 31st March, 2018):

Faculty Rank	No. of Sanctioned Regular posts	Present Status: Number in position by Highest Qualification			Total Regular Faculty in position	Total Vacancies
		Doctoral Degree	Masters Degree	Bachelors Degree		
Professor	N.A.	0	0	0	0	N.A.
Associate Professor	N.A.	0	0	0	0	N.A.
Assistant	N.A.	2	3	0	5	N.A.

Professor						
TOTAL	N.A.	2	3	0	5	N.A.

Infrastructure:

With regard to infrastructure, facilities created in the temporary campus are sufficient to support the basic theory and practical sessions prescribed for the first two academic years of B.Tech programme. The Dairy Microbiology, Dairy Technology and Dairy Chemistry laboratories are strengthened with sophisticated equipment to meet the academic/research requirements of concerned departments. A spacious drawing hall is arranged in the campus to facilitate the Engineering Drawing course prescribed in the B.Tech curricula. A well-equipped Computer Lab with 15 Desktop PCs (Pentium i3-4160 CPU@3.60 GHz processor) having Internet connection. The institution subscribed to BSNL Landline facility (Telephone No. 0472-2888288) and Broadband connection (BBG Combo ULD 2091 - multi-user facility intended for Institutions). The College Library is being set up with excellent infrastructure and good collection of books and journals required for the B.Tech (DSc. &Tech.) students. The lecture hall is equipped with LCD projection facility, Computer and Public Address Lectern. The college has made arrangements with the Central Polytechnic College, Vattiyoorakkavu for the conduct of practical sessions prescribed for General Engineering courses in B.Tech curricula. The rates and remuneration charges are fixed as per the G.O (Ms) No. 42/2014/H.Edn dated 23/01/2014.

1. EDUCATION, STUDENT AMENITIES AND ACTIVITIES

Students' Union:

Students' Union Activities (01/04/2017 to 31/03/2018):

Sl. No.	Event	Date / Period
1	Inter-Class Arts Festival	06/05/2017
2	Film Festival	09/05/2017 to 12/05/2017
3	World Milk Day 2017 Celebrations	01/06/2017
4	Environmental Day 2017 Celebration	05/06/2017
5	Honoring of University Arts Festival Winners	22/06/2017
6	Onam 2017 Celebrations (<i>Avani 2017</i>)	26/08/2017
7	Freshers' Day	18/11/2017
8	National Milk Day 2017 Celebrations	26/11/17
9	Christmas-New Year Celebrations	20/12/2017

Awards in curricular, co-curricular and extra-curricular activities:

- The students actively participated in Dhruva-2017, the KVASU Inter Collegiate Arts Festival held at Veterinary College, Pookode from 25th to 27th of May, 2017 and bagged Fifth position in the Overall Medal Tally. The winners were felicitated jointly by CDST PTA and Student Union CDST on 22.06.2017.
- Ms. Priyanka D. (2015 admission) won the District Level Essay Competition on the subject “Only where women are respected, society can claim as respected” conducted by SRI SATHYA SAI SEVA ORGANISATION Thiruvananthapuram on 13/07/2017.
- Sri. Joel George of 2015 admission won the “Best Photographer” title in connection with World Photography Day programme organized by KVASU Students’ Union on 19/08/2017.
- A Poster competition for B.Tech students was also arranged at the College level in connection with National Milk Day 2017 celebrations on 26/11/2017.
- The students actively participated in Intercollegiate Games competition held at CVAS Pookode and Mannuthy Campuses in two different spells from 10-11 December 2017 and 22-23 December 2017 respectively. The winners were given a warm welcome at College campus at an event organized by College Students Union.
- The 2015 Admission B.Tech students with the guidance of Sri. Rejeesh R., Asst. Professor (Dairy Microbiology) bagged first and second prize for the posters presented in the National Conference on ‘Emerging Food Technologies towards safe food’ – EMINENCE’18 organized by TKM Institute of technology, Kollam, Kerala (Feb 9-10,2018) on the theme Processing and value addition.

Sl. No	Title	Authors	Prize
1	<i>Assessing the physico- chemical and sensory attributes of sweetened yoghurt using coconut milk</i>	Joel George, Akshay P Kumar, John Varghese, Tony Philip, Ankith Roshanlal Shabu , Rejeesh R	FIRST
2	<i>Jackfruit Shrikhand</i>	Amritha V S, Dhipi Dileepkumar, Mayoora R, Sarija S J, Rejeesh R.	SECOND

- Sri. John Varghese and Sri. Joel George (2015 Admission B.Tech students) bagged first and second places respectively in the ‘Evoke Photography Contest’ hosted by Holy Crescent College, Ernakulum on 27/03/2018.

Sports, Physical Education and Co-curricular activities:

- Thirty B.Tech students of this College participated in the KVASU Inter-Collegiate Sports’ Meet 2017 held at CVAS Mannuthy ground from 12/12/2017 to 14/12/2017 and Twenty Five

students participated in the KVASU Inter-Collegiate games held at the CVAS Pookode ground from 22/12/2017 to 24/12/2017.

NSS/NCC Activities:

- A two days Nature Camp was organized by the NSS unit of College of Dairy Science and Technology, Thiruvananthapuram on 13th and 14th November 2017 at Athirapally-Vazhachal and Valpara Forest Reserves.
- Five B.Tech students of 2015 Admission were deputed for attending the 7 day NSS Special Residential Service Camp held at various places in Palakkad and Thrissur districts from 07/03/2018 to 13/03/2018 as part of the mandatory service programmes of National Service Scheme.

College PTA activities:

- Regular activities of CDST PTA were arranged during the reporting period. The Annual General Body meeting of CDST Parent Teacher Association was convened on 20.10.2017, 10:30 a.m. at the College Seminar Hall. The College PTA is taking care of the service and periodic maintenance of Water Purifier to ensure purified drinking water to staff and students. PTA is also providing practical records to students at nominal rates. The association extends financial support to various union and college programmes with the concurrence of Executive Committee.

Students Counselling and Placement Services:

- The Career Guidance and Placement Cell (CGPC) organized the fourth Professional Lecture titled 'YOGA...a Way of Life' under the 'PHRONESIS' monthly lecture series. Sri. Aneesh R. L, Asst. Professor, Selvam College of Yoga and Research Centre, Marthandam, T.N. and Director, Institute of Nirvana Yoga, Trivandrum offered the lecture on 18th of August, 2017, Friday, 02:00 P.M. at the College Seminar Hall.
- An awareness class on 'Anti-Ragging' meant for the senior students of B.Tech (Dairy Technology) programme was arranged at the College Seminar Hall on 13/09/2017 from 2 p.m.to 4 p.m. Adv. Pradeep T. of District Legal Services Authority, Thiruvananthapuram handled the session.
- An Induction Ceremony was arranged for the newly admitted 2017 Admission B.Tech (Dairy Technology) students on 25/09/2017, 10:30 a.m. at the College Seminar Hall.
- The Career Guidance and Placement Cell (CGPC) organized the fifth Professional Lecture titled "CYBER SECURITY" under the 'PHRONESIS' monthly lecture series on 11th of January 2018, Thursday, 02:00 PM-05:00 PM at the College Seminar Hall. Sri. Adarsh S.V. Nair, Senior Security Analyst, UST Global and Information Security Advisor, Kerala Police Cyberdome handled the session.

Other Outreach Programmes:

- The 2015 Admission B.Tech students undergone their South India Study tour (STUR 01) along with Rejeesh R and Beena R L as Tour officer and Assistant Tour Officer respectively from 17.04.2017 to 28.04.2017.
- The students and faculty members actively participated in the World Milk Day (01/06/2017) celebrations organized by the Dairy Development Department, Government of Kerala at Tagore Theatre, Vazhuthacaud (Trivandrum).
- Institute of Co-operative Management (ICM) trainees made a visit to College of Dairy Science & Technology, Thiruvananthapuram as part of their training on 14th of July 2017. The trainee members were the Dairy Extension Officers of Dairy Development Department, Govt. of Kerala. They had a very interactive knowledge transfer session with budding dairy professionals regarding- “Present Dairy Scenario in Kerala”.
- The Souvenir and Poster Committee Meetings in connection with the 46th Dairy Industry Conference, 2018 were organized at the Seminar Hall of College of Dairy Science & Technology, Thiruvananthapuram on 22nd of July, 2017
- The 2016 Admission B.Tech students along with Course Teachers (Rejeesh R and Mrs. Shyamli) visited Milma, Thiruvananthapuram Dairy (TRCMPU) as a part of Course Tours for Dairy Technology and Dairy Microbiology departments on 19/08/2017.
- The students and faculty members were deputed for attending the one day ‘Awareness Programme on Quality of Milk and Milk Products’ organized by the Dairy Development Department, Government of Kerala at Bharath Bhavan on 30/08/2017. The students of this campus arranged various cultural programmes as part of that event. Also the milk products exhibition stall set up by our students attracted public attention.
- The 2016 Admission B.Tech students undergone their All Kerala Exposure Visit to differences places/institutions of academic interest in Kerala along with Tour Officers, Dr. K. Lalu, Dr. C.R. Rachana and Smt. Jiji from 02.10.2017 to 09.10.2017.
- The 2015 Admission B.Tech students along with Course Teachers (Smt. Beena R. L and Dr. Rachana C.R) visited Central Institute of Fisheries Technology (CIFT), Kochi as a part of Course Tours for Dairy Technology and Dairy Chemistry departments on 24/02/2018
- The 2015 admission students along with Course Teacher (Smt. R.L Beena) visited M/S Family Plastics, Manvila as part of the course in Dairy Technology on 17/03/2018

Scholarships:

- 26 B.Tech students of this campus availed egrantz scholarship and 2 students availed Central Sector Scholarship during the reporting period

Hostel facilities:

- Under the aegis of the College Parent Teacher Association, hostelling of students (paying guest facility) were arranged in and around the Karakulam area. The KELTRON management has extended the services of their Staff Canteen for the staff and students of CDST as well.

Alumni: The first batch of students joined the college during the year 2015-16 only.

Students' Performance: NOT AVAILABLE

List of departments/centers/schools under the station:

1. Dept. of Dairy Technology
2. Dept. of Dairy Engineering
3. Dept. of Dairy Chemistry
4. Dept. of Dairy Microbiology
5. Dept. of Dairy Business Management
6. Dept. of Dairy Husbandry

I. DEPARTMENT WISE DETAILS***Faculty details:***

Sl. No.	Name and designation of the Teaching Staff	Discipline	Residential Address	Email ID	Contact No.	
					Land line (Res.)	Mobile
1	Sri. G.R. Jayadevan Special Officer / Asst. Professor & Head	Dairy Business Management	'Sangeeth', K.E.R.A – 175 Muttakkad P.O. Venganoor (Via), Trivandrum – 695 523	jayadevan@kvasu.ac.in	0471-2481980	9496369816
2	Dr. K. Lalu Asst. Professor & Head	Dairy Husbandry	'Prarthana', Neeleswaram P.O., Kottarakkara - 691505	lalu@kvasu.ac.in	0474-2450910	9447150267
3	Smt. Beena R.L. Asst. Professor & Head	Dairy Technology	'V.G. Bhavan', Kallayam P.O., Trivandrum – 695 043	beenarl@kvasu.ac.in	0471-2371135	9947367580
4	Dr. C.R. Rachana	Dairy Chemistry	'Ponnili', Near Town Hall,	cr.rachu@gmail.com	0470-2794401	9497682168

	Asst. Professor & Head		Attingal P.O, Trivandrum - 695101			
5	Sri. Rejeesh R. Asst. Professor & Head	Dairy Microbiology	‘Reshmi’, TC 36/631 (3), Perunthanni, Trivandrum- 695 008	rejeeshrnair@r ediffmail.com	0471- 2452583	949784 9625

Research

- 1. Projects Completed: NIL**
- 2. Projects continuing through the year: 01**

Department of Dairy Microbiology is functioning as a network project centre on Dairy microbes funded by NCVTC (ICAR), Sirsa, Haryana. The technical part of project is under the overall guidance of Dr. S.K.Tomer, Principal Scientist, ICAR- NDRI, Karnal, Haryana. The officer in charge of network project centre is Shri. Rejeesh R, Asst. Professor (Dairy Microbiology). The project is entitled “Collection of indigenous Fermented milk products from different parts of Kerala and isolation, bio chemical characterization of Lactic acid bacteria in order to develop as a stock culture in the repository of NCVTC.” The first phase, the collection of indigenous fermented product from different parts of Kerala was completed and the cultures were assessed for their purity and activity. The selected cultures were preserved by lyophilization and submitted to NDRI for further analysis.

3. Student Projects: NIL

Publications

Research Article Published:

- Jayadevan, G.R., *Human resource requirements of India’s dairy processing sector – a 21st century perspective*, Proceedings of the National Seminar on “Role of Examination System in Increasing Effectiveness of Dairy Science Education and Career Movement of Dairy Professionals” on 26th March, 2018, S.M.C College of Dairy Science, Anand, Gujarat. ISBN Number 9 781234 567897

Research Papers Presented:

- Beena, R.L. and Rajakumar, S.N. *Value Added Shrikhand by Membrane Process*, National Conference on “Emerging Food Processing Technologies Towards Safe Food - EMINENCE 2018” on 9-10 February 2018, TKM Institute of Technology, Kollam

Popular Articles / Technical Report Published:

- Rejeesh R, 'Probiotic Milk Products – Value addition and Health' (Malayalam), *Jeevaneeyam* Souvenir, Department of Dairy Development, Thiruvananthapuram.

Non-Technical Reports Published: NIL

Books / Monographs/ Manuals:

- Smt. R. L. Beena, Asst. Professor - Dept. of Dairy Technology associated with development of Reference Text book entitled *Dairy Technology for VHSE (First Year)*, Govt. of Kerala, Department of Education in association with SCERT (State Council of Educational Research and Training), in 2017.

Sl. No.	Authors	Year	Title	Publisher
1	Sri. R. Rejeesh, Dept. of Dairy Microbiology	2018	U.G. Practical Manual on course; <i>Microbiology of Milk Products</i>	CDST, KVASU
2	Smt. R. L. Beena, Dept. of Dairy Technology	2018	U.G. Practical Manual on course; Fat Rich Dairy Products	CDST, KVASU

Technology developed and transferred

A. Technology: NIL

B. Value added products: *Cocoghurt* (Yoghurt manufactured incorporating coconut milk) – Standardization trials and documentation works going on.

C. Consultancy:

Type of Consultancy	Client Details	Revenue Generated
Microbiological and Chemical analysis of milk and milk products by the Departments of Dairy Microbiology and Dairy Chemistry	Product manufacturers, entrepreneurs, farmers, General Public etc.	Free Service
Consultancy Services to small scale entrepreneurs in the area of manufacturing milk products by the Departments of DT, DM and DBM	Entrepreneurs/farmers etc.	Free Service
Consultancy Services to dairy farmers/fodder farmers in the area of dairy farm management practices, fodder cultivation and cattle nutrition by the Department of DH	Dairy farmers	Free Service

D. Patents: NIL

E. Commercialization of Technology: NIL

HRD activities:

Seminar / Workshop / Summer Institute / Symposium / Winter School / Training Programme / Short Courses / Any other programme organized:

- One day study visit and training arranged at the Campus on 14/07/2017 for the participants (Dairy Extension Officers in Dairy Development Department, Govt. of Kerala) of Diploma programme in Management of Dairy Cooperatives, Institute of Cooperative Management – Poojappura (Trivandrum)
- An orientation programme handled by Sri Ashok Sharma, Renowned HR Consultant and Former Sr. Manager (HR & Administration), KSEDC Ltd., Thiruvananthapuram was arranged for the newly admitted students (2017 Admission) on 26/09/2017, from 02:00 p.m. to 04:00 p.m.

Persons deputed for Training / Workshop / Summer Institute / Seminar / Study Tour /higher studies / any other programme both in India and Abroad:

Sl. No.	Name and designation of the Scientist	Title of the Programme	Duration	Place
1	Shri. G. R. Jayadevan, Asst. Professor (DBM) and Special Officer	HRD training programme for the Officers of KVASU	05/04/2017 to 07/04/2017	Conference Hall, Estuary Island Resort, Poovar, Trivandrum
2	Shri. Rejeesh R., Asst. Professor (DM)	Tour Officer for the South India Study tour (STUR 001) - 2015 Admission Students	17/04/2017 to 28/04/2017	South Indian States – TN, Karnataka and Telengana.
3	Dr. K. Lalu, Asst. Professor (DH)	Training on Newer Perspectives in Dairy Cattle Farming for Augmenting Productivity	27/04/2017 to 10/05/2017	Base Farm, Kolahalamedu
4	Smt. Beena R.L, Asst. Professor (DT), Dr. Rachana C.R, Asst. Professor (DC),	State Level Workshop as part of 'World Milk Day 2017' celebrations organized by the Dairy	01/06/2017	Tagore Theatre, Trivandrum

	Shri. Rejeesh R., Asst. Professor (DM), Dr. K. Lalu, Asst. Professor (DH) and Shri. G. R. Jayadevan, Asst. Professor (DBM)	Development Department, Govt. of Kerala		
5	Dr. K. Lalu, Asst. Professor (DH)	National Seminar on <i>Newer approaches in cow comfort systems for better productivity</i> jointly organized by IDA (Kerala State Chapter) & IVA ,College of Veterinary and Animal Sciences, Mannuthy Chapter	25/06/2017	Hotel Pearl Regency, Thrissur
6	Dr. Rachana C.R, Asst. Professor (DC) and Dr. K. Lalu, Asst. Professor (DH)	Tour Officers for the All Kerala Exposure Visit - 2016 Admission Students	02/10/2017 to 10/10/2017	Different places of academic interest in Kerala
7	Shri. Rejeesh R., Asst. Professor (DM)	Workshop on <i>Capacity building in food safety and food security governance in Kerala</i>	17/10/2017	IMG, Trivandrum
8	Shri. G. R. Jayadevan, Asst. Professor (DBM) and Special Officer	National Workshop on <i>Professional Content Writing</i> organized by the Institute of Management in Kerala, University of Kerala	02/11/2017	Senate Chamber, University of Kerala, Trivandrum
9	Shri. Rejeesh R., Asst. Professor (DM), Dr. K. Lalu (Asst. Professor-DH) and Shri. G. R. Jayadevan, Asst. Professor (DBM)	Training programme on <i>Research Methodology & Project Preparation</i> for the faculty members of KVASU	20/11/2017 to 25/11/2017	IMG, Trivandrum
10	Dr. Rachana C.R, Asst. Professor (DC)	Training programme on Advances in Validation of Functional Foods	01/12/2017 to 21/12/2017	Biochemistry Division, National Dairy Research Institute Karnal
11	Smt. Beena R.L, Asst. Professor (DT), Dr. Rachana C.R, Asst. Professor (DC), Shri. Rejeesh R., Asst. Professor (DM) and Shri. G. R. Jayadevan, Asst. Professor (DBM)	46 th Dairy Industry Conference on the theme “Dairying: Sufficiency to Efficiency”	08/02/2018 to 10/02/2018	Adlux International Convention Centre, Angamaly, Kochi

12	Smt. Beena R.L, Asst. Professor (DT)	National Conference on <i>Emerging Food Processing Technologies Towards Safe Food</i> - EMINENCE '18	09/02/2018 to 10/02/2018	TKM Institute of Technology, Kollam
13	Shri. G. R. Jayadevan, Asst. Professor (DBM) and Special Officer	HRD training programme for the Officers of KVASU	08/03/2018 to 10/03/2018	Training Hall, Vasundhara Sarovar Premier Resort, Vayalar, Alleppey
14	Dr. K. Lalu, Asst. Professor (DH) and Smt. Beena R.L, Asst. Professor (DT)	Human Resource Development programme on "Effect of Motivation on Institutional Development" for the Faculty members the University	15/03/2018	Academic Staff College-KVASU, Mannuthy

Other HRD related Activities

Sl. No.	Name and designation of the Scientist	Title of the Programme	Duration	Place
1	Shri. G. R. Jayadevan, Asst. Professor (DBM) and Shri. Rejeesh R., Asst. Professor (DM)	Resource persons for the 3 months Diploma Programme in Management of Dairy Cooperatives, Institute of Cooperative Management (ICM), Trivandrum	May, 2017 to July, 2017	Institute of Cooperative Management, Trivandrum
2	Shri. Rejeesh R., Asst. Professor (DM)	Handled a Session on 'Value addition of milk ' in the Refresher training course on 'Newer perspective in dairy cattle farming for augmenting productivity' organized by Base Farm, KVASU, Kolahalamedu, Idukki.	05/05/2017	Base Farm, KVASU, Kolahalamedu, Idukki.

3	Shri. Rejeesh R., Asst. Professor (DM)	Delivered lecture on Microbiology of Dairy Products and manufacture of ice cream for the officials of Dairy Department	05/08/2017	Dairy Training Centre, Oachira
4	Shri. Rejeesh R., Asst. Professor (DM)	Handled a session on Microbiology of Dairy Products and manufacture of ice cream for the Public	10/10/2017 and 19/03/2018	Dairy Training Centre, Oachira
5	Shri. Rejeesh R., Asst. Professor (DM)	Handled a session on Trends and Innovation in Value added Dairy Products for the Progressive farmers	06/12/2017	Dairy Training Centre, Oachira

Important materials/ resources acquired:

College Library of CDST Thiruvanthapuram:

- 130 books were purchased in the College Library during the reporting period (2017-18) under Library Book Bank Scheme as well as relevant state plan schemes spending about Rs. 3.0 Lakhs.

<i>Sl. No</i>	<i>Name of the equipment*</i>	<i>Year of purchase</i>	<i>Company / make</i>	<i>Utility of the equipment in brief</i>
1	Chest Freezer	2017	Technocrafts Appliances Pvt. Ltd.	In order to meet the curriculum requirements - Freezing of milk products
2	Special purpose centrifuge	2017		In order to meet the curriculum requirements - Fat estimation
3	Constant temperature Water Bath	2017		In order to meet the curriculum requirements - Heating purpose
4	Stirrer	2017		In order to meet the curriculum requirements – Blending purpose

5	Basic Bench pH Meter	2017		In order to meet the curriculum requirements - Checking pH of samples
6	Cream Separator (2 Nos.)	2017 & 2018	Netco Sales New Dairy Engineering & Trading Co. Pvt. Ltd	In order to meet the curriculum requirements – Separation of Cream
7	Centrifuge (2 Nos.)	2017 & 2018		In order to meet the curriculum requirements - Determination of Fat
8	Ice Cream Freezer	2017		Making ice-cream for study purpose
9	Butter Churner	2017		Making butter for study purpose
10	Cheese Vat	2017		Making cheese for study purpose
11	S.S Paneer Press	2017		In order to meet the curriculum requirements - Pressing Paneer
12	Micro centrifuge	2018	DLAB, USA	To support pelletisation and metabolite recovery

* Details of scientific equipment costing more than Rs. 50,000/- to be furnished.

Any other activities:

- Mr. Rejeesh R., Asst. Professor (Dairy Microbiology) was deputed as the Officer-in-charge and custodian for transporting and maintaining the stock of rectified spirit procured for academic purpose at the College Laboratories under the due supervision and guidance of Excise Circle office, Nedumangad.

- Sri. G. R. Jayadevan, Special Officer & Asst. Professor (Dairy Business Management) is nominated as the College Level Nodal Officer for the All India Survey on Higher Education and National Institutional Ranking Framework (NIRF)
- Mr. Rejeesh R., Asst. Professor (Dairy Microbiology) served the position of Convener of Poster Committee, 46th DIC held at Kochi from 8th to 10th February 2018 (*It was the first ever E-Poster session held in the History of Dairy Industry Conferences in the country*). He was also a Member of Publication committee of 46th DIC.
- Mr. G. R. Jayadevan, Special Officer and Asst. Professor (DBM) served the position of Convener of Publication Committee, 46th DIC Kochi organized from 8th to 10th of February, 2018. He was also a Member of Poster Committee of 46th DIC.
- Mr. Rejeesh R, Mr. G. R. Jayadevan and Smt. Beena R. L.(Asst. Professors) acted as rapporteurs in various Technical sessions held as part of 46th Dairy Industry Conference held at Kochi from 8th to 10th February 2018
- Mr. G. R. Jayadevan and Mr. Rejeesh R. (Assistant Professors) were the members of Planning and Editing Team of Souvenir published by Indian Dairy Association (South Zone) for the 46th DIC held at Kochi.
- Dr. Rachana C. R and Smt. Beena R. L. served as Publication Committee members of 46th Dairy Industry Conference held at Kochi from 8th to 10th of February 2018.

COLLEGE OF DAIRY SCIENCE AND TECHNOLOGY, KOLAHALAMEDU, IDUKKI

College of Dairy Science and Technology, Kolahalamedu has commenced on September 25th, 2017 at the temporary campus of DC School of Management and Technology, Pullikkanam under the aegis of the Faculty of Dairy Science and Technology, Kerala Veterinary and Animal Sciences University, Mannuthy. The College of Dairy Science Technology will give especial thrust in enlightening the young minds to be dynamic and flexible to the opportunities and challenges of Dairy industries.

The candidates admitted to B. Tech (Dairy Technology) programme are selected through the Common Engineering Entrance Examination conducted by Govt. of Kerala and admission is for 20 students per year. The course curriculum for B.Tech (Dairy Technology) is in lines with the pattern specified by the Indian Council of Agricultural Research (ICAR), New Delhi.

College comes under ElapparaPanchayath and peerumedu Constituency. 100% of the students are hostellers and the Hostel facilities are provided by the DC College, Pullikkanam now.

Objectives of the Institution:

- To establish world class educational centre in the area of Dairy Science and Technology so as to cater the present demand.
- To build the graduates acquainted with various facets of professionally managed industries which include production management, raw material purchases, personnel management, sales and marketing by virtue of industrial in-plant training.
- To undertake consultancy services in the area of Dairy Science, Food Safety and Quality Control.
- Creating the necessary infrastructure to house class rooms, laboratories, library, computer lab, sports amenities and other allied facilities.
- Promote entrepreneurial avenues in dairy and food processing
- Mobilizing sufficient financial resources for the day to day activities and further development of the institution.
- Publication of books, booklets and popular articles for the dissemination of new technologies to the dairy farming community

- To establish a Centre of excellence in terms of Food Analytical Capthe Dairy Food Process Industries.
- To undertake training programmes for small and medium dairy processing enterprises in the organized and unorganized sector.

Admission: The candidates admitted to the UG course are selected through the Common Entrance Examination conducted by the Government of Kerala. The candidates should have completed Class XII or its equivalent examination with Chemistry, Physics and Mathematics as optional subjects and should have secured an aggregate of 50% marks or above in these subjects in the qualifying examination. The candidates can choose their option for this course among other graduate courses in Engineering.

Sl. No.	Title of the Programme	Level	Duration (Yrs)	Year of Starting	Sanctioned annual intake	Total student strength
1	B. Tech (Dairy Technology)	UG	4	2017	20 students	19

Departments:

The College of Dairy Science and Technology has got the following 5 departments:

1. Dept. of Dairy Technology
2. Dept. of Dairy Engineering
3. Dept. of Dairy Chemistry
4. Dept. of Dairy Microbiology
5. Dept. of Dairy Business Management

Academics: The course curricula for B. Tech (Dairy Technology) programme are prepared in lines with the pattern specified by the Indian Council for Agricultural Research (I.C.A.R), New Delhi. B.Tech (Dairy Tech.) is a unique job oriented professional degree programme which leads to the overall development of graduates and make them capable to face various situations in varied field of work. The course is offered for a total duration of eight semesters. The total credits have been apportioned to Dairy Engineering, Dairy Technology, Dairy Chemistry, Dairy Microbiology and Dairy Business Management disciplines with due weightage for each. The students are also required to undertake a South Indian study tour and an all India study tour as a part of the course curriculum during which the students are required to visit the important institutions and commercial dairy plants across the country. The last semester of the B. Tech programme is set apart for In-plant training and Farm training. Students are exposed to the entire gamut of operations taking place in professionally managed dairy processing units, which help them to acquire the required skills set and confidence to work as highly motivated professionals for the emerging dairy industry. They are also enriched with entrepreneurial qualities to start their own industrial units. For this, they have to

successfully complete an ‘Experiential Learning Programme’ during the seventh semester. All the students are required to undergo hands on training in the experimental dairy plant during the seventh semester and undergo Internship during the final semester. The Internship programme is organized in dairy farms for a period of 35 days and in commercial dairy plants for a period of 70 days. This programme provides every student, the required practical exposure in scientific management of organized dairy farms and also in the operation, maintenance and management of large scale commercial dairy processing units like Amul, Schreiber Dynamix, Mother Dairy, Milma etc.

Faculty Status (Regular/On-Contract Faculty as on 31st March, 2018):

Faculty Rank	No. of Sanctioned Regular posts	Present Status:						Total Regular faculty in position	Total vacancies	Total Contract faculty in position
		Number in position by Highest Qualification								
		Doctoral Degree		Masters Degree		Bachelors Degree				
		Reg-ular	Con-tract	Reg-ular	Con-tract	Regu-lar	Con-tract			
Professor	0	0	0	0	0	0	0	0	0	0
Associate Professor	0	0	0	0	0	0	0	0	0	0
Assistant Professor	1	1	1	0	4	0	0	1	6	5
Academic Consultant (Deputation) (ALL UGC/ICAR QUALIFIED)	NIL	0	0	0	0	0	0	0	0	0
TOTAL	1	1	0	0	0	0	0	1	6	5

Infrastructure:

College of Dairy Science and Technology is temporarily started functioning at the DC School of Management and Technology, Pullikkanam campus. Since inception, the college is functioning with bare minimum infrastructure facilities and student amenities. The college office, Class Room

and Lab are functioning at the main building 3rd Floor and Faculty Room is in the Ground Floor as well as the college library is working with share to the DCSMAT. The DCSMAT Library houses an excellent collection of scientific books, journals, research papers, publications, annual reports, and bound volumes of periodicals which makes the library a 'learner's paradise'. The library facilities are made available to all the students, trainees, faculty members and non-teaching staff. DC College provide all the facilities like Quarters for staff, Hostel for Boys and Girls (separate), Canteen, computer lab, Auditorium, Activity Area, Gymnasium, Play Ground etc..

The College has well equipped Food Microbiology and Food Chemistry laboratories etc. for the estimation of microbiological and chemical quality of dairy products. The other practical may also be provided by the nearby best institutions with proper transport facility.

The computer lab is also shared with DC College with internet access helps the college to perform and document its functions with ease and equip the students to become truly global competitors. 24 hrs electricity, water and Wi-Fi facility is available in this campus.

Students Activities:

- The College Students of 2017 batch organized Christmas celebrations and New Year celebrations on 31st December, 2017. Games and other activities related to Christmas and New Year have conducted in connection with the celebrations.

Sports, Physical education and Co-curricular activities:

The students are given encouragement in various sports and games. Students actively participated in volley match in Inter collegiate sports meet conducted on 04.12.17 at the COVAS Mannuthy ground

College PTA activities:

- College PTA 2017-18 was formed on 25nd September 2017. A general body meeting was conducted on same day with strength of 30 members. On a collective decision Mr. Krishnan was elected as PTA president and Smt. Sunitha was chosen as Vice- president.

