

KERALA VETERINARY AND ANIMAL SCIENCES UNIVERSITY, POOKODE

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ANNUAL REPORT 2019-20

Patron

Vice Chancellor

Kerala Veterinary & Animal Sciences University
Pookode, Wayanad

Acknowledgements

Hon. Vice Chancellor
Registrar
Finance Officer
Director (Academics & Research)
Director (Entrepreneurship)
Chief Engineer (ID Wing)
Controller of Examinations
Deans, College of Veterinary & Animal Sciences, Mannuthy&Pookode
Deans, College of Dairy Science & Technology, Mannuthy
Director Clinics
Director Farms
Director (Student's Welfare)
Special Officers
College of Avian Sciences and Management, Thiruvazhamkunnu
College of Dairy Science and Technology, Pookode, Thiruvananthapuram & Kolahalamedu
College of Food Technology, Thumburmuzhy
Officers and Heads
Station heads
Faculty members
Librarian

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Directorate of Entrepreneurship

Kerala Veterinary & Animal Sciences University
Pookode, Lakkidi P.O., Wayanad- 673576

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About the University

Kerala Veterinary and Animal Sciences University with headquarters in Pookode, Wayanad has landed assets of KVASU of about 957.95 acres spread across different campuses in Thrissur, Wayanad, Palakkad, Idukki and Thiruvananthapuram districts of Kerala . 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. The ex-officio members include the Chancellor, Vice Chancellor, Registrar, Finance Officer, Directors and Deans. The functions and powers of these officers are defined in the University Act. The academic staff comprise of Professors, Associate Professors and Assistant Professors apart from research fellows and scholars at various phases of instruction or research. University now has a faculty occupancy of around 78% which would be one of the country's best and a teacher student ratio of 1:8. Further, the academic activity is supported by a non teaching cum farm staffing of nearly 948.

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-

1. College of Veterinary and Animal Sciences, Mannuthy, Thrissur
2. College of Veterinary and Animal Sciences, Pookode Wayanad
3. Verghese Kurien Institute of Dairy Science and Technology, Mannuthy, Thrissur
4. College of Dairy Science and Technology Pookode Wayanad,
5. College of Dairy Science and Technology, Kaimanam, Thiruvananthapuram
6. College of Dairy Science and Technology, Kolahalamedu, Idukki
7. College of Avian Sciences and Management, Thiruvazhamkunnu, Palakkad
8. College of Food Technology, Thumburmuzhy, Thrissur

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 Complex at Mannuthy, Veterinary Hospital at Kokkalai, Thrissur. Products from University Meat Plant and Dairy Plant at Mannuthy offers quality assured livestock products to public. The products developed under various stations of the University 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.

OFFICE OF THE 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.

Vice Chancellor

Sri. Devendra Kumar Singh IAS, Vice Chancellor (i/c) From 04/02/2019 to 23/07/2019

Dr. M. R. Saseendranath, Vice Chancellor, (Assumed charge with effect from 24/07/2019)

Vice Chancellor 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.,

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.,

OFFICE OF THE REGISTRAR

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. A digital filing system named eDocs (Electronic Document Circulation System) has been developed in the University by the University IT Cell and also the programme is under testing Stage. It is expected that this computer programme could be implemented shortly in all the offices/stations/ units under the University. University has decided to implement a project on Special Live Stock Zone at Madikai panchayath at Kasargod district which is envisaged in 90 acres of land with an initial budget outlay of Rs. 10 crores allotted in the State Budget 2019-20 through PWD. The project for implementing Regional Centre of KVASU at Koyilandy Municipality, Kozhikode district is under progress and Municipality agreed to hand over the land for the same

Activities during the reporting period

- Career Advancement Promotions of Teaching Faculty -2019 orders issued.
- Declared the probation 6in the cadre of Assistant Professor (5 Nos).
- Permission Granted to 3 teaching faculty to visit abroad for Personal purpose.
- Permission Granted to 1 teaching faculty to visit abroad for Official purpose.
- Appointed the Director Clinics, KVASU, Pookode.
- The appointment of Assistants and Computer Assistants recruited through Kerala Public Service Commission has been regularized based on their eligibility.

- The probation declaration Orders were issued to the eligible Assistants and Computer Assistants whose service have been regularized.
- The service of staff joined through Inter University Transfer has also been regularized and they were declared to have successfully completed their probation.
- Based on seniority and eligibility, promotion has been granted to Assistants and Computer Assistants to the respective higher posts.
- Consequent to the retirement of senior officers, promotion has been granted to Administrative Officers as per eligibility and seniority.
- Two Assistant Section officers were promoted to the post of Section officer so as to fill the vacancies in the S.O cadre.
- Promotion granted to 3 computer assistant (Sel.Gr) to the post of Office Superintendent.
- Assistants and Computer Assistants were joined through Inter university transfer from other Universities on reciprocal basis.
- Letter communicated to the Government regarding several issues with KAU.
- Letter communicated to the Government regarding sanctioning of Non – teaching posts
- Discussed various issues of KVASU with Hon’ble CM in the meeting held on 19.1.2020.
- Willingness of University to appoint Labour Officer KVASU, on deputation basis is communicated to Kerala Government.
- As per the Government order, the tenure of deputation of KVASU Law officer extended for one more year
- Transfer of NTS in respective cadres has been done so as to smoothen the Administration of Offices.
- Detailed report on Staff strength and work load of KVASU submitted before Work study team from P&ARD of Kerala Government on their visit on 21st & 22nd January 2020.
- Initiatives were taken to collect data from various offices/stations of the University for the development of new software in the University.
- Committees were constituted to monitor the development of new software in the University.
- Granted promotion to the cadre of Assistant Executive Engineer from the below cadre of Assistant Engineer.
- 65th meeting of the Board of Management conducted successfully.
- Establishment Committee, Statute committee, Development committee and Works committee of the University constituted.
- 8th meeting of the Establishment Committee conducted successfully.
- As per the decision of 64th Board of Management, constituted a committee to examine proposals for enhancement of PG/Phd allowance.
- As per the decision of 64th Board of Management, executed an agreement with Kerala Police Telecommunication Department and KVASU towards construction of Microwave Link Tower in connection with Digital Communication System implemented by Kerala Police.

- As per the decision of 64th Board of Management, Letters were sent to three MLAs in connection with several problems facing of the University.
- Prepared and submitted report to Registrar in connection with Kolahalamedu land issues for attending Minster level meeting.
- As per the instruction from Government, University vehicles were registered in Govt. Website (VEELS). For this, information and guidance gave to all Stations of the University.
- University issued orders to extend the term of Standing Counsel & Associate Standing counsel.
- A committee is constituted consisting of Hon'ble Vice Chancellor, Addtl. Secretary, Law Department (BoM Member), Law Officer and Registrar for conducting an evaluation and regular monitoring of the court cases pertaining to the University.
- Issued order on the basis of the direction of Hon'ble High Court of Kerala in WP(c)No.23650/2019 filed by DrShibu Simon in order to obtain seniority.
- No penalties are imposed due to disposal of RTI Application. There are 26 RTI have been disposed from 16 December onwards.
- Convened a meeting with the Standing Counsel & Associate Standing counsel to discuss the status of the cases of the University as per the direction of Hon'ble Vice Chancellor.
- Prepared and submitted the present status report to the Registrar in connection with the construction activities at Pookode Campus.
- As per the University order no.KVASU/GA/LO/735/2015 dated 31.01.2019 a Committee was constituted under the chairmanship of Registrar and four others, and two meetings of the committee were held. The Committee finally arrived at a proposal for ratifying the order which regularized the Casual Labourers working at various stations under the University.
- A meeting was held on 03/01/2020 at CLDPR,Thiruvananthapuram under the chairmanship of Sri. C.K. Saseendran, M.L.A. Smt.Bijimol ,M.L.A.,Sri. O.R. Kelu, M.L.A., Leaders of labour unions and University officers were present at the meeting which discussed the issue of regularization of casual labourers working at various farms/colleges/stations under the University and arrived at a consensus on the proposal presented by the Registrar.
- A detailed note was presented before the 64th BOM held on 06.01.2020 regarding the regularization of casual labourers. The BOM approved the ratification of the orderNo.KVASU/GA/LO/1832/2017 dated 24/4/2017 with modifications. Accordingly, specific orders for all stations implementing the BOM decision were issued on 28.02.2020.
- There are 4 new cases filed against the University and 1 Review Petition filed by the University.The University has properly defended all the cases by filing Affidavit/Counter Affidavit/Statement of Facts.

Details of the meeting of the various authorities of the University held during the reporting year 2019-20

Meetings of the Board of Management held during the period 2019-20			Meetings of the Management Council held during the period 2019-20	
Sl. No.	No. of the Meeting	Date	No. of the Meeting	Date

1	61 th Meeting	06/07/2019		33 rd Meeting	29/08/2019
2	62 th Meeting	29/08/2018		29 th Meeting	06/01/2020
3	63 rd Meeting	19/09/2018		Management Council- 2 No.s Board of Management- 6 No.s	
4	Special Meeting	15/11/2019			
5	64 th Meeting	06/01/2020			
6	65 th Meeting	25/02/2020			

FINANCE WING

An amount of Rs.89.078 crores have been received as non plan grant during the above period. An amount of Rs. 65.0146323 crores have been given to employees of the University (Non teaching staff, teaching staff and labourers) as Pay and allowances and Surrender Leave Salary. An amount of Rs.24.4741358 crores has been given to various stations of University as contingency fund. An amount of Rs.0.8954 crore been given as University share under National Pension System. University rely on Internal Revenue for meeting the day to day affairs of the University at the time of shortage of Non-Plan Grant.

During the above period Annual Budget 2019-2020 and Revised Budget 2019-20 have been prepared and approval has been received from Finance Council, BoM and Management Council. During the above period 2 Finance Council meetings have been conducted under the chairmanship of Hon'ble Vice Chancellor.

The Details of GPF and welfare funds disbursed to retired staff during the Financial year 2019-20 are listed below.