Hostel facilities:

- Hostel facilities are shared with DC college, Pullikkanam

Publications

Research Articles

Sl. No.	Authors	Year	Title of the article	Name of the Journal	Vol. No. / Page No.	NAAS rating/im pact factor
1	RoshanS. Kavitkar, K.	Nov-Dec	Utilization of Beetroot extract	International journal of pure	5(6): 295-	4.74

	Jayaraj Raw, Diwakar Mishra, BhaveshChavhan, GajananP. Deshmogh, and Rakeshprajapati	2017	on colouring agent in Lassi	and applied Boiscience	299	
2	Antony P. Pallan, Dr. S. Antony Raja, Dr. Gowtham Varma, Dr. Deepak D.K	Jan 2018	Holistic Scrubber for the purification of biogass from community and household dygester	International review of mechanical engineering (Praise Worthy Prize)	Vol.12 ISSN 1970- 8734	SIOPUS (0.55)
3	Dinker Singh, TanweerAlam, Prabalpratap Singh, AasthaBhardwaj, Saharmasud	2018	Efficacy of Feeding of soy Fortified Shrikhand as Functional Food on thyroid hormone (T3,T4) and thyroid Stimulating hormone (TSH) of rats	Journal of Pharmacognosy and Phytochemistry	7(2) & 671- 674	

Research Papers Presented

Sl. No.	Authors	Title	Name of the Seminar / Symposium / Conference	Place and Date
1	Dr. Diwakar Mishra, Dr. K. Jayaraj Rao, Dr. Dinker Singh, Dr. Rashmi Bhardwaj	Efficiency of Ajwain extract on sensory Attributer of paneer.	46 th Dairy Industry Conference -2018	Angamaly, Kochi. Feb 8-10, 2018
2	Antony P.Pallan, Dr.S.Antony Raja, Dr.GowthamVarma	Sequestration of hydrogen sulfide and carbon dioxide from biogas	International conference on emerging trends in engineering (ICETEST)	Thrissur, Government engineering college Jan 18-21, 2018

3	Dinker Singh, Avinash Singh	Effect of Herbs on Sensory/Organoleptic Attributes Probiotic Frozen Yoghurt	National Seminar on “Food Adequacy and Climate Change: Strategies for Sustainable Food Production”	Thrissur, Nov 3-4, 2017
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Books / Monographs / Manuals:

Sl. No.	Authors	Year	Title	Publisher
U.G. Practical Manuals on				
1.	Dr. Dinker Singh, Mr. Antony Pallan, Dept. of Dairy Engineering, CDST	2018	1. DE-1102-Fluid Mechanics 2. DE-1101- Workshop Practice	CDST, KVASU
2.	Dr. Dinker Singh, Ms. Reshma Cherian, Dept. of Dairy Business Management, CDST	2018	1. DBM-1102- Computer Applications And Software Packages	CDST, KVASU
3.	Dr. Dinker Singh, Mrs. Prema KS Dept. of Dairy Microbiology, CDST	2018	1. DM-1101- Fundamentals of Microbiology	CDST, KVASU
4.	Dr. Dinker Singh, Dr. Diwakar Mishra, Dept. of Dairy Technology, CDST	2018	1. DT-1201- Market Milk	CDST, KVASU

HRD activities:

Sl. No.	Title of the Programme	Place	Duration		Name of the sponsoring agency	No. of participants	No. of Papers presented	Approx. cost involved
			From	To				
1	Sustainable Dairy Development in Kerala	CDST Kolahalam edu	30-10-2017		Directorate of Entrepreneurship, Kerala Veterinary & Animal Sciences	350 - 400	NIL	Rs.1.5 lakhs

				University, Wayanad			
2	Live Stock for Food: Indian Scenario (One day lecture)	CDST Kolahalamedu	09-11-2017	CDST Kolahalamedu	25	NIL	Rs. 8000/-
3	Role of Packaging in important of Dairy Product (One day lecture)	CDST Kolahalamedu	03-01-2018	CDST Kolahalamedu	27	NIL	Rs. 6000/-

Persons deputed for Training / Workshop / Summer Institute / Seminar / Study Tour /higher studies / any other programme both in India and Abroad

Sl. No.	Name and designation of the Scientist	Title of the Programme	Duration		Place
			From	To	
1	Dr. Dinker Singh, Special Officer	20 th Indian Agricultural Scientists & farmers congress on "Recent Need based and ecofriendly Technologies for doubling farmers income"	Feb 17 th 2018 to Feb 18 th 2018		Bioved research institute of agriculture, technology & sciences, sringerpur, Allahabad, U.P
2	Dr. Dinker Singh, Special Officer	46 th Dairy Industry conference 2018 "Dairying Sufficiency to Efficiency"	Feb 8 th 2018 to Feb 10 th 2018		Angamaly, Kochi, Kerala
3	Dr. Dinker Singh, Special Officer	"Food Adequacy & Climate change: Strategies for Sustainable food production"	Nov 3 rd 2017 to Nov 4 th 2017		Kerala Veterinary and Animal Science University, Mannuthy Thrissur

4	Dr. Dinker Singh, Special Officer	“HRD Training for officers”	Mar 8 th 2018 to Mar 10 th 2018	VasundharaSarovar, Alleppey, Kerala
5	Dr. Dinker Singh, Special Officer	“Research Methodology & Project Preparation”	Nov 20 th 2017 to Nov 24 th 2017	Institute of Management in Government, Trivandrum Kerala.
6	Special Officer, scientists, staffs and Students of CDST kolahalamedu	The inauguration of Startup Village project- Sales Centre	Nov 8 th 2017	Base Farm, Kolahalamedu
7	Akshay M, IrshadAlam KK	Incubation Start Up Village	Nov 21 st	CVAS, Mannuthy

Important materials/ resources acquired:

Sl. No.	Name of the equipment	Year of purchase	Cost of equipment (Rs.)	Company / make	Utility of the equipment in brief
1	a) Desicator With Cover and porcelain plate plastic (100 mm) b) Desicator With Cover and porcelain plate plastic (250 mm)	2017 2017	6400 13221	Chemind (Trissur) Chemind	used for preserving moisture-sensitive items
2	Microscope model 25	2017	8070/2	Chemind	Top study about micro organisms
3	Digital Colony Counter	2017	5900	Chemind	To count microbial colonies
4	P ^H Meter	2017	6037	Scientific Enterprices	To find pH

5	Incubator	2017	20790	Scientific Enterprices	Incubation of micro organisms
6	RM Value apparatus	2017	2948	Chemind	To Find RM Value
7	Water Bath	2017	8576	Unique Scientific (Trissur)	To maintain particular temperature
8	AutoClave	2017	13050	Unique Scientific (Trissur)	To sterilize
9	Hot air oven	2017	24703	Unique Scientific	To remove moisture content
10	Distillation Unit	2017	27500	Chemind	To produce distilled water
11	Gas Cylinder	2017	2900/2	Bharat Gas	
12	LPG Stove	2017	4510	Mariyan Agencies (Kattappana)	Burning Purpose
13	Micro centrifuge	2018	45843	Unique Scientific	used to spin small (2 ml or less) liquid samples at high speeds
14	Refractometer	2018	1770	Unique Scientific	Used to measure total plasma protein in a blood sample and urine specific gravity in a urine sample.
15	Lab Apron	2017	14490/2	Drum Pants (Thodupuzha)	a light coat worn to protect clothing from substances used while working in a laboratory
16	Kjeldhal apparatus	2018	144900	Tulin equipments (Chennai)	For protein estimation
17	Spectro-photometer	2018	104784	Universal Agencies (Trissur)	To identify components in mixture
18	Binocular Microscope	2018	27730	Universal Agencies (Trissur)	Identifying Micro-Organisms

19	Muffle Furnace	2018	22408	Universal Agencies (Trissur)	which the subject material is isolated from the fuel and all of the products of combustion, including gases and flying ash
20	Digital Conductivity meter	2018	7080	Scientific Enterprises (Vyttila)	To find conductivity
21	Soxhlet Extraction apparatus	2018	12744	Chriscent lab equipment (Edappally)	extraction of a lipid from a solid material
22	Laminar Air flow	2018	54037	Chriscent lab equipment	To create sterile environment
23	Hand Refractometer (28-62%)	2018	1837	Chriscent lab equipment	To find the TSS content
24	Hand Refractometer (0-100%)	2018	1837	Chriscent lab equipment	To find the TSS content
25	Digital Magnetic Stirrer with hot plate	2018	66298	Calgon Scientific (edappally)	Stirring and Heating of liquid
26	Geaer Centrifuge	2018	12425	Scientific Enterprises (Vyttila)	Finding Milk Fact
27	Digital potentiometer	2018	6000	Scientific Enterprises (Vyttila)	To find potential difference
28	Mixie	2017	3472	Bismi	Mixers help automate the repetitive tasks of stirring, whisking or beating.
29	Fridge (Large)	2018	68500	Bismi Appliances	For preservation
30	Weighing balance	2017	11320	Hill top Scales (Muvattupuzha)	For weighing
31	Induction Stove	2017			For Heating
32	Blender	2017	1335	Bismi	used to mix, purée, or emulsify food and other substances

33	Dryer	2017	1780	Bismi	used to remove moisture
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Awards and honours:

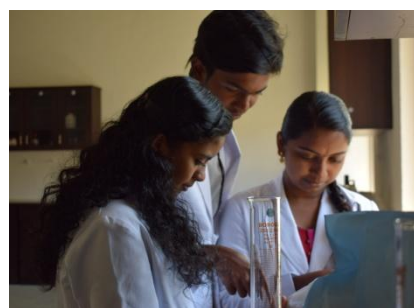
Sl. No.	Name of the institution / staff / student	Name of the award / honour	Awarding body	Purpose of award	Nature of award
1	Dr. Dinker Singh, Special Officer	Young Scientist Award-2018	Bioved Research Institute of Agriculture, Technology & Sciences, Allahabad,U.P		

Distinguished visitors in CDST Kolahalamedu

Sl. No.	Name and address of the visitor	Date of visit	Place of visit	Purpose of the visit	Remarks by the visitor	Outcome of the visit (if applicable)
1	Sri. V.S Sunil Kumar Hon'ble Minister for Agriculture & A.H. Govt. of Kerala	30 th October, 2017	College Campus, Kolahalamedu	Inauguration of College	NA	NA
2	E S. Biji Mol Honourable M L A, Peerumedu	30 th October, 2017	College Campus, Kolahalamedu	Inauguration of College	NA	NA
3	Shaji Jacob , Panchayat President Elappara	30 th October, 2017	College Campus, Kolahalamedu	Inauguration of College	NA	NA
4	Sudhakara Neelambaran Block Vice President	30 th October, 2017	College Campus, Kolahalamedu	Inauguration of College	NA	NA
5	Moly Dominic Panchayat Member	30 th October, 2017	College Campus, Kolahalamedu	Inauguration of College	NA	NA



Inauguration of CDST, Kolahalamedu on 30th October 2017 by
Sri. V.S Sunil Kumar Hon'ble Minister for Agriculture & A.H. Govt. of Kerala



Laboratory facilities



Library facilities



Sports and recreation



COLLEGE OF AVIAN SCIENCES AND MANAGEMENT (CASM) THIRUVAZHAMKUNNU, PALAKKAD

The College of Avian Sciences and Management is established at Thiruvazhamkunnu, Palakkad district with the aim of providing quality education in all aspects related to poultry science so as to meet the increasing demand of skilled personnel required in the industry. The college is offering B.Sc. (Poultry Production and Business Management), a three year graduate programme from 2014 Academic year onwards. The course is designed with the objectives of crafting human resource management professionals with technical knowledge in poultry production, developing entrepreneurial skills to unemployed youth and equipping youth with different facets of Poultry production and business management. The college also aims at conducting need based research in poultry farming for helping the farmers. An Avian Research station is also located in the campus which comprises of various poultry farms, feed mill etc.



ACADEMICS AND RESEARCH REPORT

At present the College of Avian Sciences and Management is having 126 students in three batches, 10 teaching faculty and 12 non- teaching staff. Admission of the students is through Entrance examination conducted by the university.

The College is having the following six departments.

1. Poultry Breeding and Genetics
2. Poultry Nutrition

3. Poultry Production Management
4. Avian Disease Management
5. Poultry Processing Technology
6. Poultry Business and Entrepreneurship

Infrastructure Facilities available in the campus

- Smart class rooms
- Well-equipped library
- Informatics lab with network facilities
- Centralized Air Conditioned Seminar hall
- Conference Hall
- Academic Cell
- Disease diagnosis Laboratory
- Quality Analysis Laboratory- to ensure the quality of feeds produced in the feed mill. It also carries out the quality checking of feeds from outside farmers.
- Farmers training Centre- It has a facility of accommodating 100 farmers at a time. Its entire can provide facility to farmers, research scholars, and internship trainee students of the university.
- Student hostel
- Playground and recreation facilities
- Canteen facilities
- Farm training facilities

INTERNSHIP PROGRAMMES

Students of BVScMannuthy had successfully completed their internship at ARS farm during February 2018.

IMPORTANT VISITORS TO THE CAMPUS

A group of Veterinary doctors and research scholars under the leadership of Dr. BlentinoLyngdoh, Livestock consultant, Meghalaya institute of Entrepreneurship had visited different farms of ARS and CASM campus.

Education, Student Amenities and Activities

The first batch of BSc PPBM students had three months' internship programme in various poultry allied companies and state/ central government farms in south India. They have successfully completed the programme and attained experience in different aspects of poultry business. After

completion of their course work and comprehensive viva programme, placement cum counselling centre of the college has arranged a two-day workshop to equip the students to face job interviews by Mr. Muhammed Ikhan from Lakshadweep, a well experienced person in the field of career guidance in South India.

The first batch students of 2014 admission have completed their course in January 2018. Various recruitment programs were arranged inside the campus. Leading companies in poultry industry like Sreenivasa hatchery and SKM Feeds have conducted interviews and students got an opportunity to secure their job. Also the cell took initiative to conduct interviews outside the campus. Suguna Pvt. Ltd and Virbac Animal Health had selected students and majority of boys were placed in these reputed companies. Two girls of the same batch were placed at the Avian Research Station, Thiruvazhamkunnu as technical assistants in state plan projects.

The 2015 batch admission students completed their entrepreneurial training programme – a hands on training, as part of their course in ARS farms.

STUDENT UNION ACTIVITIES

The Students' union conducted interclass arts and sports festivals in the campus. The winners were sent for inter collegiate arts and sports conducted by the University. Moreover, two students participated in inter university sports meet representing the Kerala Veterinary and Animal Sciences University. The literary club and debate club used to conduct debates on relevant issues. The film and photography club arranged one short film camp and competition "Action 18"-2017. The national integration club used to organize and celebrate national integration days.

Avian Research Station (ARS)

The Avian Research Station established at Thiruvazhamkunnu comprises of the following units:

a) Meat type Duck Production Unit with 4500 sq. ft. shed with slatted floor

- India's largest elevated duck house
- Maintains meat type exotic parent stock -White Pekin and Vigova ducks.
- Efficient waste management system



b) Cross bred chicken unit – consists of

2 Experiment Chicken sheds (state plan)

2 Breeder sheds (RKVY)

Breeder shed (RKVY) work in process

Brooder cum grower and layer sheds and a breeder shed – each with 3500 sq.ft. area with an eco-friendly and rainwater harvesting design roofing system.

Parents stock of RIR, New Hampshire, Kadaknath, Naked Neck, Garamasree and Athulya are reared in these sheds.



c) Japanese quail unit – consists of

- 3500 sq. ft. shed suitable for cage system of rearing with california type cages,eco-friendly and rainwater harvesting design roofing system.

3500 sq. ft. shed



Quail shed

d) Feed mill

- 4800 sq.ft. area feed mill with a capacity of milling of 4 to 6 tones feed /hour. The facility is attached quality analysis laboratory. The aim I to supply feed to university farms,AHD farms and Retail sale to farmers.



e) Hatchery Unit



f) Farmers Training Centre



The stock and sale details from ARS, Thiruvazhamkunnu

	LIVESTOCK											
Month	QUAIL				CHICKEN				DUCK			
	OB	Purchase/	Mortalit y	Sal e	OB	Purchase/	Mortalit y	Sale	OB	Purchas e/	Mortal ity	Sale
		Producti on				Produ- ction				Produc tion		
Apr-17	565	0	20	10	1651	1650	387	248	709	0	2	19
May-17	535	0	14	0	2666	850	339	777	658	0	5	200
Jun-17	521	0	25	0	2396	0	137	324	483	0	7	142
Jul-17	496	0	38	0	1935	0	55	189	334	0	3	75
Aug-17	458	0	18	0	1691	0	80	96	256	0	2	80
Sep-17	440	0	7	0	1515	0	71	0	174	0	2	0
Oct-17	433	0	14	419	1444	0	79	32	172	0		0
Nov-17	0	0	0	0	1333	1200	32	46	172	0	1	0
Dec-17	0	0	0	0	2455	0	268	44	171	1000	32	0
Jan-18	0	0	0	0	2143	0	39	0	1139	0	48	0
Feb-18	0	0	0	0	2104	1446	87	0	1091	506	76	0
Mar-18	0	500	58	0	3463	3689	259	189	1521	0	132	386
Apr-18	422				6704				1003			
		500	194	429		8835	1833	1945		1506	310	902

	EGG STOCK											
Month	Quail Egg				Chicken Egg				Duck Egg			
	O B	Productio n	Sale / Hatch		OB	Produ ction	Sale / Hatch		OB	Product ion	Sale / Hatch	
			Table / chipped	Hatch ing Egg			Table / chippe d	Hatchin g Egg			Table / chipped	Hatch ing Egg

Apr-17	30	4431	2392	1775	80	17213	3453	13458	18	477	432	0
May-17	29 4	10645	10620	0	382	13551	12748	925	63	683	734	0
Jun-17	31 9	9845	9864	0	260	3718	3922	0	12	490	484	0
Jul-17	30 0	8970	9080	0	56	1555	1576	0	18	709	703	0
Aug-17	19 0	6479	6539	0	35	443	478	0	24	526	540	0
Sep-17	13 0	4420	4530	0	0	364	314	0	10	203	207	0
Oct-17	20	1722	1742	0	50	4311	4182	0	6	593	578	0
Nov-17	0	0	0	0	179	9863	3385	6202	21	1237	1221	0
Dec-17	0	0	0	0	455	16895	1308	16004	37	1842	984	889
Jan-18	0	0	0	0	38	16889	987	14493	6	1882	320	1440
Feb-18	0	0	0	0	144 7	11882	949	11937	128	1769	393	1421
Mar-18	0	0	0	0	443	12932	1194	9850	83	656	259	480
Apr-18	0				233 1				0			
		46512	44767	1775		10961 6	34496	72869		11067	6855	17922

Research Projects- Ongoing poultry projects

- Developing Waste management Systems for effective utilization of farm, hatchery and canteen waste- 15 lakhs
- Establishing a Centre for Meat Type Duck Production at Avian Research Station, Thiruvazhamkunnu-50 Lakhs
- Strengthening of Integrated Rural Poultry Production Centre (continuing)-15 lakhs
- Strengthening of feed supply facilities to the farmers of Palakkad district-8.75 lakhs

ii. Revolving Fund Project:

1. Feed Mill

The feed mill aims at providing sufficient feed to farmers in various districts like Palakkad, Malappuram, Kozhikkod and Kannur. The feed mill produced chicken breeder, chicken grower, chick mash, duck breeder, duck grower, quail starter, quail breeder and pig feed. The average monthly production was 150-200 ton during the 17-18 year.

ANNUAL REPORT FOR FEED PRODUCTION & SUPPLY DURING THE PERIOD 2017-18												
PRODUCTION (KG)												
	Chicken Breeder	Chicken Grower	Chick Mash	Duck Breeder	Duck Grower	Quail Breeder	Quail Starter	Pig Feed	Rabbit Feed	Brocken Maize	Shell Grit	Total
Production	330529	146349	111674	38350	25900	3060	1050	3000	0	0	120	
Total	330529	146349	111674	38350	25900	3060	1050	32600	0	2000	120	691632
SALE OF ITEMS(VALUE)												
	AHD, Chathamangalam	AHD, Athanavanad	AHD, Mundayad	ARS	AHD, Kudappanakundu	LRS	RF Project	Attapadi Project	School Project	Cocunut Nursery	Local sale	AHD Koovapadi
Sale	5190385	2441730	4631325	2518325	123922	51570	924590	406000	191956	6995	1211039	127480
Total	5190385	2441730	4631325	2518325	123922	51570	924590	406000	191956	6995	1211039	127480

ANNUAL REPORT FOR BIRDS PRODUCTION & SUPPLY DURING THE PERIOD 2017-18																
BIRDS (NOS)																
	Athulya Birds	Austra white		BV380 Male & Female	Gramasree Male & Female		Rhodo white Male & Female		Kadakanath	Ass eel	Quails	Poultry eggs	Manure	Poultry cages		Total
		N O	K G		N O	K G	N O	K G						5bird cages	10bird cages	
Production	2140	3375	86	967	11813	136	3089	32	98	45	5614	339	7	250	100	0
Total	2140	3375	86	967	11813	136	3089	32	98	45	5614	339	7	250	100	0

SALE OF ITEMS(VALUE)				
	Local sale	ARS	Attapadi project	School Project
Sale	824675	185972	1291000	356250
Total	824675	185972	1291000	356250

1. FARMERS-SCIENTIST INTERFACE SEMINAR

A six-day training programme for 40 young entrepreneurs of Palakkad and Malappuram Districts was organised in collaboration with Central Poultry Development Organisation, Bangalore from 7 Aug –12 Aug, 2017.

SUPPORT

The Farmers counselling centre offered service to farmers from different districts like, Palakkad, Malappuram, Kozhikkode and Thrissur. Also Post mortem of birds were undertaken to diagnose diseases.

COLLEGE OF FOOD TECHNOLOGY, THUMBURMUZHI

B. Tech (Food Technology) programme inaugurated on September 7th, 2015 at College of Food Technology, Thumburmuzhy under the aegis of the Kerala Veterinary and Animal Sciences University. The College of Food Technology will give especial thrust in enlightening the young minds to be dynamic and flexible to the opportunities and challenges of Food industries.

University has three faculties, viz, Faculty of Veterinary and Animal Sciences, Faculty of Dairy Science & Technology and Faculty of Poultry Science. KVASU started College of Food Technology, Thumburmuzhy under the Faculty of Dairy Science & Technology.

The candidates admitted to B.Tech (Food Technology) programme are selected through the Common Engineering Entrance Examination conducted by Govt.of Kerala and admission is for 20 students per year. The course curriculum for B.Tech (Food Technology) is in lines with the pattern specified by the Indian Council of Agricultural Research (ICAR), New Delhi.

College of Food Technology is situated at Thumburmuzhy which is 15km away from Chalakudy Town of Thrissur District. College comes under PariyaramPanchayath and Chalakudy Constituency. 80% of the students are hostellers, but college has no hostel facility now.

Objectives

1. To establish world class educational centre in the area of Food Technology so as to cater the present demand.
2. To build the graduates acquainted with various facets of professionally managed industries which include production management, raw material purchases, personnel management, sales and marketing by virtue of industrial in-plant training.
3. To undertake consultancy services in the area of Food Safety and Quality Control.
4. To establish a Centre of excellence in terms of Food Analytical Capabilities for the Food Process Industries.
5. To undertake training programmes for small and medium food processing enterprises in the organized and unorganized sector.

Opportunities & Emerging Prospects

At present only the College of Dairy Science and Technology (CDST) under KVASU is offering a B.Tech course in Dairy Science & Technology in Kerala. The graduate and Post graduate

courses in Food Technology are offered from various Arts and Science colleges in Kerala and none of them have the mandatory accreditation for the B.Tech and M.Tech courses in Food Technology approved by the ICAR. Hence the proposed B.Tech (Food Tech) under the aegis of the CFT Thumburmuzhy would be the first institution of its kind in Kerala which can provide qualified technologists on a long term basis to the ever growing food processing sector.

Admission:

The candidates admitted to the UG course are selected through the Common Entrance Examination conducted by the Government of Kerala. The candidates should have completed Class XII or its equivalent examination with Chemistry, Physics and Mathematics as optional subjects and should have secured an aggregate of 50% marks or above in these subjects in the qualifying examination. The candidates can choose their option for this course among other graduate courses in Engineering.

Sl. No.	Title of the Programme	Level	Duration (Yrs)	Year of Admission	Sanctioned annual intake	Total student strength
1	B.Tech (Food Technology)	UG	4	2015	40 students	25 students
				2016	20 students	20 students
				2017	20 students	20 students

Departments:

The College of Food Technology has got the following 5 departments:

1. Department of Food and Business Management
2. Department of Food Chemistry and Nutrition
3. Department of Food Microbiology
4. Department of Food Engineering
5. Department of Food Technology

Faculty Status (Regular/On-Contract Faculty as on 31st March, 2018):

Faculty Rank	No.of Sanctioned Regular posts	Present Status: Number in position by Highest Qualification						Total Regular faculty in position	Total vacancies	Total Contract faculty in position
		Doctoral Degree		Masters Degree		Bachelors Degree				
		Regular	Contract	Regul- ar	Contract	Regular	Con- tract			
Professor	0	0	0	0	0	0	0	0	0	0

Associate Professor	0	0	0	0	0	0	0	0	0	0
Assistant Professor	10	1	1	1	6	0	0	2	8	7
TOTAL	10	1	1	1	5	0	0	2	8	6

Academics:

The course curriculum for B.Tech (Food Technology) is prepared in lines with the pattern specified by the Indian Council of Agricultural Research (ICAR), New Delhi. This is a unique job oriented degree programme which emphasizes on food/dairy engineering aspects along with the food chemistry and food microbiology on the technology of manufacture of safe and high quality food/dairy products. The course is offered for a total duration of eight semesters.

Out of the total credits (191), 136 credits have been apportioned to Food Technology, Food Engineering, Food Microbiology, Food Chemistry and Food Business Management disciplines for course work up to six semesters. Hands on Training (25 credits) and in plant Training and Report and Evaluation (30 credits) are provided to the students at 7th and 8th semester for industry exposure to various food process industries.

Infrastructure:

The College has Food Microbiology, Chemistry and Technology laboratories. The other engineering practicals may also be provided by the nearby best institutions with proper transport facility.

The computer lab with internet access helps the college to perform and document its functions with ease and equip the students to become truly global competitors. The collegelibrary provides cutting-edge facilities and services to support teaching, research and learning. It houses an excellent collection of scientific text books, journals, research papers, publications, annual reports, and bound volumes of periodicals. The library facilities are made available to all the students, trainees, faculty members and non-teaching staff.

The construction of second floor of the college has almost completed by the month of August and the construction of food processing unit is also progressing.

Students' Activities:

The students's Union 16-17 has participated in intercollegiate arts festival conducted in Pookode campus on 24-27 of May 2017. They bagged third prize in some items like Oppana, Monoact, Clay modelling and Mappilappattu.

- The inauguration of second College Students Union 2016-2017 (AAVEG) was held on 04th August, 2017. Film Director Sri. Sunder Das was the guests for the programme.

- The College Students Union 2016-2017 organized Fresher's Day on 8st November 2017. Students of 2015 and 2016 admission gave warm welcome to their juniors.
- Faculty Status (Regular/On-Contract Faculty as on 31st March, 2018): An interclass Mehendi competition on behalf of interclass arts competition was conducted on 6th November 2017.
- An interclass Chess competition was organized by student's union on 25th December 2017.
- The College Students Union 2016-2017 organized Christmas celebrations on 20th December, 2017. Crib, Carol competitions and games were conducted in connection with the celebrations.
- 5 students of 2015 batch were actively participated in the Wild life camp "KURINJI" organized by University Union 2016-2017 at OOTY on 27th and 28th of February 2018.
- 5 students of 2016 batch were actively participated in the Short film camp "ACTION 2018" organized by University Union 2016-2017 at CVASM, Thiruvazhamkunnu on 1th and 2th of March 2018.
- 4 students of 2015 batch were actively participated in the NSS camp "SPANDANAM" organized by Kerala Veterinary University at Manamangalam, Thrissur on 7th and 13th of March 2018.
- Valentine's Day celebrations were conducted on 14th of February 2018.
- CFT students celebrated interclass arts "FESTEL '18" on 6th February 2018.
- Kerala Piravi, Fresher's Day and Onam celebrations were celebrated in a vast way by students of CFT on November 1st and 24th of September respectively.

. Other activities

- Mr. Sunil Kumar, Honourable Minister of Agriculture, Kerala visited CFT campus on 9th June 2017.
- Soft Skill oneday training programme was conducted on November 21st 2017 in Mannuthy Campus.
- 2015 batch students of CFT went for Industrial visit to Mannuthy Campus milk plant and Valppara tea estate was conducted on August 19th and 27th, 2017 respectively.
- An Industrial visit to CIFT and Arjuna extracts was conducted for 2015 batch as per their curriculum.
- Anti-ragging campaign was conducted in campus seminar hall on August 23rd 2017. Athirapilly SI was the chief speaker for the function.

- One day in orientation programme on HRD in Food industry “IGNITE” was organized by AFSTI on 14th June 2017. Dr. George Ommen took an extensive class on the above topic for the students.

Sports, Physical education and Co-curricular activities:

The students are given encouragement in various sports and games. Students were participated in intercollegiate games conducted from 10th to 13th December 2017 at Mannuthy Campus and from 21st to 23rd December 2017 at Pookode, Wayanad. Inter college Athletics was conducted from April 12th to 13th at Mannuthy Campus. Annu Ann Joseph of 2016 batch scored third prize for 100 m and high jump events. Ajilesh Krishna of 2015 batch went for all India inter-agri meet conducted at Bangalore at January 28th to February 3rd. Sudharsh of 2016 batch got selected for Inter Agri football games held at Kozhikode on March 3rd to 5th, 2018

College PTA:

A general body meeting was conducted on 25th September 2017 at College of Food Technology, Thumburmuzhy and the parents of 2015, 2016 and 2017 admission were present in the meeting. Mrs. Aysha C.H, Assistant professor, Department of Food Microbiology was elected as new PTA secretary.

Other Outreach Programmes:

- Students participated in “Indian Dairy Conference” organized at Adlux international convention centre, Angamaly by IDA on 8to 10th February 2018.
- Students participated in “International conference” organized at St. Therasas, Ernakulam on 9to 10th February 2018. Various posters and papers were presented by CFT students in this event.
- Students participated in “National Conference” organized at TKM Institute of Technology, Kollam on 10to 11th February 2018. Group of three students (Bharath, Gloria and Abitha) of 2015 batch bagged first price in paper presentation in this event. They presented on the topic “Effect of starch based edible coating on the postharvest quality parameters and shelf life of green matured tomatoes”.
- METS College, Mala conducted national conference on February 23rd and 24th 2018 and Subith of 2015 batch got second price in paper presentation. He presented on “Rheological physical and optical properties of UV treated chicken egg”.
- A quiz competition was conducted in CIFT, Cochin on behalf Surakhisth Khadhiya Abhiyanat September 28thand Annu and Sheba of 2nd Year B.Tech students bagged third prize.

- Students participated in “Food Entrepreneur’s Conclave” organized at Kerala University of Fisheries and Ocean studies (KUFOS) by Cochin Chapter of AFST (I) on 18th August 2016.
- 2015 batch students of CFT went for South India trip from 23rd to 4th December 2017. They visited several industries related to food like Suguna Foods Pvt Ltd, Hudson Agro Pvt Ltd, Indian Institute of Packaging, Britannia Industries as part of their curriculum

Scholarships:

- 11 students of B.Tech (Food technology) 2015 admission, 3 students of 2016 and 4 students of 2017 admission are availing Kerala Govt. E-grand scholarships
- 1 student is getting National Portal Scholarship.

Faculty achievements:

- Dr. Athira S & Mrs. Aysha C. H have participated in National Seminar on Food adequacy & climate change: Strategies for Sustainable Food Production organised by AMST, KVASU, AFSTI(I) & IDA (Kerala Chapter) on 3rd & 4th November 2017 for which Dr. Athira S was awarded for the Best Oral Presentation.

Important materials / resources acquired:

Sl. No.	Name of the equipment	Year of purchase	Cost of equipment (Rs.)	Company/ make	Utility of the equipment in brief
	Cheese vat	2018	10500	Delbert Industries	To prepare different variety of cheese
	Paneer press	2018	17500	Delbert Industries	To make paneer from milk
	Cream separator	2018	35000	Delbert Industries	To separate the fat from milk
	Rotek tray drier	2018	9500	Unique Scientific	To dry fruits and vegetables
	Incubator	2018	7534	Unique Scientific	To incubate for the growth of microorganisms
	pH meter	2018	3705	Unique Scientific	To check the pH of various solutions

	Autoclave	2018	11046	Unique Scientific	To sterilize the media
	Serological water bath	2018	4123	Unique Scientific	To heat the solution at different temperature
	Hot air oven	2018	11499	Unique Scientific	To find out the moisture content
	Monocular microscope	2018	14405.93	Unique Scientific	To identify microorganisms
	Wensar precision balance	2018	8142	Chemind	To weigh given samples

GLIMPSES



Cricket Team



Volley ball team



Annu Ann Joseph of 2016 batch scored third prize for 100 m and high jump



Students Union 2016-17 Inauguration



Visiting Britannia Industries, Bangalore during South India Tour of 2015 batch



2016 BATCH STUDENTS



2017 Batch

ACADEMIC STAFF COLLEGE, KVASU

MAJOR ACHIEVEMENTS

The following programs were conducted by the Academic Staff College during 2017-18

1. Refresher course on ‘Reshaping Scientific Communication in the Context of Building Entrepreneurship’ from July 11th to 31st 2017

Academic Staff College organized a 21 days refresher course on ‘Reshaping Scientific Communication in the Context of Building Entrepreneurship’ (interdisciplinary) from July 11th to 31st 2017. Dr. DeepaAnanth was the course director. The training session was conducted in seven modules, viz. academic leadership, scientific communication, teaching and research methodology, innovation technology development, digital learning, commercialisation of technology and entrepreneurship. The sessions also included UGC rules for administration of colleges in Kerala, designing policies in higher education in Kerala, chemistry of interpersonal communication, art of scientific communication-media workshop, curriculum assessment and planning, pedagogy & problem based learning, how to write winning project, tapping scientific resources and references, conducting ethical research trial, handling research data, creative visualisation, gender sensitization and e governance, stress management, innovation technology development, distance learning and E content development, bioinformatics, legacy of environment impact assessment, IPR and patenting in technology management, financial literacy, supporting entrepreneurship, dreaming big on start-ups, empowering skill India and career opportunities for scientists.



2. 2nd Orientation Programme from 3rd to 30th January, 2018 at College of Veterinary and Animal Sciences, Mannuthy for University / College teachers

The orientation programme was organised for 24 working days with 6 working hours/ day as specified by the UGC. Forty one teachers from various arts and science / professional colleges participated in the course. Considering the multiple role of teachers in higher education as a teacher, researcher and extension worker the related topics covering all these aspects were selected and efficient and experienced persons in the concerned fields both from outside and inside the university were selected as resource persons for the course.

In the programme, various aspects of teaching, like innovative strategies in English language learning, methods to become an effective teacher, mind control; pedagogical principles in education, creativity and innovation in education were included. Apart from this, the role of media in education, use of ICT tools in teaching, e resources for teaching and research, role of team work in education, research ethics and interpersonal relationship were discussed. The programme also covered problem based learning, personality development & problems in early adult hood, time management, importance of positive attitude in work place and sharing e-content. Open educational resources in moodle courses, creative visualization and positive attitude, recent trends in pedagogy of higher education, co-operative learning strategies, cybercrime and security, intellectual property rights were also a part of the programme. Aspects of technical writing skills, plagiarism detection, importance of yoga and gymnasium in human health were all discussed in detail. The practical sessions in yoga and gymnasium were also included in the course. A recent concept of gamification in education was also discussed in the programme. The participants; especially those from outside the university were given an opportunity to visit the various farms of the university, and our production units like Meat plant and Dairy plant. They were also given a detailed understanding of the meat and milk products of the university. A long session on microteaching evaluation was arranged in the programme where each participant could analyse their strengths and weaknesses as a teacher.

In the programme, all the resource persons were evaluated by the participants immediately after each session and their findings were documented scientifically. As a part of the course all the participants were made to deliver a short presentation of 20 min. duration followed by 10 min. discussion on a topic of their choice. These presentations were evaluated by appropriate moderators based on pre-determined guidelines. The write up of these seminar presentations and photographs of the programme were edited and compiled as a university publication named “Seminar Digest” which was distributed to all the participants for their future reference.

As a part of the programme a field trip was also arranged to Punnathoor Ana kotta. On the last day of the programme participants were evaluated based on a written examination for which the question paper was prepared by using the questions given by the resource persons and the overall performance of each participant was recorded as grades in the certificate issued to them. The entire

organisation of the programme was also subjected to critical evaluation by the participants for improving the programme based on their positive suggestions.]



3. Human Resource Development Programme on “Effect of Motivation on Institutional Development” for faculty members and technical staff at Mannuthy and Pookode

- a. Human Resource Development Programme on “Effect of Motivation on Institutional Development” for the faculty (75no:s) and technical staff (60no:s) of the University on 13.03.2018 and 14.03.2018 respectively at College of Veterinary and Animal Sciences, Pookode. The resource person was Sri Vamanakumar, famous international trainer, whose sessions were highly appreciated by the participants.





- b. Human Resource Development Programme on “Effect of Motivation on Institutional Development” for the faculty (136 nos) and technical staff (73 nos) of the University on 15.03.2018 and 17.03.2018 respectively at College of Veterinary and Animal Sciences, Mannuthy. The resource persons were Prof. Joy Mathew, Comptroller (Retd), Kerala Agricultural University; Sri Vamanakumar, international trainer and Sri. Anoop, national trainer.



INSTRUCTIONAL FARMS

University Livestock Farm and Fodder Research & Development Scheme, Mannuthy

The farm was established on 4th May 1917 under the Thiru- Kochi Government as Ollukara Central Livestock Farm and later it became a part of Kerala Veterinary College in 1955. In 1972 it was renamed as University Livestock Farm under Kerala Agricultural University & now it is working as University Livestock Farm & Fodder Research Development Scheme under Kerala Veterinary & Animal Sciences University. The University Livestock Farm houses 95 numbers of Milking Cows and its followers totalling to 275. Average daily milk production is 720Ltrs. 86 numbers of Buffaloes out of which 17 are milch are maintained which produces 80 Ltrs of milk per day. The farm acts central for field training of UG students (B.V.Sc& AH), B.ScAgri, B.Tech (Dairy Sciences) B.Sc (C&B). It is the training centre for the programmes like Dairy Diploma, Livestock Assistant, and Farmers Training etc. It is a Model Dairy unit with cross bred animals for demonstrating Scientific & hygienic milk production. The Unit facilitates research on farm animals in the area of nutrition, management & Animal reproduction. In the Fodder Research Development Scheme Hybrid Napier (CO2, CO3, CO4, CO5 & Killikulam), Guinea grass, and Congo signal Fodder Grass varieties are cultivated in 13 hectare of land. On an average 10 tons of green grass is produced per day.

Objectives:

- To impart training for BVSc. AH, B Tech Dairy and Diploma students of Kerala Veterinary & Animal Sciences university
- To impart training for Livestock Assistants & Farmers.
- To produce quality milk from crossbred cattle and buffaloes
- To become a model dairy farm
- To promote research in the areas of feeding, management and reproduction in cattle, buffaloes, fodder cultivation and development.
- To provide research facility to post graduate and doctoral students.