Sl No	Item	Amount disbursed
1	WPF	1858191/-
2	FBS	304369/-
3	WFS	62977/-
4	WFBS	11118/-
5	WWFS	5911/-
6	GPF	25340424/-

- GPF and WPF credit cards for the Financial year 2012-13 have been given to Non teaching staff, teaching staff and labourers of University.
- Pension is being given to 185 employees and 83 labourers of the University.
- 2 labourers and 21 employees (including teaching staff) have retired during the financial year 2019-2020

An amount of Rs.78328976/-(Rupees Seven Crore Eighty Three Lakh Twenty Eight thousand nine hundred and seventy six only) has been disbursed as pension, an amount of

Rs.4,00,59,921/- (Four Crores Fifty Nine Thousand Nine Hundred and twenty one only) has been disbursed as commutation and an amount of Rs.2,46,48,914/- (Two crores Forty Six lakhs Forty Eight Thousand Nine Hundred and Fourteen only) has been released as DCRG. An amount of Rs. 2,97,83,203/- (Two Crore Ninety Seven lakhs Eighty Three Thousand and Two hundred and three only) has been released as terminal surrender for the financial year 2019-2020 for Teaching and Non Teaching staff.

An amount of Rs.1,06,72,091/- (One Crore six lakh seventy two thousand and ninety one only) was released as pension, an amount of Rs.3664599/- (Thirty six lakh sixty four thousand five hundred and ninety nine only) was released as commutation, an amount of Rs.2909583/- (Twenty nine lakh nine thousand five hundred and eighty three only) was released as DCRG and an amount of Rs.68530/- (Sixty eight thousand five hundred and thirty only) was released as Terminal Surrender to labours for the Financial year 2019-2020.

Details of Pensionary benefits released for this financial year 2019-2020.

Sl No	Item	Staff	labourers
1	Pension	78328976	10672091
2	Commutation	40059921	3664599
3	DCRG	24648914	2909583
4	TSEL	29783203	68530
Total amount disbursed		172821014	17314803

Details of action taken in respect to EAP/PFMS/S.S Courses for the period 01.04.2019 to 31.03.2020 is shown below.

Sl No	Project	Amount released
1	ICAR, AICRP, Outreach	41677829/-
2	DTRA, NASF, DST, DBT, AHD	12045451/-
3	Training	3164750/-
4	KSCSTE	8000/-
5	Liquidated damage/Caution deposit/Course Fee refunded	259650/-

A fixed percentage of tuition fees of self sustaining courses is being transferred to the Course Director's account and institutional charge is being transferred to Internal Revenue account based on the request of principal investigator.

- An amount of Rs.5 crores was transferred to various stations of University booking the expenditure under state plan 2019-2020 as e-lams.
- An amount of Rs.57 crore was allocated under plan head. An amount of Rs.10 crores was released to various stations from the sanctioned amount of 52 cores after deducting e-lams.
- The utilization certificate in the prescribed format was submitted to the Government regarding 2018-19 state plan allocation of Rs.15 crore and 5 crore (e-lams) and 2017-18 resumption amount of Rs.10.79 crores.
- An amount of Rs.416.60 lakhs and 169 lakhs was released for 3 projects under RKVY.
- Pension adalat was conducted along with Kerala State Audit Department for redressing the audit objections of pensioners.
- A reply regarding AG audit report was submitted to Accountant General for the period 2015 to 2018.
- The reply from various stations heads regarding 2014-15, 2015-16 Audit report (KSID) is being codified.
- A total amount of Rs.4,49,39,052/- (Four crore forty nine lakhs thirty nine thousand and fifty two only) was released under General Provident Fund and Workers Provident Fund for the Financial year 2019-20 as Non-refundable Advance, Temporary advance, PF transfer and PF closure.

Sl No	Item	Released amount	Number of persons
1	GPF - NRA	13738000	85
2	GPF - TA	1831124	18
3	WPF-NRA	130000	-
4	WPF-TA	1522385	22

- The 7th pay revision for teaching (UGC staff) was implemented and payslips issued (204 numbers)
- Pay slips issued to teaching staff after implementing Career Advancement Promotion

DIRECTORATE OF ACADEMICS AND RESEARCH

The Directorate of Academics and Research is headed by the Director of Academic and Research and is assisted by a Joint Registrar, One Deputy Registrar, two Assistant Registrars, three Section Officers, one office superintendent, thirteen Section Assistants and two Computer Assistants. A separate wing under the Controller of Examinations is also functioning which is supported by the staff of Academic section. The Directorate implements, supervises and monitors all academic activities of the University as well as the research programmes. A Monitoring and Evaluation Cell is constituted under the Directorate for the monitoring and

evaluation of various projects undertaken by the faculty in the University.

ACADEMIC PROGRAMMES (2019-20)

KVASU offers Doctoral, Postgraduate, Undergraduate, PG Diploma, Diploma and Certificate programmes in Veterinary and Animal Science, Dairy Science and Technology and Poultry Science subjects, in addition to various Technology Enabled Distance Learning Programmes. Altogether there are 41 courses offered by the University including the conventional courses.

1. Academic Programmes in various colleges

a. College of Veterinary& Animal Sciences, Mannuthy

1. Ph.D. Programme in Veterinary and Animal Sciences (in 20 disciplines)
2. Ph.D. Programme Climate Change in Animal Agriculture
3. Ph.D. Programme in Biosciences (in 10 disciplines)
4. M.V.Sc. Programme. (in 20 disciplines)
5. M.Sc. in Biostatistics
6. M.Sc. in Quality Systems in Dairy Processing
7. M.Sc. in Bio-Chemistry and Molecular Biology
8. M.Sc.in Applied Microbiology
9. M.Sc. in Animal Biotechnology
10. M.Sc. in Animal Science
11. B.V.Sc& AH Programme
12. Post Graduate Diploma in Climate services in Agriculture
13. Post Graduate Diploma in Climate services
14. Diploma in Laboratory Techniques
15. Diploma in Poultry Production
16. Diploma in Dairy Science
17. Diploma in Feed Technology

b. College of Veterinary& Animal Sciences, Pookode

1. Ph.D Programme in Veterinary and Animal Sciences (in 19 disciplines)
2. Ph.D. Programme in Biosciences
3. M.V.Sc Programmes (in 19 disciplines)
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 Sciences & Technology, Chettachal, Thiruvananthapuram

B.Tech (Dairy Technology)

f. College of Dairy Sciences & 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

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 Diploma in Dairy Entrepreneurship
11. Post Graduate Diploma in Poultry Entrepreneurship
12. Post Graduate Certificate Course in Veterinary Homeopathy
13. Post Graduate Certificate in Community based disaster Management
14. Diploma in Integrated Farming Systems
15. Diploma in Dairy Entrepreneurship
16. Diploma in Poultry Entrepreneurship

Certificate Programmes

1. Certificate Course on Animal Handling
2. Certificate Programme on Livestock Production
3. Certificate Course on Histological and Museum Techniques
4. Certificate course on Dairy Cattle Production and Management
5. Certificate course on Multi skill development programme in Integrated Resources Management Centered on Livestock and Poultry

2. Total Seats and student enrolment (2019-20)

Sl. No	Course name	Total seats	Total Admitted
1.	Ph.D. in Veterinary and Animal Sciences	49 (ICAR-9)	22
2.	Ph.D. in Dairy Sciences	3	2
3.	M.V.Sc	152 (ICAR-38)	104

4.	M.Tech.	6	6
5.	M.Sc. in Biostatistics	5	3
6.	M.Sc. in Quality Control in Dairy Industry	6	6
7.	MS in Wildlife Studies	20	13
8.	M.Sc. in Biochemistry and Molecular Biology	15	13
9.	M.Sc. in Applied Microbiology	10	6
10.	M.Sc. in Animal Biotechnology	15	2
11.	M.Sc. in Animal Sciences	10	1
12.	BVSc&AH	180	182*
13.	B.Tech (Dairy Technology)	100	96
14.	B.Tech (Food Technology)	20	20
15.	B.Sc Poultry production and Business Management	75	75
16.	Diploma in Poultry Production	30	12
17.	Diploma in Laboratory Techniques	30	14
18.	Diploma in Dairy Science	60	60
19.	Diploma In Feed Technology	20	3

*Admitted to the Supernumerary quota for Jammu & Kashmir Students.

Technology enabled distant courses

Sl. No	Course name	Total Admitted
1.	Post Graduate Certificate Course in Veterinary Homoeopathy	85
2.	PG Diploma in One health	23
3.	P.G. Certificate in One Health Surveillance	1
4.	PG Diploma in Therapeutic Management of Infectious Diseases of Pet Animals and Pet Birds	35
5.	P.G. Diploma in Ethno pharmacology	7
6.	PG Diploma in Food Safety and Quality Assurance	7
7.	Diploma in Integrated farming systems	0
8.	Diploma in Poultry Entrepreneurship	-
9.	Diploma in Dairy Entrepreneurship	0
10.	Post Graduate Diploma in Poultry Entrepreneurship	7
11.	Post Graduate Diploma in Dairy Entrepreneurship	3
12.	PG Diploma in Livestock Agri Entrepreneurship and Food safety and security Management	0
13.	PG Certificate Course in Farm Journalism	-
14.	PG Diploma in Informatics and Management	0
15.	PG Certificate/Diploma in Toxicologic Pathology	1
16.	PG Certificate in Community Based Disaster Management	0

3. Number of Academic Council Meetings held:- 1

27th Academic Council Meeting was held on 23.11.2019.