Details of livestock population as on 31.03.2018 (Breed / Strain /Age / Sex wise)

Sl No	Item	Number (Cattle)	Number (Buffalo)
1	Total number of animals	285	84
2	Milch animals	90	27
3	Dry animals	34	15
4	Less than 20 months	59	17
5	15-20 months	43	1
6	9-15 months	27	7
7	6-9 months	6	8
8	3-6 months	8	8
9	Less than 3 months	18	1

Current activities

Institution	No. of students	From	To
Farm training for Dairy Diploma students, Mannuthy (2015 Admn COVAS Pookode)	05	03.11.2017	30.11.2017
Farm training for Dairy Diploma students, Mannuthy (2015 Admn COVAS Mannuthy)	09	16.10.2017	12.11.2017
On Job Training to VHSE students, GMBVHSS, Irinjalakuda	106	12-01-2018	15-01-2018

Conference/seminar/training conducted

Name & Designation	Details of Training conducted			Sponsoring Organization
	Topic	Venue	Date	
Dr. Surej Joseph	Experiential Training on Prophylactic Hoof Care in	ULF & FRDS	April 21-	Veterianry Surgery &

Bunglavan	Farm Animals	Mannuthy	22, 2017	Radiology Dept. CV&AS Mannuthy
	Green grass- an ideal fodder for elephants	ULF & FRDS Mannuthy	25-03-2018	Centre for elephant studies, CVAS mannuthy
	Fodder cultivation ETR 321 for 3rd year BVSc& AH	ULF & FRDS Mannuthy	June – December 2017	Associate Professor and Coordinator, ETR 321
	Livestock farming as an employment option- Fodder production	CVAS Mannuthy	06-11-2017 to 17-11- 2017	Dfarms KVASU, NORKA
DrJith John Mathew	‘Samrambamitra’ Entrepreneurship training to Dairy Farmers	Divine Farm, Muringhoor	08-03-2018	DE, KVASU
	Animal Welfare	DVC-Ernakulam	08-02-2018	AHD, Kerala
Dr. Shibu Simon	Crisis management strategies in disease outbreak at the refresher course for university faculty	BaseFarm, Kolahalamedu	9.5.17	KVASU
DrShibu Simon	Livestock farming as an employment option-	CVAS Mannuthy	06-11-2017 to 17-11- 2017	Dfarms KVASU, NORKA

Conference/seminar/training attended

Name & Designation	Details of Seminars			Sponsoring Organization
	Topic	Venue	Date	
Dr. Surej Joseph Bunglavan	Effect of motivation on Institutional Development	CVAS Mannuthy	15-03-2018	Academic Staff college, KVASU

	Training programme on Research Methodology	IMG Campus Barton Hill, TVM	20-11-2017 to 24-11-2017	IMG, Thiruvananthapuram
Dr. Shibu Simon	Continuing Education Programme canine hip dysplasia, canine clinical haematology, canine mid ventral laparotomy	Small Animal Veterinary Association Kerala	29 October 2017	KVASU
Dr. Surej Joseph Bunglavan	Orientation programme on Innovative Pedagogical strategies	CVAS Mannuthy	03-01-2018 to 30-01-2018	Academic Staff college, KVASU
Dr. Shibu Simon	9th Federation of small animal Practitioners Associations of India Continuing Education Programme on companion animal practice.	FSAPAI	10 and 11 November, 2017	Bangalore
Dr. Shibu Simon	16th WSAVA CE Continuing Education	WSAVA	12-11-2017	KVASU
Dr. Shibu Simon	Continuing Education Programme on canine reproduction current trends in practice, canine dermatology, canine thoracic and abdominal radiograph interpretation and canine haemoparasites	Small Animal Veterinary Association Kerala	9 and 10 December 2017	KVASU

Dr Jith John Mathew	14 th Biennial conference of Animal Nutrition Society of India titled Nutritional Challenges for raising animal productivity to improve farm economy	Junagadh Agricultural University	01-02-2018 to 03-02-2018	KVASU
DrJith John Mathew	MHRDC Induction programme for University Teachers	Calicut University	03-05-2018 to 31-05-2018	KVASU

**Research projects with outlay and funding agency
(include PG and PhD projects carried out in the unit)**

Name of Project	Funding Agency	Name of PI	Name of Co-PI	Outlay
State Plan projects				
Increasing productivity of cross bred cattle of University Livestock Farm	State Plan	Dr. Shibu Simon	Dr. Surej Joseph Bunglavan Dr. Jith John Mathew	Rs. 76.125 Lakhs
Strategies for improving the fodder production	State Plan	Dr. Surej Joseph Bunglavan	Dr. Shibu Simon Dr. Jith John Mathew	Rs. 65.625 Lakhs
Assessing the performance of Murrah Buffalo herd for milk and meat production in hot and humid climate of Kerala	State Plan	Dr. Jith John Mathew	Dr. Surej Joseph Bunglavan Dr. Shibu Simon	Rs. 21.875 Lakhs
Establishment of calf nursery at ULF & FRDS	State Plan	Dr. Surej Joseph Bunglavan	Dr. Shibu Simon Dr. Jith John Mathew	Rs. 8.75 lakhs

Farm Products

Farm Products	Cost
Cow / Buffalo Milk	11125245
Sale of Animals (Cattle)	890383
Fodder Grass	459053
Plastic Bags	25351
Fodder/Slips (Co3/ guinea grass)	392913
Urine/Vermicompost	22838
Cow Dung (fresh)	387767
Cow dung (powder)	611305
Digested slurry	9000
Firewood	1500
Palm Leaves	4392
Miscellaneous Items	129783
Total	14059530

Research

PG Research Works

1. Isolation and identification of bacterial agents associated with polyarthritis in calves.
2. Effect of feeding hydroponic maize fodder in early lactating cross bred cows.
3. Solids Not Fat profile of crossbred cow milk.
4. Rumen metagenomic profiles and methane emission levels in Vechur and cross bred cattle under different dietary regimens.
5. Evaluation of performance of crossbred calves under different feeding systems.
6. Development of protocol for management of hoof problems in cross bred cattle.
7. Modeling of best fit lactation curve in cross bred cattle of Kerala.
8. Endometrial ecotexture, cytology and biopsy in post-partum subclinical endometritis of crossbred dairy cows.
9. Nutritive evaluation of palmyra seed husk and sugarcane bagasse in cross bred calves.

Ph.D. Research

1. Evaluation of rumen fermentation pattern and nutrient utilization in Murrah buffalo, Vechur and crossbred cattle on different feeding regimen.
2. Reproductive performance of early postpartum cross-bred cows supplemented with bypass fat and subjected to hormonal induction of oestrus.
3. Meteorological profile of Thrissur and assessing its relationship with physiological stress parameters in crossbred cattle.

Publications

1. Arokia Robert M, **Shibu Simon**, Kurien, M.O And Praveen,S. (2017). Therapeutic Management Of Hydrometra In A Malabari Doe. *International Journal of Science, Environment and Technology*, Vol. 6, No 2, 2017, 1418 – 1420
2. Arokia Robert M, **Shibu Simon**, Benjamin,E.D. and Praveen,S. (2017). Improving reproductive efficacy in swine husbandry through artificial insemination. *International Journal of Science, Environment and Technology*, Vol. 5, No 4, 2016, 2486-2494
3. Chinnu, P. V., **Simon S.** and Narayanan, M.K. (2017). Haematological parameters of dogs with cystic pyometra. *Accepted for publication in the Journal of Veterinary and Animal Sciences*
4. **Shibu Simon**, K.N. Aravinda Ghosh and A. Ramanathan (2017). Critical Management Of Canine Pregnancy By Conceptus Ecobiometry And Doppler Ultrasonographic Assessment Of Maternal And Foetal Blood Flow . KVSC LEAD PAPER
5. **S. J. Bunglavan**, A.K Garg, R.S, Dass and Sameer Shrivastava (2018). Effect of varied levels of selenium supplementation in nano form on growth, nutrient intake and digestibility in wistar albino rats, *Indian Journal of Animal Research* 52: 248-253

Extension activities

(radio talks, TV documentaries, technology developed and transferred etc)

- (1) Radio talk on Infertility in milch animals-November 2017
- (2) Radio talk on Breeding of dogs-December 2017

(1) **No. of visitors to the Farm (People): 4700 nos.**

(Dairy Farmers, Farmer club members, Dairy Extension Officers, ATMA Exposure visit, Farmers exposure visit, Field trip, Group study, Study tour, Study Trip, Students from different

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schools, Veterinary Colleges, SHG Groups, MILMA trainees, Milk societies, Gramapanchayat, Kudambasree units, Army trainees, Health inspectors, Officers of Dairy Department)

Significant achievements (No of animals produced and sold, new strains developed etc)

Cattle Farm	Total Milk Production (Lakhs Liters)	Total Calving (No.s)	Sale of Fresh Dung (Tons)	Sale of animals
	283,127	109	247.64	58
Buffalo Farm	Total Milk Production (Liters)	Total Calving (No.s)	Sale of Fresh Dung (Tons)	Sale of animals
	55,000	29	155.7	30
FRDS	Total Fodder Production (Tons)	Sale of Dry Cow Dung (Tons)	Sale of fodder slips (no.s)	
	2169.6	49.0	391,000	

Staff details

Sl. No	Name and designation of the Teaching Staff	Discipline	Residential address	Email ID	Contact No.	
					Land line (Resi)	Mobile
1.	Dr. Shibu Simon Professor & Head	Animal Reproduction, Gynaecology and Obstetrics	Mappilaparambil (H), East Fort, Thrissur-680005	shibu@kv asu.ac.in	0487-2322277	9447006499 9446320200
2.	Dr. Surej Joseph Bunglavan	Animal Nutrition	Bunglavlil house, Gandhinagar Main Street, Cheroor, Thrissur	surej.joseph@kvasu.ac.in		9526862274
3.	Dr Jith John Mathew	Animal Nutrition	Vazhanathottathil House,	drjithjohnvet@gmail		9446936939

			Amayanoor P.O, Kottayam	l.com		
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Relevant photographs if any



Inauguration of '*sathothararajatha jubilee akhosham of ULF & FRDS*' by Sri.K.Rajan, M.L.A.



Fodder maize cultivation in new fodder plots



Micro sprinkler irrigation



Cows at exercise yard/paddock



Hybrid Napier CO3 Plantation



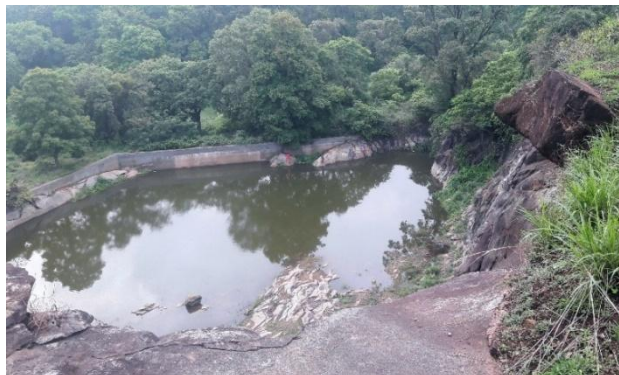
Farm training for IVth BVSc & AH clinical batch students



Rain gun sprinkler irrigation



Replanting of fodder plots with Hybrid Napier CO3



Rain water harvesting in hilly area
Utilizing the quarry



Practical training for Diploma in
Dairy Science students



Fodder Sorghum cultivation in hill plots



FMD vaccination in dairy buffaloes



Construction of a new pond for irrigation
purpose



Cultivation of Hybrid Napier CO3 on
roadsides in the campus



Intensive calf management in calf nursery unit



Fertility management using transrectal ultrasonography in ULF Farm



Farm training for veterinarians on prophylactic hoof trimming and hoof care



Educating the farmers on benefits of hoof care



Planting of 250 coconut seedlings and 100 arecanut seedlings- inauguration by Dean



Early detection of mastitis using electronic mastitis detector

CENTER FOR PIG PRODUCTION AND RESEARCH

E- Mail: cpb@kvasu.ac.in, Telephone No. 0487 2374 535, 0487 2370 378, Fax No. 0487 2374 535



Genesis

Centre was started on 12-05-1965 as a small pig breeding unit along with an auxiliary pork production scheme under the Department of Animal Husbandry. It was taken up by Kerala Agricultural University in 1972 and renamed as University Pig Breeding Farm. The farm was upgraded to Centre for Pig Production and Research in 1995 accounting the academic, research and extension activities undertaken in this center. This center was taken up by the Kerala Veterinary and Animal Sciences University since 2011. At present the Centre has a total holding capacity of 2500 pigs including growers and piglets housed in various pens spread over an area of 10.25 acres.

Mandate

1. Promote and undertake research on all aspects of pig production and health.
2. Act as a repository of elite germplasm of different pig breeds and conservation of native germplasm.

3. Operate as an instructional farm for conducting training to students and farmers.
4. Human resource development in the area of pig husbandry and bio-waste management.
5. Conduct extension activities as model demonstration unit to pig farmers.
6. Production and supply of quality breeding and fattening piglets to farmers and increase the revenue.
7. Function as a centre for technology transfer, validation and assess its impact on socio-economic status of pig farmers.
8. Collaborate with National and International Institutes to carry out research on pig production.
9. Provide consultancy service for farmers, entrepreneurs and funding agencies.
10. Development of integrated farming system centered on pigs.

Staff Position

Teaching	Non Teaching		Labourers
	Administration	Technical Staff	
Professor & Head: 1	Section Officer: 1	Senior Farm Supervisor: 1	Permanent: 1 Casual: 34
Assistant Professor: 3	Assistants: 2 Computer Assistant: 1	Farm Supervisor/ Assistants: 3	Class IV: 2

Details of Teaching Staff

Dr. Usha A.P. MVSc., Ph.D (Edin)

Professor & Head

Research Interests: Animal Production and Biotechnology

Number of Publications: Research papers in refereed journals: 41, Conference proceedings: 65, Popular articles: 17, Books/Book chapters, manuals: 9, Gene bank submissions: 7, Others: TV documentaries, radio talks etc 7



Dr. E. B. Benjamin MVSc.

Assistant Professor (Animal Reproduction and Obsterics)

Research Interests: Study of fertility in farm animals,
Artificial Insemination in pigs, Frozen semen production

Number of Publications: Popular articles: 10, Booklet/leaflets: 10



Dr. Lali F. Ananad MVSc., Ph.D

Assistant Professor (Animal Breeding and Genetics)

Research Interests: SNP analysis, Animal Production,
Marker Assisted Selection

Number of Publications: Research papers in refereed journals: 13,
Conference proceedings: 11,
Popular articles: 10, Books/Book chapters 3,
Gene bank submissions: 14



Dr. Roshin Anie Jose, MVSc., M. Phil

Assistant Professor (Livestock production and Management)

Research Interests: Waste water management,
Study of managerial systems
Eco friendly swine production

Number of Publications: Popular articles: 12, Booklet/leaflets: 12



Stock Position as on 31.03.2018: Total No. of Pigs: 1739

Age Group	Farm	AICRP	Mega seed
0-2 months	86	72	242
2-3 months	199	-	8
3-4 months	106	-	13
4-5 months	39	-	7
Adult	859	114	126
Total	1289	186	399

Performance of animals

Trait	Large White Yorkshire	Landrace	Duroc	Indigenous	Crossbred
Litter size at birth	10.12	9.88	7.5	8.43	10.10
Litter size at weaning	9.69	8.96	6.2	8.34	9.52
Litter weight at birth (kg)	11.02	11.24	10.2	6.01	9.86
Litter weight at weaning (kg)	90.75	89.4	60.4	49.94	85.42
Average individual weight at birth (kg)	1.08	1.13	1.36	0.70	0.97
Average individual weight at weaning (kg)	9.36	9.97	10.0	5.74	8.97

Accomplishments

The centre functioned as a nodal organization to implement Massive Livestock Development Programme (MLDP) with financial outlay of Rs.70 lakhs during 1993-97 in collaboration with State Animal Husbandry Department for distributing quality piglets to the farmers. ICAR funded All India Coordinated Research Project is under operation since 1993 to evaluate the performance of indigenous pigs and their crosses with exotic breeds. Mega seed project on pigs funded by ICAR has started functioning since 2015.

The Board of Management appreciated the Professor and Head and her team of scientists, staff and labourers for the commendable achievements and revenue generation at the Centre for Pig Production and Research, Mannuthy.

The strategic breeding programmes for more than two decades evolved a new crossbred variety of pig with remarkable disease resistance, heat tolerance, lean meat production and feed conversion efficiency. The new pig variety was released as 'Mannuthy white' by Dr. H. Rahman (Deputy Director General, ICAR) in presence of Dr. R. S. Gandhi, Assistant Director General, Dr. Vineet Bhasin, Principal Scientist and Dr. D.K. Sarma, Director ICAR NRC on Pig in this year. The farmers, laborers, faculties and other beneficiaries witnessed the programme.

The center has distributed more than 5500 piglets (breeding and fattening) to farmers and has generated over 2 crores internal revenue during 2017-18. The centre distributed 150 piglets to 60 tribal families in Malakkappara and Varandarappilly tribal colonies utilizing the recurring contingency of Rs. five lakhs each in the projects AICRP on Pigs and Mega seed (TSP Component). The programme envisages the improvement of socio-economic status by enhancing the food security of tribal colonies. Ninety seven M.V.Sc. and thirteen Ph.D. from different disciplines and various plan projects have been completed in this centre.

Facilities

Livestock: The centre has a total stock strength of about 1800 animals, with breedable stock of 780 Large White Yorkshire, 60 Duroc, 174 Landrace, 60 Desi and 240 crossbreds.

Infrastructure: There are six farrowing houses three of which are modernised, three grower sheds, two breeding houses and a piglet shed. Feed mill and mixer with 6 ton capacity is in use. Slurry tank for storing and pumping waste water to grass fields is functioning. Artificial insemination lab was established for scientific breeding. Non-conventional energy sources like solar power plant and biogas plant are being used to reduce the consumption of electrical energy. A model for water recycling is also functioning with dung drying machine and water recycling tanks. The recycled water is being routinely utilized for sprinkler irrigation of agricultural crops and for recharging the water resources. Water sprinklers have been installed in farrowing houses to alleviate summer heat stress. Modernised water tanks have been installed to ensure continuous water supply and to conserve the available water. Piglet nursery have been installed for the first time in Kerala as a model to all Pig farms.

Activities

Academic: The scientists of CPPR undertake regular theory and practical classes both for students of B.V.Sc & AH and MVSc programmes. They also conduct practical farm trainings viz. Livestock farm practice, entrepreneurial training and internship training to the undergraduate students. The scientists are assigned as major and minor advisors and provide facilities and technical advice for conducting Post graduate and doctoral research. Training to Vocational Higher

Secondary Students in Livestock Management Course and a certificate course in animal handling is also undertaken here.

Research: The various projects undertaken at CPPR during the current financial year with financial outlay is as given below.

Sl. No.	Name of scheme	Expenditure (Lakhs)
Plan projects		
1	Scaling up of piglets production	53.36
2	Conservation of Ankamali pigs	7.98
3	Evaluation of crossbred pigs(25% AICRP share)	21.41
4	Strengthening of CPPR	17.5
5	Effect of supplementation of xylanase on growth performance in weaned piglets	9.50
6	Artificial Insemination for improving reproductive efficiency in pigs	4.06
7.	Waste water management for eco friendly swine production	17.5
Total		131.32
EAPs		
1	AICRP on pigs(75% Share)	73.46
2	Mega seed project	57.98
Total		131.38

Student projects

M.V.Sc. Projects

1. Dietary incorporation of cooked barley and spent grapes as energy source in LWY sows.
2. A comprehensive approach for diagnosis of leptospirosis in domestic pigs.

Extension:

- National Research Centre on Pig allotted Rs. five lakhs each under recurring contingency in the projects AICRP on Pigs and Mega seed (TSP Component) for distributing piglets to tribal people. As part of the project 150 piglets were distributed to tribal colonies in Malakkappara and Varandarappillygrammapanchayath. Distribution of piglets to 60 tribal families will improve socio-economic status by enhancing the food security of tribal colonies. Many of the

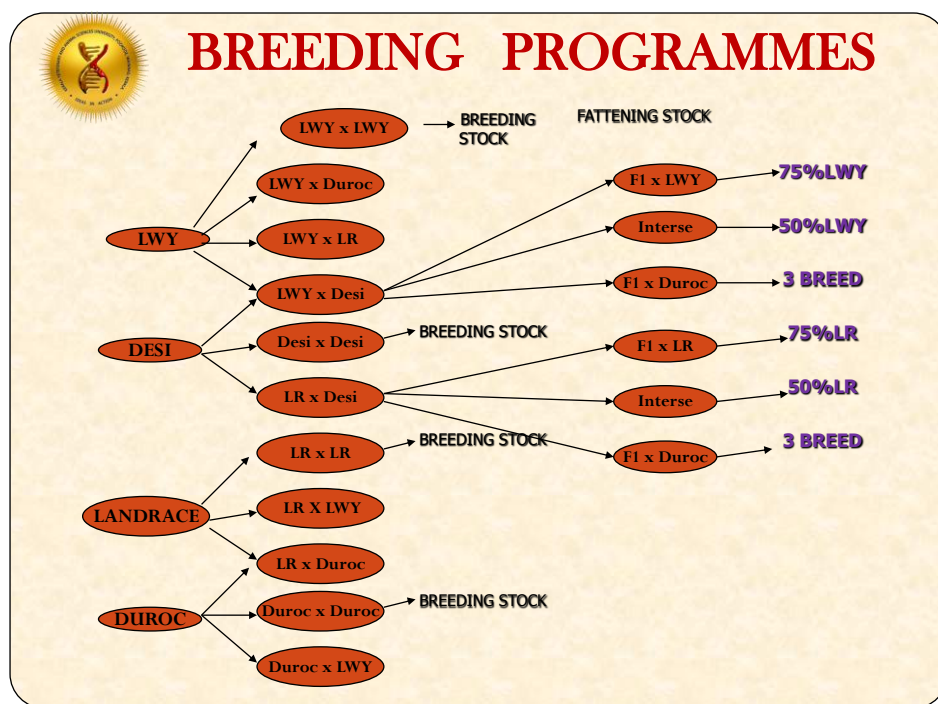
beneficiaries were women and thus this programme will contribute to women empowerment and will provide job to the unemployed group. Moreover, utilization of food waste from nearby areas will result in better waste management and produce quality meat.

- Hands on practical trainings are provided to veterinary officers, farmers and self help groups. Faculty provides technical advice to pig farmers and helps in the preparation of project reports for the establishment of pig farms.
- Provision of technical advice to progressive pig farmers, issue of project reports, establishment of field units of pigs and active involvement in people's campaign programmes in decentralised planning.
- The Centre provide technical knowhow to progressive farmers for establishing piggery unit in respect to the construction of shed, health care and management, waste disposal and other problems faced on day to day basis over telephone and personal call.
- Farmer's queries are answered through telephone calls and personal contacts.
- Farmers & students from different states all over India visit the farm.
- The Centre for Pig Production and Research could establish piggery units throughout the State of which sizable number of farmers took up this as a full time engagement and this unit is proud to report that it could provide a sustainable income for the families and now many of them totally depends on their pig farm for their income.
- The Centre has been conducting field visits on demand by the farmers to solve their problems.
- The Centre recommended integrated farming system, centered on pigs to farmers.
- Every year the Centre is conducting a 'Farm Day'. Many progressive pig farmers have been participating and discuss the prospects and problems of pig rearing in Kerala and many of the pig farmers expressed their success stories.
- With the collaboration of Kerala Livestock Farmers Association, the Centre has organized farmers meet and discussed the constraints and limitation of the pig farming in the state and remedial measures were evolved and the same has been submitted to state government for necessary action through the association.
- Self employment training was given to unemployed women from weaker section of the community for starting their own piggery units. Different units of Self Help (Kudumbashree) groups have undertaken short-term training on piggery for their better livelihood.

- The Centre has been producing and distributing quality piglets with better performance to the farmers.

Farm management

Breeding: The CPPR houses the nuclear stock of four pure breeds namely Large White Yorkshire, Landrace, Duroc and Desi pigs and various crossbreeds from the above breeds. This center supplies pure bred stock to farmers and governmental agencies within and outside state. The breeding programmes followed in CPPR is as given below:



Nutrition: The ration for the pigs is supplied by Feed mill of School of Animal Nutrition and Feed Technology, KVASU, Mannuthy campus. Around 3000 kg feed with crude protein content of 18% and 20% are prepared daily to cater to pigs in different stages of growth and requirement. Researches are also being conducted to identify non conventional feed source with good growth performance so as to create low cost ration for pigs.

Management: This includes all the routine activities of the farm like diagnosis of diseases and its treatment, vaccination, deworming, cleanliness of shed, identification of animals and waste management. Vaccination for Swine Fever and FMD are routinely followed in the farm. Micro chipping is practiced for identification of the animals. The waste from the pig farm is put into the aerobic compost pit and the biogas plant. The biogas plant generates enough energy to run the day-

to-day activities of the farm. The slurry from the plant and compost from the pit are used as manure for the vegetable cultivation undertaken in the farm.

Financial details: This centre cater to the needs of the farmers not only within state but also from other states like Tamil Nadu, Karnataka, Andra Pradesh, Maharashtra as well as North Eastern states by supplying piglets. The receipts generated are mentioned below:

Year	EXPENDITURE (Lakhs Rs)				REVENUE (Lakhs Rs)	
	AICRP & Mega Seed	Plan	Non Plan	Total Expenditure	Pigs Sold	Revenue Generated
2017-18	262.69	131.32	261.37	655.38	3100	220.00

Farm Visits

ICAR Expert Panel Inspection team to CPPR, Mannuthy



Visit by Candido Pomar, Senior scientist, Agri Food, Canada



**Farmers Training
Session I**



Session II



Distribution of Piglets under Tribal Sub Plan AICRP on Pigs at Chalakkudi, Thrissur District, Kerala



Waste water recycling at the farm
New facilities at CPPR
Continuous drinking water supply and effective conservation



Summer stress management using water sprinkling system



Establishment of Piglet nursery



FACILITIES AT CPPR



Grower Pen



Breeding Pen

The centre has two breeding houses each to hold 250 adult parent stock and three grower sheds with holding capacity of 500 animals. Three exotic pure bred varieties - Large White Yorkshire, Landrace and Duroc and the Ankamali- the indigenous pig breed of Kerala are maintained in the farm. More than thousand breeding piglets and pigs are sold as parent stock, within and outside state annually.



Crossbreed piglets

Two breed and three breed varieties of crossbred piglets having high growth rate and better feed conversion efficiency, evolved in this farm are distributed to farmers within the state. More than five thousand of crossbred piglets sold annual



Farrowing House with Guard Rail House



Modern Farrowing House with crates

There are six farrowing houses two of which are modernized to house 180 sow with litter. Facilities like nipple drinkers, heating bulbs and creep area for piglets provide better piglet management to yield average litter size of above 10 per farrowing.



Bore well



Ground level water tank

The sources of water include a ground water storage tank, which can store 2 Lakhs litres of water, a bore well with yield of 15,000 Litres and open wells.



Solar Power Plant



Bio gas unit

Non-conventional energy sources like solar power plant and biogas plant are being used to reduce the consumption of electrical energy.



Artificial insemination



Training Session

Activities

Distribution of Piglets under Tribal Sub Plan AICRP on Pigs and ICAR Mega Seed Project at Malakkappara, Athirappally Panchayath Chalakudy, Thrissur District Kerala



Distribution of Piglets under Tribal Sub Plan AICRP on Pigs and ICAR Mega Seed Project at Varandarappilly panchayath Thrissur District Kerala



Waste water recycling at the farm



Visitors at the farm



Integrated Farming – Garden peas cultivated utilizing the washing from the sheds



GOAT AND SHEEP FARM, MANNUTHY

The Goat Farm was established in 1965 under the Department of Animal Husbandry, Kerala and transferred to Kerala Agricultural University in 1972 and renamed as University Goat and Sheep Farm. This unit was attached to Kerala Veterinary and Animal Sciences University on its inception from May, 2011. Presently, the farm maintains goats of Malabari, Attappady black breeds, Malabari x Alpine/ Sannen crossbreeds and sheep of Mecheri and Ramanad White breeds. The unit is situated in 4.10 acres of land at Mannuthy in College of Veterinary & Animal Sciences Campus, KVASU with the total holding capacity of 350 goats.

Mandate

- Promote and undertake research on all aspects of goat production and health.
- Act as a repository of elite germplasm of different goat breeds and compare the production potential and adaptability of native breeds /crossbreeds.
- Study the possibility of evolving a dual-purpose strain suitable for agro-climatic conditions of Kerala.
- Operate as an instructional farm to students
- Conduct extension activities as model unit and supply breeding animals to farmers.
- Human resource development and capacity building in the area of goat production
- Function as a centre for technology transfer, validation and consultancy.

1. Present stock

Species / Breed	Age	0-3 months		3-6 months		Adult		Total	
Goat	Sex	M	F	M	F	M	F	M	F
Malabari		5	16	6	5	5	54	16	75
Attappady black		0	8	0	4	3	39	3	51
Crossbred		6	18	6	1	0	71	12	90
Sheep		4	5	0	1	0	17	4	23
Total		15	47	12	11	8	181	35	239

TOTAL - 274

2. Production and Reproduction data

Kids born	297 (Male – 157 & Female – 140) <ul style="list-style-type: none">• Malabari – 67• Crossbred – 113• Attappady black - 97• Sheep - 20
Manure	12000 kg
Milk (coupon sale)	4397.5 liters

3. Details of supply of germplasm and other inputs to the farmers and institutions

- 173 breeding animals supplied (Malabari- 66, Attappady- 30 & Crossbred- 77)
- Under NABARD Project on Developing an Inclusive Model for Sustainable Goat Production in Kerala in Puthussery Panchayath of Palakkad District
- 45 farmers are registered and provided with training and other inputs for goat rearing
- Eight superior Malabari breeding bucks were distributed to farmers free of cost
- Insurance coverage to 367 animals for Rs. 5000/head- with effect from 17/11/2017 to 16/11/2018 at United Insurance Company Ltd., Thrissur.
- 300 Faecal samples were screened and deworming medicines were administered to all goats – 30 strips (300 tabs)
- Ectoparasiticidals were distributed – 50 bottles
- 200 kg powder + 24 liters liquid Vitamin and mineral feed supplements were distributed.
- 4000kg goat feed

4. Revenue generated by sale of animals / products etc

- *Production*

S.No.	Items	Quantity	Receipts (Rs.)
1	Number of animals sold	97 (culling) 175 (breeding)	1145410
2	Milk sold (lit)	4397.5 (coupon sale)	304965
3	Miscellaneous items		96875
TOTAL			1547250

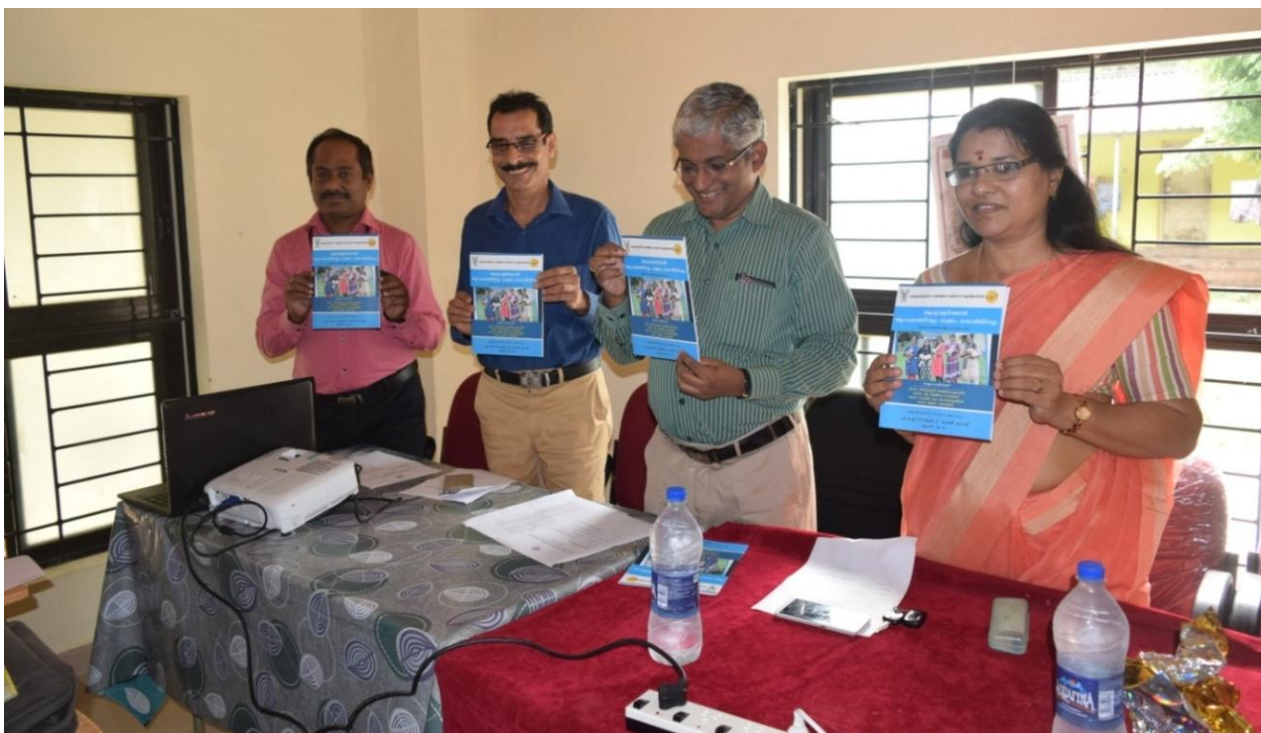
- *Revenue and Expenditure*

Receipts (Rs.)	Expenditure (Rs.) Plan (A)	Expenditure (Rs.) Non Plan (B)	Total expenditure (A+B) (Rs.)
1547250	2854831 (bank account) 2802148 (treasury account)	437953	6094932

5. Photographs of new strains / varieties / synthetics developed and photographs highlighting the activities of the farm



Malabari unit - Training to goat farmers and entrepreneurs



Malabari unit - Release of a training manual on goat farming by University dignitaries



Buck distribution

6. Details of trainings conducted

- *Paid Trainings Organized to farmers / Entrepreneurs*

Sl no.	Date	Number of participants	Title and duration of training
1	19.04.17 - 20.04.17	18	Commercial Goat Farming for two days
2	23.05.17 - 24.05.17	24	
3	28.06.17 - 29.06.17	10	
4	02.08.17 - 03.08.17	15	
5	11.10.17 - 12.10.17	14	
6	15.11.17 - 16.11.17	17	
7	13.12.17 - 14.12.17	11	
8	10.01.18 - 11.01.18	17	
9	27.02.18 - 28.02.18	17	
	Total	143	

- *Sponsored training classes conducted to farmers, Vocational students*

Sl no.	Date	Number of participants	Trainee
1	01.06.17	7	Milma Training Centre, RV Puram
2	19.06.17	35	AHD, Lakshadweep
3	12.07.17	10	Milma Training Centre, RV Puram
4	27.07.17	50	AHD, Chalakkudy
5	27.07.17	45	AHD, Kunnankulam
6	08.08.17	26	AHD, Thrissur
7	18.08.17	7	AHD, Thrissur
8	25.08.17	34	RAHC, Malappuram
9	31.08.17	17	Milma Training Centre, RV Puram
10	02.09.17	32	St Mary's Convent, Thrissur
11	13.09.17	16	AHD, Thrissur
12	05.10.17	18	AHD, Thrissur
13	09.10.17	17	AHD, Thrissur

14	09.10.17	12	AHD, Thrissur
15	09.10.17	16	Kudumbashree, Pavaratty
16	26.10.17	45	Muthuvara Coconut Kendram
17	26.10.17	12	Milma Training Centre, RV Puram
18	09.11.17	27	Integrated Farming – Charcy George
19	27.11.17	49	GVHSS, Ayyanthole
20	29.11.17	12	Milma Training Centre, RV Puram
21	04.12.17	10	Vilangannur Milk Producers Cooperative Society
22	04.12.17	30	GVHSS, Ayyanthole
23	14.12.17	35	LMTC, Malampuzha
24	12.01.18	63	GMBVHSS, Irinjalakuda
25	15.01.18	46	GMBVHSS, Irinjalakuda
26	15.02.18	31	Director, Canra Bank Rural Self employment training Institute, Palakkad.
27	10.03.18	18	Milma Training Centre, RV Puram
	Total	720	

- *Sponsored field training*

Sl no.	Date	Number of participants	Venue
1	12-07-17	50	LMTC, AHD, Thodupuzha
2	10-08-17	40	LMTC, AHD, Thalayolaparambu
3	12-12-17	30	LMTC, Malampuzha
4	08-03-17	52	Tanur AICRP Field unit
	Total	172	

- *Trainings conducted to students - B.V.Sc & AH*

Sl.No.	Date	Number of Participants
1	Livestock Farm Practice	129 students
2	Entrepreneurship training on Goat Production	24 students
3	Internship	40 students

7. Satellite units

- KottakkalAryavaidyashala - Goat farm
- Church of the East- Goat farm

UNIVERSITY POULTRY AND DUCK FARM, MANNUTHY

The UPDF was established in 1950 under Erstwhile Cochin State. Although the mandate of the farm is to provide facilities for research and practical training to UG and PG students, it provides extension activities to the farmers engaged in poultry production as a part time or full time income generation activity. At present we are having 28 breeds of chicken including many fancy breeds. We supply Gramasree parent stocks to Central Hatchery, Chengannur and to Regional Poultry Farms in each district of Kerala. The students of various streams are facilitated here for their practical experiences. Above all, the farm is acting as one of the highest income generating station under the KVASU with an annual revenue collection of around Rupees Two Crores.

Academic Programme

1. Two MVSc projects completed and two PhD programme are going on utilising the facilities available in the farm.
2. Provides practical training to BVSc students.
3. Internship programme to BVSc students of Mannuthy and Pookode college and students of BSc poultry production
4. Conducting courses like study circle and livestock farm practice.
5. Conducting PG and PhD courses on Poultry Genetics, Poultry Products Technology and Management of various species of poultry.
6. Giving Entrepreneurial training, ETR 321 to BVSc students for empowering them to become better entrepreneurs.
7. Conducting On the Job Training to VHSE students for 2 weeks.
8. Imparting Practical training to BSc (Honours) students of College of Corporation and Banking.
9. Practical training to Students of MSc Climate change (integrated) of Kerala Agricultural University

Extension activities

- Conducted training on quail farming on 10-11-2017 for ex patriates to facilitate self employment
- Conducted classes to interested farmers in the training on current trends in Quail farming and practical training to the group on 13-03-2018
- Conducted training on Backyard poultry production on 19-03-2018
- Conducted training to Kudumbasree volunteers and village extension officers through Rural Development Department.

Training conducted

- HRD training conducted for labourerson 28-3-2018 to inculcate ownership values and collective responsibility at Centre of Advanced Studies in Poultry Science, Mannuthy.

PG research projects undertaken

1. Comparison of production performance of Kuttanad, White peckin ducks and their crosses for meat purpose - Project outlay Rs.25,000
2. Standardisation of finisher ration for Gramasree cockerels - Project outlay Rs.25,000

Other projects

Sl. No.	Title of the scheme	Name of the funding agency	Name of the PIs and Co-PIs	Outlay
1	Student's Egger Nursery	UG project for the course ETR 321	Dr. S. Sankaralingam, Co-ordinator	0.9 lakh
2	Revolving Fund Poultry Project	ICAR	Dr. S. Sankaralingam, Assistant Professor Co-PI	1 crore (turnover)

Plan projects

Sl.No	Name of the Project	Total outlay	Amount expended
16-17 Spill over			
1.	Selection of 8 th week body weight in kuttanad ducks to produce a broiler duckline	14.5 lakhs	14.05 lakhs
2.	Augmenting backyard poultry production	70 lakhs	66 lakhs
3.	Augmenting Production facility in university poultry farm hatchery	10 lakhs	5 lakhs
17-18 New allotment			
1.	Selection of 8 th week body	7 lakhs	Continuing.

	weight in kuttanad ducks to produce a broiler duckline		Amount expended up to 31-3-2018 – 3,99,982
2.	Augmenting backyard poultry production	70 lakhs	Continuing. Amount expended up to 31-3-2018 – 34,97,089

Publications

Research Article Published :2

Sl. No.	Authors	Year	Title of the article	Name of the Journal	Vol. No. / Page No.	NAAS rating	Citation index	MVSc/PhD theses / Non-theses article
1	S. Sankaralingam, K.P. Neethu and K. Ashitha	2017	Effect of oxomethannano particles against coccidialoocysts	JIVA	15(1): 50-51		Nil	
2	M. Azhaguraja, S. Sankaralingam, P. Anitha, BinojChacko & T.V. Aravindakshan	2017	Association of prolactin gene polymorphism with production traits in White Leghorn	JIVA	15(2): 12-15	Nil	Nil	MVSc Thesis article

Research Papers Presented :2

Sl. No.	Authors	Title	Name of the Seminar / Symposium / Conference	Place and Date
1	S. Sankaralingam, K. Ashitha, K.P. Neethu, M. Azhaguraja and C. Srinivasan	"Production performance of Kuttanad Duck (AnasPlatyrrhynchos) under cage system of rearing"	9 th Kerala Veterinary Science Congress 2017	Nedumbasseri, Cochin
2	M. Azhaguraja, S. Sankaralingam, P. Anitha, BinojChacko	Identification of Prolactin Gene	9 th Kerala Veterinary Science Congress	Nedumbasseri, Cochin

	and T.V. Aravindakshan	Polymorphism in White Leghorn and Native Chicken	2017	
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Popular Articles / Technical Report published : 2

Sl. No.	Authors	Title	Name of the Journal / Magazine / Daily etc.	Date
1	Dr. S. Sankaralingam	Alternate Poultry Production	E-notes of Certified Farm Advisor Programme of MANAGE, Hyderabad	17.05.2017
2	Dr. S. Sankaralingam	Prospects of duck farming in India	Training Manual of ICAR sponsored Winter course “Prospects of diversified poultry and its impact in enhancing the rural economy published by CAFTAS, VCRI, Namakkal, TANUVAS	10.11.2017

Books / Monographs / Manuals

Sl. No.	Authors	Year	Title	Publisher
1	Sankaralingam (Editor)	2017	Journal of Indian Veterinary Association Vol 14 Issue 3	Indian Veterinary Association, Kerala
2	Sankaralingam (Editor)	2017	Journal of Indian Veterinary Association Vol 15 Issue 1	Indian Veterinary Association, Kerala
3	Sankaralingam (Editor)	2017	Journal of Indian Veterinary Association Vol 15 Issue 1	Indian Veterinary Association, Kerala

Awards and honours

- Certificate of Appreciation for outstanding contribution to quality of International Journal of Livestock Research as reviewer
- Letter of appreciation for helping in organising the National seminar on “Food Adequacy & Climate change” from Director of Academics & Research, KVASU, Pookode

Extension activities

1. Made video Lecture on “Alternate Poultry Production” for the Certified Farm Advisory Programme of MANAGE, Hyderabad.
2. Given consultation and counselling to around 150 farmers. They were benefited for starting poultry farm or integrated farms. Advice given on disease control and better management practices.

Physical achievement

Livestock Population as on 01-04-2017	
Item	No
Chicken (including fancy breeds)	5725
Duck	258
Turkey	59
Quail	1448
Goose	21
Guinea Fowl	28
Egg Production in the year 2017-18	
Item	No.
Chicken	705534
Duck	58773
Quail	243842
Turkey	1835
Guinea Fowl	1680

Chick Production in the year 2017-18

Item	Commercial chicks	Parent Stock	Total chicks produced
Chicken	376539	46950	423489
Duck	4081		4081
Quail	133921		133921
Turkey	643		643
Guinea fowl	209		209
Total			562343

Revenue received by sale of animals/products etc in the year 2017-18

Sl No	Animals/Products	Amount (Rs)
1	Commercial chicks/Parent stock/Grown-up	17354315
2	Egg (Table & Hatching eggs)	1438313
3	Manure	81340
	Total Revenue received	19088735

Other activities

Student's Egger Nursery Project (ETR 321)

Under ETR 321 course, 20 students hadrun a project entitled “Student’s Egger Nursery” worth Rs. 90,000. They reared 2000 birds with an additional expenditure of Rs. 42,800 and earned a net profit of Rs. 2,40,000 by selling the pullets at different age. The net profit of Rs.2,40,000 was shared among the 20 students @ Rs.12000/student.

A student receiving the profit share of Rs. 12000 from Dr. P. Anitha, Director, Centre for Advanced Studies in Poultry Science, Mannuthy



Dr. S. Sankaralingam, Assistant Professor organised the DPP 2016 batch study tour to Tamil Nadu Poultry industry at Udumalpet, Pollachi and Namkkal. In June 2017



Diploma in Poultry Production 2016 batch student's visit to SugunaBroiler parent breeding farm, Udumalpet



Diploma in Poultry Production 2016 batch student's visit to Ostrich unit, VCRI, Namakkal

CATTLE BREEDING FARM, THUMBURMUZHY

Technology

Details of technology developed	Whether the technology developed is transferred to public utility through Directorate of Extension Education or any other means and particulars thereof	Whether the technology transferred is adopted by farmers / commercialised and particulars thereof	Impact of the new technology developed
Thumburmuzhy model aerobic compost	Technology developed was transferred to the public by the originator and the institution.	The technology was adopted by the farmers as well as by the public. The technology was well adopted by the residence associations for its members, especially those living n flats.	This Rural technology helped the urban dwellers in recycling the domestic waste.

Consultancy

Type of consultancy	Client details	Revenue generated
Establishment of Satellite fodder unit	04 numbers	Free of cost
Dairy farm project report	03 numbers	Free of cost
Farm Advisory services	566 farmers	Free of cost

Details of livestock population as on 31.03.2018 (Breed / Strain / Age / Sex wise)

Crossbred

SI No	Total Strength of Animals	Numbers
1	0-3 months	19

2	4-6 months	6
3	7-12 months	28
4	13-18 months	6
5	Above 18 months	43
6	Dry non- pregnant	15
7	Dry pregnant	2
8	Heifer pregnant	7
9	Animals above 6 months of pregnancy	31
10	Milch animals	68
11	Total	225

Vechur

Sl No	Total Strength of Animals	Numbers
1	Adult Male	01
2	Calves (below 12 months)	02
3	Heifers 12 – 18 months	01
4	Heifers Above 18 months	Nil
5	Dry pregnant	03
6	Dry non-pregnant	05
7	Milch animals	01
8	Total	13

Production and Reproduction data 2017-18

Sl No	Parameter	Numbers
1	Total milk production/day	882 kg
2	Average milk production/cow/day	12.1 kg
3	Total Milk production during the year	322072 kg

4	Number of Calves born	83 Male - 42 Female - 41
5	Average birth weight of calf	32 kg
6	Age at first calving	3 years
7	Average milk production/lactation	3616 kg
8	Average lactation length	320 days
9	Average Calving interval	15 months
10	Conception rate	24%
11	Sale of animals – male calves	38
12	Sale of animals – heifers	0
13	Sale of animals – cows	61
14	Sale of dung	7276 kg dry
15	Death of animals	08
16	Fodder Production	2222662 kg

Details of supply of germplasm and other inputs to the farmers and institutions: Male calves were supplied to farmers for beef production

Revenue generated by sale of animals / products etc.: 2017-18

Sl No	Item	Amount (Rs.)
1	EMD	40635
2	Coconut	282672
3	Fodder Grass	100290
4	Fodder slips & seeds	370805
5	Milk	9940458
6	Sale of animals & AI charge	580840
7	Miscellaneous	206449

8	Rent	43390
9	Abatement	81257
10	Sale of dung	188058
11	Empty feed bag	24808
12	TOTAL	11859662

Expenditure.: 2017-18

Plan	1,67,78,370
Non-Plan	2,00,54,240
Total	3,68,32,610







Seminar / Workshops offered

Sl. No.	Title of the Programme	Place	Duration		Name of the sponsoring agency	No. of Participants	No. of Papers presented	Approx. cost involved
			From	To				
1	Young Entrepreneurs training on dairy business	CBF, Thumbur muzhy	19.04.2017	to 21.04.2017	-	06	-	Nil
2	Young Entrepreneurs training on dairy business	CBF, Thumbur muzhy	29.08.2017	to 31.08.2017	-	04	-	Nil
3	Dairy farm Entrepreneur training	CBF, Thumbur muzhy	07.12.2017		KCMMF Training Centre, Thrissur	24	-	Nil
4	Dairy farm Entrepreneur training	CBF, Thumbur muzhy	21.02.2018		KCMMF Training Centre, Thrissur	29	-	Nil

Trainings/ Workshops handled

Sl. No.	Name and designation of the Scientist	Title of the Programme	Duration		Place
			From	To	
1	Dr. Justin Davis	Farmers class on Scientific feeding and management in cattle	10.04.2017		ETC, Mannuthy
2	Dr. Justin Davis	HRD Training on Professional Harmony	18.04.2018		CVAS, Mannuthy
3	Dr. Justin Davis	Modern trends in animal housing	04.05.2017		Base Farm Kolahalamedu
4	Dr. Justin Davis	Human -Animal conflicts in Kerala: from status to solutions	14.06.2017 to 16.06.2017		CVAS, Mannuthy
5	Dr. Justin Davis	Farm waste management	25.10.2017		CVAS, Mannuthy
6	Dr. Justin Davis	Seminar on Food Adequacy and Climate change: strategies for sustainable food production	03.11.2017 to 04.11.2017		CVAS, Mannuthy
7	Dr. Archana S.N	Farmers class on Dairy farm management	03.11.2017		Kuttichira Milk Society
8	Dr. Justin Davis	Accompanying Tour Officer South India study tour	24.11.2017 to 03.12.2017		South India study tour
9	Dr. Justin Davis	46 th Dairy Industry Conference	08.02.2018 to 10.02.2018		Angamaly, Kochi
10	Dr. Justin Davis	Farmers class on Quail	24.02.2018		ETC, Mannuthy

	Davis	Farming		
11	Dr. Justin Davis	HRD Training on “Effect of motivation on institutional development	15.03.2018	CVAS, Mannuthy
12	Dr. Seena T X	HRD Training on “Effect of motivation on institutional development	15.03.2018	CVAS, Mannuthy
13	Dr. Justin Davis	Farmers class on Profitable Dairy Farming	22.03.2018	ETC, Mannuthy
14	Dr. Seena T X	Farmers class on Selection and breeding of Dairy cattle	23.03.2018	CBF, Thumburmuzhy

Details of Internship Training/ Farm Training:

Sl No	Date		Details
	From	To	
1	10.08.2017	02.09.2017	Six B.Tech (DSc.& Tech) students from College of Dairy Science and Technology, Mannuthy
2	07.09.2017	05.10.2017	Seven B.Tech (DSc.& Tech) students from College of Dairy Science and Technology, Mannuthy
3	16.10.2017	12.11.2017	Five Dairy Diploma students from College of Veterinary & Animal Sciences, Pookode
4	03.11.2017	30.11.2017	Four Dairy Diploma students from College of Veterinary & Animal Sciences, Mannuthy
5	16.01.2018	27.01.2018	Seven B.V.Sc. & A.H students from College of Veterinary & Animal Sciences, Pookode
6	29.01.2018	04.02.2018	Nine B.V.Sc. & A.H students from College of Veterinary & Animal Sciences, Mannuthy
7	01.02.2018	12.02.2018	Seven B.V.Sc. & A.H students from College of Veterinary & Animal Sciences, Pookode
8	14.02.2018	23.02.2018	Seven B.V.Sc. & A.H students from College of Veterinary & Animal Sciences, Pookode

9	03.03.2018	14.03.2018	Eight B.V.Sc. & A.H students from College of Veterinary & Animal Sciences, Pookode
10	12.03.2018	18.03.2018	Six B.V.Sc. & A.H students from College of Veterinary & Animal Sciences, Mannuthy
11	12.03.2018	11.04.2018	Two M.Sc. Animal Science students from College of Veterinary & Animal Sciences, Mannuthy

Activities of the Laboratory : **Renovated the laboratory.**

Number of Samples Tested

Milk samples – 780

Blood samples – 75

Faecal samples – 212

Publications

Research articles

Sl. No.	Authors	Year	Title of the article	Name of the Journal	Vol. No. / Page No.
1	Justin.D; Anil.K.S; Joseph.M; Suraj.P.T; Ally.K and Ramnath.V	2017	Mineral profile of Hybrid Napier Grass Under Slurry Irrigation	International Journal of Advanced Research in Biological Sciences	4 (3); 119-126

Research Papers Presented:

Sl. No.	Authors	Title	Name of the Seminar / Symposium / Conference	Place and Date
1	P.Sathya	Potential of Lactic acid bacteria to release Angiotensin converting enzyme inhibitory peptides	9 th Kerala Veterinary Science Congress	Cochin- 11 th and 12 th November 2017
2	P.Sathya	Angiotensin converting enzyme inhibitory activity of fermented goat milk	National Seminar on Food Adequacy and Climate change;	3 rd and 4 th November-

		prepared with different lactic acid bacteria	Strategies for sustainable food production	2017
3	P.Sathya	Fermented goat milk- Potential source of Antihypertensive peptide	National Seminar on 10 th Food Xplore '17	15 th Dec. 2017
4	Archana S. N.	Occurrence of <i>Leptospira sp.</i> in paddy field water samples in an around Thrissur district of Kerala	9 th Kerala Veterinary Science Congress	Cochin- 11 th and 12 th November 2017

Popular Articles / Technical Report published :

Sl. No.	Authors	Title	Name of the Journal / Magazine / Daily etc.	Date
1	Justin Davis, Prasad A and Arokia Robert M	Gravity based sand filter for improving water quality	Indian Farmer	August, 2017
2	P.Sathya and Archana S.N.	Health benefits of Ghee	Kerala Karshakan- Vol.5 Issue-8	February-2018
3	P.Sathya, Archana, S.N., Seena, T.X. and Justin Davis	Health Benefits of Goat Milk	Kerala Karshakan-Vol.5 Issue-9	March- 2018
4	Seena, T.X., P. Sathya, Archana, S. N. and Justin Davis	Summer management in Dairy farm	Kerala Karshakan-Vol.5 Issue-9	March- 2018

Non-Technical Reports published :

Sl. No.	Authors	Title	Name of the Journal / Magazine / Daily etc.	Date
1	Archana S. N.	Cat Scratch Disease and	National Seminar "Surveillance and control	

		its Zoonotic Importance	of Rabies and other zoonotic diseases ”	28 th September- 2017
2	Archana S. N	Milk as a source of Tuberculosis	National Seminar “Surveillance and control of Rabies and other zoonotic diseases ”	28 th September- 2017

Other information:

- Farm day and Diamond Jubilee celebrations held at Cattle Breeding Farm, Thumburmuzhy
- The Cattle Breeding Farm Thumburmuzhy has 225 pedigreed high producing crossbred cattle suitable for the agro-climatic conditions. The modifications of the housing system in the centre have resulted in improvement in milk yield of the cattle. This is a clear indication about the production, genetic makeup and its interaction with the climatic conditions.
- The Cattle Breeding Farm Thumburmuzhy has a gene pool of various improved fodders and supplying fodder slips/seeds to farmers.
- “Thumburmuzhy Model” aerobic composting technique (TMACT) developed at Thumburmuzhy Cattle breeding Farm of Kerala Veterinary & Animal Sciences University has invited the attention of policy makers as a cost effective and eco friendly “Waste Management System”.

LIVESTOCK RESEARCH STATION, THIRUVAZHAMKUNNU

Faculty Position:

SL No	Cadre:	No. of Personnel in position
1	Professor & Head	1
2	Assistant Professor	3

1. Faculty Improvement Programme:

- a. Dr. B. BibinBecha attended 21 days training on ‘Advanced imaging and interventional protocols in disease diagnosis and management in farm and pet animal practice’ from 04/07/2017.
- b. Dr. Jith John Mathew attended 21 days training on Advances in animal nutrition for improving livestock productivity’ from 06/09/2017.

2. Training Programmes:

- Hosted off campus training on “Backyard Poultry rearing” for students of VHSE
- Training on Silage preparation for students of Vanavarayar Institute of Agriculture, Pollachi (TNAU).
- Training on Hoof care management conducted in association with Dept of Surgery, CVAS- Mannuthy
- Training on Motivation & Positive Thinking imparted to students of CASM, Thiruvazhamkunnu.
- Training on various aspects of Animal Nutrition and feed technology to students of BRC (Bio resources cum Agro service centre), Kuthuparambu.
- Internship training- B.V.Sc& AH Mannuthy&Pookode
- Internship training- B.Tech (Dairy Science and Technology), Mannuthy
- On the Job Training VHSE students
- Training for Veterinary Officers

- HRD training for farm labourers
- Training on reproductive management and feeding of dairy cattle and hygienic milk production to 50 progressive farmers of Malampuzha block under milk shed development scheme in Dairy Development Department.

3. Farm Advisory Services

- 60 Farmers given expert advice in starting entrepreneurship based on dairy farming and goat rearing
- Veterinary Hospital provided services to farmers, pet lovers

Livestock Research Station (LRS), Thiruvazhamkunnu started functioning as District Livestock Farm in 1950 and was in existence even before the formation of the state of Kerala. It is located in MannarkkadTaluk of Palakkad District and has an area of 163 hectares. The farm was handed over to Kerala Agricultural University in 1972 and was given its present name. LRS was attached as a station to Kerala Veterinary and Animal Sciences University upon its inception on May, 2011. The current utilization pattern of the land is presented Table (i)

Table (i): Land utilization at LRS, Thiruvizhamkunnu

Sl No.	Land Used as	Area (Ha)
1	Fodder	50
2	Coconut	13
3	Arecanut	7
4	Cashew	15
5	Integrated Farming	6
6	Agro Forestry	6
7	Buildings	1
8	Road	2.5
9	Artificial Forest	46
10	Others	16.5
	Total	163

Objectives

Objectives of LRS were redefined by KVASU to include

1. To impart training for farmers, internship students, PG students, livestock inspectors, DEO's and Veterinarians

2. To undertake problem oriented and adaptive research projects in feeding, breeding and management of livestock
3. To develop sustainable cross bred cattle that could best accustom to Kerala climatic conditions
4. To conserve native breeds of livestock
5. Undertake researches to find panacea to problems encountered in breeding, feeding and management of domestic animals
6. To undertake extension and technology transfer initiatives in animal husbandry sector
7. To establish demonstration units of various domestic animals
8. To undertake research projects in fodder production and conservation
9. To conserve the natural forest blanket of campus and to undertake studies on ecology, nature and forestry
10. To distribute seeds of good quality fodder and livestock to farmers

Human Resources

The Station has excellent man power in both technical and non technical sides. LRS is headed by a Professor and has the service of 3 Assistant Professors from disciplines like Animal Genetics, Reproduction and Nutrition. The farm employs about 115 labourers who form a disciplined and dependable work force.

Livestock Resources

LRS has a vivid variety of livestock resources and are proud to host among crossbred cattle Murrah Buffaloes, Vechur Cattle, Malabari goat and Attapadi Black goats in its campus. The station also has a display stock of fancy birds and poultry as detailed in Table (ii).

Table (ii): Stock of Livestock & Fancy birds in LRS, Thiruvazhamkunnu

SI No	Livestock	Head count	Animal type	No
1	Cross bred cattle	230	Milch	50
			Dry	34
			Heifers	71
			Bull Calves	14
			Female Calves	20
			Bull	41
			Total	230

2	Buffalo	34	Animal type	No
			Milch	7
			Dry	2
			Heifers	14
			Bull Calves	4
			Female Calves	3
			Bull	4
			Total	34
3	Vechur Cattle	36	Animal type	No
			Milch	7
			Dry	10
			Heifers	4
			Bull Calves	4
			Female Calves	4
			Bulls	7
			Total	36
4	Attappady Goat	47	Doe	28
			Buck	6
			Kids	13
			Total	47
5	Malabari Goat	18	Doe	15
			Buck	0
			Kids	3
			Total	18
6	Poultry& Fancy birds	34	Italian Bantam	4
			Cochin Bantam	6
			White polish	3
			Old English game	2
			White cocatails	1
			Lovebirds	16
			Red Pigeon	2
			Total	34

Revenue generation

The sale of farm products and agricultural products constitutes most of the income from the farm. Income generated in the last fiscal year(2017-18) from LRS, Thiruvazhamkunnu exceeded rupees one crore and is given in Table (iii).

Table (iii): Revenue generated from LRS, Thiruvazhamkunnu during 2017-18

Farm Products		
SL. No.	ITEM	INCOME (Rs)
1	Cow milk	46,38,480
2	Buffalo milk	1,63,840
3	Egg (Hen)	4,910
4	Duck egg	18
5	Animal Sales	5,87,005
6	Cow dung	3,65,560
7	Goat dung	3,780
	Total (A)	57,63,593
Agricultural Produce		
SL. No.	ITEM	INCOME (Rs)
14	Firewood	12,000
15	Green grass	10,41,633
16	Co3 slips	1,29,735
17	Coconut	5,52,685
18	Arecanut	12,02,000
19	Cashew nut	15,69,250
20	Mango	24,530
21	Jackfruit	51,100
22	Suppota	2,501
23	Gooseberry	4,600
24	Fish	17,400

25	Vermi compost	74,905
26	Banana	2,140
27	Glyrecedia	1,360
28	Grass slip	3,250
29	Arecanut tree	250
	Total (B)	46,89,339

Table (iii): Revenue generated from LRS... cont'd..

Miscellaneous Items		
SL. No.	ITEM	INCOME (Rs)
30	AI Charge	2,480
31	Bus pass	7,250
32	Registration	560
33	RTI	90
34	Photocopier charge	573
35	Plastic bag	22,170
36	Bus charge	44,954
37	Parking charges	3,065
38	Bamboo ladder	300
39	Rent	71,810
40	Scrap sale	530
41	Care charge	5,000
42	Head load charge	9,600
	Total (C)	1,68,382
Grand Total (A+B+C)		1,06,21,314

Research Outputs

As part of improving research output, several facilities were added to the infrastructure of LRS during 2017-18. Laboratory was strengthened by installing portable ultra sound machine and ELISA reader. Malabari goats were introduced and a tower silo was constructed during the same period. The enhancement in infrastructure is expected to produce better publications in the future.

Laboratory facility at LRS

Research contribution from LRS is limited by reluctance of PG students to undertake work in the station. Laboratory available in LRS has the facilities for basic work in microbiology, pathology, nutrition, animal reproduction etc. The station is looking forward for more enthusiasm from the part of faculty members to encourage students for working in this station.

SI No	Instrument/ Facility
1	Binocular microscope with micrometry
2	Laminar air flow cabinet
3	Refrigerated centrifuge
4	ELISA Reader and accessory instruments
5	Portable ultrasound scanner
6	Weather station
7	Double distilled water apparatus
8	Automatic milk analyser

Road Ahead

Livestock Research Station, Thiruvazhamkunnu has the potential to emerge as an important asset of KVASU. Last fiscal year witnessed strengthening of infrastructure, with the addition of facilitates like installation of ELISA reader and portable ultrasound machine. In the livestock section, a new flock of 15 Malabari goats were introduced in to the farm during last financial year. Proposals to renovate old sheds were approved by the university and are in different stages of implementation. The station has increased its revenue substantially over the previous year and is expected to contribute more to the income of the University in the years to come. Research contribution from LRS is limited by reluctance of PG students to undertake work in the station. Laboratory available in LRS has the facilities for basic work in microbiology, pathology, nutrition, animal reproduction etc. The station is looking forward for more enthusiasm from the part of faculty members to encourage students for working in this station.

BASE FARM, KOLAHALAMEDU, IDUKKI

Financial Details

Expenditure	--	Rs. 144.59 Lakhs Rs
Revenue	--	Rs. 56.24 Lakhs Rs

No. of animals

Sl No	Item	Number/Quantity
1	Total number of animals	128
2	Adult males	3
3	Non pregnant females	17
4	Milch animals	42
5	Dry non pregnant cows	11
6	Dry pregnant cows	14
7	Heifers below 18 month of age	26
8	Calves (below 6 months)	15

Production details

Parameters	Quantity	Amount
Milk production	140695.5 Kg	Rs 4642951.5
Fodder production	541550 Kg	
No. of calving	53	
Sale of animals	38	Rs 269740
Death of animals	10	
Sale of cow dung (wet)	29m ³	171020
Sale of cow dung (dry)	11821.1 kg	

Production details (Avg)

Birth weight	28.85 kg
Yearling weight	-
Age at first calving	3.2 years
Lactation length	302 days
Lactation milk yield	2655 kg
Peak yield	20.8 kg
Average milk yield/cow	8.96 kg
Calving interval	406days
Conception rate(AI/conception)	3.15

Extension/ Entrepreneurial activities

1. Established the Valley View Animal Theme Park
2. Plan projects (2017-2018)
 - (i) Strengthening of Heritage Farm at Base Farm Kolahalamedu (FSP/17-18/22)
 - (ii) Establishment of calf nursery at Base Farm, Kolahalamedu (FSP/17-18/24)
 - (iii) Proposed international training centre and renovation of existing residential building at Base Farm, Kolahalamedu (ISP/17-18/36)

Faculty Details

Sl. No	Name	Designation
1	DrDipu M T	Asst Prof & Head
2	DrMuhammedAslam M K	Asst Prof
2	Dr George Sherin K	Asst Prof (WA)

MEAT TECHNOLOGY UNIT, MANNUTHY

Introduction

Considering the importance of meat in human nutrition, the Kerala Agricultural University had conceived the idea of developing a modern Meat Plant capable of undertaking the responsibilities of teaching, research and extension, almost two decades ago. However, the dream came true in 1992, when infrastructure facilities were created for a multi species abattoir, meat processing unit and necessary laboratories. The unit soon developed modern facilities, which were fully utilized for providing practical hands on training to veterinary students, unemployed youth, entrepreneurs and veterinary officers under Continuing Education Programme. Several externally aided projects were undertaken by the unit including the establishment of a Carcass Utilization Plant with financial support from Ministry of Agriculture, Government of India.

Regular production, processing and marketing of meat and meat products lead to interaction with the public, State Agricultural Universities, Veterinary Officers, Local body authorities and Animal Husbandry Department. The Meat Technology Unit, Mannuthy was later recognized as Department of Livestock Products Technology in 1994. Several HRD training programmes were developed and implemented which attracted the attention of several universities, State Animal Husbandry Departments, NGO's and private agencies. Several important research activities are undertaken by the scientists of this centre, the results of which are extremely useful to the Indian Meat Industry. The facilities and manpower developed were the first of its kind under universities in India leading to the ICAR recognizing this unit as **Centre of Excellence in Meat Science and Technology in 2001**. Department of Livestock Products Technology and Meat Technology Unit started offering the MVSc programme in 2004 and PhD programme in 2011.

Vision, Mission & Core Values of Meat Technology Unit

VISION

We envision the transformation of the organization into a global training and knowledge hub in meat science and technology

MISSION

Catalyze holistic development of meat sector in the country through sustainable technologies, professional training, entrepreneurship facilitation and knowledge dissemination.

CORE VALUES

1. Maintain high standards in education and training with focus on employability, entrepreneurship and skill acquisition
2. Relentless pursuit towards scalable and sustainable technologies, products and solutions through research and development
3. Operate as a model which consistently delivers superior quality fresh and processed meat products and exemplify the potentials and constraints of the sector
4. Reinforce backward linkages with farmers by direct procurement of the livestock and poultry for meat production

Mandate of Department of Livestock Products Technology and Meat Technology Unit

- Teaching
- Research
- Extension
- Training and entrepreneurship
- Meat and Meat products production
- By- products utilization

Major Activities

1. The regular mandate of the Meat Technology Unit and Department of Livestock Products Technology includes undergraduate and post-graduate teaching, research and extension on various aspects of meat production and processing
2. Development of quality management programmes in the area of hygienic animal slaughter and processing of meat
3. Evolving suitable methodologies for improving the organoleptic qualities of meat and meat products
4. Development of Eco-friendly slaughter house and meat processing unit waste utilization methods
5. Development of adaptable processing technologies and formulations for value addition of livestock products
6. Standardization of packaging technique for fresh and processed meat and poultry for medium scale entrepreneurial adoption

7. Identification, promotion and validation of indigenous knowledge of local butchers and workers in meat sector
8. Regular production, processing and marketing of meat and meat products and byproducts and close interaction with State Agricultural Universities, Veterinary Officers, Local Self Government authorities, Industries Department, Suchitwa Mission, Health professionals, FSSAI, Animal Husbandry Departments etc.
9. Technical advice to entrepreneurs, Food Safety Commissionerate
10. Conducting classes to Nursing, Pharmacy, MBBS, BAMS and Food Technology students
11. Hands-on training on slaughter practices and meat inspection to Vet. Officers and on meat processing to Self Help Groups. The meat species identification laboratory developed at this centre is being utilized by judiciary, forest authorities, wild animal protection agencies, and consumer redressal forums, Government Departments, Veterinary Surgeons, entrepreneurs and the public

Facilities available

Multispecies abattoir, well equipped quality control labs. Carcass utilization plant of European standards for the dry rendering of inedible by products to yield feed-grade meat-cum-bone meal/organic fertilizer. Gamma Chamber 5000 for gamma irradiation of meat and meat products.