4. The results for the following number of students were published.

Name of the Programme	Admission Year	No. Student qualified in this period
Ph.D. Programme	2016	3
M.V.Sc. Programme	2017	78
	2016	13
	2015	4
	2014	3
M.Tech. Programme	2017	3
	2015	1
MS Wildlife Studies	2016	3
M.Sc. Applied Microbiology	2017	1
M.Sc. Biochemistry and Molecular Biology	2017	5
MSc Animal Science	2016	1
B.Tech (Dairy Technology)	2015	161
	2014	2
B.Tech (Food Technology)	2015	18
BSc PPBM	2015	41
Diploma Dairy Science	2017	54
	2016	5
Diploma Poultry Production	2018	11
Diploma in Laboratory Techniques	2018	6
Diploma in Feed Technology	2018	2
PG Diploma in Therapeutic Management of Infectious Diseases of Pet Animals and Pet Birds	2017	23
PG Diploma in One health	2017	23
P G Certificate in Veterinary Homoeopathy	2018	32
	2017	4
	2016	1
P G Certificate in One health	2018	1
PG Certificate in Community Based Disaster Management	2018	3
Diploma in Commercial Dairying	2018	24

5. Initiated the works to conduct third convocation of the University to grant degrees and awards to the students.

6. Merit Scholarship for the following number of students were granted during the period.

Name of the Programme	Admission Year	No. students received the scholarship in each batch
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BVSc &AH	2019	6
B.Tech (Dairy Technology)	2015	10
	2016	4
	2019	10
B.Tech (Food Technology)	2019	2
BSc PPBM	2019	7

7. The following number of certificates were issued to the students who have completed their study from the University:
- Provisional Certificate - 464
 - Transcript - 443
 - Original Degree/ Diploma - 268
 - Migration Certificate - 54
8. University had conducted spot admission to fill 33 seats in B.Tech. (Dairy Technology) and one seat in B.Tech. (Food Technology), that remained vacant in the Dairy Science and Technology Colleges and Food Technology College under the University on 31.08.2019.

Scholarships awarded

- Ph.D.:- Senior Research Fellowship @ Rs.5000/- per month to all student admitted, except deputed candidates and those awaiting any other Scholarship from the Government/ University, and Research grant @ Rs. 50000/- per student.
- M.V.Sc&M.Tech:- Junior Research Fellowship @ Rs. 4000/- per month to all students admitted except deputed candidates and those awaiting any other Scholarship from the Government/ University and Research grant @ Rs, 25000/- per student.
- M.Sc./M.S.:- Assistantship @ Rs. 5000/- to 20% number of students admitted, subject to a maximum of 2 Assistantship in each discipline.
- KVASU Merit Scholarship:- @ Rs. 1500/- per semester for encouraging 10% meritorious under graduate students to purchase their studies in the University.
- KVASU Merit cum Means Scholarship:- @ Rs. 20,000/- per student 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.
- 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, on completion of programme of senior residents in those departments.

- Commenced a certificate programme in commercial dairying.
- Participated in the Chancellor's Award for the Best University in Kerala and won the Best Young Emerging University in Kerala consecutively for the second time.
- Participated in the National Institutional Ranking Framework and positioned in the 150-200 roll band.
- Second convocation of the University was conducted on 01.11.2018 and around 256 students had been granted degrees and awards.

RESEARCH ACTIVITIES

A) State Plan Projects 2019-20

- An amount of Rs. 5 crores has been sanctioned through e-LAMS during the above period vide G.O(P)No.131/2019/Fin dtd.30/09/2019.
- Administrative Sanction for State Plan projects for the year 2019-20 with total outlay of Rs.57 crores has been received vide.GO.(Rt.)No.476 /2019/AHD dtd.31/10/2019.
- An amount of Rs.10 crores has been sanctioned as first instalment of the State Plan during the period vide G O.(Rt.) No.20 /2020/AHD dtd.21/01/2020 and Administrative and Technical Sanctions were issued from this office for the utilization of the fund.
- Administrative Sanction has been accorded for the RIDF project entitled "Establishment of referral and diagnostic laboratory for supporting livestock farming and diagnostic zoonotic disease with a total budget of Rs.3214.37 lakh and an amount of Rs.610.73 has been sanctioned for the year 2019-20 as first instalment. Permission for utilizing the above amount has been sought from Board of Management and a request for exempting the University from repayment of the above amount has been forwarded to the Government.

B) State Plan Projects 2020-2021

State Plan proposals for the financial year (2020-21)) have been submitted for a total budget of 62.33 crores. However, the Government has limited the total outlay of State Plan projects (2020-21) to Rs. 50 crores. RIDF proposal for an amount of 12.21 crores has also been submitted.

C) RKVY Projects

A total amount of Rs.410 lakh and Rs.6.60 lakh have been released for the RKVY project entitled "Establishing a poultry breeding farm for backyard chicken production at Thiruvazhamkunnu (Second Phase)" during the above period being project cost and administrative cost respectively.

The following 4 new RKVY projects have been sanctioned to the University.

Sl No	Name of RKVY Project Proposal	RKVY assistance (Rs in lakh)
1	Establishment of state of the art laboratories for diagnosis, research, teaching and demonstration facilities in the field of tick and tick-borne diseases for the mitigation of economic losses to the livestock farmers(Department of	224.00

	Veterinary Parasitology, CVAS, Pookode)	
2	Health care management programme for augmenting production and reproduction in small scale and marginal cattle farms of Kerala, (University Veterinary Hospital, Mannuthy)	198.00
3	Strengthening of Centre for Animal Adaptation to Environment and Climate Change Studies (CAADECCS) for assessment of thermal stress in Dairy cattle(Department of Veterinary Physiology,CVAS,Mannuthy)	170.00
4	Establishment of Molecular Virology Laboratory in Bioscience Research and Training Centre (Thonnakkal, Thiruvananthapuram)	73.00
	TOTAL	665.00

- However, a total amount of Rs.73 lakh and Rs.96 lakh have been released to the projects entitled “Establishment of Molecular Virology Laboratory in Bioscience Research and Training Centre (Thonnakkal, Thiruvananthapuram)” and Health care management programme for augmenting production and reproduction in small scale and marginal cattle farms of Kerala, (University Veterinary Hospital, Mannuthy), respectively.

- Also, 11 new project proposals with a total outlay of Rs.1603.23 lakh have been submitted to the Government for funding under RKVY (2020-21).

D) Externally aided projects/Revolving fund projects

There are 33 externally aided projects ongoing in the University as on date.

SI No	Name of Funding Agency	Number of ongoing projects
1	ICAR	09
2	DST	05
3	DBT	01
4	RKVY	05
5	KSCSTE	06
6	AHD	05
7	ATMA	02
8	NABARD	01
9	IDSP	01
10	DTRA	01
	TOTAL	36

Besides, 32 projects are running in the University under revolving fund mode.

E) ICAR Grants and Scholarships/Fellowships

The ICAR has sanctioned funds under various components for the year 2019-20 to the University during this period as follows.

SI No	Name of Component	Amount allotted (in lakh)
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1	Development Grant	137.0000
2	Library Strengthening	26.0000
3	National Talent Scholarship	33.08764
4	Student READY (In-Plant Training)	16.9200
5	Veterinary Internship	36.7200
6	Junior Research Fellowship	2.57527
7	Merit cum Means Scholarship	1.4400
	TOTAL	253.74291

Rate /Running Contract

Orders for entering into running contract for the supply of chemicals, laboratory items, etc for the year 2019-20 have been issued to reputed firms who have fulfilled all conditions put forth by the University.

INFRASTRUCTURE DEVELOPMENT WING

The Infrastructure Development Wing located in the Pookode campus of Kerala Veterinary and Animal Sciences University is entrusted with the construction, maintenance, planning and development of basic facilities of the University. The wing headed by the Director is comprised of technical and administrative staff. Kerala Public Works Department rules and regulations are followed by the ID Wing in executing the works. The wing is also monitoring the water / electricity supply of the Mannuthy and Pookode campuses of the University. In the year 2019-20, 88 works have been completed through e-tender procedures and 16 works have been completed through short tender procedures. The wing commenced the execution of works pertaining to 2020-21.

In Pookode campus, the maintenance works of the roof of academic block, hostel, road, renovation of different teaching departments, construction of first floor of different quarters, construction of extension of Pig Farm and urgent works related with water / power supply have been completed. Urgent steps to develop basic facilities in locations damaged by the flood in 2018 and also to complete construction works with mandatory permission from the Forest Department is also progressing.

In Mannuthy campus, renovation and maintenance of different teaching departments, compound wall construction, well, repair of hostel buildings, construction of building for rehabilitation centre for stray puppies, water tank construction, maintenance of road, additional works for the College of Dairy Science and Technology, construction of Academic Staff College, Multi Facilitation Centre, different works related with Pig Farm, Poultry Farm, University Livestock Farm have been completed. The works related with construction of new hostel, examination hall and Meat Technology Unit are nearing completion. Initiated the preliminary steps for construction of a Virology Laboratory at an estimated cost of Rs.32 crore, construction of milking parlour for Rs. 53 lakh and providing pipeline for Fodder Unit for Rs. 15

lakh.

In Thiruvazhamkunnu campus, the renovation and maintenance of the Cattle Shed, hostel building, canteen, construction of goat farm, chicken shed, well, pump house, pipe line have been completed. Works started for the construction of second floor of the Academic Block. The initial works for construction of newly proposed Farm Shed under RKVY project has been started.

In Thumburmuzhi campus, no new works are permitted by the authorities concerned due to the flood and landslide in 2018.

In Kolahalamedu campus, construction of new hostel building, maintenance of animal shed and check dam have been completed. The proposals for a total of Rs.48 crore for the basic facilities of College of Dairy Science and Technology and facilities for Base Farm have been submitted to the Government of Kerala.

Approximately, the works with a total cost of Rs.10 crore have been carried out in 2019-20. Also, proposals are being formulated by identifying fund from different sources to execute projects for the overall development of the University.

DIRECTORATE OF ENTREPRENEURSHIP

The Directorate of Entrepreneurship headed by Director (Entrepreneurship) has Publications, Training, Entrepreneurship, capacity building and knowledge transfer, Media and Informatics, Technology Enabled Distance Learning as major divisions. 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 coordinates the publication works of University publications. Technology enabled Distance Learning Centre coordinates the conduct of various distance learning courses of the University. The 24X7 Veterinary Services „e- Vet connect“ provides veterinary services and advisories to owners of large and small ruminants, pet animals in the State. The facilities for emergency veterinary services of experts even after normal working hours are provided. The Centre for Livestock Development and Policy Research undertakes policy research and capacity building. The Regional Research and Training Centre at Thiruvananthapuram act as an intermediary between the headquarters of the University and Government focusing on policy issues and trainings. The Academic Staff College of the University functioning under the 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 startups. The Directorate of Students Welfare monitors the student welfare activities, coordination of NSS activities etc.