Courses

Degree Programme	Course No.	Course Title	Credits
UG	LPT 312	Abattoir Practices and Animal Products Technology	1+1
	LPT 321	Meat Science	1+1
PG	LPT 601	Fresh Meat Technology	1+1
	LPT 602	Meat Processing, Packaging, quality control and marketing	2+1
	LPT 603	Poultry and Fish Products Technology	2+1
	LPT 604	Egg and Egg Products Technology	1+1
	LPT 605	Abattoir and poultry processing plant practices	1+1

	LPT 606	Slaughter house byproducts Technology	2+1
	LPT 607	Processing and Marketing of Wool	2+1
	LPT 609	Quality control of milk and milk products	1+1
	LPT 610	Technology of Milk Products	2+1
	LPT 611	Biotechnology of Foods of Animal Origin	1+1
	LPT 612	Implant Training	0+2
PhD	LPT 701	Advances in Abattoir Practices and Animal Byproduct Utilization	2+1
	LPT 702	Advances in Fresh and Processed Meat Technology	2+1
	LPT 703	Advances in Poultry Products Technology	2+1
	LPT 704	Advances in Milk and milk product Technology	3+1
	LPT 705	Advances in Quality Control of Livestock Products	2+0
	LPT 706	Biotechnological Techniques in Animal Products	1+1
Diploma	DPP 18	Poultry Processing & Egg Quality	1+1

Faculty and Staff :

Category	Faculty/Staff	Mobile number	Email ID
Professor and Head	Dr. B. Sunil	9497626575	sunil@kvasu.ac.in
Associate Professor	Vacant		
Assistant Professor (1 - Vacant)	Dr. V.N. Vasudevan	9447382558	vasudevan@kvasu.ac.in
	Dr. Sathu. T	9447293042	sathu@kvasu.ac.in
	Dr. Irshad. A	9895213500	irshad@kvasu.ac.in
Farm supervisor	1		
Class IV	2		
Office assistant (On contract)	1		

Processing associate (On contract)	3		
Processing assistant (On contract)	2		
Typist (On contract)	1		
Laborer	2		

Research

Projects Completed

Externally aided projects continuing:

1. Name of the scheme / project :

Development of biomass briquettes using straighter house waste

2. Name of the funding agency : ATMA, Thrissur
3. Date of start and closure : 01.03.2018
4. Budget : Rs.12.573 lakhs
5. Principal Investigator & Co-PIs : Dr..Vasudevan V N (PI), Dr. Sathu T,
Dr. Irshad A and Prof K.V Soolapani Varier

Research highlights :

1. Optimization of characteristics of rumen contents and blood suitable for the development of biomass briquettes
2. Pilot scale manufacture of biomass briquettes using dried rumen contents and blood
3. Analysis of the physical properties and combustion characteristics of the developed briquettes

State plan projects completed:

1. Name of the scheme / project

: Development and quality analysis of certain novels shelf stable meat products

2. Name of the funding agency : Govt of Kerala
3. Date of start and closure :01-03-2017 to 30-09-2017
4. Budget : Rs 5 lakh

5. Principal Investigator & Co-PIs : Dr. Sathu.T (PI), Dr.Vasudevan & Dr.Irshad (Co-PIs)
6. Research highlights :
 1. Shelf-stable chicken 65 preparation was standardized and shelf-life was evaluated
 2. The product had a shelf-life of 48 hours at ambient storage conditions whereas the control product spoiled within 24 hours.
7. Scientific utility of the findings :
Transferred the technology for adaptation by Small entrepreneurs through trainings
8. Significant achievements made in science and technology (in 2-3 bullet points):
Developed *novels shelf stable meat products suitable for small entrepreneur*

2. Name of the scheme / project

: Development of computer aided designs of abattoirs and meat processing plants for entrepreneurship and outreach programmes

2. Name of the funding agency : Govt of Kerala
3. Date of start and closure : 01-03-2017 to 30-09-2017
4. Budget : **Rs 5 lakh**
5. Principal Investigator & Co-PIs : Dr.Vasudevan (PI), Dr.Sathu.T & Dr. Irshad (Co-PIs)
6. Research highlights :
 1. The civil and technical specifications for the proposed models are prepared
 2. Computer aided models of Slaughter house developed
7. Scientific utility of the findings :
Developed various slaughter house models suitable to adopt entrepreneurs and LSG

3. Name of the scheme / project

: Standardization of packaging technique for fresh and processed meat and poultry for medium scale entrepreneurial adoption

2. Name of the funding agency : Govt of Kerala
3. Date of start and closure : 21.10.2018 – 31/03/2018
4. Budget : **Rs 10 lakh**
5. Principal Investigator & Co-PIs : Dr.Vasudevan V N (PI),

6. Scientific utility of the findings :
- Standardization of packaging design and technique suitable for traditional wet meat market as well as frozen and further processed meat and poultry products.
 - Technology transferred to small scale entrepreneur through awareness and training programme

4. Name of the scheme / project

: *Technology development for value added ready to eat egg, chicken, egg-chicken products for adoption on a cottage scale production*

2. Name of the funding agency : Govt of Kerala
3. Date of start and closure : 21.10.2018 – 31/03/2018
4. Budget : **Rs 10 lakh**
5. Principal Investigator & Co-PIs : Dr.Sathu.T (PI), Dr.Vasudevan &
Dr. Irshad Co-PIs)

6. Research highlights :
- Developed technology for manufacturing of highly acceptable, ready to eat/ heat and eat egg-chicken products
 - Nutritional analysis for labeling of the developed products
 - Transferred the technology for cottage scale production through trainings to entrepreneurs

7. Scientific utility of the findings :

Transferred the technology for adaptation by Small entrepreneurs through trainings

5. Name of the scheme / project

: *Establishment of an ISO certified facility for production of wholesome meat and meat products*

2. Name of the funding agency : Govt of Kerala
3. Date of start and closure : 21.10.2018 – 31/03/2018
4. Budget : **Rs 100 lakh**

5. Principal Investigator & Co-PIs : Dr.Sathu.T (PI), Dr.Vasudevan & Dr. Irshad Co-PIs)

6. Scientific utility of the findings :

Various civil works essential for the certification of the Meat Technology Unit, Mannuthy as following

- Establishment of a training center
- Preliminary auditing of the operations and facilities.
- Part of the civil works which were essential for certification
- Flooring of the cattle and pig slaughter halls with EPU
- Other construction/ renovation in the kitchen and staff training hall, part of the Laboratories, Meat processing and worker amenities as per gap analysis report

Income Expenditure Statement (in Lakhs) in Last Five Years

Financial Years	Expenditure	Revenue	Fund Transferred to University
	Revolving Fund		
2012-13	70.76	93.82	21.5
2013-14	115.15	131.28	17
2014-15	84.06	109.05	26
2015-16	129.96	200.05	60
2016-17	141.46	185.46	40
2017-18	139.74	235.7	40

Animals slaughtered (Species wise)

Cattle	No of animals
Cow	101
Vechur	1
CJ	1

CH	6
Bull	89
Vechur	35
CJ	1
CH	2
Male calf	105
Vechur	2
Female calf	4
Heifer	32
CH	1
Total	380
Buffalao	29
Pig	
LWY Female	253
Male	230
Duroc Female	85
Male	98
CB Female	3
Male	12
Desi Female	6
Landrace Female	1
Total	688
Goat	
Female	94
Male	48

Freemartin	1
Malabari Female	7
Attapady Female	1
Sheep	
Female	18
Male	30
Total	199
Chicken	2686
Chicken broiler	4724
Duck broiler	2824
Duck Kuttanad	234
Quil	700
Turkey	33
Total	11201

Meat and Meat Products sold (Frozen and Products)

Sl no	Name of items	Unit	Quantity
1.	Beef	Kg	21489
2.	Beef cutlet	pkt	3372
3.	Beef fry	pkt	492
4.	Beef minced (keema)	pkt	2487
5.	Beef pickle	pkt	783
6.	Beef sausage	pkt	977
7.	Beef Smoked	pkt	163
8.	Beef tripe	pkt	132
9.	Chicken	Kg	5956.5
10.	Duck	Kg	3814

11.	Buffalo	Kg	2195
12.	Buffalo hide	Unit	1058
13.	Cattle hide	Unit	734.4
14.	Chicken cutlet	pkt	3038
15.	Chicken nuggets	pkt	446
16.	Chicken pickle	pkt	372
17.	Chicken samusa	pkt	530
18.	Chicken sausage	pkt	1137
19.	Chicken tikka	pkt	264
20.	Duck kuttanad	pkt	123
21.	Egg and chicken roll	pkt	330
22.	Goat skin	Unit	126
23.	Goat tripe	Unit	160
24.	Mutton	Kg	1509.5
25.	Pork	Kg	30791
26.	Pork fry	pkt	417
27.	Pork low fat	Kg	459
28.	Pork pickle	pkt	308
29.	Pork sausage	pkt	747
30.	Premium fresh beef	Kg	732
31.	Quail dressed	pkt	176
32.	Goat head	Unit	5
33.	Goat feet	Unit	7
34.	Goat head and feet	Unit	146
35.	MCB Meal feed 2 kg	Kg	15777

Value added products and Bye Products

Value added Meat Products	24 Lakhs (10% of Revenue)
By- products utilization	
Meat cum Bone Meal	10.2 Lakhs

Rendered fat	1.3 Lakhs
Others	2.9 Lakhs
Total	14.4 Lakhs (6 % of Revenue)

Consultancy Services

- Consultancy service given to various panchayat, municipality and corporation (LSGD) to establish slaughterhouse and rendering plant
- Technical advice offered to entrepreneurs, Food Safety Commissionerate
- Hands-on training on slaughter practices and meat inspection to Vet. Officers and on meat processing to Self Help Groups.

Trainings

Training Programme	Number/Batch	Total
Hands on Training in Poultry Processing (9-3-2017) (one day Training – Paid)	ONE	EDP - 5 Outside state participation- 2 training Butcher Training – 1 For Vets- 1 Total= 8
Meat Processing and Quality Control for Meat Handlers (Two Day Training – Plan Project) 18,19/9/2017; 25,26/9/2017	TWO	
Meat Processing and Quality Control for MTU Staff & Students. (Two Day Training – Plan Project) (22, 23/9/2017)	ONE	
Training of Hygienic Butchering Practices for North East Butchers (Three day training- Paid), (7,8 & 9/11/2017)	ONE	
Hygienic Slaughter Practices and Abattoir Management for Veterinarians of AHD, (Two day – Funded by KSVC) (21-22; 28-29/11/17)	TWO	
Hygienic Slaughtering, Meat Processing and Quality Control (3 day Training- Paid) (22-24/03/2018)	ONE	



Hands on Training in Poultry Processing for entrepreneurs



Hands on Training in Hygienic Slaughtering, Meat Processing and Quality Control for entrepreneurs



Hygienic Slaughter Practices and Abattoir Management for Veterinarians of AHD



Training to Pig farmers (1day Training organized by CPPR)- 5 Numbers

Stipendiary Training Programme

- ▶ Meat processing cum plant operation : 2 years
- ▶ Wholesome meat production and meat processing: 1 year
- ▶ Meat plant operation and maintenance : 1 year



3. Internship Training Programme for Students

1. CVAS Mannuthy & Pookode
2. Avian Sciences and Management, Thiruvazhamkunnu
3. Tharananellur Arts & Science College - Irinjalakkuda



Students of Tharananellur Arts & Science College - Irinjalakkuda

Seminars Conducted

National Seminar “*Food Adequacy and Climate Change: Strategies for Sustainable Food Production*” organized at Hotel Dream City auditorium, Pattikkad on 3rd and 4th November 2017



Meat Technology Unit Celebrated twenty-fifth anniversary

- ▶ Released Coffee table book (about the brief history of MTU)
- ▶ Documentary – kaleidoscope (about MTU and its activities)



Distinguished visitors

- Dr. J. Radhakrishnan IAS, Principal Secretary to Govt, Health and Family Welfare Department, Government of Tamil Nadu

PUBLICATIONS

Publications: Research articles/ popular articles/ Books/ Monographs/ Technical reports

I. Research Article Published:

- Prajwal, S., Vasudevan, V.N., Irshad. A., Sathu, T., Gunasekaran, P. Kuleswan Pame and Poobal, P. 2017. prediction of sensory tenderness of beef muscles having different collagen characteristics using Warner-Bratzler shear force. Int. J. Env. Sci. Technol. 6(2): 1123-1133.
- Prajwal, S., Vasudevan, V., Sathu, T., Irshad, A., and Sunanda, C. 2017. Characterization of Buffalo Meat Using Principal Component Analysis. Int. J. Livestock Res. 7(7): 251-260.
- Prajwal, S., Vasudevan, V., Sathu, T., Irshad, A., Nayan Kumar S.R. and Kuleswan Pame. 2017. Antibiotic residues in food animals: Causes and health effects. The Pharma Innovation. 6(12): 1-4.
- Pame, K., Sathu, T., Vasudevan, V. N., Prajwal, S., and Gunasekaran, P. 2017. A Study on the Effect of Physico-Chemical Characteristics, Palatability and Storage Quality of Kibbles Incorporated With Slaughter House By-products for Canine. Int. J. Livestock Res. 7(8), 228-237.
- Vasudevan V.N., Kuttinaryanan P. Sathu, T. Irshad, A. and Prajwal S. 2017. Influence of fore leg angle on the pre-slaughter stress and pork quality of cross-bred Large White Yorkshire. J. Meat Sci. (Accepted).
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- Sunil B., Irshad, A. Vasudevan, V.N. and Sathu. T. 2017. *Climate Change and sustainable food production*. Excel India Publishers, New Delhi.

- Sunil B., Irshad, A. Vasudevan, V.N. and Sathu. T. 2017. *Meat Technology Unit 25-Coffee Table Book*. Kerala Veterinary and Animal Sciences University, Meat Technology Unit, College of Veterinary and Animal Science. p64.

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- Vasudevan, V.N. Prajwal, S. Sathu, T. and Irshad, A. 2017. Food safety approach for food safety vendors in India. In: Sunil B., Irshad, A. Vasudevan, V.N. and Sathu. T. 2017. In: (Ed.). *Climate Change and sustainable food production*. Excel India Publishers, New Delhi. p 397-412.
- Vasudevan, V.N. Prajwal, S. Sathu, T. and Irshad, A. 2017. Influence of cooking on antimicrobial drug residues in meat and meat products. In: Sunil B., Irshad, A. Vasudevan, V.N. and Sathu. T. 2017. In: (Ed.). *Climate Change and sustainable food production*. Excel India Publishers, New Delhi. p 336-355.
- Sathu, T. Vasudevan, V.N. Pavan, M. and Irshad, A. 2017. Traceability in meat supply chain. In: Sunil B., Irshad, A. Vasudevan, V.N. and Sathu. T. 2017. In: (Ed.). *Climate Change and sustainable food production*. Excel India Publishers, New Delhi. p 408-412.
- Irshad, A. Shalima Shhukoor. and Vasudevan, V.N. 2017. Quality and safety of dairy products. In: Sunil B., Irshad, A. Vasudevan, V.N. and Sathu. T. 2017. In: (Ed.). *Climate Change and sustainable food production*. Excel India Publishers, New Delhi. p 408-412.

Compendium

- Sunil B., Irshad, A. Vasudevan, V.N. and Sathu. T. 2017. Proceedings of the Third Convention of the Association of Meat Scientists and Technologists and National Seminar on Food adequacy and Climate Change: Strategies for sustainable Food Production; 3rd to 4th November, 2017, Thrissur. Kerala Veterinary and Animal Sciences University, Meat Technology Unit, College of Veterinary and Animal Science.

Manual

- Irshad, A. Vasudevan, V.N. and Sathu. T. 2017. *Manual on Hygiene slaughter Practices for Veterinarians*. Kerala Veterinary and Animal Sciences University, Meat Technology Unit, College of Veterinary and Animal Science. p65.

Extended abstracts and abstracts

- Prajwal, S., Vasudevan, V.N., Sathu, T. Irshad, A, Sunanda, C. Kuleswan Pame. Gunasekaran P. Poobal, P and Ajith, M.C. Characteristics of meat from three Indian native cattle breed cows using principal component analysis. In: Sunil B., Irshad, A. Vasudevan, V.N. and Sathu. T. 2017. *Proceedings of the Third Convention of the Association of Meat Scientists and Technologists and National Seminar on Food adequacy and Climate Change: Strategies for sustainable Food Production*; 3rd to 4th November, 2017, Thrissur. Kerala Veterinary and Animal Sciences University, Meat Technology Unit, College of Veterinary and Animal Science. 105p.
- Prajwal, S., Vasudevan, V.N., Sathu, T. Irshad, A, Sunanda, C. Kuleswan Pame. Gunasekaran P. Ajith, M.C. and Sharon, A.J. Comparative study of fatty acid Profile of three representative muscles of mature cross bred cow and buffalo. In: Sunil B., Irshad, A. Vasudevan, V.N. and Sathu. T. 2017. *Proceedings of the Third Convention of the Association of Meat Scientists and Technologists and National Seminar on Food adequacy and Climate Change: Strategies for sustainable Food Production*; 3rd to 4th November, 2017, Thrissur. Kerala Veterinary and Animal Sciences University, Meat Technology Unit, College of Veterinary and Animal Science. 128p.
- Gunasekaran P. Sathu, T. Vasudevan, V.N., Prajwal, S., Kuleswan Pame. and Irshad, A. Quality evaluation of multi hurdle treated shelf stable barbecued chicken stored at ambient temperature. In: Sunil B., Irshad, A. Vasudevan, V.N. and Sathu. T. 2017. *Proceedings of the Third Convention of the Association of Meat Scientists and Technologists and National Seminar on Food adequacy and Climate Change: Strategies for sustainable Food Production*; 3rd to 4th November, 2017, Thrissur. Kerala Veterinary and Animal Sciences University, Meat Technology Unit, College of Veterinary and Animal Science. 235p.
- Gunasekaran P. Sathu, T. Vasudevan, V.N., Prajwal, S., Kuleswan Pame. and Irshad, A. Impact of glycerol on physico-chemical and sensory attributes of barbecue chicken. In: Sunil B., Irshad, A. Vasudevan, V.N. and Sathu. T. 2017. *Proceedings of the Third Convention of the Association of Meat Scientists and Technologists and National Seminar on Food adequacy and Climate Change: Strategies for sustainable Food Production*; 3rd to 4th November, 2017, Thrissur. Kerala Veterinary and Animal Sciences University, Meat Technology Unit, College of Veterinary and Animal Science. 235p.
- Prajwal, S., Vrinda Menon, K., Sai Sreenivas K.N. Vasudevan, V.N., Sathu, T. Irshad, A, and Santosh kumar. Survey on personal Hygiene and Food storage practices of street food vendors in Thrissur Corporation. In: Sunil B., Irshad, A. Vasudevan, V.N. and Sathu. T. 2017. *Proceedings of the Third Convention of the Association of Meat Scientists and Technologists and National Seminar on Food adequacy and Climate*

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- Gunasekaran P. Sathu, T. Vasudevan, V.N., Prajwal, S., Kuleswan Pame. and Irshad, A. Effect of Acidulants on Physico-chemical and sensory attributes of barbecued Chicken. In: Ajith Kumar, S., Irshad, A. and Sunil, G., 2017. *Proceedings of the ninth Kerala Veterinary Science Congress*; 11th to 12th November, 2017, Nedumbassery, Kochi. 235p.
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AWARDS AND HONOURS

Name of the Centre / Department / Research Station:

Sl. No.	Name of the institution / staff / student	Name of the award / honour	Awarding body
1	Dr Sathu T	Best research paper-first (oral) (International)	International multidisciplinary Research foundation at Goa, India,
2	Dr Sathu T	Best research paper-first (oral)	AMST
3	Dr V N Vasudevan	Best Veterinarian award	Indian Veterinary Association
4	Dr V N Vasudevan	Best oral Prize	AMST
5	Dr V N Vasudevan	1 st oral Prize	KVSC
6	Dr V N Vasudevan	Best Oral prize	KVSC-2017
7	Dr V N Vasudevan	Best Poster Prize	AMST-17
8	Dr V N Vasudevan	1 st Poster Prize	KVSC-17
9	Dr Prajwal S, PhD Scholar	1 st oral Prize	KVSC
10	Dr Prajwal S, PhD Scholar	Best oral Prize	ICAVLS-17
11	Dr Prajwal S, PhD Scholar	1 st Poster Prize	KVSC-17
12	Dr. Shalima shukoor. A, MVSc Scholar	1 st Poster Prize	Indian Veterinary Association

Books / Monographs / Manuals:

Sl. No.	Authors	Year	Title
1	Dr. V N Vasudevan	2017	Hygiene slaughter Practices for Veterinarians.

2.	Dr. V N Vasudevan, Dr. Irshad A, Dr. Sathu T	2017	Practical Manual on Abattoir Practices and Animal Products Technology
3	Dr Sathu. T., Dr. Irshad A., and Dr. Vasudevan V N	2017	Practical Manual on Meat Science
4	Dr Sathu. T	2017	Manual on HACCP
5	Dr Sathu. T	2017	Manual on ISO 22000: 2005

KVASU DAIRY PLANT, MANNUTHY

The University dairy plant was commissioned in 1992. It is a student experimental Dairy processing unit where graduate and post graduate academic programs of dairy and veterinary faculties are supported. Moreover research work is carried out by post graduate students from other universities. Dairy plant is offering different training programs like stipendiary training, sponsored training and hands on trainings. Consultancy is offered to entrepreneurs in different aspects of dairy processing. Large number of visitors especially school children are exposed to different technical activities.

Revolving fund scheme operating in this unit process cow and buffalo milks received from University farms into fluid milk and a range of value added milk products. University Dairy plant has developed and standardized some dairy products. All these commodities are sold out through sales counter at this unit, University sales counter, Mannuthy and some supermarkets in Thrissur Town.

ORGANISATIONAL SETUP

University dairy plant is constituent unit under KVASU. It has got academic, research and extension mandates. Plant is utilized by under graduate students of dairy and veterinary faculties of university for practical training. Post graduate research for students of Dairy Technology, Dairy Science department and students from other universities are conducted here. Research project is under operation.

EDUCATIONAL COURSES

Dairy and Food Technology offers a promising option for value addition and resource mobilization in terms of availability of Food for the consumers and simultaneously providing more earnings at farmers and industry level. There is large scope for Dairy and Food industry to grow in view of the globalization and increasing purchasing power of consumers. This will further increase the requirement of Dairy Technologists and researchers.

CONFERENCES/SEMINARS/TRAININGS CONDUCTED

Topic	No. of Trainees	Institution	Venue	Date	Name of scientist
Plant visit and lecture on plant activities	24	Farmers Group	University Dairy Plant	11.04.2017	Dr. S. N. Rajakumar

Plant visit and lecture on plant activities	21	Farmers Group	“	27.04.2017	“
Plant visit and lecture on plant activities	40	St. Mary's LP School, Cherukunnu	“	27.04.2017	“
Plant visit and lecture on plant activities	9	Govt. Medical College, Thrissur	“	17.05.2017	“
Plant visit and lecture on plant activities	31	Farmers Group	“	18.05.2017	“
Plant visit and lecture on plant activities	4	DEO, Education Dept., Thrissur	“	25.05.2017	“
Plant visit and lecture on plant activities	14	Govt. Medical College, Thrissur	“	01.06.2017	“
Plant visit and lecture on plant activities	16	Farmers Group	“	07.06.2017	“
Plant visit and lecture on plant activities	30	Morning Star Home Science College, Angamaly	“	17.06.2017	“
Plant visit and lecture on plant activities	8	Govt. Medical College, Thrissur	“	27.06.2017	“
Plant visit and lecture on plant activities	33	Nirmala College, Muvattupuzha	“	28.06.2017	“
Plant visit and lecture on plant activities	10	Govt. Medical College, Thrissur	“	03.07.2017	“
Plant visit and lecture on plant activities	52	Vishnu Ayurveda College	“	14.07.2017	“

Plant visit and lecture on plant activities	51	SNUPS Kundukuzhipadam	“	22.07.2017	“
Plant visit and lecture on plant activities	80	Austin College, Guruvayoor	“	23.07.2017	“
Plant visit and lecture on plant activities	48	PNNM Ayurveda College, Shornur	“	28.07.2017	“
Plant visit and lecture on plant activities	53	AMUPS Poovathani	“	04.08.2017	“
Plant visit and lecture on plant activities	29	Navajyothi Organic Farmers Society, Thodupuzha	“	16.08.2017	“
Plant visit and lecture on plant activities	15	Govt. Medical College, Thrissur	“	17.08.2017	“
Plant visit and lecture on plant activities	60	Eurokids School	“	-	“
Plant visit and lecture on plant activities	45	Mil Al Ameen HSS Kechery	“	13.09.2017	“
Plant visit and lecture on plant activities	44	Morning Star Home Science College, Angamaly	“	16.09.2017	“
Plant visit and lecture on plant activities	33	MH English School Edappal	“	11.10.2017	“
Plant visit and lecture on plant activities	30	GVHSS Kizhuparamba	“	12.10.2017	“
Plant visit and lecture on plant activities	34	Farmers Group	“	16.10.2017	“

Plant visit and lecture on plant activities	90	Vidyadhiraja HSS Aluva	“	20.10.2017	“
Plant visit and lecture on plant activities	302	St. Joseph's UPS, Koonamavu	“	21.10.2017	“
Plant visit and lecture on plant activities	10	Farmers Group	“	04.11.2017	“
Plant visit and lecture on plant activities	104	HSS Kuthanur, Palakkad	“	17.11.2017	“
Plant visit and lecture on plant activities	61	CHS Madavur, Kozhikkode	“	17.11.2017	“
Plant visit and lecture on plant activities	62	GMMGHSS Palakkad	“	21.11.2017	“
Plant visit and lecture on plant activities	20	St. Thomas HSS Thrissur	“	06.12.2017	“
Plant visit and lecture on plant activities	52	Snenogahya Con, Irinjalakkuda	“	08.12.2017	“
Plant visit and lecture on plant activities	40	Simet Con, Malampuzha	“	19.12.2017	“
Plant visit and lecture on plant activities	45	Muduvara Coconut Farmers Cluster	“	26.12.2017	“
Plant visit and lecture on plant activities	25	Farmers Group	“	27.12.2017	“
Plant visit and lecture on plant activities	32	New College, Vandoor	“	15.01.2018	“

Plant visit and lecture on plant activities	45	GLPS Pallam	“	19.01.2018	“
Plant visit and lecture on plant activities	44	MRHSS Chalakkudy	“	22.01.2018	“
Plant visit and lecture on plant activities	85	Vimala Central School, Perumbavoor	“	27.01.2018	“
Plant visit and lecture on plant activities	38	MES College, Mampad	“	29.01.2018	“
Plant visit and lecture on plant activities	65	Govt. Girls School, Thrissur	“	30.01.2018	“
Plant visit and lecture on plant activities	50	SALPS Kalloorkkad	“	01.02.2018	“
Plant visit and lecture on plant activities	8	Mukunnapuram public school	“	02.02.2018	“
Plant visit and lecture on plant activities	80	Sreevaikundam School, Malappuram	“	03.02.2018	“
Plant visit and lecture on plant activities	81	Sreedevi's GUPS, Alathur	“	05.02.2018	“
Plant visit and lecture on plant activities	-	GLPS Anappadi	“	09.02.2018	“
Plant visit and lecture on plant activities	-	GHSS Anchery	“	09.02.2018	“
Plant visit and lecture on plant activities	-	GLPS Cherukara	“	-	“

Plant visit and lecture on plant activities	-	MRRMHSS Chavakkad	“	15.02.2018	“
Plant visit and lecture on plant activities	46	GHSS Elamakkara	“	15.02.2018	“
Plant visit and lecture on plant activities	33	GLPS Kizhakkuparamb	“	15.02.2018	“
Plant visit and lecture on plant activities	45	AUPS Pallissery	“	-	“
Plant visit and lecture on plant activities	-	Poolavally Milk Society	“	27.02.2018	“
Plant visit and lecture on plant activities	35	Nirmala College, Muvattupuzha	“	02.03.2018	“
Plant visit and lecture on plant activities	76	NSSUPS, Chunakkara	“	-	“
Plant visit and lecture on plant activities	17	Global Pvt. ITI, Amballur	“	16.03.2018	“
Plant visit and lecture on plant activities	40	Farmers Group	“	24.03.2018	“

1.4 Research projects and Extension activities under taken:

A. State plan projects

Two plan projects entitled “Establishment of Effluent Treatment Plant (RSP/17-18/XII - 10)” and “Exploring the Electrical Energy Conservation Potential in KVASU Dairy Plant through Energy Audit Approach (ISP/ 17-18-30)” were allotted to University Dairy Plant, KVASU, Mannuthy.

- B. A new Form-Fill-Seal type automatic sipup machine has been installed at University Dairy Plant for increased productivity, hygiene, reduced time and labour requirement and for better branding.

STAFF DETAILS

Cadre	Sanctioned posts	In position	Vacant	Contact No.
Professor& Head	1	1	Nil	9495882953
Associate Professor	1	Nil	1	
Assistant Professors	03	1	02	7559067959

1.5.2 Non Teaching

Cadre	Sanctioned posts	In position	Vacant
Technical Supervisor	1	1	Nil
Assistant	1	1	Nil
Computer Assistant	1	0	1
Farm Supervisor Gr. I	1	1	Nil
Clerical Assistant	1	1	Nil
Technician (Dairy Mechanic)	3	0	3
Class IV	2	1	1
Labourer	3	2	1

UNIVERSITY VETERINARY HOSPITAL & TEACHING VETERINARY CLINICAL COMPLEX, MANNUTHY

Teaching Veterinary Clinical Complex (TVCC) congregates the services of the clinical departments like Veterinary Clinical Medicine, Ethics and Jurisprudence, Veterinary Epidemiology and Preventive Medicine, Veterinary Surgery and Radiology and Animal Reproduction, Gynaecology and Obstetrics under one umbrella to impart a cohesive health benefit to the public. It is the platform for conducting graduate, post graduate as well as post doctoral works in these fields along with treatment and consultation services to the community.

Educational courses

	Programmes	Credits	Duration
UG (offered directly by TVCC)	VCP- 411 Veterinary clinical practice	0+5	1 semester
	VCP- 421 „	0+5	
	VCP- 511 „	0+5	
	TRP - 311 Tracking program		
PG (Offered by other departments and training given at TVCC)	VOG 607 CLINICAL PRACTICE I	0+3	1 semester
	VOG 608 CLINICAL PRACTICE II	0+3	
	VCM 612 CLINICAL DIAGNOSTIC TECHNIQUES	0+2	
	VCM 613 VETERINARY EMERGENCY MEDICINE	0+2	
	VCM 614 CLINICAL PRACTICE I	0+3	
	VCM 615 CLINICAL PRACTICE II	0+3	
	VSR 602 CLINICAL PRACTICE – I	0+3	
	VSR 603 CLINICAL PRACTICE – II	0+3	

PhD Offered by other departments and training given at TVCC)	VOG 706 CLINICAL PRACTICE I	0+3	1semester
	VOG 707 CLINICAL PRACTICE II	0+3	
	VOG 790 SPECIAL PROBLEM	0+2	
	VCM 709 ADVANCED CLINICAL PRACTICE I	0+2	
	VCM 710 ADVANCED CLINICAL PRACTICE II	0+2	
	VCM 711 ADVANCED CLINICAL PRACTICE III	0+2	
	VCM 790 SPECIAL PROBLEM	0+2	
	VSR 701 CLINICAL SURGICAL PRACTICE – I	0+2	
	VSR 702 CLINICAL SURGICAL PRACTICE – II	0+2	
	VSR 703 CLINICAL SURGICAL PRACTICE – III	0+2	

Dept. of TVCC also offers stipendiary training to VHSE pass outs in “Animal handling, veterinary laboratory techniques, pharmacy and nursing” (two batches per year) consisting of four people each, which equips the selected candidates with all supportive activities related to paraveterinary aspects in full fledged veterinary hospitals/ farms in public and private sectors. Two batches were engaged in the last year; new batches of stipendiary trainees were taken up in August 2017.

Ambulatory Clinic is functioning at selected milk societies (Cherumkuzhy and Malamukku) in an ambulatory van engaged solely for this purpose. The experienced faculty extends their service to the farmers of Cherumkuzhy and Malamukku, APCOS through conducting infertility camps and awareness programmes.

Emergency services for large animals were offered during the working hours and even during night hours and holidays. Resident PG students are engaged for this service. House visits and farm visits were conducted to treat large animals. Rare medicines like Buparvaquone for Theileriosis were procured and used for the benefit of farmers. Animals requiring continuous treatment were housed in the inpatient section of the hospital.

Indian veterinary association, COVAS, Mannuthy unit in association with IVA, Kerala conducted two-day hands-on training programme in canine cardiology on 21st and 22nd February,

2018 at Teaching Veterinary Clinical Complex, College of Veterinary and animal sciences, Mannuthy.

Funds and Grants:

Sl. No	Scheme Code	Name of Scheme	Plan Outlay (Lakhs)	Revised Outlay	Outlay Adjusted (12.5%)	Ist Allotment	2nd Allotment	Total Allotment	Balance
1	ISP/ 17-18-7	Development of new Teaching Veterinary Clinical Complex to impart advanced veterinary health service to farmers in Kerala	50	43.75	6.25	0	43.750	43.750	0.00
2	RSP/17-18/XI - 1	Universal Veterinary Health Coverage for Optimizing Productivity of Livestock	10	8.75	1.25	2	1.000	3.000	5.75
3	EntSP /17-18/6	Doorstep Veterinary Services to the Rural Farmers of Selected Villages through Ambulatory Clinic	15	13.125	1.875	5	2.000	7.000	6.13
4	RSP/17-18/VIII -4	Establishment of canine fertility unit at University Veterinary Hospital, Mannuthy	15	13.125	1.875	0	2.000	2.000	11.13
Total			90	78.75	11.25	7	48.75	55.75	23.01

Awards, honours and personal achievements

- Dr. Ajithkumar S., Professor and Head, attended the 9th Kerala Veterinary Science Congress at Hotel Flora International, Kochi and presented the lead paper in Animal Health Sciences section
- Dr. Ambily R., Asst. Professor, attended the 9th Kerala Veterinary Science Congress at Hotel Flora International, Kochi and presented a poster on “Incidence of encephalitozoonosis in a rabbit farm” and received best poster award.
- Dr. Ajithkumar S., Professor and Head, UVH &TVCC was selected as the best unit president, IVA, Kerala.