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 4per 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.

Outreach:

1. Flood relief activities: Directorate of Entrepreneurship coordinated various flood relief activities initiated by the University in the worst hit areas in several districts of the state. As part of the programme “Unarvu”, various animal health camps and relief camps for livestock and poultry farmers was conducted. University products viz., concentrate cattle feed, milk, eggs and fodder and essential items were distributed to affected farmers in Wayanad and Thrissur districts, during the month of August and September 2019.
2. Established ‘Silky’ Pet Spa for grooming of pet animals and training for dogs
3. Resumed the functioning of Technology Information and Sales counter at Pookode on 17th October 2019
4. Participated in the inaugural programme of various facilities of the University at Mannuthy campus on 25th October 2019. Minister inaugurated the following programmes
 - Multi facilitation centre for the benefit of farmers, scientists, students and entrepreneurs in conducting interaction and trainings with residential facility.
 - Farm Advisory Centre at the Directorate of Farms for the advise to the farmers within the state and outside the issues
 - Centre for rehabilitation of Stray Puppies under END (Early Neutering in Dogs) for providing training the veterinarians, animal welfare organizations and creation of awareness among public regarding the handling of dog population in a humane manner
 - Released Meat and Egg products by Livestock Product Technology department and Meat Technology Unit of KVASU
 - Release of Complete feed block by the department of Animal Nutrition to act as a readymade balanced mixture foe cattle especially in lean seasons and at the time of natural calamities.
 - Distribution of Liveli hood support (cattle/goat) to the victims of flood through the Unarvu programme
 - Introduced the official Face Book page and KVASU You Tube Channel as social media platforms for knowledge, information and technology transfer.

Exhibitions/ Farmers seminar

1. Arranged exhibition stall of University in Exhibition ‘POOPPOLI-2020’ the international Flower Show at RARS Ambalavayal from 01.01.2020 to 12.01.2020
2. KVASU established an Exhibition stall at VAIGA 2020 at Thrissur (04-07 Jan, 2020) highlighting the value addition of Livestock products and publications of KVASU.
3. Organised exhibition in connection with State level Panchayat Day Celebrations-2020, held during 17th February to 19th February 2020 at SKMJ School Ground, Kalpetta, Wayanad
4. Organised exhibition in connection with Malayala Manorama Karshakasree Karshikamela-2020 from at Palakkad from 22.01.2020 to 26.01.2020

5. Participated by arranging an exhibition stall for ‘Dairy Expo -2020’ at Thiruvananthapuram held during 24th to 28th February 2020
6. Arranged exhibition stall of University in connection with ‘‘Talent Expo 2019 Science fair and Exhibition’’ held on 11th October 2019 at WMO English Medium School, Meppadi
7. Participated in exhibition at Palakkad as part of Baroda Kissan Pakhvada & baroda Kisan Divas on 18th October 2019
8. Participated in the Higher studies expo DISHA 2019 at Govt. Higher Secondary School, Bella East, Kanjangad from 26.11.2019 to 1.12.2019.
9. Participated by arranging an exhibition stall for ‘Quest 2019 Science Exhibition’., held during 5th to 7th December 2019 at Govt. Arts & Science College, Calicut

Trainings/ Conferences/Seminars conducted/ participated

1. Facilitated the Professional Students Summit (PSS) 2020, at Cochin- February 15, 2020
2. Conducted Students Orientation Programme for BVSc & AH, PPBM and Dairy Diploma 2018 and 2019 batch held during 17th February to 18th February 2020 KVASU Headquarters
3. Organized and conducted the obligatory three months training programme for two batches of Assistant Directors of Animal Husbandry Department during July – September and November-December 2019.
4. Conducted three skill development trainings on Animal Birth Control for field veterinarians of Animal Husbandry Department , 30 participants each during from 22.7.2019 to 27.7.2019 and 5.8.2019 to 10.8.2019
5. Organized a one day state level workshop ‘ Athijeevanam’ jointly organised by AHD-KVASU-IVA on the theme ‘ sustainable development in the context of problems faced by farmers requiring interventions from University and AHD’, considering the prevailing problems of climate change, flood and other disasters.

Publications

1. Published the University Annual Report 2018-19 in August 2019
2. A book on stray dogs in Malayalam- ‘Dog- Man’s companion’ .
3. Published and released September 2019 issue of KVASU Newsletter ‘Windows’ on 3.12.2019
4. Published brochures on leaflets on various topics related to Animal Husbandry
5. Published a booklet about the University
6. Released the Calendar, Organizer and Student data book for the year 2020

Distance Learning Centre of Directorate of Entrepreneurship

1. The courses ongoing: PG Diploma in Poultry Entrepreneurship, PG Diploma in Dairy Entrepreneurship and Diploma in Dairy Entrepreneurship.
2. Orientation class for candidates of Distant Learning courses for the academic year 2019-20 was conducted on 24/09/2019 at Kabani Auditorium, KVASU Head Quarters, KVASU, Pookode.
3. A meeting was conducted on online conduction of Distant Learning Courses on 27th Sept.2019 at the Chamber of DE,Camp office Mannuthy. An external expert in the field Mr. Ravikrishnan A.K. was an invitee in the meeting.

Meetings/ Discussions

1. Faculty attended the viva voce examination of MVSc. Student Dr, Asif Muhammad at Mannuthy
2. Attended the inaugural programme of Hostel building of College of Dairy Science and Technology, Kolahalamedu on 24.02.2020 Adv. K Raju, Hon'ble Minister & Pro-Chancellor to KVASU inaugurated the programme

3. The Valedictory function of Third Refresher training programme of Academic Staff College held on 27.02.2020, at CVAS Mannuthy.
4. The Valedictory function of the "Obligatory Training programme for Assistant Directors of Animal Husbandry Department" held on 28.02.2020 at Mannuthy
5. Discussed with Members of Quilandy Municipality on starting a University Regional Centre at Quilandy, on 12th July 2019

ACADEMIC STAFF COLLEGE

The Academic Staff College (ASC) came into existence under Kerala Veterinary and Animal Sciences University, on 29th December 2015 within the premises of the College of Veterinary and Animal Sciences, Mannuthy, Thrissur. The first of its kind to be established by a professional university, the ASC has its motto “Siddhirbhavathi Karmaja”. The ideology behind the venture was to emphasize on the central role the teachers play in the elaborate system of education. The ASC was formed with the purpose of providing continuous teacher training/enhancement programmes that are subject-specific as well as general in nature that lead to the holistic development of the participants.

- 3rd to 16th July 2019- 2nd Refresher course on “Sharpening of Soft Skills for Academic Excellence” at College of Veterinary and Animal Sciences, Mannuthy
- 14th to 27th February 2020- 3rd Refresher Course “A Roadmap to Enhance Core Teaching Competencies in Academic Landscape”
- 15. 3rd to 30th June 2020- Farmer friendly lecture series “Veterinary Doctorodu Chodikkaam”

KVASU LABORATORY FACILITIES

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

1. Central Instruments Laboratory, CoVAS, Mannuthy For determination of T3 and T4 by Radio immune assay.
2. Feed Analysis Laboratory, Dept. of Animal Nutrition, CoVAS, Mannuthy for Determination of moisture and total ash in feeds and fodder.
3. Quality Control Laboratory, Dept. of Veterinary Public Health, CoVAS, Mannuthy for Determination of coliforms in drinking water /ground water.
4. Food Quality Assurance Laboratory, Dept. of Veterinary Public Health, CoVAS, Pookode for Determination of coliforms in drinking water /ground water.
5. Feed and Fodder Analysis Laboratory, Dept. of Animal Nutrition, CoVAS, Pookode for determination of proximate principles in animal feeds.
6. The laboratories attached to School of Applied Animal Production and Biotechnology, CoVAS, Mannuthy and Molecular Biology Laboratories attached to Departments of Veterinary Microbiology and Veterinary Biochemistry also possess many sophisticated equipment.

The list below shows the total infrastructure facilities available across various laboratories of Mannuthy and Pookode campuses.

Name of the equipment	Positioned at CoVAS, Mannuthy	Positioned at CoVAS, Pookode
1. Atomic Absorption Spectrophotometer	1	1
2. Triple Quadruple- GCMSMS	1	Nil
3. Ultra High Performance Liquid Chromatography	1	1
4. Vertical Electrophoresis Apparatus With Power Pack	3	1
5. Mini-protean® Tetra Hand cast Systems	3	1
6. Criterion™ Electrophoresis Cell	3	1
PROTEAN® I12™ IEF System For 2-D Electrophoresis	1	Nil
8. Mini Trans-blot® Wet Transfer Cell	1	Nil
9. Trans-blot® SD Semi-dry Transfer Cell	1	Nil
10. Trans-blot® Turbo™ Semi-dry Transfer Cell	1	Nil
11. Chemidoc MP Imaging System	5	3
12. Multimode ELISA Plate Reader	5	3
13. Microplate Washer	2	1
14. Gradient Thermal Cycler	10	7
15. Densitometer	1	Nil
16. Homogenizer	2	1
17. Freeze Drier/ Lyophilizer; cold Trap	1	1
18. Vacuum Concentrator	1	Nil
19. Orbital Shaker	3	2
20. Rotary Flash Evaporator	2	1
21. Gamma Counter	1	Nil
22. Phosphor Imager	1	Nil
23. Nanodrop Spectrophotometer	1	1
24. Fluorospectrometer- Nanodrop	1	Nil
25. Semi-micron Analytical Balance	1	Nil
26. Micron Analytical Balance	Nil	1
27. Electronic Weighing Balance	10	4
28. Bio-chemical Analyser	4	2
29. Haematology Analyser	4	2
30. Ultra-centrifuge	1	Nil
31. Refrigerated Centrifuge (High-speed)	5	3
32. Stereo Zoom Microscope	2	1
33. Trinocular Research Microscope	2	1
34. Inverted Research Microscope	2	1
35. CO ₂ Incubator	4	2
36. Beta Counter With Cell Harvester	1	Nil

37. Autoclave	8	4
38. Ice Flaker	2	1
39. Spectrophotometer UV-VIS-NIR	1	Nil
40. Automated Mammalian Cell Counter	2	1
41. pH/Ion Selective Electrode (ISE) Meter	10	7
42. Incubator	15	10
43. Hot Air Oven	14	10
44. Deep Freezer -86°C	2	1
45. Real Time PCR	3	1
46. Automatic Fraction Collector	1	Nil
47. Electrofusion Apparatus/ Electroporator Gene Pulser Xcell	1	Nil
48. Microwave Digestion System	1	Nil
49. Fourier Transform Infrared Spectrometer (FTIR)	1	Nil
50. Biosafety Cabinet Class II	2	1
51. Shaker Water Bath	4	2
52. Fume Hood	2	1
53. Fluorescence Spectrometer	2	Nil
54. Ultrasonic Cleaner	2	1
55. Electrolyte Analyzer for Na/K/Cl estimation	1	1
56. Accelerated Solvent Extractor	1	Nil
57. Deep freezer -20°C	8	4
58. Flow cytometer	Nil	1
59. Capillary gel electrophoresis system	1	nil
60. Gas chromatograph	1	1
61. Micro Ultra centrifuge	Nil	1
62. Scanning electron microscope	1	Nil
63. Liquid chromatograph Mass spectrometer	1	Nil
64. Inductively coupled OES analyzer	1	Nil
65. Sodium potassium electrolyte analyzer	1	Nil

COLLEGE OF VETERINARY AND ANIMAL SCIENCES MANNUTHY

Introduction

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.

Courses

The college offers programmes leading to the bachelor of veterinary science and animal husbandry as well as the master's and doctoral degrees in veterinary science. In addition other certificate, diploma and m.sc., programmes are also offered.

Admission procedure

Students for B. V. SC. & A.H. course are admitted to the college through the annual cbse neet examination. Admission to the other courses is through university entrance examination and interview.

Staff strength

As on 1.4.2019 there are 118 self-drawing officers including 108 teachers, 39 non gazetted officers and 5 permanent labourers drawing salary from the office of the dean, CVAS, Mannuthy

Infrastructure facilities

Lecture classes for BVSc & AH programme, Master's and doctoral credit and defense seminar 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.

Student amenities

Academic

Class rooms: The college has six lecture halls for undergraduate teaching which is equipped with LeD TV, Wi-Fi connectivity, smart boards and UPS . Besides there is a "Smart class room" with video conferencing facility and online teaching facility. There are 32 class rooms for PG classes in different departments and schools with LCD projector facility.

TVCC: The campus houses KR Narayanan memorial Teaching Veterinary Clinical Complex with state of the art facility for Veterinary medicine, Surgery and Reproduction.

Meat Plant: A well equipped meat plant and processing units provide hands on training in abattoir practices and product development .

Examination halls: CVAS, Mannuthy has two examination halls with well developed cctv cameras, Mikes facility, water filter and uninterrupted power supply to accommodate approximately 450 students at a time .

Library facility: The college has a library that functions from 9 am to 7 pm .It is

equipped with 7 computers for students, Wi-Fi facility, subscribes 23 e journals and has 25634 books.

Exhibition halls/ Museums: The college has following museums for academic activities of students

Sl no.	name of Department	name of exhibition hall	Purpose
1	Veterinary Anatomy & histology	Anatomy Museum	A state of the art museum depicting anatomy of different animal species for Ug, Pg teaching as well as provided public access
2	Veterinary Parasitology	Parasitology museum	A state of the art museum with collection of animal as well as zoonotic parasites for Ug, Pg teaching as well as provided public access
3	Veterinary Pathology	Pathology museum	A state of the art museum with collection of specimens depicting post mortem lesions of important diseases in animals for Ug, Pg teaching as well as provided public access
4	Livestock Production management	eco Farm	Live museum with demonstration of livestock management practices in different animal species
5	Veterinary Pharmacology	ethno botanical museum	live museum of different plant species of therapeutic significance

Co curricular

Auditorium: The college has 3 auditoriums to enrich the curricular/co-curricular student activities

Name	Capacity
College Auditorium	150
golden Jubilee Auditorium	300
Seminar hall	150

Language Laboratory: Classes for improving proficiency in English is held regularly 2 hours a week. All interested students are allowed to participate in the programme. In addition a Spreakers Club which functions in line with Agora Speakers International conducts sessions once a week for 2 hours which is meant to improve the communication and leadership skills of students.

Cultural Center: A faculty recreation club is operational in the campus. In addition to the interclass arts festival conducted by the Students'Union, programmes are also organised under the auspices of Speakers Club, Readers Club, Music Club, Dance Club

and Quiz Club. The faculty club runs an indoor facility for badminton which is extensively used by both faculty and students.

Sports facility: The following facility in CVAS ,Mannuthy is operational under the department of Physical education

- Track and Field
- Football Field
- two cricket fields
- Two cricket Practice nets
- Two volleyball courts
- one Basketball court
- Two badminton courts
- Table tennis hall
- Chess room
- Yoga hall
- Well equipped gym

Residential

The following hostel facility is available in the campus

Sl. No.	Particular	Boys Hostel (UG)	Boys Hostel (PG)	Girls hostel (UG)	Girls hostel (PG)
1	Capacity	208	76	353 (4 hostels)	112
2	Mess facility	Yes-1 (80 capacity)	Yes	Available (capacity 100)	Yes
3	Drinking water	Yes (2 water coolers)	Yes Filtered water with cooler	Available (with water purifiers in each hostel)	Yes Filtered water with cooler
4	Indoor games	Yes TT table, caroms	Yes		
5	Hot water	Yes		Available	Yes
6	News paper	Yes (1 english, 3 Malayalam, 6 Magazines)	Yes	Available 3 Malayalam and 1 english daily	Yes
7	Cleaning facility	yes (2 lady staff)	Yes	Available with 5 contract staff	Yes

Other student amenities

- Water filters available in different corners
- Ladies washrooms
- Canteen facility and multifacilitation centre
- coffee shop

- Low priced Xerox facility
- A well functional ARIS cell with seventeen computers to help students to collect resources online and to provide them with printouts, scanned documents etc at a subsidized rate
- open air class room facility for small groups
- University sales counter in the campus is functional and it offers the Earn while you learn Program operated by the Dept of extension. The student volunteers numbering 20-30 looks after the information dissemination cum sales of livestock products to the public.

Student training programmes

Non- Credit Compulsory Courses

a.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, Anaesthesiology, 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.

b. 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..

c. 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.

Financial outlay for 2019-20

The College of Veterinary and Animal Sciences, Mannuthy, Thrissur is one of the oldest institutions in the Kerala Veterinary and Animal Sciences University and its proud bearing traces back to the year 1955. It is the basis on which the entire foundation of the university relies in terms of contribution to animal husbandry sector and economy generation. The college at present has numerous externally aided projects sponsored by ICAR, DBT, DST, KSCSTe and other agencies. Skilled and highly experienced faculty and staff, state of art laboratories and farms, strong infrastructure are all added strengths of this institution. Apart from core undergraduate, postgraduate and doctoral courses for the Veterinary and Animal Sciences, the college runs numerous diploma and other courses related to the animal husbandry and basic sciences. The college has three nABL accredited laboratories in its credit. In testimony to its proud heritage the Kerala Veterinary and Animal Sciences University has been receiving the Chancellors award for the best young emerging university for the past three consecutive years. This college has a promising future and vast potential for expansion in the coming years.

Fund allocation Heads	Amount (Lakhs)
non Plan	2325.00
State Plan	993.54
Externally aided projects	128.41
New academic programs	75.77
ICAR Development grant	82.6014
Internal Revenue	14.86689
Total	3620.18829

Office of the Dean

Staff details

Sl. No.	Name	Designation	Email	Mobile
01	Dr. C. Latha	Dean	deanvetmty@kvasu.ac.in	9446445100 9495047649
02	Dr. P.V. Tresamol	Associate Dean	adeanmty@kvasu.ac.in	9446307016
03	Sri. Reghu.A Smt. Santhamma K.n. Sri. Manikuttan C	administrative officer Gr.i administrative officer Gr.i administrative officer Gr.i	agrasala@gmail.com knsanthammaao@gmail.com manikuttanc@kvasu.ac.in	9446542471 9495467023 9446994414
04	Sri. Arun.B.Asok Sri. Syamkumar J.	Section officer (HG), Academics Section officer, academics	arunbasok@gmail.com syam95397@gmail.com	9995068103 9539705559

05	Sri. Anto Varghese Smt. Sini Sudhakar	Section officer (HG), Accounts/Bills Section officer (HG), Accounts/Bills	antovarghese43@gmail.com siniarun19@gmail.com	9446351043 9495132967
06	Sri. SanojeKumar. A.C	Section officer(HG), establishment & general	sanojkac@gmail.com	9747898591
07	Sri. Sreejith K. Balan	office Superintendent (HG)	sreejithkbalan@gmail.com	9961609492
08	Sri. Joseph e.L.	office Superintendent and Steno to Dean	eluvathingaljoseph@gmail.com	9496348845

Academic cell-1

Major Activities of the Academic Cell:

The academic cell-1 deals with all the academic matters of BVSc, MVSc and PhD courses of the University at CVAS, Mannuthy such as registration of students, conduct of exams, issue of identity cards and various certificates, allotment of admission numbers etc.

Activities	Details
Admission	Coordinated the BVSc & Ah, MVSc & PhD (2019 admn) admission, orientation and registration
examination	Conduct of mid-term, internal exam & Board exam
IUMS	Student registration, student course allocation and teacher allocation Monitoring attendance and internal mark entry particulars
Scheduling of entrepreneurial Training programmes (eTR 321), Tracking Programme	2015 admn
Antiragging activities	Co-ordinated the Antiragging committee meeting, Antiragging campaign with District legal Service Authority, formation of antiragging squad, mentoring cell and antiragging duty
Chancellors award	Compilation of documents for Chancellors award 2019
Improvement of examination hall facility	*Renovated the Pg examination hall *Made permanent seating arrangement in exam hall for all batch of students *Issued guidelines for conduct of examination
certificate	Verification and preparation of mark certificates, bonafide student certificates, fee structure certificate, course completion certificates etc.