Table showing summary of cases handled in 2017

SI No.	Item	April, 17	May, 17	June, 17	July, 17	Aug, 17	Sep, 17	Oct, 17	Nov, 17	Dec, 17	Jan, 18	Feb, 18	Mar, 18	Total
	Clinical Cases													
1.	Bovine	165	217	205	2844	247	1654	2945	207	211	219	180	220	9094
2.	Caprine	342	423	405	188	428	206	277	405	89	317	298	361	3378
3.	Small animals (Canine & Feline) Old & new cases	1433	1395	635	1211	1299	922	1307	1308	1188	1156	1410	1409	13264
4.	Birds	3940	3371	6384	410	1410	407	490	1388	1710	5005	4776	2859	29291
5.	Others	16	34	36	36	31	12	120	98	32	26	11	29	452
Total		5896	5440	7665	4689	3415	3201	5139	3406	3230	6723	6675	4878	55479

Laboratory services

The clinical lab is carrying out the following activities

1. Routine faecal sample examination
2. Urinalysis
3. Blood and buffy coat smear examination
4. Skin scrapings and impression smear examination
5. Complete blood count
6. Serum biochemistry (ALP, ALT, Total protein, Albumin, Bilirubin, Blood Urea Nitrogen, Creatinine, Calcium, Phosphorus)
7. Microbial culture and sensitivity

REVOLVING FUND PROJECT- QUATERLY ACCOUNTS 01.01.2018 to 31.03.2018 (4th QUARTER)			
1	Name of the station	:	Teaching Veterinary Clinical Complex & University, Veterinary Hospital, Mannuthy
2	Title of the Revolving Fund Project	:	To provide comprehensive Service & Health care at University Veterinary Hospital Mannuthy

3	Name and Address of the Principal Investigator	:	Dr.Ajithkumar S. ,Professor & Head , TVCC & UVH, Mannuthy
4	Date of Start of Project	:	01.04.2014
5	Financial Details	:	
	i. Bank Account No.	:	67269864616
	ii. Operational reserve if any,	:	1,00,000
	iii. Opening Balance as on 01.01.2018	:	405,986.50
	iv. Closing Balance as on 31.03.2018	:	433,546.50
	v. Total Expenditure (Jan- March, 2018)	:	303,739.00
	vi. Total Income (Jan- March, 2018)	:	592,610.00
	vii. Net margine for the quarter	:	288,871.00
	viii. Amount transferred to FO with date	:	Rs. 1,00,000/- transferred on 27.03.2018
	ix. Balance in bank as on 31.03.2018	:	497,511.50

FINANCIAL STATEMENT

3	Particulars of expense (Voucher)	3rd Quarter, 2017-18
1.	Opening stock (Value) if applicable	
2.	Raw materials/ingredients purchase	
3.	Labour cost/honorarium(Training)	83,075
4.	Vaccines	86,767
5.	Telephone/electricity/transportation charges	
6.	Medicines	131,503
7.	Office expences/Audit fees	
8.	Repairs and maintenance	
9.	Miscellaneous expenses	2,394
	Total	303,739
Sl No.	Particulars of income	3rd Quarter, 2017-18

1.	Sales/Reciept/Training fees	588,407
2.	Miscellaneous income	
3.	Bank Interest received	4,203
4.	Closing stock (Value) if applicable	
5.	Total	592,610
	Net Margin	288,871
	Amount receivable(pending receipt if any)	Nil
*****Rs. 100,000/- transferred to Finance Officers Account on 27.03.2018		
	Bank balnce as on 31.03.2018	: 497,511.50
	Cash in hand on 31.03.2018	: 4660
	Uncashedcheques details	
1	Cheque No. 064772 dtd. 30.09.2014 to M/s. Chemik Chemicals	1812
2	Cheque No. 064789 dtd. 29.11.2014 to M/s. Mrudula Agencies	850
3	Cheque No. 023762 dtd. 30.03.2016 to M/s. Baba Drug house	5084
4	Cheque No. 023847 dtd. 22.03.2017 to M/s. Universal Pharmacueticals	975
5	Cheque No. 023856 dtd. 18.04.2017 to M/s. Lab Care Agencies	1913
6	Cheque No. 959043 dtd. 08.08.2017 to M/s. Universal Pharma Distributors	1176
7	Cheque No. 113886 dtd. 07.12.2017 to M/s. Surgchem, Thrissur	2800
8	Cheque No. 113933 dtd. 12.03.2018 to M/s. Chemik Chemicals, Thrissur	1774
9	Cheque No. 113938 dtd. 19.03.2018 to M/s. Civic Enterprises	2464
10	Cheque No. 113940 dtd. 27.03.2018 to M/s. City Surgicals, Thrissur	21135
11	Cheque No. 113942 dtd. 27.03.2018 to M/s. Doctors pharma, Thrissur	28642
	Total	68625

UNIVERSITY VETERINARY HOSPITAL, KOKKALAI

University Veterinary Hospital, Kokkalai, initially known as Cochin State Veterinary Hospital established in 1904, currently functioning as an independent station under Kerala Veterinary and Animal Sciences University. The hospital occupies an area of 1.19 acres. The outpatient clinic of the hospital (OP Clinic) works from 8.00 A.M to 12.00 noon (OP registration up to 11.30 AM) and there after casualty service is being provided up to 4.00 P.M. on all working days and from 9 A.M to 12.00 noon on all holidays. Hospital handles about 100 to 120 cases daily with an annual increment of about 10%.

Major Mandates of the Station

1. Providing expert treatment, health checkup and preventive vaccinations and breeding management to animals, supported by modern diagnostic facilities
2. Clinical teaching of undergraduates, post graduates and doctoral students.
3. Facilitating postgraduate and doctoral research and under taking External Aided Research Projects
4. Referral services and emergency clinical cases referred by veterinarians and providing treatment
5. Providing training to VHSE (Animal Husbandry and Dairying) Certificate holders and farmers, conduct of continuing veterinary education programme
6. Consultancy services to govt. and private agencies like Kerala Police, Kerala Forests and wildlife Dept., Kochi International Airport, Thrissur Zoo *etc.*

Major Facilities:

Video endoscopy, Ultrasonography, Computed Radiography with networking to units, Operation theatre with gaseous anaesthesia, digital monitoring, ventilator, oxygen administration, facility for soft tissue, orthopaedic, gynaecological and ophthalmic surgeries. ECG, emergency and critical care with defibrillator, breeding advice with EVC, gynaecological operation theater, Laboratory with autohaematology analyser, semi-automatic serum chemistry analyser, Dark field microscope, Fluorescent antibody microscope, automated progesterone analyser, facilities for routine hematological and microscopical examination, blood transfusion, Vaccinations for pets and birds on discounted rates, pharmacy with common drugs, emergency medicines and i/v fluids.

Details of Service Rendered

No. of cases attended – (species wise): Canine : 23780

Bovine	:	4566
Caprine	:	6775
Feline	:	1693
Avian	:	2297
Others	:	491
TOTAL	:	36484

In-patient facilities : NIL

No. of cases admitted and quarantined : NIL

Vaccination :

▪ Multi component Vaccine in dogs	:	2697
▪ Anti-rabies Vaccination	:	2561
▪ Cat Vaccination	:	127
▪ Ranikhet Disease Vaccine	:	1960

Referral units (No. of cases attended): 3679

- Theatre services : Major : 302 Minor :207
- Emergency and critical care service : 362
- Mobile veterinary service : Not available
- Veterinary Medical Record System : Manually maintained through a nominal register and case sheets and electronically through the eVetConnect system. Registration valid for two months
- Case studies carried out / published : Nil (Researches and publications through concerned departments)
- Details of project works carried out by outside students : NIL
- Revenue generated (Only the amount remitted to Finance Officer's Account upto

▪ 31.3.2018)

: Non-Plan : NIL

Revolving Fund : 1. Rs. 8, 00,000.00 on 8th March, 2018

1. Rs. 1, 13, 455. 00 on 14th March, 2018

Total Amount = Rs. 9, 13, 455. 00

Educational courses

- Supports clinical courses of BVSC &AH pertaining to Department of Surgery and Radiology, Animal Reproduction, Gynecology and Obstetrics, Clinical Medicine, Ethics and Jurisprudence and Epidemiology and Preventive Medicine and clinical practice of M.V.Sc and PhD courses pertaining to the above subjects are also being conducted here.
- Stipendiary training program on Veterinary Nursing, Pharmacy and Laboratory Techniques for students completed Vocational higher secondary course.

Visit of International Faculty

Director of **Jeanne Marchig International Centre for Animal Welfare Education of The Royal (Dick) School of Veterinary Studies, University of Edinburgh, Easter Bush, Scotland, UK, Prof. Cathy Dwyer, Out Reach Manager, Dr. Heather Bacon and Ms. Jess Staff Veterinary Nurse**, visited KVASU on 19th and 20th of February, 2017, and visited University Veterinary Hospital, Kokkalai and interacted with the faculty, students and nursing trainees.

Conference/Seminars/Trainings attended :

Name of the Incumbent	CONFERENCES/SEMINARS/TRAININGS ATTENDED
Dr. Syam K. Venugopal Professor and Head	<p><u>Papers presented at seminars:</u></p> <p>Presented a lead paper on “Bone Grafts & Graft Substitutes - current Concepts & Future Trends” in the XV Annual Convention of the Indian Society for Advancement of Canine Practice and National Symposium on “Newer approaches in management of canine health and rewarding clinical practice as well as trade” held at NTR College of veterinary Sciences, Sri Venkateswara Veterinary University, Gannavaram, AP from 9th to 11th February, 2018.</p> <p>Conference/Seminars/Trainings/Workshops attended:</p> <ul style="list-style-type: none">• Attended XIII Annual Convention of the Indian Society for Veterinary Surgery and National Symposium on “Concepts of One-Health in Canine Health Care Management” held at CVAS, Sri Venkateswara Veterinary University, Tirupati, AP from 27th to 29th December, 2017.• Attended XV Annual Convention of the Indian Society for Advancement of Canine Practice and symposium on Newer approaches in management of canine health and rewarding clinical practice as well as trade” held at NTR College of veterinary Sciences, Sri Venkateswara Veterinary University, Gannavaram, AP from 9th to 11th February, 2018.

<p>Dr. Jayakumar, C Assistant Professor</p>	<p><u>Papers presented at seminars:</u></p> <ul style="list-style-type: none"> • Presented a paper on “Clinical efficiency of oxytocin and metoclorpramide in stimulation of lactation in bitches ” in the XV Annual Convention of the Indian Society for Advancement of Canine Practice and symposium on Newer approaches in management of canine health and rewarding clinical practice as well as trade” held at NTR College of veterinary Sciences, Sri Venkateswara Veterinary University, Gannavaram, AP from 9th to 11th February, 2018 • Presented a paper on “Foam test for assessment of fetal lung surfactant in amniotic fluid of dogs” in the XV Annual Convention of the Indian Society for Advancement of Canine Practice and symposium on Newer approaches in management of canine health and rewarding clinical practice as well as trade” held at NTR College of veterinary Sciences, Sri Venkateswara Veterinary University, Gannavaram, AP from 9th to 11th February, 2018. <p>Conference/Seminars/Trainings/Workshops attended:</p> <ul style="list-style-type: none"> • Attended three days seminar on Human- Animal conflicts in Kerala: from status to solution held at CVAS, Mannuthy from 14th to 16th June 2017 • Co-chair of the jury for the scientific session on “Animal Health Science” on 11th November 2017 for the 9th Kerala Veterinary Science Congress held at Flora Airport Hotel, Nedumbassery. • Attended one day HRD Training –effect of motivation on institutional development on 15.3.2018 at CVAS, Mannuthy.
<p>Dr. Laiju M. Philip Assistant Professor</p>	<p>Conference/Seminars/Trainings/Workshops attended:</p> <ul style="list-style-type: none"> • Participated in the twenty one day training programme on “addressing challenges in veterinary surgery and anaesthesia” from august 30th to September 19th 2017 sponsored by ICAR and organized at GADVASU, Ludhiana. • Attended one day HRD Training –professional harmony on 18.4.2017 at CVAS, Mannuthy • Attended three days seminar on Human animal conflicts in india: from status to solution held at CVAS, Mannuthy from 14th to 16th June 2017 • Participated in the 28 day orientation programme on

	<p>“innovative pedagogical strategies” from 3.1.2018 to 31.1.208 conducted by academic staff college, KVASU, Mannuthy.</p> <ul style="list-style-type: none"> • Attended one day HRD Training –effect of motivation on institutional development on 15.3.2018 at CVAS, Mannuthy
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RESEARCH / INFRASTRUCTURE PROJECTS

Sl. No.	Name of the Project	Outlay (Lakh)	Amount Received (Lakh)	Amount Utilized (Lakh)	Source
1	Strengthening of Veterinary Hospital				State Plan Projects 2017-18
2.	Investigation and management of companion animal fertility				-do-
3.	Developing a protocol for evaluation and management of veterinary trauma patients and establishment of Veterinary Trauma Care Centre				-do-
4.					

PUBLICATIONS

Name of the Incumbent	Details of Article Published
Dr. Syam K. Venugopal Professor and Head	<p>1. Anoop.S., Sherin B. Sarangom, K. M. Dileep Kumar, Jinu John,Syam K. Venugopal, and C. B. Devanand. 2017. Acute traumatic diaphragmatic hernia and postoperative pneumothorax in a mongrel puppy. <i>Intl. J Advanced Biological Research (IJABR)</i>. 7(4): 807-809.</p> <p>2. Abhijith, M. S., K. D. John Martin,C. B. Devanand, Syam K. Venugopal, K. M. Dileep Kumar, Laiju M. Philip andUsha, P. T. A. 2017. Epidurographic diagnosis of lumbar spinal cord injury in a Lhasa apso dog and its successful management. <i>Intl. J Science Environment and Technology (IJSET)</i>. 6(4): 2412-2416.</p> <p>3. Dhanush Krishna Balakrishanan Nair, Narayanan Divakaran Nair,</p>

	<p>SyamKunnekkattuVenugopalVijayanNarayana Das, Sisilamma George, Mammen John Abraham, SajiEassow, Malcolm Ronald Alison, AnoopSainulabdeen and ThapasimuthuVijayammaAnilkumar (2018). Pathological effects of processed bovine pericardial scaffolds – A comparative <i>in vivo</i> evaluation. <i>ToxicologicPathology</i>. 37(7): 1 - 15.(IF- 2.147).</p> <p>4. Pramod, U.,S. Sooryadas, P. T.Dinesh, N. S. Jinesh Kumar, K. C. Bipin, K.D. John Martin and Syam K. Venugopal. 2017. Diagnostic characteristics of double intussusceptions in a nondescript dog. <i>Indian Journal of Natural Sciences</i>(IJONS). 43(8): 12598 - 12602.</p> <p>5. S. T. Maruthi, George Chandy, Syam K.Venugopal, S. Sooryadas,K. M. Lucy, and C. Sunanda. 2017. Occurrence of hip dysplasia in dogs: A retrospective study. <i>Indian J. Canine Pract</i>.9(1): 67-69. (NAAS Rating- 2.76)</p>
Dr. C. Jayakumar Assistant Professor	<ul style="list-style-type: none"> • R.H. Naveenkumar, C. Jayakumar, G.S. Shravya and C.M. Sudha (2018). Ectopic pregnancy in a malabari doe. <i>IJAR</i>: 39 (1); 66-67. • Jayakumar, C., Chinnu, P.V., Amritha, A. and Unnikrishnan, M.P (2017). Challenges in management of Canine high risk pregnancies with single pup syndrome. <i>IJCP</i>: 9 (1): 22-26. • Shravya, G. S.,Jayakumar, C., Smitty, J. and Naveen Kumar, R. H. (2017). Mucometra in a persian cat. <i>IJCP</i>: 9 (2): 137-138 • Jayakumar. C, Sudha.C.M, Niyaz. E and Naveenkumar.R.H (2017). Unilateral bartholin's gland cyst in a dog. <i>IJAR</i>: 38 (1): 74-75 • C. Jayakumar, G. Sudha, S. Kantharaj and K. Lakshmikanth (2017). Hydrometra in jamnapari goats - two case reports. <i>IJAR</i>: 38(1): 72-73
Dr. Laiju M. Philip Assistant Professor	<ul style="list-style-type: none"> • Laiju M. Philip, Abhilash R.S. and Francis Bastin, P. 2017. Accuracy of Transvaginal Ultrasonography for Early Pregnancy Diagnosis in Attappady Black Goats. <i>Malaysian Journal of Veterinary Research</i>.8: 35-41. • Laiju M. Philip ,Syam K. Venugopal and C.B. Devanand. 2017. Management of Toe Ulcer and Apical Necrosis of Distal Phalanx in a Cow. <i>IntasPolivet</i>18: 473-474. • M. Unny, N, Sulficar,S., Anoop, S., Laiju M. Philip , Ambily V.R., Janus,A and Ajithkumar, S. 2017. Upper Respiratory Tract Infection and Guttural Pouch Tympany in a Horse. <i>The North East</i>

	<p><i>Veterinarian</i>17: 38.</p> <ul style="list-style-type: none"> Abhijith, M.S., John Martin K.D., Devanand, C.B., Syam K Venugopal, Dileep Kumar K.M., Laiju M Philip and Usha P.T.A. 2017. Epidurographic diagnosis of lumbar spinal cord Injury in a lhasaapso dog and its successful Management. <i>International Journal of Science, Environment and Technology</i>, 6: 2412 – 2416.
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Books :

Sl. No.	Title	Authors / Department	Language
1.	Practical manual for the Stipendiary Training on Veterinary Nursing, Pharmacy and Laboratory Techniques	Dr. Syam K. Venugopal Professor and Head, Dr. Laiju M Philip, Dr. K. Jayakumar and Dr. K. Syamala Assistant Professors	English
2.	Training manual for Experiential training on prophylactic hoof care in farm animals	Dr. Laiju M Philip	English

AWARDS/ HONOURS AND OTHER PERSONAL ACHIEVEMENTS

- Dr. C. Jayakumar, recipient of University Gold medal for the highest grade point average in Veterinary Gynaecology and Obstetrics during doctoral programme during the ninth convocation of the Karnataka Veterinary, Animal and Fisheries Sciences University held on 7th April 2017.
- Dr. Smitty Johnson, post graduate student bagged first prize in the TANUVAS 9th clinical case conference on Farm and Companion animal practice for veterinary students for the clinical case study entitled “ Unilateral uterine prolapse in a cat “ authored and under faculty guidance of Dr. C. Jayakumar.
- Dr. Rakshitha.P, post graduate student bagged first prize in the TANUVAS 9th clinical case conference on Farm and Companion animal practice for veterinary students for the clinical case study entitled “ Foetal mummification following uterine torsion in a cat “ authored and under faculty guidance of Dr. C. Jayakumar.
- Dr. Raheema. S, post graduate student bagged second prize in the TANUVAS 9th clinical case conference on Farm and Companion animal practice for veterinary students for the clinical

case study entitled “Successful management of a repeat breeder cow using a multi target therapeutic approach “ authored and under faculty guidance of Dr. C. Jayakumar

- Vysakh Mohan, Under graduate student bagged first prize in the TANUVAS 9th clinical case conference on Farm and Companion animal practice for veterinary students for the clinical case study entitled “ Uterine rupture and peritonitis following oxytocin overdose in a Rottweiler bitch “ authored and under faculty guidance of Dr. C. Jayakumar.

EXTENSION ACTIVITIES

By the Institution

1. Free Anti rabies Vaccination camp on 06.07.2017

By Incumbents

Name of Incumbent	Extension activity
Dr. C. Jayakumar Asst. Professor	<ul style="list-style-type: none"> • Training class at Goat and Sheep farm, Mannuthy on “Reproductive management in goats” as a part of skill development training on “ Commercial Goat Rearing” for farmers on 19th to 20th April 2017. • Subject expert for Infertility camp for bovines at Thekkumkarapanchayath on 15th September 2017. • Radio talk on “Infertility in cows and correction” at All India Radio broadcasted on 28th March 2018.
Dr. Laiju M. Philip Asst. Professor	<ul style="list-style-type: none"> • Awareness class “Hoof Health Management in Dairy Cattle” as part of Science Popularisationprogramme –KSCSTE at Kozhikkunnu APCOS on 28.10.2017 • Popular Article Nallapasuvinalavothakulamb- Karshakasree July 2017 p 104-105 • Documentary Kulambinumvenamkaruthal – telecasted by Dooradarshan, Thiruvanthapuram 21st November 2017 (DD Malayalam) • Radio Talk Foot care in dairy cattle- All India Radio, Thrissur. (March 2, 2018)

Dr. Syam K. Venugopal Professor and Head	<ul style="list-style-type: none"> • Radio Talk “Modern Amenities in Veterinary Practice” - All India Radio, Thrissur(07/02/2018).
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ADMINISTRATIVE, EDUCATIONAL, RESEARCH AND OTHER ASSIGNMENTS

- e-Vetconnect Hospital Management System is functional in the hospital.
- Biomedical waste management is being carried out in affiliation with IMAGE-IMA

SIGNIFICANT EVENTS IN THE DEPARTMENT

Director of Jeanne Marchig International Centre for Animal Welfare Education of The Royal(Dick) School of Veterinary Studies, University of Edinburgh, Easter Bush, Scotland, UK, Prof. Cathy Dwyer, Outreach Manager, Dr. Heather Bacon and Ms. Jess Staff Veterinary Nurse, visited KVASU on 19th and 20th of February, 2017, and visited University Veterinary Hospital, Kokkalai and interacted with the faculty, students and nursing trainees

CENTRE FOR ADVANCED STUDIES IN POULTRY SCIENCE, MANNUTHY

Centre for Advanced Studies in Poultry Science (CASPS) was established in 1985 as recognition for its contribution in various fields of activities. Establishment of ICAR Revolving Fund poultry project, implementation of NATP on productivity enhancement of Ducks and successful conduct of IV World Water Fowl conference etc. are the significant milestones of the Centre.



MAJOR ACTIVITIES

Mandate

- Academic programmes of the Poultry Science and Veterinary faculty
- Research on advanced areas in Poultry Science
- Implementation of Externally aided projects
- Transfer of Technology (TOT) programmes
- Training programmes to farmers and veterinarians under AHD.

Research activities

- Conservation of poultry germplasm
- Selection and breeding for egg production
- Evolving of birds for backyard rearing
- Nutritional requirement studies of poultry species
- Management studies on chicken, duck, quails and turkeys

PROJECTS CONTINUING THROUGH THE YEAR

- Revolving Fund Poultry Project

This is a successful model of Revolving Fund Project operating in KVASU which is under the administrative control of CASPS, which was started in 1998 with Rs. 25 lakhs as one time grant from ICAR. During 2017-18, major activity under the Revolving Fund Poultry Project is production and supply of balanced poultry and livestock feeds to cater the requirements of farms under the University and Animal Husbandry Department of Government of Kerala. In 2017-18, 2852 MT of feed was produced and supplied to various farms. Apart from this, poultry feed in 5 kg and 4Kg packets were also supplied to farmers to promote backyard poultry production. In 2017-18, 67.16T of Chicken breeder, 29.55T of Chicken grower & 32.45T of Chick mash retailed to farmers through Revolving Fund Poultry Project, CASPS, Mannuthy.



Sl No	Title of the Scheme	Name of the funding agency	Name of the PIs and Co-PIs	Outlay
1	Revolving Fund Poultry Project	KVASU	PI Dr.P.Anitha Co-PIs Dr.Binoj Chacko Dr.Harikrishnan S Dr.Sankaralingam Dr.Suja C.S	50 lakhs (Corpus Fund)

State Plan Projects 2017-18 (continuing)

- Conservation and popularization of native chicken varieties in Kerala – 13.125 lakhs

Avian Biotechnology Lab

Equipments and research materials used for molecular biology works in avian biotechnology laboratory were purchased under state plan project for avian biotechnology laboratory. PCR and gel electrophoresis was performed for SNP analysis of White leghorn and native chicken. Polymorphism of neuro peptide Y gene in 200 native chicken and 200 IWN strain of White Leghorn was carried out using the technique Single strand conformation polymorphism (SSCP). The PCR products with distinct band pattern were sent for sequencing. The birds with different band pattern will be analyzed using the production parameters after the arrival of sequencing result.



- Advanced Studies mycotoxin testing facilities for Poultry Feed – 8.75 lakhs

Mycotoxin Lab

All ingredients purchased for feed production and the compounded feed produced in RFPP under CASPS were screened for aflatoxin level using ELISA reader. In 2017-18, 105 samples were screened for Aflatoxin level.



ELISA READER



PCR MACHINE

- Hatchery waste disposal and its effective utilization – 8.75 lakhs

As per the conditions laid in MoU between KVASU & KAU, standardization procedures for preparation of reagents and conversion of hatchery waste to a fertilizer product by fortification with the reagents prepared by Dept.of Soil Science, College of Agriculture, Vellayani is undergoing. After the completion of the process, the protocol will be adapted using the equipments installed in this project for the proper utilization of hatchery waste in the poultry farms of KVASU.



Consultancy

Type of consultancy	Client details	Revenue generated
Counseling	Farmers	Nil

Training Programme organized

Sl. No.	Title of the Programme	Place	Duration		Number of Participants
			From	To	
1	Training on Egger nursery and	CAS in Poultry	13-03-2018 to 14-		23 nos

	poultry farming for farmers	Science, Mannuthy	03-2018	
2	Training on Current trends in Quail farming for Farmers	CAS in Poultry Science, Mannuthy	19-03-2018 to 20-03-2018	19 nos



Research Articles

Association of Prolactin gene polymorphism with production traits in White Leghorn- M Azhaguraja, S Sankaralingam, P Anitha, Binoj Chacko & T V Aravindakshan, JIVA Vol 15, issue 2, August 2017 page no 12-14.

Effect of different levels of Aflatoxin B1 on egg production of breeder Japanese Quails (*Coturnix coturnix japonica*)- T G Soma, Binoj Chacko, P Anitha, S Sankaralingam & K Ally, JIVA Vol 15, issue 2, August 2017 page no 20-24.

Effect of low energy-protein and low phosphorus diets on the production performance of layer chicken-P Ponnuvel, P Anitha & Binoj Chacko- International journal of Advanced Research in Biological Sciences, Volume 5, Issue 1-2018.

CENTRE FOR ANIMAL ADAPTATION TO ENVIRONMENT AND CLIMATE CHANGE STUDIES (CAADECCS) BACKGROUND

Various climate models indicate that the global warming is real and rise in temperature is likely to be around 2-3°C by the end of the century with the regional uncertainties in rainfall. Monsoon aberrations have become more frequent over Kerala, popularly known as the Gateway of Monsoon. Decline in rainfall and increase in temperature is observed in the last 50-60 years across the state of Kerala. Farmers in Kerala are encountering challenges in terms of shortage of livestock workers, rise in production costs, uncertain markets and more recently, increased weather / climate risks. Climate change related issues over Kerala are decline in land and ocean biodiversity and wetlands, increase in sea level, increase in landslides, groundwater depletion and saline water intrusion, decline in forest area and frequent forest fires and rate of increase in temperature across the high ranges are likely to be immediate threat to several thermo-sensitive animal species. Life cycles of animals, reptiles and birds are likely to be adversely affected due to rising mercury in addition to mortality due to heat stress. Animal raids in farmsteads and attacks in peripherals have not become uncommon due to deforestation. Climate change also influences animal diseases and their dynamics. Interactions of animal insect and diseases are likely among various life species and thus scenario of major and minor animal pest and diseases is likely to change.

The Kerala Veterinary & Animal Sciences University (KVASU) has established a “Centre for Animal Adaptation to Environment and Climate Change Studies (CAADECCS)” to excel in climate change education, research and extension in the field of Animal Agriculture under the Directorate of Academics and Research as per the University Proceedings No. KVASU/DAR/R2/3579/2011 (1) Pookode dated 27.04.2012 with ICAR special grant during XI Plan.

The CAADECCS will serve as the nodal agency dealing with research and capacity building on all the aspects of climate risk management in relation to animal agriculture including weather insurance and provide information to the planners/ policy makers for implementing strategies to mitigate the ill effects of climate change/variability so as to sustain and enhance the rural livelihoods through livestock production and management.

The centre aims to have Livestock Advisory Field Units (LAFUs) at all the three Livestock farms to cater to the location specific issues on climate change adaptation and mitigation and prepare Livestock Advisory based on medium Range Weather Forecasting for the benefit of livestock farmers. The outcomes of the Centre will have local and regional as well as national and global relevance on climate change adaptation and mitigation strategies in the field of Animal Agriculture under the Humid Tropics. A multidisciplinary team have been identified comprising of Veterinary Physiology, Livestock production management, Animal Nutrition, Preventive Medicine

and epidemiology, Animal reproduction, Biotechnology and public health as a part of capacity building and human resources development to meet the objectives of the Centre.

- Faculty Position:**
1. Implementing Officer- Dr. V. Beena (Assistant Professor Dept. of Veterinary Physiology on additional duty)
 2. Assistant Professor- Dr. S. Harikumar (Assistant Professor Dept. of LPM on additional duty)

Education

P.G. Diploma in Climate Services

Two P.G. Diploma Programs have been launched in Climate Services. No student enrolment.

Ph.D. Climate Change and Animal Agriculture

One Ph.D. student is on roll. The sixth semester is in progress. As a part of the Ph.D. research programme, Physiological monitor (AD Instruments, Australia) has been standardised to measure the physiological parameters of cattle

CAADECCS-ACCER B.Sc.-M.Sc Climate Change Adaptation

Three students of B.Sc.-M.Sc. (Integrated) Climate Change Adaptation, ACCER, KAU completed research work (17-10-2016 to 10-11-2017) from NIANP in collaboration with CAADECCS.

The details of the students are as follows:-

Sl.No.	Name of the Student	Admission No.	Title of the thesis
1.	Aleena Joy	2012-20-101	Comparative assessment of the adaptive capacity of different indigenous breed goats to summer heat stress based on changes in phenotypic traits
2.	Archana P.R.	2012-20-107	Evaluating the differences in meat characteristics between different indigenous breed goats subjected to summer heat stress
3.	Pragna Prathap	2012-20-119	Assessing the differences in body weight changes, rumen fermentation profile and metabolic activity between different indigenous breeds of goats subjected to summer heat stress

A batch of five students completed their course work from different departments of CoVAS and sent (21/8/2017) to NIANP for their research work.

Continuing Education

Training offered to AHD Officers: Officers of the Animal Husbandry Department attended classes in CAADECCS on climate change and Animal Husbandry as a part of their three months training programme.

Submitted a project proposal for 8 days modal training course to Department of agriculture, Government of India for scientists all over the India.

Research

State Plan Projects

1. Livestock Advisory based on weather forewarning: An amount of 5 lakhs has been given for providing livestock advisory services to farmers. The whole amount was spent for this purpose and also for improving the facilities of the centre for effective dissemination of information to the farmers. In collaboration with KAU weekly bulletins containing tips on animal husbandry practices being distributed to farmers of Thrissur, Palakkad and Ernakulam districts using messengers, online services like email and Whatsapp. Farmer interfaces have been arranged at different milk societies for discussing the solutions and the precautions to be taken by them to counteract the weather based problems faced by them.

2. Maintaining, Strengthening & Refurbishing CAADECCS for Climate Change Preparedness in Livestock Sector:- An amount of Rs 2 lakhs has been given to CAADECCS for Establishment of meteorological observatory and other expenses. An amount of Rs.149430/- (Rupees one lakh forty nine thousand and four thirty only) from the total allotment for this project has been transferred to the account of Executive Engineer, ID wing for the preparation of land for surface observatory and also for fencing the identified area. The remaining amount (Rs. 50,570/- Rupees fifty thousand five hundred and seventy only) has been utilised for the general maintenance and also for the maintenance of the equipments (including AMC) of the centre.

External Aided Projects

1. Submitted a RKVY project worth `1.5 crore.

Publications

2.3.1. Articles Published in Research Journals

1. **“Role of Heat Shock Proteins in Livestock Adaptation to Heat Stress”. Archana, P.R., Aleena, J., Pragna, P., Vidya, M.K., Abdul Niyas, P.A., Bagath, M.,**

2. “Behavioral Responses to Livestock Adaptation to Heat Stress Challenges”. Ratnakaran, A.P., Sejian, V., Sanjo Jose, V., Vaswani, S., Bagath, M., Krishnan, G., **Beena, V., Indira Devi, P.,** Varma, G and **Bhatta, R.** Asian J. Anim. Sci. (2017). 11(1): 1-13.
3. “Effect of antioxidant supplementation on haematological parameters of transition dairy cattle”. Ambily, T.R., **Beena, V.,** Karthiayini, K., Uma, R., Ramnath, V and Sunanda, C. International Journal of Science, Environment and Technology(2017). 6(5):2785-2791.
4. “Effect of varying temperature humidity index on the plasma volume of crossbred cattle calves”. Zarina, A., Varma, G., Karthiayini, K., Raji, K. and **Beena, V.** Journal of Agrometeorology.19 (Special Issue - AGMET 2016): 120-122.
5. “Effect of heat and nutritional stress on growth and testicular HSP70 expression in goats”. Abdul Niyas, P.A., Sejian, V., Bagath, M., Parthipan, S., Selvaraju, S., Manjunathareddy, G., Kurien, E.K., **Varma, G** and Bhatta, R. Journal of Agrometeorology (2017). 19(3): 189-194
6. “Comparative assessment of heat stress induced changes in carcass traits, plasma leptin profile and skeletal muscle myostatin and HSP70 gene expression patterns between indigenous Osmanabadi and Salem Black goatbreeds”. Archana, P.R., Sejian, V., Ruban, W., Bagath, M., Krishnan, G, Aleena, J., Manjunathareddy, G.B., **Beena, V** and Bhatta, R, , Meat Sci.(2018) doi.org/10.1016/j.meatsci.2018.03.015.
7. “Comparative assessment of growth performance of three different indigenous goat breeds exposed to summer heat stress” Pragna, P., Sejian, V., Bagath, M., Krishnan, G., Archana, P.R., Soren, N.M., **Beena, V** and Bhatta, R. J. Anim. Physiol. Anim. Nutr. (2018). DOI: 10.1111/jpn.12892.
8. “Summer season induced rhythmic alterations in metabolic activities to adapt to heat stress in three indigenous (Osmanabadi, Malabari and Salem Black) goat breeds” Pragna, P., Sejian, V., Soren, N.M., Bagath, M., Krishnan, G., **Beena, V.,** Indira Devi, P and Bhatta, R. Biol. Rhythm Res. (2017) DOI: 10.1080/09291016.2017.1386891.

Details of Presentations/ Participation in National Seminars

1. Effect of summer heat stress on the rumen fermentation profile of native Osmanabadi goats”. Pragna, P., Sejian, V., Bagath, M., Krishnan, G., **Beena, V.**, Devi, P.I and Bhatta, R. Oral presentation at the XXVI Annual conference of SAPI and national symposium on Physiological Innovations to Forecast the Impact of Climate Change and to Evolve Strategies for Sustainable Livestock Production from 21-22 Dec.2017 at Veterinary College, KVAFSU, Nandinagar, Bidar.
2. “Growth Performance as Affected by Heat Stress in Salem Black Goats”. Pragna, P., Sejian, V., Krishnan, G., Bagath, M., Soren, N.M., **Beena, V** and Bhatta, R.Oral presentation at the XXVI Annual conference of SAPI and national symposium on Physiological Innovations to Forecast the Impact of Climate Change and to Evolve Strategies for Sustainable Livestock Production from 21-22 Dec.2017 at Veterinary College, KVAFSU, Nandinagar, Bidar.
3. “Growth efficiency as indicated by endocrine responses in three indigenous (Osmanabadi, Malabari, Salem black) goat breeds exposed to summer heat stress”. Pragna, P., Sejian, V., Bagath, M., Krishnan, G., **Beena, V** and Bhatta, R.Oral presentation at the XXVI Annual conference of SAPI and national symposium on Physiological Innovations to Forecast the Impact of Climate Change and to Evolve Strategies for Sustainable Livestock Production from 21-22 Dec.2017 at Veterinary College, KVAFSU, Nandinagar, Bidar.
4. “Impact of summer heat stress on the rumen fermentation profile of Malabari goats”. Pragna, P., Sejian, V., Bagath, M. **Beena,V.**, P., Devi, P.I and Bhatta. R.Oral presentation at the XXVI Annual conference of SAPI and national symposium on Physiological Innovations to Forecast the Impact of Climate Change and to Evolve Strategies for Sustainable Livestock Production from 21-22 Dec.2017 at Veterinary College, KVAFSU, Nandinagar, Bidar.
5. “Growth Heat stress and goat meat production: impact on plasma leptin profile and skeletal muscle HSP70 expression pattern in Salem black Goats”. Archana, P.R.,Sejian, V., Krishnan, G., Bagath, M., Wilfred Ruban, Manjunathareddy, G.B., **Beena, V** and Bhatta, R. Oral presentation at the XXVI Annual conference of SAPI and national symposium on Physiological Innovations to Forecast the Impact of Climate Change and to Evolve Strategies for Sustainable Livestock Production from 21-22 Dec.2017 at Veterinary College, KVAFSU, Nandinagar, Bidar.
6. “Carcass characteristics and bodyweight changes in Osmanabadi goats subjected to summer season induced heat stress”. Archana, P. R.,Sejian, V., Wilfred Ruban., Krishnan, G., Bagath, M., Manjunathareddy, G.B., **Beena, V** and Bhatta, R. Oral presentation at the XXVI Annual conference of SAPI and national symposium on Physiological Innovations to Forecast the Impact of Climate Change and to Evolve Strategies for Sustainable Livestock Production from 21-22 Dec.2017 at Veterinary College, KVAFSU, Nandinagar, Bidar.