Internship evaluation	Monitored the submission of Log Book Manual, Dissertation and Project of Internship students & for internship students of 2014 admission
Conduct of Seminar	Conducted Masters and Doctoral credit and defense seminars

Courses handled: BVSc & Ah, MVSc and Ph.D.

Number of students for each course and gender distribution

Total Students as on 31.03.2020

Year of study	Admission	Semester No./ Year	Total	Male	Female
			BVSc &		
1 st Year	2019 & earlier	I year	107	39	68
1 st Year (Re-re-repeat)	2015 & earlier	II sem	3	2	1
2 nd Year	2018 & earlier	II year	85	47	38
2 nd Year (Re-repeat)	2015 & earlier	IV sem	3	3	0
3 rd year	2017 & earlier	III Year	121	43	78
3 rd Year (Repeat)	2015 & earlier	VI sem	12	9	3
4 th Year	2016 & earlier	IV year	141	50	91
4 th Year (old syllabus)	2015 & earlier	VIII sem	145	58	87
Internship	2014 & earlier	X sem	130	44	86
Total			747	295	452

Year of study	Admission	Semester	Total	Male	Female
			Ph.D		
1 st Year	2019	I sem	18	6	12
2 nd Year	2018	III sem	10	6	4
3 rd Year	2017	V sem	9	3	6
4 th Year (if any)	2016	VII sem	5	3	2
Total			42	18	24

Year of study	Admission	Semester No.	Total	Male	Female
			MVS		
1 st Year	2019	I sem	68	19	49
2 nd Year	2018	III sem	68	23	45
3 rd Year (if any)	2017	VI sem	7	1	6
Total			143	43	100

Total strength of Ug, Pg &Ph.D Students = 932 (M 356 + F 576)

Academic cell -2

Major activities

The academic cell-2 deals with all the academic matters of Diploma., M.Sc. and PhD Biosciences courses of the Kerala Veterinary and Animal Sciences University at CVAS, Mannuthy such as registration of students, conduct of exams, transmission of grade reports, other activities related to submission of dissertation, issue of identity cards and various certificates etc., IUMS related activities-Student registration, student course allocation and teacher allocation, monitoring attendance and internal mark entry particulars, classes on Spoken English, coaching for competitive examination and general awareness are arranged for the benefit of M.Sc. and Diploma students, recruitment of staffs on contract for these courses, conduct of Doctoral credit and defense seminars.

Courses offered:-

- PhD in Biosciences
- M.Sc. Biostatistics
- M.Sc. Quality control in Dairy industry
- M.Sc. Biochemistry and molecular Biology
- M.Sc. applied Microbiology
- M.Sc. animal Biotechnology
- M.Sc. animal sciences
- Diploma in Dairy science
- Diploma in Feed technology
- Diploma in Poultry Production
- Diploma in laboratory techniques

Number of student intake for each course and gender distribution

Sl. No.	Course	Year of Admission	No. of students		Total
			Male	Female	
1	M.Sc. Quality control in Dairy Industry	2019	1	5	6
2	M.Sc. Animal Biotechnology	2019	0	2	2
3	M.Sc. Animal sciences	2019	1	1	2
4	M.Sc. Applied Microbiology	2019	2	4	6
5	M.Sc. Biostatistics	2019	2	1	3
6	M.Sc. Biochemistry and Molecular Biology	2019	5	8	13
7	Diploma in Dairy science	2019	9	21	30
8	Diploma in Laboratory Techniques	2019	9	5	14
9	Diploma in Poultry Production	2019	6	6	12
10	Diploma in Feed Technology	2019	3	0	3

DEPARTMENTS AND ITS ACTIVITIES

VETERINARY ANATOMY AND HISTOLOGY

Major activities

- Ug, Pg and PhD. classes
- Research projects and student projects (one MVSc student and 9 M.Sc. Zoology students (external) submitted thesis)
- Maintenance of state of the art museum
- Development of innovative pedagogical approaches

Research Highlights

- nucleotide Sequence variations and deletions in ovomucoid genes with respect to low hatchability and embryonic abnormalities.
- Mitochondrial Cytochrome C oxidase subunit (CoI) sequence in DnA barcoding and Muzzle imprinting
- Anatomical causes of infertility in crossbred cows (molecular and structural studies).
- Development of innovative pedagogical approaches.
- Advanced techniques for animal cadaver preservation and museology.
- Advanced studies in neuro-anatomy.
- Continuing Research projects on gross anatomy in relation to endocrine, immunologic, and embryonic studies.

ANIMAL NUTRITION

Major activities

- Academic: handled classes for diploma, undergraduate, postgraduate and doctoral students.
- Extension: organizing training programmes for progressive farmers/ entrepreneurs and one training programme for veterinarians/laboratory personnel's.
- Scientific advices on feeding management and ration formulation nutritive evaluation of feed and fodder samples:
- Scientific advices on feeding management, ration formulation, nutritive evaluation of feed and fodder samples

Research Highlights

- Maintenance energy requirement was assessed in medium sized nondescript dogs kept restrained.
- Effect of feeding densified complete feed blocks incorporated with unconventional feed ingredients like dhanvantharam oil residue and tapioca starch waste at 20 per cent levels to crossbred heifer calves was evaluated
- Effect of feeding complete feed (16 per cent cP and 65 per cent tDn) incorporating moringa leaves and fodder sorghum was evaluated in lactating goats.
- Densified complete feed block (DcFB) technology was standardized and a paddy straw based product “*NutriMDCFB*” was commercially launched

ANIMAL GENETICS AND BREEDING

Major activities

- Undergraduate, Pg and Ph.D. courses on Animal genetics and Breeding
- external aided projects (DST, KSCSTe and AhD) and plan projects. ICAR projects on Malabari goat Improvement and FPT Scheme
- hands on training on molecular biology and bioinformatics (14 days) and two days seminar

cum workshop in collaboration with KUHAS

- Conservation of native cattle breeds of Kerala, maintenance of germplasm repository, cryo-conservation and supply of semen of native cattle by Vechur Conservation unit and supply of rabbit seed stock and trainings/extension services by Rabbit Breeding Station, CASAgB
- Technical and administrative support to SAAPBT, CASAgB, Research and Co-ordination, Academic Cell, student's hostel, women complaint redressal committee, various farms (goat, rabbit and vechur), professional journals editorial committees etc.

Research Highlights

- Published twelve research articles in international and national journals and reviewers of peer reviewed international and national journals
- Department has ongoing projects from DST SeRB, ICAR, KSCSTe, AhD and state plan
- Performed genome wide study of selection signature, diversity and identified genetic markers of economic traits in native goats of Kerala
- identified differentially expressed genes in native and crossbred cattle of Kerala in response to tick infestation
- icar FPr Scheme- 5569 ai were done in thrissur district and first lactation 305-day milk yield of progenies increased to 3232.99 ± 35.23 Kg.
- AICRP on Malabari goat- enhancement of productivity, implementation of breeding, feeding, and health control technologies in the field and capacity building of stakeholders were carried out

VETERINARY PHARMACOLOGY AND TOXICOLOGY

Major activities

- Organized XIX Annual Conference of Indian Society of Veterinary Pharmacology and Toxicology (ISVPT) and national Symposium on "Pharmacogenomics in the development and Validation of indigenous drugs" at College of Veterinary and Animal Sciences, Mannuthy
- Conducted Training on lab animal models and bi methodology
- Conducted post graduated diploma on ethno-pharmacology
- conducted certificate course in Veterinary Homeopathy
- Conducted national pre conference workshop "*in silico* and cell culture techniques as an alternatives to the animal use"

Research Highlights

- Assessed anticancer activity of *Hordeum vulgare* and *Pergulariadaemia* in triple negative breast cancer cells
- Screened milk for 2,3,7,8 tetrachlorodibenzo-p-dioxin (TCDD) and completed *in vitro* assessment of its impact on steroidogenesis
- Project on antineoplastic effect of biosynthesised baicalein and piperlongumine nanoparticles
- Project on "Effect of lemon grass oil and citral in combating antibiotic resistance in methicillin resistant *Staphylococcus aureus* isolates from bovine mastitis"

VETERINARY EPIDEMIOLOGY AND PREVENTIVE MEDICINE

Major activities

- Academic: handled classes for undergraduate, postgraduate and doctoral students.
- Free vaccination camp for cat and dogs during world veterinary day and zoonosis day
- Disease investigation were conducted at KLDB Bull Mother Station Mattupetty, University Livestock Farms and Private Farms
- Tuberculosis, johnes disease and brucella screening were done at University farms
- Vaccination were conducted at University Livestock farms
- Screening for haemoparasites and mastitis in different farms of university and private were conducted regularly

Research Highlights

- *Spa* typing of *staphylococcus aureus* which is a major pathogen of mastitis
- Standardization of treatment protocol for complicated babesiosis in dogs
- Screening of theileria organism were done and identified *Theileria orientalis* genotype buffeli and chitose
- Screening of goat for theileria organism and identified *Theileria luwenshuni*
- Sub clinical mastitis were screened and isolated MRSA

VETERINARY MICROBIOLOGY

Major activities

- Teaching under graduate, post graduate and doctoral students
- Implementing two external aided projects
- Diagnosis of field outbreaks of infectious diseases and giving advice for proper treatment and control
- Conducting M.Sc. Applied Microbiology course
- Providing technical advice to veterinary officers of the state and farmers

Research Highlights

- Prepared a subunit vaccine employing recombinant oMPA of *Riemerella anatipestifer* and assessed the humoral and cell mediated immune responses in ducks in comparison with inactivated vaccine. The inactivated vaccine was found to be superior to the subunit vaccine
- Seroprevalence of leptospirosis in goats in 5 districts of Kerala was studied by microscopic agglutination test and it was found to be 10.80 per cent. Serogroup Pomona was the most prevalent one

Five molecular typing methods were employed to determine the genetic variations between *Riemerella anatipestifer* isolates. The ReP-PCR subtyping proved to be much easier and cheaper

POULTRY SCIENCE

Major activities

- Teaching of Ug, Pg, Ph.D. & Diploma in Poultry Production
- Research – Pg, Ph.D.
- Routine farmers counselling & advises on post mortem reports

- Trainings and other extension programmes including Farmer's classes and Radio talks
- Implementation of state plan projects.