7. “Impact of heat stress on the meat quality as evidenced by the changes in the physico-chemical attributes, proximate composition and organoleptic attributes in Malabari goat”. Archana, P.R., Sejian, V., Bagath, M., Krishnan, G., Wilfred Ruban., Manjunathareddy, G.B., **Beena, V** and Bhatta, R. Oral presentation at the XXVI Annual conference of SAPI and national symposium on Physiological Innovations to Forecast the Impact of Climate Change and to Evolve Strategies for Sustainable Livestock Production from 21-22 Dec.2017 at Veterinary College, KVAFSU, Nandinagar, Bidar.
8. “Assessment of thermotolerant ability of Malabari goats based on endocrine profile and PBMC HSP70 expression during heat stress challenges”. Aleena J, Sejian V, Bagath M, Krishnan G, **Beena V**, Bhatta R. Oral presentation at the XXVI Annual conference of SAPI and national symposium on Physiological Innovations to Forecast the Impact of Climate Change and to Evolve Strategies for Sustainable Livestock Production from 21-22 Dec.2017 at Veterinary College, KVAFSU, Nandinagar, Bidar.
9. “Superior adaptive capability of indigenous Salem black goats to summer heats stress based on endocrine variables and relative PBMC HSP70 gene expression”. Aleena J, Sejian V, Bagath M, Krishnan G, Veeranna R.K, Manjunathareddy G.B, **Beena V**, Bhatta R.Oral presentation at the XXVI Annual conference of SAPI and national symposium on Physiological Innovations to Forecast the Impact of Climate Change and to Evolve Strategies for Sustainable Livestock Production from 21-22 Dec.2017 at Veterinary College, KVAFSU, Nandinagar, Bidar.
10. “Effect of summer season related heat stress on blood biochemical profile in Osmanabadi goat”. Aleena J, Sejian V, Bagath M, Krishnan G, Manjunathareddy G.B, **Beena V**, Bhatta R. Oral presentation at the XXVI Annual conference of SAPI and national symposium on Physiological Innovations to Forecast the Impact of Climate Change and to Evolve Strategies for Sustainable Livestock Production from 21-22 Dec.2017 at Veterinary College, KVAFSU, Nandinagar, Bidar.
11. “Impact of summer heat stress on the rumen fermentation profile of Osmanabadi goats”.Pragna, P., Sejian, V., Bagath, M. Beena, P., Devi, P.I and Bhatta. R.Oral presentation at the9th Kerala Veterinary Science Congressfrom 11-12 Nov.2017 at Nedumbassery, Cochinorganized by Indian Veterinary Association, Kerala.
12. “Impact of heat stress on carcass traits, plasma leptin profile and skeletal muscle HSP70 gene expression pattern in Malabari goats”.Archana, P.R., Sejian, V., Krishnan, G., Bagath, M., W. Ruban., G.B. Manjunathareddy, **V. Beena**, Indira Devi and Bhatta, R.Oral presentation at

the 9th Kerala Veterinary Science Congress from 11-12 Nov. 2017 at Nedumbassery, Cochin organized by Indian Veterinary Association, Kerala.

13. "Assessment of adaptive capability of indigenous Malabari goats to heat stress based on changes in blood biochemical responses". Aleena J, Sejian V, Bagath M, Krishnan G, Veeranna R.K, **Beena V**, Devi P.I, Bhatta R. Oral presentation at the 9th Kerala Veterinary Science Congress from 11-12 Nov. 2017 at Nedumbassery, Cochin organized by Indian Veterinary Association, Kerala.
14. "Initialization and standardization of assessing physiological adaptability in livestock for Climate Change studies". **Jisha, N.V., Varma, G., Beena, V.,** Karthiayini, K., Prasad, A., Gleeja, V.L., Sejian, V. Poster presentation at the National *seminar on Food Adequacy and Climate Change: Strategies for Sustainable Food Production* from 3-4 Nov. 2017 at Thrissur, Kerala jointly organized by Association of Meat Scientists Technologists and Kerala Veterinary and Animal Sciences University.
15. "Impact of summer heat stress on the growth performance of Malabari goats". Pragna, P., Sejian, V., Bagath, M., Krishnan, G., Manjunathareddy, G.B., **Beena, V.,** Devi, P.I and Bhatta, R. Poster presentation at the National *seminar on Food Adequacy and Climate Change: Strategies for Sustainable Food Production* from 3-4 Nov. 2017 at Thrissur, Kerala jointly organized by Association of Meat Scientists Technologists and Kerala Veterinary and Animal Sciences University.
16. "Impact of heat stress on meat quality as evidenced by changes in physico-chemical properties, proximate composition and organoleptic attributes in Malabari goats". Archana, P.R., Sejian, V., Ruban, W., Bagath, M., Krishnan, G., Manjunathareddy, G.B., **Beena, V.,** Indira, D.P., and Bhatta, R. Oral presentation at the National *seminar on Food Adequacy and Climate Change: Strategies for Sustainable Food Production* from 3-4 Nov. 2017 at Thrissur, Kerala jointly organized by Association of Meat Scientists Technologists and Kerala Veterinary and Animal Sciences University.
17. "Effect of heat Stress on meat quality characteristics, proximate composition, sensory attributes, plasma leptin profile and skeletal muscle HSP70 and myostatin gene expression in Osmanabadi Goats". Archana, P.R., Sejian, V., Bagath, M., Krishnan, G., Ruban, W., **Beena, V.,** Indira, D.P., and Bhatta, R. Oral presentation at the National *seminar on Food Adequacy and Climate Change: Strategies for Sustainable Food Production* from 3-4 Nov. 2017 at Thrissur, Kerala jointly organized by Association of Meat Scientists Technologists and Kerala Veterinary and Animal Sciences University.

18. “Assessing the physiological adaptability of Malabari goats when shifted from its native tract to different agro-ecological zone”. Aleena J, Sejian V, Bagath M, Krishnan G, Manjunathareddy G.B, **Beena V**, Devi P.I, Bhatta R. Poster presentation at the National seminar on Food Adequacy and Climate Change: Strategies for Sustainable Food Production from 3-4 Nov.2017 at Thrissur, Kerala jointly organized by Association of Meat Scientists Technologists and Kerala Veterinary and Animal Sciences University.
19. “Comparative Assessment of Growth Performance in Three Indigenous Goat Breeds during Heat Stress based on PBMC IGF-1 mRNA Expression Pattern”. Pragna, P., Sejian, V., Bagath, M., Krishnan, G, Veeranna, R.K., **Beena, V.**, Devi, P.I., and Bhatta, R. Oral presentation at the National Conference on Emerging trends in Environmental Biotechnology Approach to Conserve Biodiversity from 21-22 Sept.2017 at Garden City University, Bangalore, Karnataka.
20. “Impact of Heat Stress on the Meat Quality as Evidenced by the Expression patterns of Skeletal Muscle Myostatin Gene in three different Indigenous Goat Breeds”. Archana, P.R., Sejian, V., Bagath, M., Krishnan, G, Ruban, W., Manjunathareddy, G.B., **Beena, V.**, Devi, P.I., and Bhatta, R. Oral presentation at the National Conference on Emerging trends in Environmental Biotechnology Approach to Conserve Biodiversity from 21-22 Sept.2017 at Garden City University, Bangalore, Karnataka.
21. “Impact of Heat Stress on Endocrine Profile and PBMC HSP70 Expression in Osmanabadi Goats”. Aleena J, Sejian V, Bagath M, Krishnan G, Veeranna R.K, **Beena V**, Devi P.I, Bhatta R. Oral presentation at the National Conference on Emerging trends in Environmental Biotechnology Approach to Conserve Biodiversity from 21-22 Sept.2017 at Garden City University, Bangalore, Karnataka.
22. “Physiology of stress and impact of climate change in animals”. **V. Beena**. In the National Conference on “Impact of Climate Change on Livestock based Livelihood systems” as part of Annual meet of NABARD Animal Husbandry Officers organized by the NABARD and Directorate of Entrepreneurship, KVASU from 24-26 April 2017.
23. “Effect of intermittent wetting and forced ventilation on the behaviour of confined dairy cows during summer”. Harikumar, S., Prasad, A., Raji, K. And Anil K.S. Oral presentation at the National Environmental and Climate Change Congress, from 20-22 March.2017 at Energy Management Centre, Thiruvananthapuram.
24. V. Beena Implementing officer, CAADECCS acted as organizing committee member of National seminar on Food Adequacy and Climate Change: Strategies for Sustainable Food Production from 3-4 Nov.2017 at Thrissur, Kerala jointly organized by Association of Meat Scientists Technologists and Kerala Veterinary and Animal Sciences University.
25. V. Beena Implementing officer, CAADECCS co-chaired a session in 9th Kerala Veterinary Science Congress from 11-12 Nov.2017 at Nedumbassery, Cochin organized by Indian Veterinary Association, Kerala.

Participation in state level meetings

1. CAADECCS represented as focal theme member in the stakeholders consultation meeting for identification of innovative ideas for climate change proposals jointly organized by Directorate of Environment and Climate Change and NABARD on 6th February 2018 at NABARD regional office, Trivandrum

Awards received by the students

1. **Best Paper Award** for the paper entitled “Impact of heat stress on carcass traits, plasma leptin profile and skeletal muscle HSP70 gene expression pattern in Malabari goats” by P.R. Archana, V.Sejian,G. Krishnan,M.Bagath, W. Ruban,G.B. Manjunathareddy, **V.Beena**, Indira Devi P and R.Bhatta (2017). In: 9th Kerala Veterinary Science Congress organized by Indian Veterinary Association, held at Flora International Hotel, Nedumbassery Cochin, Kerala, India between 11-12th November, 2017.
2. **Best Paper Award** for the paper entitled “Impact of heat stress on meat quality as evidenced by changes in physico-chemical properties, proximate composition and organoleptic attributes in Malabari goats”by P.R. Archana, V.Sejian, W. Ruban, M.Bagath, G.Krishnan, G.B Manjunathareddy, **V.Beena**, Indira Devi P and R.Bhatta (2017). In:National seminar on Food Adequacy & Climate Change: Strategies for Sustainable Food Production organized by Association of Meat Scientists & Technologists and Kerala Veterinary & Animal Sciences University held at Thrissur, Kerala on 3rd and 4th November 2017.
3. **Best Poster presentation Award** for the paper entitled “Assessing the physiological adaptability of Malabari goats when shifted from its native tract to different agroecological zone” by J. Aleena, V. Sejian, M. Bagath, G. Krishnan, G.B. Manjunathareddy, **V. Beena**, P. Indira Devi and Raghavendra Bhatta (2017). In: Association of Meat Scientists and Technologists Conference organized by Department of Meat Science and Technology held at Pattikad, Thrissur, Kerala, India between 3-4th November, 2017.

Books Published

1. Prasada Rao G.S.L.H.V., Girish Varma G. and Beena V (2017) “Climate Resilient Animal Agriculture”Livestock Meteorology“ New India Publishing Agency. New Delhi.544p (ISBN: 978-93-85516-87-0).
2. Prasada Rao G.S.L.H.V., Girish Varma G. and Beena V (2018) New India Publishing Agency. New Delhi.462p (ISBN:978-93-86546-18-0).

3 Extension Activities

3.1.Published four leaflets for the benefit of farmers

1. Monsoon management of poultry
2. Monsoon management of cattle

3. Summer management of poultry
4. Summer management of cattle



Framer Leaflets

Farmers seminars conducted

Farmer seminar on monsoon management of cattle:Farmer seminars and interactive sections on monsoon management of cattle were conducted atMannamangalam and Valakkavmilk societies of Thrissur district on 04-07-2017 andon 05-10-2017 respectively. Eminent faculties from various departments of KVASU delivered lectures for progressive milk farmers.

Farmer seminar on summer management of cattle:A farmer seminar was conducted on the topic management of cattle during summer season for the dairy farmers of Mannamangalammilk society on 27-02-2017



Seminar at Mannamangalammilk societySeminar at Valakkav milk society

Knowledge dissemination through mass media

1. Dr V. Beena Implementing officer of CAADECCS delivered a radio talk on cattle management
2. Various articles on awareness and management strategies were published in different newspapers and magazines.



Article in Deshabhimani newspaper



Articles in Karshakan magazine

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CENTRE FOR ADVANCED STUDIES IN ANIMAL GENETICS AND BREEDING, MANNUTHY

The Department of Animal Breeding and Genetics of College of Veterinary and Animal Sciences was upgraded and given the status of Centre for Advanced Studies in Animal Genetics and Breeding (CASAGB) in 1986 as recognition for its contribution in various fields of activities.

Objectives:

- Supports Master's and Doctorate research on Animal Breeding, Genetics and Biostatistics
- Improving the genetic potential of livestock for efficient growth and increased production
- Research in molecular genetics, genomics and animal breeding
- Conservation of native animal genetic resources and act as germplasm repository for domestic animals

Components of CASAGB:

Dept. of Animal Breeding & Genetics - The Department offers Under Graduate, Masters and Doctoral Programmes in Animal Breeding, Genetics, & Biostatistics. Courses are offered at UG level where basic concepts of Biostatistics, Animal Genetics and Breeding are taught with practical experience in solving problems. At post graduate level, courses on Population Genetics, Cytogenetics, Molecular Genetics, Immunogenetics, Conservation Genetics and Biometric Genetics are taught.

Cattle Breeding

Field Progeny Testing Scheme (ICAR) : Running of A.I. centres in seven milk societies in Thrissur district for the progeny testing of highly pedigreed HF crossbred bulls selected by the ICAR, conducting infertility camps, supply of feed, deworming and mineral mixtures free of cost to the farmers in the scheme, technical advice to farmers about livestock farming etc.

Breeding Policy: Contribution to the Breeding Policy of Kerala.

Goat Breeding -

University Goat and Sheep Farm, Mannuthy: Supply of kids to farmers, Technical and Managerial advice to farmers about goat farming, breeding etc., On job training for VHSE students, Internship training for final year B.V. Sc& A.H. students

Conservation of native breeds in farm : Malabari and Attappady Black

AICRP on Goat Improvement Scheme: Conservation of Malabari goats in its native tract, Supply of superior breeding bucks, feed, mineral mixtures to field centres regularly. The elite germplasm centre is maintained at University Goat and Sheep Farm, Mannuthy. The field centers are at Thalassery, Thaliparamba, Badagara, Perambra, Thavanur, Kottackal and Tanur located in Kannur, Kozhikode and Malappuram districts. In 2018, one new field centre at Pudukad, Thrissur district have been included. In 2017-18, twenty five superior breeding bucks have been supplied to farmers.

Rabbit Breeding

Rabbit Breeding Station : Supply of rabbits to farmers, Technical advice to farmers about rabbit farming.

Vechur Farm: Conservation, Maintenance and Distribution of seed material: Distribution of animals and semen to farmers, Conservation of Vechur and Kasargode breeds.

Staff strength

Sl. No	Departments	Staff position			Remarks
		Teaching staff	Supporting staff	Labo urers	
1	Animal Breeding and Genetics:	Professor- 2 Assistant Professor- 5	Farm Supervisor 1	-	2 Assistant Professors deputed on working arrangement: Pig farm- 1 and ICAR FPT scheme-1
2	CASAGB	Professor- 1 Assistant Professor- 2	Assistant Registrar 1 University Assistants 2 Attenders 2 Farm Supervisor (Gr-1)-1	11	

Projects continuing through the year

Sl. No.	Title of the scheme	Name of the funding agency	Name of the PIs and Co-PIs	Outlay
1	Field Progeny Testing Scheme	ICAR (75%) & State Plan 2017-18 (25%)	Dr.K. Anilkumar & Dr. Radhika G.	72 Lakhs

2	AICRP on Malabari Goat Improvement	ICAR (75%) & State Plan 2017-18 (25%)	Dr. Thirupathy Venkatachalapathy & Dr. Jamuna Valsalan	29 Lakhs
3	Genetic Diversity Analysis of cattle genetic groups of Kerala using microsatellite markers	KSCSTE	Dr. Radhika G.	16.88 Lakhs
4	Addressing the Production Challenges of Native Goat Breeds of Kerala through Genomic Approach	AHD	Dr. Marykutty Thomas	17.60 Lakhs
5	Development of multi-trait selection criteria in crossbred cattle of Kerala	DST-SERB	Dr. Jamuna Valsalan	9.98 Lakhs
6	Augmenting goat kid production to enhance the livelihood of farmers in Thrissur district	State Plan 2017-18	Dr. Jamuna Valsalan	9 lakhs
5	Conservation centre for Vechur and Kasargod cattle	State Plan 2017-18	Dr. Manoj M.	50 Lakhs
6	Establishment of a germplasm repository for domestic animal diversity of Kerala	State Plan 2017-18	Dr. Manoj M.	10 Lakhs
7	Popularisation of Integrated Small Holder Rabbit Farming in Kerala	State Plan 2017-18	Dr. Marykutty Thomas	30 Lakhs
8	Characterization, expression and polymorphism analysis of candidate genes affecting production, reproduction and disease resistance in native cattle and goat breeds of Kerala for sustainable improvement and development of native breeds.	State Plan 2017-18	Dr. Radhika G.	9.625 Lakhs
9	Enhancing milk production potential of genetically superior cows through scientific intervention for producing better progenies	State Plan 2017-18	Dr. Radhika G.	10 Lakhs

10	Selective identification of elite duck farming clusters of Kerala for the strengthening of <i>in situ</i> conservation and multiplication of the duck varieties in their breeding tract	State Plan 2017-18	Dr. Bindya Liz Abraham	10 Lakhs
11	Ensuring breed purity and augmenting marketing facilities for dairy products and byproducts from indigenous dwarf cattle maintained by farmers of Kerala	State Plan 2017-18	Dr. Bimal C. B.	12 Lakhs
12	Centre for Advanced Studies in Animal Breeding and Genetics	State Plan 2017-18	Dr. T.V. Aravindakshan	10 Lakhs

Number of current first and second year Post Graduate students

First Year = 4

Second year = 5

Publications:

Research articles

1. M. Manoj, G.S.L.H.V. Prasada Rao and T.V.Aravindakshan. 2017. Seasonal influence on conception rate in Vechur and Kasargod dwarf cows. *Journal of Agrometeorology***19**: 123-125. **NAAS 2017 6.36**
2. Radhika,G., Raghavan, K.C., Mercey, K.A., Sunanda, C. and Rojan, P.M. 2018. Assessment of Genetic Diversity in Goat Genetic Groups of Kerala, India using Morphobiometric Markers. *Indian Journal of Animal Research*. 52(3) : 331-336 NAAS rating – 6.15
3. Radhika G., Aravindakshan T.V., Jinty S and Ramya K. 2018. Evaluation of Genetic diversity, Population structure and relationship between legendary Vechur cattle and Crossbred cattle of Kerala state, India. *Anim. Biotech*. 29 (1) : 50-58 (Published online in 2017) NAAS rating – 6.75
4. Naicy, R. T. Venkatachalapathy, T.V. Aravindakshan, K.C. Raghavan, M. Mini and K. Shyama. 2017. cDNA cloning, structural analysis, SNP detection and tissue expression profile of the *IGF1* gene in Malabari and Attappady Black goats of India. *Journal of Genetics*. 96, 307–312.

5. Naicy,T R. T.Venkatachalapathy, T.V. Aravindakshan, K. C. Raghavan, M. Mini and K. Shyama. 2017. Association of a novel single nucleotide polymorphism at the exon-2 of Insulin-Like Growth Factor 1 (IGF1) gene with phenotypic variants in goats. *Veterinarski Arhiv.* 87: (4), 457-472.
6. S. K. Dash, A. K. Gupta, Avtar Singh, A K Chakravarty, **M. Manoj** and Virendra Kumar. 2017. Threshold analysis of indicator traits for involuntary disposal in Holstein Friesian crossbred cattle. *Indian Journal of Animal Sciences.***87**(1): 128–130 **NAAS 2017 6.17**
7. Shakti Kant Dash, A.K. Gupta, **Manoj .M**, Virender Kumar, Pushp Raj Shivhre and Jamuna Valsalan. 2017. Analysis of lifetime performance in Karan Fries Cattle. *Indian J. Anim. Res.*Online ISSN: 0976-0555. DOI: [10.18805/ijar.B-3283](https://doi.org/10.18805/ijar.B-3283). Online Published: 8-09-2017. **NAAS 2017 6.09.**
8. Marykutty Thomas and Syamala K. 2017.Sensitivity and specificity of the famacha system in attappady black goats of Kerala. *Indian Journal of Small Ruminants.*23 (2): 204-207.
9. Jamuna Valsalan. 2018. Cytogenetics of bovine. Book chapter has been accepted in the book *Bovine Science* by Intech Publishers. ISBN 978-953-51-6469-2.
10. Bimal.P.Bashir and Thiupathy Venkatachalapathy R. 2017. A Gender perspective study on role performance among Goat Keepers in Northern Region of Kerala. *Indian Journal of Social Research.* 58 (3):381-88. **NAAS 3.00**
11. Bimal.P.Bashir and R.Thirupathy Venkatachalapathy, R.2017. Study on Supply Chains on Goat in Northern Kerala. *Advances in Animal and Veterinary sciences.***NAAS 4.04**
12. P.N. Shivakumara., **T.V. Aravindakshan.**, Thomas Naicy., K. Anilkumar. and R. Uma. (2018). Molecular characterization and differential mRNA expression profiling of Toll-like receptor-2 gene in Vechur (*Bos indicus*) and crossbred (*Bos indicus* X *Bos taurus*) cattle of Kerala in response to anthrax vaccination. *Meta Gene*16 15–20.

Books

Sl. No.	Authors	Year	Title	Publisher
1	Dr. Manoj M, Dr. Bimal C B, Dr. Anilkumar K, Dr. Thirupathi Venkatachalapathy and Dr. T V Aravindakshan	2018	Vechur Pasu Parirakshana padhathi – oru avalokanam	KVASU ISBN: 978-81-937459-0-8

Monographs –

1. Malabari aadukalude menma- oru tharathamya padanam
2. Aadukalile rogangalum roga prathirodha margangalum
3. Aaduvalarthal aadayathinum swayam thozhilinum

Technology developed and transferred

1. Technology for FAMACHA eye colour chart was standardized
2. Developed a goat shed to accommodate 25 goats with provision for urine collection for high rain fall area.
3. Validated a foot dip mat to prevent foot rot in goats during Monsoon

Human Resource Development activities organized:

1. 10 days training on Basic Molecular Biology Techniques and Introduction to Bioinformatics Tools (July 17 to 26, 2017)
2. 14 days training on “Molecular Biology and Bioinformatics tools for Advanced Life Science Research” From 19-10-2017 to 1-11-2017.
3. AICRP -Goat (Malabari field Unit) conducted 9 trainings with 2 days duration to 143 farmers have been conducted at different field centres

Awards and honours/ endowments

Sl. No.	Name of the institution / staff / student	Name of the award / honour	Awarding body	Purpose of award	Nature of award
1	Dr. Jamuna Valsalan	DST-SERB Early Career Research Award	DST-SERB	Early Career Research Award	National
2	Dr. Thirupathy Venkatachalapathy	Best oral paper award- National Seminar on Food Adequacy & Climate Change: Strategies for sustainable food production	Association of Meat Scientists and Technologists & KVASU	Best oral paper award	National

Distinguished visitors

- Dr. J Radhakrishnan, IAS, Principal Secretary, Health and Family Welfare Department. Govt of Tamilnadu.
- Dr. Anouk Schurink, Scientist, Wageningen, Netherlands

Outreach programmes

- Dr. G. Radhika - Resource persons for training: Goat rearing training at LMTC, Malampuzha October, 2017.
- Dr. G. Radhika - Resource person at UGC HRDC, University of Calicut, on 22-1-18 on Molecular genetic technologies for Conservation and Animal Breeding for UGC sponsored Refresher course in Bioscience from 10-1-18 to 30-1-18.
- Dr. Jamuna Valsalan. All India Radio talk on “How to start a buffalo farm”, conducted on June 4, 2018

Any other activities

- a. Provided 10 Vechur animals and 150 doses of Vechur and Kasargod semen to registered farmers through the plan project at Vechur Farm, CASAGB, Mannuthy
- b. Provided 5163 doses of crossbred bull semen, 19.2 tones of cattle feed and 750 kg mineral mixture to beneficiary farmers through ICAR-FPT scheme
- c. Provided 25 bucks, 5.3 tones of goat feed, 1528 kg goat feed supplements, 26 weighing balances, 100 measuring tapes and 200 liters of tickicide to beneficiary farmers through AICRP Goat scheme
- d. Provided the seed material to launch satellite rabbit breeding units at Kunnampulam, Kodappanakunnu, Angamaly, Kuriottumala under Animal Husbandry Department, Govt Kerala.
- e. Distributed 1038 number of breedable rabbits to farmers and government farms
- f. Provided 6250 kg of cattle feed to beneficiary farmers through KVASU plan projects

CENTER FOR ONE HEALTH EDUCATION, ADVOCACY, RESEARCH AND TRAINING (COHEART), POOKODE

The Center for One Health Education, Advocacy, Research and Training (COHEART) was established in 2014 at KVASU to propagate the concept of “One Health” to various health and allied health professionals of India. During the year 2017-18, the centre had organized various seminars, school educational programmes, pet health camps, important day commemorations and have also conducted cutting edge research addressing various public health issues. The centre has also offered various course through technology enabled distant learning mode and have won various projects, received meritorious awards, travel grants and have published book chapters. The details are described below.

COURSES OFFERED BY COHEART

The centre offers various courses annually. For the year, 2017-18, a total of 27 students have successfully completed PG Diploma in One Health. The other courses offered by the centre are PG Cert. in One Health Surveillance and PG Cert. in Community Based Disaster Management

PROJECTS

- Project Title: Study on the nasal carriage of Methicillin Resistant *Staphylococcus aureus* among dogs. *Funded by Kerala Govt. State Plan- 2016-17*
- Project Title: Assessment of the microbiological quality of air in the health care settings of various hospitals located in Wayanad district. *Funded by Kerala Govt. State Plan- 2016-17*
- Project Title: Establishing Zoonotic disease referral extension unit under COHEART. *Funded by Kerala Govt. State Plan- 2016-17*
- Project Title: Initiating One Health approach for prevention of major zoonotic diseases in Wayanad district. *Funded by Kerala Govt. State Plan- 2016-17*
- Project Title: Establishment of students One Health club - An interactive platform for veterinary, medical and allied health science students enrolled in selected educational institutions of Kerala. *Funded by Kerala Govt. State Plan- 2016-17*
- Project Title: Epidemiology of common enteric zoonotic pathogens in Wayanad district. *Funded by Kerala Govt. State Plan- 2017-18*

- Project Title: Education of farmers and students on good animal husbandry practices and control of health threats through 2 D infographic animation technology. *Funded by Kerala Govt. State Plan- 2017-18*
- Project Title: Interface program for knowledge transfer on latest technologies and innovations in Veterinary Science, Animal Husbandry and Public Health. *Funded by Kerala Govt. State Plan- 2017-18*

AWARDS/ HONOURS AND OTHER PERSONAL ACHIEVEMENTS (2017-18)

- Savitha Rudrappa, PG Diploma student of One Health received Best Dissertation Award with a cash and citation. Her dissertation work was on “Occurrence of thermotolerant campylobacter in dogs in Thrissur, kerala”
- Dr. Prejit, Officer-In-Charge, COHEART received travel grant and invitation from SGTF and FAO to represent as Indian stakeholder for the workshop on “Development of Governance Structure and Roadmap for Establishment of a South Asia One Health Disease Surveillance Network” during 11-13 Dec 2017 in Bangkok. Following the workshop, Dr. Prejit became the founder member of SAOH Disease Surveillance Network
- Dr. Prejit acted as Resource person for world veterinary day event organized by KGVOA on the 28th of April 2017. The session handled was on “***Antimicrobial Resistance - from awareness to action***” and the participants were veterinarians all over Kerala
- Dr. Prejit, delivered an invited lecture on “Scope and importance of One Health” for students and faculty of James Madison University, Virginia
- PGDOH Dissertation work of Dr. Bibu John received Best Poster Award in the XVII Annual Conference of Indian Society of Veterinary Pharmacology and Toxicology held at Lala Lajpat Rai University of Veterinary and Animal Sciences- Dec. 20-22, 2017.
- PGDOH Dissertation work of Dr. Suman Bedre received First Prize in poster competition for XVth Annual Conference of IAVPHS & National Symposium, on Intersectoral Approaches to combat zoonoses strategies and challenges held from 11th to 13th Oct. 2017 at Tirupati
- Dr. Prejit acted as the resource person for IVA-CVE program held on 3rd May 2017 at CVAS, Pookode and handled a session on “Anti-microbial resistance”

ACTIVITIES ORGANISED BY COHEART (2017-18)

- **World Milk Day commemoration:** College of Dairy Science and Technology, Pookode, Wayanad and COHEART jointly celebrated World Milk Day, on 1st June 2017 at Thariyode Dairy Co-operative. There was farmer’s seminar and demonstration of value added dairy product preparation. The CDST students demonstrated and prepared milk peda and paneer cutlet. Thariyode Panchayath president Smt.Reena Surendran presided the function. The

programme was inaugurated by Kalpetta Block Panchayath president Smt. Shakunthala. The celebration witnessed sessions on Mastitis-Prevention and control measures (by Dr. Jayesh V, Veterinary Surgeon) and Milk quality and Value addition (by staffs of CDST)

- **World Veterinary Day commemoration:** As a part of celebration of World Veterinary Day, one-week long program was jointly organized by COHEART and IVA, Pookode Unit. The day marked the beginning with a session on Leadership and communication skills. The various other events organized were farmer's seminar, essay and quiz competition for BVSc & AH students etc.
- **Safe milk mission kottor:** COHEART acted as a partner for the model panchayath scheme of kozhikode launched as "SAFE MILK MISSION KOTTOR". The centre educated the farmers on Clean milk production and also enlightened the farmers on the impact of antibiotics usage on animal and human health. Prior to implementation of the project, raw milk from animals was collected and quality was assessed. As a part of the panchayath scheme, milking parlour was designed at various individual farms. Safe milk mission kottor was officially launched by Hon' minister Shri T. P. Balakrishnan.
- **World Environment Day celebration:** COHEART Co-organized one-week educational program from June 1 to 5, 2017 on Environment, Health and Disease under the theme "Connecting people to nature". The program comprised of wild life photography exhibition, essay competition, versification, poster making competition and various other competitions coupled with seminar, campus cleaning activities etc
- **World Blood Donor Day commemoration:** COHEART celebrated blood donor day on July 26th at CVAS, Pookode to raise awareness on significance of blood donation and to acknowledge blood donors for their voluntary, life-saving gifts of blood. The theme was "Give Blood. Give Now. Give Often". Dr. Suraj, Blood Bank Incharge of TH QH Bathery delivered a brief introductory note on the importance of blood donation. More than 50 students and faculties participated the camp and have donated blood. The collected blood was stored in Blood Bank, Bathery.
- **Celebrated world zoonoses day:** On zoonoses day (July 6th), 2 D animated documentary on "Glimpses of Zoonotic Diseases" designed and developed by COHEART was filmed to create awareness on Zoonotic disease threats. The educational video was a 2D animation publication series explaining the major zoonotic diseases, their epidemiology, clinical manifestations, diagnosis and control. The event was attended by students and faculties of CVAS, Pookode.
- **National workshop on "Ethics and welfare concerns in research for human and animal health"** was jointly organized by COHEART and Department of Veterinary Pharmacology and Toxicology on 15.09.17. The aim of the workshop is traversing the ethical and welfare concerns in research for betterment of human and animal health. The session began with a

talk on Ethics in public health research by Dr. Vijaya Hegade, Professor and Head, Dept. of Public Health Dentistry, AJ Institute of Dental Sciences, Kuntikana, Mangalore. Dr. S. G. Ramachandra, Chief Research Scientist, Central Animal Facility, Indian Institute of Science, Bengaluru spoke on the emerging issues and practice of Ethics and welfare in animal experimentation. The compendium was released by Dean, Prof. (Dr.) K. Vijayakumar. This was followed by interactive session on “Animal Welfare through Replacement- Reduction and Refinement in Techniques in Animal Experiments” by Dr. N. Prakash, Professor and Head, Department of Pharmacology and Toxicology, Veterinary College, Hebbal, Bengaluru. Post lunch session was handled by, Dr. Manilal Valliyatte Chief Executive Officer, People for the Ethical Treatment of Animals (PETA) who enlightened the participants on Scientific and legal reasons for adopting alternatives to experiments on animals. This was followed by a session on Genesis and development of Animal Ethics by Mr. A.G. Babu, CPCSEA nominee and media person. The workshop recommended strict adoption of 3 R’s in the animal experimentation, use of animal alternatives like simulation techniques for physiological and pharmacological research in human and animal medicine and to explore the possibility to launch a PG Certificate course on Animal welfare and Bioethics

- **COHEART Co-Organized Pet health camp and seminar on Rabies free Wayanad by 2030** in 22/09/2017 at Padinjarathara panchayath in collaboration with DAHO (Wayanad). Dogs were given free anti rabies vaccination and dog owners were educated on the need for vaccinating their pet animals and how we can achieve Rabies free Kerala in near future.
- COHEART organized Educational program on Health, Hygiene and Diseases in eight government schools of Wayanad district. The knowledge of the students was also assessed by organizing quiz competitions. Three active participants from each school were selected on the basis of competition who will be carrying forward the concept of One Health in the respective schools.
- **One Health awareness drive in health and allied health institutions of North Kerala:** COHEART enlightened various health and allied health institutions to rebuild the interconnectedness of humans, animals and their environments. We identified student members for One Health club. Institutions covered under this project were Malik Denar College of Nursing- Kasargode, Carewell school of nursing- Kasargode, Various Departments of Central university of Kerala, Malabar Medical college, KMCT Ayurvedha college, Govt. Homoeo college- Calicut, Government Medical College- Calicut, Alshifa college of Nursing- Perinthalmanna, EMS college of Nursing, Govt. Ayurvedha college, Pariyaram, Govt. School of Nursing-Kannur, Parasinnikadavu Ayurvedha college, Kannur University etc.
- **Commemorated World rabies Day:** Various schools from Wayanad were invited to participate the awareness class on Rabies and to present poster on the theme “healthy man, healthy animal and healthy nature” The first, second and third prizes were bagged by Lourde

Matha Higher secondary school- Pallikunnu, Wayanad Orphanage Higher secondary school- Pinangode and St. Joseph Girls Higher secondary school- Meppady respectively. The special excellency award was bagged by Govt. Higher secondary school, Kaniyambetta.

RESEARCH (2017-18)

Research undertaken by COHEART scientists and the students of PG Diploma in One Health are detailed below

Sl. No	NAME OF THE STUDENT	TITLE OF THE DISSERTATION
1	VANITHA H.D.	Occurrence of enterohaemorrhagic <i>Escherichia coli</i> in market beef, Thrissur
2	PAVAN M.	Development of portable aerobic composter for poultry feather waste – A public health concern
3	TAYDE RAVINDRA SHAIVAJI	Studies on occurrence of campylobacter species of public health importance from poultry and pig
4	MUKESHA KINI M.A.	Study on subclinical mastitis in cattle
5	SHARADA N K.	Efficacy of herbal medicines to improve healthcare in rural areas
6	NISHANTH C.	Occurrence and antibiogram of <i>Arcobacter</i> spp. from poultry meat solid in retail outlets in Bengaluru city
7	AMBIKA	Knowledge assessment through surveying on cattle zoonotic diseases in bidar district (Karnataka) dairy farmers
8	CHRISTINA POULOSE	Microbiological quality of buffalo meat from different locations of Vythiri panchayath
9	KRISHNA REDDY N.	Pilot Study of efficacy of herbal and homoeopathic drugs in management of brucellosis in dairy cattle and awareness
10	PRUTHVISHREE B.S.	Antibiotic susceptibility pattern of <i>Escherichia coli</i> isolated from piglet fecal samples
11	SAVITA RUDRAPPA K	Occurrence of thermotolerant campylobacter in dogs in Thrissur, Kerala
12	MARUTHI S.T.	Diagnosis and clinical evaluation of parenteral antibiotic combined with topical therapy for the management of Dermatophilosis in cattle
13	TAYDE RAVINDRA SHAIVAJI	Studies on occurrence of campylobacter species of public health importance from poultry and pig
14	VANI R PILLAI	Occurrence of thermotolerant campylobacter in cats of Thrissur district.
15	BIBU JOHN K	Toxicological effect of Trifluralin
16	MURALIKRISHNA.P	Sanitizing effect of different chlorine preparations on microbiological count of water and to understand knowledge,

		attitude and practices regarding chlorination in thrissur district, kerala
17	ANEESH A.	Rabies awareness among dog owners of Thrissur corporation
18	KUMARSWAMY N. P.	Analysis of physico-chemical and bacterial parameters of water from food service establishments and public places in Thrissur
19	SARIKA N.	A study on basic knowledge aspects of leptospirosis among laboratory workers, animal handlers and agricultural workers
20	BEDRE M. SUMANTH	Evaluation of anti-rabies protective titre among the occupational risk groups of Kerala
21	YASHAS R. KUMAR	Antibiotic sensitivity pattern and biofilm formation of mastitis causing bacterial isolates from Kerala and Karnataka
22	ANNIE NAVOMI PHILIP	Microbiological quality of raw milk and its significance to support safe milk mission project of Kottoor Panchayath
23	LIJIN JAMES	Knowledge, attitude and practice of major zoonotic diseases among livestock owners and pet owners of Wayanad district, Kerala
24	SUPRIYARAJ D.	Effect Of ABC (Animal Birth Control) and ARV (Anti-Rabies Vaccination) programme in control of dog mediated rabies
25	Dr. C.LATHA	Occurrence of <i>Toxoplasma gondii</i> in feline and humans
26	DR. ARCHANA NAIR SHIVKUMAR	Occurrence of leptospira spp. in cattle from Alapuzha district of Kerala
27	DR. VRINDA MENON K	Impact of environment in the persistence of Leptospira Spp. In Alappuzha District, Kerala
28	OTHER RESEARCH	<ul style="list-style-type: none"> • Epidemiological Studies on <i>E. coli</i>, <i>Salmonella</i>, <i>Y. enterocolitica</i> and <i>Staphylococcus aureus</i> in Wayanad • Study on the nasal carriage of Methicillin resistant <i>Staphylococcus aureus</i> among dogs • Assessment of the microbiological quality of air in the health care settings of various hospitals • Anti rabies protective titre among the occupational risk groups i.e., Field Veterinarians, Veterinary assistants, animal handlers and dog owners of Kerala • Assessment of knowledge attitude and practice of personal hygiene and food safety from school children of Wayanad

PUBLICATION (2016-17)

- Book Chapter on “One Health- Vision for future” by Dr. Prejit. In: Veterinary Public Health: One Health, Edited by Sushovan Roy *et al.* 2017. New Delhi Publishers

- Sunitha, R., Prejit, Vinod V.K., B. Sunil, Asha K., Jess Vergis and Ebin Baby Mathews. 2017. Occurrence of *Listeria monocytogenes* and *Salmonella* spp. in seafood collected from Wayanad, Kerala. *Journal of Immunology and Immunopathology*. 19, 2: 97-106
- Bojiraj Munisamy, Prejit, Praveena Sivanathan and Porteen Kannan. 2017. Knowledge Assessment through Surveying on Cattle Zoonotic Diseases in Dairy Farmers. *Int. J. Curr. Microbiol. App. Sci*(2017)
- Mahesh S.H, Prejit, Vinod V.K, B. Sunil, Koshy John and Nimisha Soman. 2017. Prevalence and Molecular Characterization of Methicillin Resistant *Staphylococcus aureus* in Bovine Raw Milk and Beef Samples from Wayanad District of Kerala. *Indian Journal of Natural Sciences*. Vol.8. Issue 45

CENTRE FOR WILD LIFE STUDIES, KVASU, POOKODE

Research:

Completed project

1. Prevalence of endoparasites in Asian Elephant (*Elephas maximus* Linnaeus, 1758) of Wayanad district of Kerala, South India – completed

Ongoing project

1. Forest cover changes and large mammal population in South Wayanad Forest division

Student Research Projects (2015 Batch)

1. Population and distribution of Malabar Slender Loris (*Loris lydekkerianus malabaricus*) in human modified plantations of Kottayam District, Kerala, India – Roshin Tom
2. Dhole (*Cuon alpinus*) distribution and prey composition in South Wayanad Forest Division, Kerala – Samuel George
3. Abundance, roost characteristics, acoustics and diet composition of selected bat species in South Wayanad Forest Division - Bibin Paul M.
4. Behavioural pattern and defecation rate of Gaur (*Bos gaurus* H. Smith, 1827) at Trivanthapuram – Swathy Soman
5. Molecular detection of Mycobacterium tuberculosis complex (MTBC) and *Mycobacterium avium* complex (MAC) organisms in Indian Grey Mongoose (*Herpestes edwardsii*) – Bindya A.
6. Screening for diseases in Asiatic Wild Dogs (*Cuon alpinus*) in South Wayanad Forest Division, Kerala – Tushna Karkaria Sarosh
7. Prevalence of endoparasite in Asian Elephant (*Elephas maximus* Linnaeus, 1758) of South Wayanad Forest Division, Kerala – Abhijith T.V.
8. Population and foraging ecology of Nilgiri Langur (*Trachypithecus johnii* Fischer, 1829) in Ranni Division of Pathanamthitta, Kerala – Devapriya Dileep

Significant achievements made in science and technology

- a. Identified Parvo virus from Dhole populations in India
- b. Studied sustainable populations of Slender loris in plantations of Kottayam district in Kerala

- c. Studied prevalence of endoparasite in wild Asian Elephant populations of South Wayanad Forest Division
- d. Studied acoustic signature of selected bat species in South Wayanad for non-invasive sampling

Publications:

- Bindya, A., Ravishankar, C., Karkaria, T.S., Chandy, G. and Alexander, J. 2018. Molecular detection of bacteria of *Mycobacterium avium* complex (MAC) in Indian Grey Mongoose (*Herpestes edwardsii*), Presented a paper in 30th Kerala Science Congress, 28-30 January 2018.
- Abhijith, T.V., Ashokkumar, M., Dencin, R.T. and George, C. 2018. Gastrointestinal parasites of Asian elephants (*Elephas maximus* L. 1798) in South Wayanad forest division, Kerala, India, *J. Parasit. Dis.* (2018). <https://doi.org/10.1007/s12639-018-1012-0>

Technology developed and transferred

- a. I farm technology upgraded, steps are being taken to transfer the benefit of the technology to public

Consultancy

Rescue, veterinary care, and forensic services to Forest Department and zoos of Kerala

HRD activities:

1. Online training program organized for MS (Wildlife Studies) student (Dr. Tushna Karkaria S.) - Integrated training program in infectious diseases, food safety and public policy (ITrap-IDFP), from Jan to Dec 2017 at University of Saskatchewan.
2. *Passaros*- International bird day celebration at KVASU, from 10th to 12th December 2017
3. Workshop on Amphibian and reptile diversity and evolution- by Dr. Benjamin Tapley, ZSL, London Zoo, June 2017.
4. Tribal welfare activities in Narangakandy colony, Kalpeta
5. Training programs for the students of KVASU-CWS at Kerala Forest Research Institute, Peechi, Thrissur
6. Training of MS (Wildlife Studies) students at the Student Conference on Conservation Science, Bangalore – September 2017

7. Field training for MS (Wildlife Studies) students at different protected areas and institutes - to Gir National Park, Gujarat, Rajaji National Park, Uttarakhand, Great Himalayan National, Himachal Pradesh and Wildlife Institute of India 11th March to 31st March 2018.
8. Hands on training for MS (Wildlife Studies) students in zoo animal management, animal rescue and rehabilitation at Thiruvananthapuram Zoological Garden March 2018.
9. Training program on man-animal conflict, COVAS, Mannuthy, Thrissur.



Workshop on Amphibian and reptile diversity and evolution



Passarosprogramme



MS (Wildlife Studies) student training at KFRI



Butterfly survey at Periyar Tiger Reserve - MS WS students

Distinguished visitors

- a. Dr. Benjamin Tapley, Team Leader of Herpetology, ZSL, London Zoo

Any other activities

Wildlife field surveysattended by the students

- b. Butterfly survey at Aralam Wildlife Sanctuary, Kannur– Jan 2017

- c. Kole Wetland bird survey – Kumarakom Bird Sanctuary, Alappuzha – Jan 2017
 - a) Herpeto-faunal survey at Periyar Tiger Reserve – July 2017
 - b) Butterfly survey at Parambikulam Tiger Reserve – Oct 2017
 - c) Odonates survey at Periyar Tiger Reserve – Oct 2017
 - d) Butterfly survey at Aralam Wildlife Sanctuary, Kannur– Jan 2018.

Major achievements

53rd Board of Management meeting of KVASU approved the proposal for the “Western Ghats Regional Institute for Wildlife Research and Tribal Welfare”, aimed at the up-gradation of Centre for Wildlife Studies as an autonomous institute under KVASU to cater to the growing requirement for faculty and infrastructure for the empowerment of students as per international standards in the area of wildlife science.

CENTRE FOR ETHNOPHARMACOLOGY

The centre for Ethnopharmacology was established at Pookode in the year 2013 under EFC grant vide letter No. F.No. 7 (2)/-2011-EPD dated 29-03-2012 of the Under Secretary to the Government of India, Ministry of Agriculture, New Delhi. The administrative and technical sanctions were accorded for implementation of the project vide letter No. KVASU/DAR/R2/3579/2011(1) Pookode, dated 27.04.2013 of DAR.

Mission

- to promote interdisciplinary natural product based translational research.
- to enhance core competencies and develop new technologies in natural product drug discovery and diverse scientific understanding
- to impart research development programmes

Objectives

1. To promote the integration of folklore knowledge, attitudes and skills in traditional medicine into modern medicine and the existing health delivery system using appropriate technologies.
2. To validate traditional medicine in the light of modern science as to promote safe and efficacious drugs.
3. To discover and elucidate the mechanism of action of bioactive natural products that may serve as leads for the development of new pharmaceuticals that address various therapeutic needs
4. To collaborate with national, international agencies ,institutions and pharmaceutical industry to facilitate research and dissemination of knowledge
5. To organize workshops, seminars, symposia and training programmes in frontier areas of natural products research.

Research activities

- Traditional Medicine validation
- Drug discovery and development

Works executed/Achievements

SL. No	Equipment	Make	Imported/ Indian	No. of units	Year of procure ment	Installed at
1.	Shaking Incubator-R051-1	Rotek	Indian	1	2014	Phyto- chemistry lab
2.	Cryostat Bath	Rotek	Indian	1	2014	Phyto- chemistry lab

3.	Master Cycler Nexus Gradient	Eppendorf	Imported	1	2014	Experimental Pharmacology lab
5.	Digital Physiograph	INCO	Indian	1	2014	Experimental Pharmacology lab
6.	Digital plethysmometer	INCO	Indian	1	2014	Experimental Pharmacology lab

Research activity

Drug discovery and development

Projects implemented

1. Isolation and structural elucidation of bioactive terpenoids isolated from *Clerodendronphillipinum* and *Tetrasigmaleucostaphylum* by mass and NMR spectroscopic techniques

MSc projects implemented

2. Evaluation of proximate content, phytochemical constituents, HPTLC and GC-MS analysis of flavonoid fraction isolated from the methanolic extract of *Pterocarpusmarsupium*
3. Evaluation of proximate content, phytochemical constituents, HPTLC and GC-MS analysis of flavonoid fraction isolated from the methanolic extract of *Cissusquandragularis*
4. Evaluation of proximate content, phytochemical constituents, HPTLC and GC-MS analysis of flavonoid fraction isolated from the methanolic extract of *Polygonumchinese*
5. Evaluation of proximate content, phytochemical screening, GC-MS analysis of the methanolic extract of *Cissusquandragularis*
6. Evaluation of proximate content, phytochemical screening, GC-MS analysis of the methanolic extract of *Pterocarpusmarsupium*
7. Evaluation of proximate content, phytochemical screening, GC-MS analysis of the methanolic extract of *Polygonumchinese*

CENTRE FOR LIVESTOCK DEVELOPMENT AND POLICY RESEARCH & REGIONAL RESEARCH AND TRAINING CENTRE, THIRUVANANTHAPURAM

Administration of Research and Training Centres

Establishment matters of the staff and routine activities of the centre are being handled

- Total files handled during the period: 295
- Details of financial transactions done
 - Non Plan: Rs.15,92,272 /-
 - Plan fund: Rs. 9,04,152/-
 - Internal receipt: Rs.825/-
 - Imprest : Rs.2,21,355/-

Academic activities

Handled theory and practical classes of Milk Production Management (DBM-1101) and Co-operative dairying and food safety regulations (DBM- 2107) courses to B. Tech Dairy Science students at CDST, Thiruvananthapuram.

Trainings conducted

Sl No.	Title of training	Duration	Location
1	Training programme for University faculty on Research Methodology & Project Preparation	20-11-2017 to 24-11-2017.	IMG Trivandrum
2	Training programme for Kudumbasree groups on Scientific goat rearing	21.08.2017	Athiyannoor Gram Panchayat
3	Training programme for Veterinary Officers on Skill in clinical competencies	16.08.2017 to 7.08.2017	KSVC Trivandrum

Papers published

George, A. Jacob, S. K. Dennison, E. P. 2017. Pattern of consumption of livestock products among adolescents in Kerala. International Journal of Rural Development, Environment and Health Research, 1(1): 93-96.

Trainings/Seminars/Conferences attended

- Attended the Human Resource development training programme for the faculty entitled 'Effect of motivation on institutional development' on 15th March 2018 at College of Veterinary and Animal Sciences, Mannuthy.
- Attended National seminar on 'Psychotechnique East and West' on 8th and 9th of February 2018 at Mahatma Gandhi College, Thiruvananthapuram.

Consultancy and other services offered

Technical advice to various stakeholders such as farmers, entrepreneurs and extension functionaries in and around the district was provided through the centre. Sale of university publications to the needy persons was arranged and thereby collected internal revenue.

Technical Assistance to University Officers

The coordinators had been deputed for official Government meetings representing the University during the period in the Government Secretariat and other offices at Thiruvananthapuram.

Research Projects implemented

Sl No.	Project Title	Financial Outlay	Funding agency	Investigators	Status (complete d/ On-going)
1	Capacity Building programmes for various stakeholders of livestock sector	7 lakhs	State plan Project	Coordinator	Completed
2	Pattern of consumption of livestock products among adolescent people in Kerala	4 lakhs			

Research collaboration with External Institutions

Participatory Technology Integration to empower and ensure Livelihood Security of farmers in Alappuzha District [ICAR Project of CPCRI, Kayamkulam]

SCHOOL OF BIO-ENERGY STUDIES AND FARM WASTE MANAGEMENT

Significant achievements made in science and technology

- Invented restricted flow two stage biogas plant with balloon storage with highly improved efficiency of bio-gas production.



Restricted flow two stage bio-gas plant



Installed dung-dewatering machine at ILFC Pookode.3 tonnes per hour dung-dewatering machine at ILFC, Pookode



Equipment for Thermal studies in Bio-energy (Plan- 16-17)

Projects completed

- 1) Development of two stage digester bio-gas plant
- 2) Model Dung Drying Unit at Pookode
- 3) Establishing a Kennel

Projects continuing through the year

1. **RSP/17-18/XII-3** : Biodiesel Production from Animal fat
2. **RSP/17-18/XII-2** : Development of a two stage digester biogas plant
3. **RSP/17-18/XII-5** : Integrated Solid Waste Management in Veterinary College Campus
4. **RSP/17-18/XII-1** : Enhancement of aerobic composting through mechanical shredding and forced oxygenation and thermal studies"

Technical support

The School had 152 visitors during 2017-18 with queries related to Farming and waste management. Technical help was extended to waste handling and management to the different farmers. Several Panchayaths and municipalities of the state consulted the School of Bioenergy studies and farm waste management for technical support in scientifically managing solid waste.

Distinguished Visitors

Dr. P. Shanmugham, Sr. Principal Scientist, Shri. P. Kanthasamy, principal Technical Officer from Central Leather Research Institute visited bio-diesel plant to study the functioning of biodiesel plant.

M.Tech Projects

Sl. No	Name of Student	Year	Affiliation	Project
1.	Abhilash. S Ajith. P	2017	M tech Thermal Science Dept. of Mechanical Engineering, College of Engineering Thiruvananthapuram	Calorific value and thermal efficiency of biofuels
2.	Manu V.R	2018	Mtech Propulsion Engineering, College of Engineering Thiruvananthapuram	Utilisation of bio-diesel from chicken oil in a variable compression ratio diesel engine and its performance and emission characteristics

M.V. Sc Projects

Sl. No	Name of Student	Year	Affiliation	Project
1.	Goutham Varma	2017	M V Sc LPM CVAS, Mannuthy, Thrissur	Enhancing Biogas Production by co-digestion of livestock manures
2.	Jonathan	2018	M V Sc LPM CVAS, Mannuthy, Thrissur	Evaluation of effluent treatment methods in Dairy Farm

PhD Projects

Sl. No	Name of Student	Year	Affiliation	Project
1.	Antony P Pallan	2017	Karunya University, Coimbatore	Holistic Approach for Organic Waste Management by Anaerobic Digestion
2.	Deepak Mathew D K	2018	LPM CVAS, Mannuthy, Thrissur	Nutrient recycling potential of fly larva for bio-waste management

B.Tech Student Projects

Sl. No	Name of Student	Year	Affiliation	Project
1.	Rivin Varghese Rahul Krinanan P Sreerag Sreenivasan Sunil. S Thomas Francis	2018	8 th Sem, Mechanical Engineering. Government Engineering College, Thrissur	Analysis and comparison of performance and emission of IC engine fuelled with diesel and bio-diesel
2.	R. Praveen, V. Prasanth B. Nantha kumar M. Naveen Kumar	2018	8 th Sem, Mechanical Engineering. Selvam college of Technolgy, Namakkal, Tamil Nadu	A study of engine performance, combustion, emission characteristics of various biodiesel blends
3.	G. Sridhar	2018	3 rd year, Mechanical Muthayammal	I.C. Engine performance testing, emission testing using bio-diesel

	K.S. Shriram K.Venkatesh		Engineering College, Rasipuram, Tamil Nadu	of various proportions.
4.	Abhay V Ajay V Abishek P Vyshak I Mohammed Binshad C.K Nihal C.P	2018	8 th Sem, Mechanical Engineering. Vedavya Institute of Technology, Ramanattukara, Malapuram	Exercy analysis of biodiesel

Industrial Visit

Sl. No	Name of Student	Year	Affiliation	Project
1.	Jose P Mani Sulfikar Ali Remya Krishnan Kavya E.R	2018	B.Tech, Mechanical Engineering, College of Engineering, Calicut	Industrial Visit

Publications

Chapter in Books published

John Abraham, Ramesh Saravanakumar and Deepak Mathew (2017) Utilisation of broiler slaughter waste for biodiesel, carcass meal and glycerol production. Chapter 49 of Climate Change and Sustainable Food Production. ISBN 978-93-86724-13-7. Excel India Publishers. New Delhi.

Refereed Journals with NAAS/Scopus rating

Jyothi. S. B, **John Abraham** and Balusami. C (2017) Effect of climate on production and composition of bio-gas from different animal waste. *Invertis Journal of Renewable Energy*, Vol. 7, No. 4. Pp.208-210.

Pallan, A., Raja, S., Varma, C., Deepak Mathew, D., Holistic Scrubber for the Purification of Biogas from Community and Household Digesters, (2018) *International Review of Mechanical Engineering (IREME)*, 12 (1), pp. 9-17. doi:<https://doi.org/10.15866/ireme.v12i1.14000>

SCHOOL OF APPLIED ANIMAL PRODUCTION AND BIOTECHNOLOGY

Molecular Biology in Veterinary Sciences chiefly concerns with understanding the interaction between various systems of animal cell, including interrelationship of DNA, RNA and protein synthesis. Animal Biotechnology is an upcoming interdisciplinary field demanding expertise from different areas of biological sciences. School of Applied Animal Production and Biotechnology offers MVSc and M.Sc programs in Animal Biotechnology to students who have graduated in Veterinary and other biological sciences.

Post graduate students of Animal Genetics, Breeding and Animal Biotechnology are encouraged to undertake research activities on recent advancements of Animal Genetics, Breeding and Biotechnology. At present, Molecular Genetics lab is equipped to conduct studies on PCR-RFLP, microsatellites, SSCP, qPCR and aims to start work on genomics. Specific areas of research include immunity of host to diseases like mastitis, FMD, John's disease etc, heat tolerance of Vechur cattle, prolificacy of Malabari goats, genetic diversity on domestic animals, production and constituents of milk in crossbred cattle and other production traits in animals.

Learning support for the department is provided by a well-established Molecular laboratory for DNA and RNA work, Bioinformatics lab, Computer lab with internet facilities and facilities for data analysis related to Animal Breeding

Number of current first and second year Post Graduate students

First Year = 4

Second year = 4

Ongoing projects

1	Strengthening of School of Applied Animal Production and Biotechnology	State Plan 2017-18	Dr. T.V. Aravindakshan	10 Lakhs
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Trainings conducted from 1.4.2017 to 31.3.2018

- 10 days training on “Basic Molecular Biology Techniques and Introduction to Bioinformatics Tools” From 17-07-2017 to 26-07-2017
- 14 days training on “Molecular Biology and Bioinformatics tools for Advanced Life Science Research” From 19-10-2017 to 1-11-2017
- Publications

- Jain Jose K., Bindu Lakshmanan., Lavinia Wahlanga., Syamala K. and **Aravindakshan T.V.** (2018). Molecular evidence of haemoparasites in ixodid ticks of dogs- first report in India. *Veterinary Parasitology: Regional Studies and Reports* **13**: 177–179
- Anjan Behera, R. Thirupathy Venkatachalapathy and, **Aravindakshan, T.V.** (2018). Identification of novel single nucleotide polymorphism at thyroid hormone responsive (THRSP) gene of native goat breeds of India. *Small Ruminant Research* **163** : 68–71.
- Jain Jose, K., Bindu Lakshmanan., Hitaishi, V.N., J.E. Praveena., K. Syamala and **T.V. Aravindakshan.** (2018). Detection of *Babesia canisvogeli*, *Babesia gibsoni* and *Ehrlichia canis* by multiplex PCR in naturally infected dogs in South India. *Veterinarshi Archiv* 88 (2) 215-224.
- Anu Bosewell., Naicy Thomas., **Aravindakshan, T.V. and** Elizabeth Kurian (2018). Sequence characterization, structural analysis, SNP detection and expression profiling of SLC11A1 gene in Indian goats. *Small Ruminant Research* <https://doi.org/10.1016/j.smallrumres.2018.04.012>
- Jain KJ, Lakshmanan B, Syamala K, Praveena JE, **Aravindakshan T.V.** (2017) High prevalence of small *Babesia* species in canines of Kerala, South India, *Veterinary World*, 10(11): 1319-1323.
- Jain Jose., Bindu Lakshmanan., **Aravindakshan, T.V.**, Hitaishi, V.N. and Binu K Mani. (2017). Evaluation of DNA extraction protocols from ixodid ticks. *Int. J. of Science, Environment.* 6: (3) 1912-1917.
- Anu Bosewell., Naicy Thomas and **T.V. Aravindakshan** (2016). Characterization of exon 9 of solute carrier family 11 member A1 gene in Vechur cattle. *Biotechnology in Animal Husbandry* 32 (3) : 251-260

SCHOOL OF ZOONOSES PUBLIC HEALTH AND PATHOBIOLOGY

Programmes Conducted :

World Zoonoses Day Celebration :

1. An exhibition and seminar was organised for the farm workers, non teaching staff, students and faculty of College of Veterinary and Animal Sciences, Mannuthy on 6th July, 2018 to create awareness on zoonoses.





2. The workshop on 'Culture of Responsibility' was organized by the School of Zoonoses Public Health and Pathobiology , in association with the American Society of Microbiology for the post graduate students and staff of Jubilee Mission Medical College, Amala Medical College and Government Medical College , Thrissur at College of Veterinary and Animal Sciences, Mannuthy on September, 18th 2017.
3. The workshop on 'Culture of Responsibility' was organized by the School of Zoonoses Public Health and Pathobiology for the Post graduate and PhD students at College of Veterinary and Animal Sciences, Mannuthy on March, 14th 2018.

4. An exhibition on “Know Zoonoses to no Zoonoses’ , awareness class on zoonoses and workshop on techniques in identification of parasites was organized at St Xaviers College, Alwaye on March 13th , 2018



Exhibition- Alwaye





Parasitology- Workshop for Science graduate students of St Xaviers College Aluva



Awareness class on Zoonoses- Always, “Strengthening of School”

Infrastructure Activities :

Fund received: 6 lakhs

- a. Restructuring of research laboratory
- b. Purchase of UPS for Co₂ Incubator purchased under School EAP grants

Research Activity :

- a. **Project :** Impact of animals and population dynamics and environment on *Leptospira* infection in Alappuzha, Kerala

The transmission dynamics of Leptospirosis was studied in the endemic area of Allapuzha district, i.e. Kainaagiripanchayat. It was found that the backwaters were high in coliform count but *Leptospira* spp was not detected in the water samples by PCR. Among the 40, apparently healthy cattle, four urine and two blood samples were positive for *Leptospira*. The two cattle serum samples by MAT revealed the presence of *L. pomona*. Two human serum samples also revealed the presence of *L. icterohaemorrhagiae*. *The urine samples revealed the presence of saprophytic Leptospira organisms.*



CENTRAL INSTRUMENTS LABORATORY, MANNUTHY

Central Instruments Laboratory conducted nine short term trainings on “Modern Analytical Research Techniques used in Veterinary and Allied Sciences” during 2017-18. A total of 135 Post Graduate students got trained and acquainted with operating procedures of all the sophisticated equipments installed at Central Instruments Laboratory.

Central Instruments Laboratory received three new equipment worth 1.97 crores namely Liquid Chromatograph Mass Spectrometer, Inductively Coupled Plasma Optical Emission Spectrometer and Scanning Electron Microscope. All the three were installed and made functional. A total of 2406 visitors, on an average of nine users/day, used the laboratory’s infrastructure facilities, which include students and staff within and outside KVASU . A revolving fund operating through Central Instruments Laboratory generated a revenue of 11,84,192/- against an expenditure of 11,39,235/- , with a net profit of 44,957/-. The expenditure includes 1.5 lakhs which has been transferred to finance officer of KVASU as a part of profit. The expenditure also includes 4.2 lakhs spent exclusively for Annual Maintenance Contract fee of some sophisticated equipments. At present five temporary employees are engaged on daily wages basis under revolving fund, as Lab Technicians, Office Assistant, Lab Assistant and Sample Collector. An Instrumentation Engineer on contract basis has been working through plan scheme of the laboratory.

CENTRAL INSTRUMENTATION FACILITY

–RIDF NABARD

The central instrumentation facility houses the entire research activities in the University. The main objectives of this centre are, to provide state of the art facilities for diagnosis of various infectious and non- infectious diseases, to carry out residue analysis of drugs, xenobiotics and pesticides in milk, animal products and by products, feed and environmental samples and to establish a regulatory monitoring programme and evaluation of associated health risk, to carry out analysis of conventional and non-conventional feeds/ formulated feeds, for the identification and validation of ethno-veterinary practices in Kerala and isolation of patentable phytochemical molecules of commercial importance and study their toxicities. This will facilitate pharmacological evaluation of various compounds available in the area of biochemistry and biology for the pharmaceutical sector. It is also meant for conducting studies on enhancement of conversion efficiencies of locally available feedstuff by rumen micro flora manipulation, to conduct hormonal assays using radio isotopes and explore the field of molecular medicine and monoclonal antibody production. This standalone research system will function as the nerve centre of all modern research work to be taken up in the Pookode campus.

The development of CIF in the university anticipates substantial generation of revenue by analysis of samples, by providing bench spaces to the scientists, facilities and officers and researchers working in research institutes, universities, state and central government departments, and taking up external aided projects with government agencies, industries and international agencies. Facilities / services of the centre shall be extended to other institutes, within and outside state.

Implementing Officer: Dr. Sanis Juliet, Department of Veterinary Pharmacology and Toxicology, sanis@kvasu.ac.in, sanisjuliet@gmail.com, 04936 255403, 9446259510

Important materials/ resources acquired:

SL. NO.	EQUIPMENT NAME	Name of the firm	AMOUNT IN FOREIGN CURRENCY	Units	Utility
1	GC with three detectors and injectors	BrukerDaltonics INC.,40 USA	30,350.00.USD	One	For analysis of pesticides and xenobiotics
2	Preparative cum analytical HPLC system	Shimadzu (Asia Pacific) Pte Ltd 79, Singapore 118 264	35,000.00.USD	One	For separation of plant/herbal extracts

3	LCMSMS	Shimadzu (Asia Pacific) Pte Ltd 79, Singapore 118 264	1,51,860.00.USD	One	Analysis of pesticides and xenobiotics
4	Gas chromatograph MS	Shimadzu (Asia Pacific) Pte Ltd 79, Singapore 118 264	80170.00.USD	One	For analysis of pesticides and xenobiotics
5	Flow cytometer	Becton Dickinson Holdings Pte Ltd, Singapore	95000.00.USD	one	For cytotoxicity studies
6	Flash Chromatography	BUCHI Labortechnik AG, Switzerland.	29670.00. CHF	one	For separation of plant/herbal extracts
7	Ultramicrocentrifuge	Thermo Electron Ltd Germany	27,771.00.USD	one	Separation of microsomes and lysosomes by centrifugation at higher g
8	Real time PCR	Life Technologies Holdings Pte Ltd Singapore	20,000.00.USD	one	Quantification studies
9	Automatic tissue processor and stainer	Leica Mikrosysteme Germany.	12,138.00 Euro	one	Processing of tissue samples
10	Refrigerated micro centrifuge	Eppendorf AG Germany.	6515.00. Euro	one	Separation of samples by centrifugation at higher g
11	Gel documentation	'SYNOPTICS LTD.', UK	5825.00.Pound sterling	one	Visualization of gel products

	n system				
12	-20 deep freezer Vertical	Thermo Fisher Scientific Asheville LLC Limited U. S.A	4621.00.USD	one	Storage of samples
13	Biosafety cabinet Type B2 Class II	Esco Micro Pte. Ltd., 21 Singapore 486 777	10,406.00.USD	one	Molecular and cellculture works
14	Nanodrop spectrophotometer	Thermo Fisher Scientific,USA	11726.5 USD	One	
15	CO2 incubator	Thermo Fisher Scientific, USA	5664 USD	One	
16	High precision water bath	Thermo Fisher Scientific, USA	4037.3	one	
17	Deep freezer - 80)	Thermo Fisher Scientific Asheville LLC U. S.A	11253 USD	one	

Distinguished visitors

Educational visits:

- Officers on training from Department of Animal Husbandry, Government of Kerala
- Staff and students from MIMS college of Allied Health Sciences, Malappuram
- Staff and Students from Veterinary Colleges.

Research activities utilizing the equipments

A) *Projects Implemented (Externally Aided)*

- 1) ‘Study of herbal acaricides as means to overcome the development of resistance in tick to conventional acaricides’ funded by NAIP ,ICAR, New Delhi (NAIP/Comp- 4/C2066/2007-08)
- 2) “Chemo-profiling of potential phyto- acaricides and their functional characterization for controlling resistant cattle ticks” under NFBSFARA, ICAR, New Delhi (NFBSFARA/BSA-4004/2013-14)
- 3) Chemical, structural and functional characterization of identified anti-tick lead phytochemicals and optimization of delivery matrix for effective application of natural

formulation for the control of acaricide resistant ticks under NASF, ICAR, New Delhi (NASF/ABA-6015/2016-17)

B) Approved Research projects Post graduate students(2016 admission) of CVAS, Pookode

Publications 2017

- 1) Ravindran, R., Chithra, N.D., Deepa, P.E., Ajithkumar, K.G., Chandrasekhar, L., Sreelekha, K., Nair, S.N., Juliet, S. and Ghosh, S. 2017. In vitro effects of caffeic acid, nortriptyline, precocene I and quercetin against *Rhipicephalus annulatus* (Acari: Ixodidae). *Experimental and Applied Acarology*, 71, 183-193. NAAS rating :7.81
- 2) Nimisha, M., Ravindran, R., Pradeep R. K., Amrutha, B. M., Kurbet, P. S., Kumar, K. G. A., Varghese, A., Deepa, C. K., and Juliet, S. 2017. Molecular confirmation of *Rhipicephalus haemaphysaloides* infesting ruminants in Wayanad, Kerala, India. *International Journal of Current Microbiology and Applied Sciences*, 6, 2304-2309. NAAS rating :5.38
- 3) Prakashbabu, B. C., Vijay, D., George, S., Kodiyil, S., Nair, S.N., Gopalan, A.K., Juliet, S., Ravindran, R. 2017. Wound healing and anti-inflammatory activity of methanolic extract of *Gmelina arborea* and *Hemigraphis colorata* in rats. *International Journal of Current Microbiology and Applied Sciences*, 6, 3116-3122. NAAS rating :5.38
- 4) Kariyappa, P. R., Ravindran, R., Nimisha, M., Amrutha, B. M., Kurbet, P. S., Kumar, K. G. A., Varghese, A., Deepa, C. K., Dinesh, C. N. 2017. Prevalence of bovine babesiosis and theileriosis in Kerala, India. *International Journal of Current Microbiology and Applied Sciences*, 6, 2310-2314. NAAS rating :5.38
- 5) Ravindran, R., Juliet, S., Ramankutty, S. A., Sathish, N., Nair, S. N., Ajithkumar, K. G., Chandrasekhar, L., Ghosh, S. 2017. Effects of ethanolic extract of the leaves of *Pongamia glabra* and *Gliricidia sepium* against *Rhipicephalus (Boophilus) annulatus*. *Advances in Animal and Veterinary Sciences* 5: 1-6. NAAS rating :4.04
- 6) Sreelekha, K. P., Krishna T. P. A., Krishna, T. P. A., Deepa, P. E., Darsana, U., Juliet, S., Nair, S. N., Ravindran, R. 2017. Pharmacological characterization of leaves of *Blumea mollis* (D. Don) Merr. from Western Ghats of Wayanad region of Kerala, India. *Journal of Pharmacognosy and Phytochemistry* 6, 319-323. NAAS rating :5.21
- 7) Suresh N. N., Juliet S., Amithamol K. K., Sunil A R, Adarsh K.T. P., Sreelekha K. P., Divya T. M. Darsana U., Ajith Kumar K.G., Ghosh S., and Ravindran R. 2017. In vitro acaricidal effects of ethanolic extract and its fractions of *Ageratum conyzoides* L. against common cattle tick, *Rhipicephalus (Boophilus) annulatus* *Annals of Phytomedicine* 6(2): 162-168.