Research Highlights

- evaluated phenotypic and production characters of native chicken of Kerala
- evaluated the performance of the crossbreeds of native chicken of Kerala with white leghorn
- compared the effect of citric acid, non starch polysaccharide degrading enzymes and their combination with that of antibiotic supplementation on performance of broilers
- Studied the influence of fish oil on production performance and fatty acid profile of eggs in athulya & native chicken

VETERINARY PARASITOLOGY

Major activities

- Teaching uG, PG and Doctorate students
- examination of clinical samples and specimen and result communication
- Conducting Diploma programme in Laboratory Techniques in addition to Ug, Pg and Ph.D. teaching /research
- Conducting classes and hands-on practical cum training to students and staff of Paramedical institutions on parasites of human importance
- Collaborative research with medical professionals and assisting in reach out programmes for farmers

Research Highlights

- First report of the incidence of *Haemaphysalis megalaimae* and *H.kutchensis* species of goat ticks in Kerala
- Successful standardisation of multiplex PCR for simultaneous detection of amphistome and schistosome in snails and for identifying *Indoplanorbis exustus* DnA
- Development of combined targeted selective treatment strategy for goats of Kerala based on validated anaemia score, body condition score and dag score
- Development of an epidemiological calendar for deworming goats
- Design of a IgG based eLISA protocol using recombinant rSs22.6 antigen for seroprevalence studies of bovine intestinal schistosomosis

VETERINARY PUBLIC HEALTH

Major activities

- offering courses for B V Sc. & aH , M V Sc, Ph. D and Diploma in laboratory Techniques
- offering technologically enabled course : Post Graduate Diploma in Food evaluation of quality of water and food for public under nABL accredited quality control laboratory
- Conduct of awareness class cum exhibitions on "Know zoonoses to no zoonoses" for farmers and school children

Research Highlights

- occurrence of entero-aggregative *E. coli* in young animals, human infants and associated environment sources in Ernakulum district was 21.5, 5.89 and 15.69 and 9.52, 9.52 and 4.76

per cent respectively

- Seropositivity of leptospirosis in 52.2 and 29.5 per cent of cattle and 29.4 and 15.6 per cent of humans were observed in Mannanchery and Mararikulam south panchayats respectively of Alapuzha district
- *Moringa oleifera* (18 mg/ 4 ml) and *Citrullus lanatus*(156 mg/4ml) seed extract showed improvement in microbiological quality of drinking water
- Prevalence of *Campylobacter* spp in two different swine production facilities of Thrissur district of Kerala was 33.33 % and 21.70% respectively
- Antibiotic residues in 2.88 per cent of raw milk samples from Palakkad district were above MRL.

VETERINARY BIOCHEMISTRY

Major activities

- offering courses for B.V.Sc. & a.H., M.V.Sc, Ph.D. and M.Sc. (Biochemistry & Molecular Biology) degree programmes
- Implementation of plan projects and eAPs
- Conducting research in thrust areas of Veterinary Biochemistry

Research Highlights

- Genetic influence on the metabolic adaptation of transition dairy cows was analysed
- reported for the first time the occurrence of *Anaplasma platys* infection in canines
- Estimated the level of aflatoxin B1 in different animal and poultry feeds using LCMS
- The *in vitro* cytoproliferative and immunomodulatory effects of goat lactoferrin and its pepsin hydrolysate were established
- Silver nanoparticles synthesised using *Oxalis corniculata* leaf extracts were found to possess potent *in vitro* antibacterial activity.

VETERINARY PATHOLOGY

Major activities

- Teaching and research – BVSc., MVSc., PhD., Diploma
- Post-mortem examination in small and large animals, wild animals as well as in birds
- confirmatory diagnosis of rabies
- Tumour diagnosis
- examination and evaluation of clinical samples

Research Highlights

- Performed histological classification and grading of canine mammary and superficial tumours
- Studied the expression of mToR, p-mToR and DePToR and their comparison in canine mammary and superficial tumours
- identified subclinical iBD in poultry flocks of Kerala and identified that there will be variation in lymphocyte subpopulation in subclinical IBD
- established the presence of PRRSV (Porcine reproductive and respiratory syndrome

virus) and PPV (Porcine parvo virus) in the swine population of Kerala by PCR and IhC. Also studied the gross and histopathologic lesions in PRRSV and PPV

- Evaluated the efficiency of decellularisation protocols as well as host responses of differently decellularised bovine omental scaffolds in a rat model

DAIRY SCIENCE

Major activities

- Two year M.Sc (Quality control in Dairy Industry) and Two year Diploma in Dairy Science programme is being offered by the department under self- sustaining mode
- Milk and Milk Products technology course is offered for the B.V.Sc students
- Conducted training on “value added dairy products for dairy entrepreneurs”

Research Highlights

- residues of antibiotics, oxytetracycline (otc), enrofloxacin (EFX) and ceftriaxone (cFt) in milk affected quality of fermented dairy products like dahi and yoghurt.
- the effect of herbal agents on preservation of milk samples meant for chemical analysis was studied and it was found that *vettilla* and *kunnan leaf* were effective in preserving milk samples
- Exopolysaccharide production potential of different strains of *Lactobacillus plantarum* was evaluated and the prebiotic potential of ePS was determined
- Studied the effect of microencapsulation on viability and fermentation potential of *Bifidobacterium bifidum* in probiotic yoghurt.

VETERINARY PHYSIOLOGY

Major activities

- Teaching of Undergraduate, Post graduate/Ph.D.
- Research in thrust areas of Veterinary Physiology
- Coordinating and contributing to extension activities
- Imparting training to students and research scholars on various analytical techniques on Veterinary and allied sciences

Research Highlights

- Study on gonadotropins, their receptors and gonadal hormones in pituitary and ovarian follicles of Malabari and Attappady Black breeds of goats
- Study on expressions of *Angiopoietin-1 (ANPT-1)* and *Aromatase (CYP19)* genes in ovarian follicles of Malabari and Attappady Black breeds of goats
- Production of designer chicken eggs fortified with vitamin D₃ and zinc
- Study on association of temperature humidity index with physiological, biochemical and behavioural responses in native and crossbred goats

VETERINARY AND ANIMAL HUSBANDRY EXTENSION

Major activities

- Teaching Ug, Pg, Diploma and PhD. students along with Pg Research
- coordinated flood relief activities, unarV 2019 of KVaSu

- handled IPR awareness classes within and outside the university and submitted 4 Patent Facilitation Forms from faculty to Patent Information Centre, KSCSTe
- guided and facilitated the visit of campus farms and production units by around 3000 farmers, students, researchers, officials of milk cooperative societies and elected representatives of local bodies

Research Highlights

- Carried out descriptive analysis of Vechur cattle farming system in Kerala
- analysed Human-Wildlife conflict and its mitigation measures in the eastern Palakkad forest areas of Kerala
- analysis of Kuttanad Buffaloe Farming System
- Three Ug research projects sanctioned by KSCSTe are in progress

LIVESTOCK PRODUCTS TECHNOLOGY

Major activities

- Teaching and research activities in the field of livestock Products Technology
- Regular production, processing and marketing of meat and meat products and by-products
- Technical advice to entrepreneurs, Food Safety Commissionerate
- Conducted classes for nursing, Pharmacy, MBBS, BAMS and Food Technology students.
- hands-on training on slaughter practices and meat inspection to Veterinary officers and on meat processing to Self Help Groups
- conducted training programmes for staffs and faculty in relation with covid – 19 and prepared operational guidelines for Meat Technology Unit during lock down period

Research Highlights

- Development of organic briquettes from slaughter house waste as a nutrient source for plant growth
- Development of poultry meat cocktail nuggets incorporating jackfruit (*Artocarpus heterophyllus*) and Shatavari(*Asparagus racemosus*)
- Application of entomological tools to determine the time of exposure of carcasses at retail and poultry outlets
- Development and evaluation of functional chicken noodles
- Development of blue print for consumer handling buffalo meat for optimum quality
- application of image analysis to evaluate buffalo meat tenderness

CLINICAL MEDICINE, ETHICS AND JURISPRUDENCE

Major activities

- Teaching Ug, Pg and Doctorate students
- Training for Assistant Directors of AhD Kerala
- Participated in Flood relief camps
- Ambulatory veterinary services to two rural milk societies namely Cherumkuzhy and

Malamukku

- Clinical services and Consultancy services to animals and farmers respectively, daily on OP hours

Research Highlights

- *Babesia gibsoni* in dogs can be successfully treated with two injections of buparvaqone @ 5mg/kg body weight i/m at 48 h interval
- Xenotransfusion of cats with canine blood can be advocated in emergency situations as a life saving measure. And there is high prevalence of type A blood group in cats in Kerala
- Flea bite dermatitis in cats could successfully be managed using topical selamectin spot-on @ 6 mg/kg body weight monthly and oral prednisolone @ 2.2 mg/kg every twenty-four hours for 7 days and chlorpheniramine maleate @ 2 mg orally every twelve hours for 7 days
- oxidative stress in Anaplasmosis in goats can be corrected with Vitamin e and selenium supplementation along with oxytetracycline therapy

ANIMAL REPRODUCTION GYNAECOLOGY AND OBSTETRICS

Major activities

- Acting as a referral centre catering to the needs of livestock and pets with reproductive issues
- Conduct of Undergraduate, Post graduate and Doctoral classes
- conduct of research in the field of animal reproduction (Postgraduate and Doctoral and eAPs)
- Disseminating advances in the area of animal reproduction to field veterinarians and providing support to livestock farmers by conducting and co-operating with field fertility management classes
- Providing germplasm for breeding of Malabari does as chilled and cryopreserved semen and those of cattle and buffaloes for research

Research Highlights

- Efficacy of endometrial ultrasonography, cytology and biopsy in postpartum dairy cows for the diagnosis of subclinical endometritis were assessed
- Formulae were developed for assessment of gestation age in Malabari does by ultrasonography and flow velocity indices of uterine and umbilical artery in Malabari goats with single and multiple pregnancies were standardized
- *In vitro* embryo production revealed that the season of semen collection significantly affect the quality of cryopreserved semen of crossbred bulls
- Study on receptor expression in cervix of pyometra affected dogs revealed that estrogen receptors (*ER-α*) and progesterone receptor (*PR*) were not involved whereas an increased expression of *IL-8* in the uterine cervix increase cervical patency in pyometric dogs
- elective caesarean c-section in high risk pregnancy dogs following induction of foetal maturation with mifepristone was successful

DEPARTMENT LIVESTOCK PRODUCTION MANAGEMENT

Major activities

- Conducted Ph.D., M.V.Sc., M.Sc., B.V.Sc. & A.h and Diploma courses
- Conducted Pg and Ug classes for Kerala Agricultural University students
- Faculty members of the department took initiative for purchasing and transporting 100 dairy cattle from the military farms at Secunderabad, Telengana state to various farms under the university
- Provided consultation services and project reports to entrepreneurs in animal husbandry sector

Research Highlights

- Developed a growth curve model in Malabari goats
- Evaluated the effect of housing systems on growth rate, carcass traits and meat quality of rabbits
- Recommended the best thermal stress alleviation methods for Murrah buffaloes in humid tropics
- Developed the reference for pork chops having different fat thickness, lean fat and lean colour
- Assessed the meat content in beef cutlet marketed in Thrissur district of Kerala based on the content of 3-methyl histidine

DEPARTMENT OF VETERINARY SURGERY AND RADIOLOGY

Major activities

- Teaching and Research as part of the educational courses for undergraduate, post graduate and doctoral programme
- Clinical Services at the out-Patient Units of University Veterinary hospital & TVCC, Mannuthy and University Veterinary hospital, Kokkalai
- Radiological diagnostic services and surgical treatment of animal patients through the Revolving fund project “Comprehensive Surgical Care.
- Extension service through the referral services extended to field veterinarians and farmers through Veterinary hospitals

Research Highlights

- Evaluated clinical and haemato- biochemical effects of dexmedetomidine butorphanol-midazolam -ketamine –anaesthesia for elective surgery in cats
- Evaluated the effectiveness of elastic stable intramedullary nailing (ESin) technique for the management of long bone fracture in dogs
- Assessed the aetiologies for chronic vomiting in dogs using endoscopy as a non invasive diagnostic tool
- evaluated minor labial salivary gland transplantation for management of dry eye in brachycephalic breeds of dogs

STATISTICS

Major activities

- Conducting statistics related courses for MVSc, Diploma and M.Sc. students
- Conducting M.Sc. Biostatistics

- Consultation for design of experiments for preparation of synopsis and research
- guidance and analysis for research projects

DEPARTMENT OF PHYSICAL EDUCATION

Major activities

- organized KVASU inter collegiate Athletics Championship
- organized Inter Collegiate Volleyball, Cricket and Shuttle Badminton
- organized Summer Coaching Camp for football
- Celebrated International yoga Day
- Training for students in various games

External Aided Projects (Ongoing):

Name of the Project	Funding agency	Name of PI	Activities undertaken
1. Field Progeny Testing scheme	ICAR	Dr K. Anilkumar	During this period 1496 inseminations were done using Frieswal semen and 525 pregnancies were confirmed. A total of 320 calvings were reported and 165 female progenies were born. In this period 44 progenies reached first lactation and 53 progenies completed first lactation. Average 305 day lactation yield for progenies was 3294.442 litres. The cows of dairy farmers in project area are inseminated with Frieswal semen free of cost leading to improvement in production of progenies and continuous monitoring of progenies in field by field staff of the scheme ensures scientific management of calves and heifers.
2. All India Coordinated Research Project on Malabari Goat Improvement	ICAR	Dr.R. ThirupathyVenkat achalapathy	Maintenance of elite germplasm centre Validation and implementation of breeding, feeding, and health control technologies in the field for improved goat production and health Capacity building of stakeholders and goat keepers for sustainable and profitable goat husbandry
3. Genetic Diversity Analysis Among Cattle Genetic Groups of Kerala Using Microsatellite Markers	KSCSTE	Dr Radhika G	Study was conducted on six cattle genetic groups namely, Vechur, Kasargode, Vadakara dwarf and low, medium, high milk yielding crossbred cows of Kerala. A total of twenty-five microsatellite primers chosen from a panel suggested by FAO DAD-IS, were custom synthesised after labelling the forward primers with fluorescent tags and all the primers were

			procured. Standardisation and amplification of eight microsatellite loci were done from the isolated DNA. Multiplex PCR was conducted for groups of four microsatellites each with different fluorescent tags FAM, PET and HEX. The PCR products obtained were checked in agarose gel and two sets of four microsatellites are complete, which is now outsourced for genotyping.
4. Addressing the production challenges of Native Goat Breeds of Kerala through Genomic Approach	AHD	Dr. Marykutty Thomas	Identified selection signatures related to various production and reproductive traits in native goats of Kerala. Identified potential genetic markers related to prolificacy trait in native goats.
5. Development of multi-trait selection criteria for crossbred cattle of Kerala	DST SERB	Dr. Jamuna Valsalan	Blood samples and data of major performance traits, pedigree were collected. Identification of polymorphism was carried out for Prolactin (PRL), b(1,4)- galactosyltransferase-I (B4GALT) gene.
6. Anatomical causes of infertility in crossbred dairy cows: structural and molecular studies on reproductive system.	Animal Husbandry Department	Dr. K. M. Lucy	Collected samples of genitalia and blood from infertile cattle from different slaughter houses. Purchased chemicals for the project. Histological and molecular works related to the project is being conducted.
7. Outreach Ethno veterinary project - Ongoing (2017-2020)	ICAR	Dr Usha Narayana Pillai	Evaluation of antifungal activity of different extract of <i>A. japonica</i> and <i>Centrocoma mollae</i>
8. Entrepreneurship among fodder producer in Thrissur district of Kerala State: An explorative study	KSCSTE	Dr. Subin K Mohan	Reference collection and beneficiary selection
9. Socio-economic impact of Anaplasmosis	KSCSTE	Dr. Subin K Mohan	Reference collection and beneficiary selection

in Thrissur District of Kerala State			
10. Isolation and characterisation of infectious bronchitis virus isolates from Kerala, India	DST	Dr. Surya Sankar	Standardised PCR and Taqman based real time PCR for detection of IBV in clinical samples. Isolated IBV from clinical samples.
11. Isolation of <i>Mycoplasma capricolum</i> subsp. <i>capripneumoniae</i> and development of a latex agglutination test for field diagnosis of contagious caprine pleuropneumonia (CCPP) in goats	AHD, Kerala	Dr. Surya Sankar	Samples were collected from live and readily dead goats suspected for respiratory infections and processed for isolation of <i>Mycoplasma</i> spp. Standardised genus specific and species specific PCR for detection of <i>Mycoplasma</i> spp.
12. Identification and development of novel antimicrobial peptides to tackle antimicrobial resistance	DST-SERB	Dr. Varuna P. Panicker, Assistant Professor	Identification of genes
13. Effect of clean milk production protocol on quality of milk in smallholder production system	KSESTE	Dr. A. Prasad	Project approved preliminary survey started
14. Outreach Programme on zoonotic diseases	ICAR	Dr B Sunil	Study on biofilm producing abilities of <i>Campylobacter</i> spp. on abiotic surfaces. Prevalence of <i>Campylobacter</i> spp in seafoods and water. “Samshudhi” – Outreach programme for SC community in Madakkathara Panchayat

			a. Assessment of drinking water b. Distribution water sanitation and personal hygiene kit c. Exhibition on zoonoses d. Awareness class on zoonoses and personal hygiene for school students in the panchayat
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Ph D Research Projects (Ongoing and Completed)

Name of the Scholar	Title of thesis	Research activities undertaken
Dr Annie V Raj (Department of Veterinary Anatomy)	Structural causes of infertility in crossbred dairy cows (Ongoing)	Exploring the structural causes of infertility using histomorphological and ultrastructural studies. To elucidate the role of candidate gene(s) in the development of anomalies. To determine the incidence of anatomical causes of infertility prevailing under Kerala conditions.
Dr Alphine Joseph (Department of Veterinary Anatomy)	Comparative histomorphology and ultrastructure of skeletal muscle of broiler and Kuttanad ducks.	Investigate the histomorphology and ultrastructure of skeletal muscle in broiler and Kuttanad ducks. Determine the comparative proportion of fiber types in selected muscles of broiler and Kuttanad ducks using Histochemical methods. Compare physical, chemical and mechanical properties of the muscle in broiler and Kuttanad ducks.
Dr. Hari Krishnan S (Department of Poultry Science)	Selection for egg production in native chicken and performance of its crossbreds with White Leghorn	Completed
Dr. M. Sirajudeen (Department of Poultry Science)	Influence of graded levels of dietary aflatoxins on the hatchability of Kuttanad duck eggs	Ongoing
Dr. S. Sankaralingam (Department of Poultry Science)	Transcriptome analysis of pectoral muscle among Pekin and Kuttanad ducks	Ongoing
Dr. Arun George (Department of Clinical Medicine)	Clinico biochemical and molecular investigation of hemolytic anemia in dogs	Standardised PCR amplification of specific exons of pyruvate kinase and phosphofructokinase.
Dr. Rupalee Ghag (Department of	Diagnosis and management of	Research work on dialysis is being conducted.

Clinical Medicine)	Cardiovascular renal axis disorder subtype H in dogs	
Dr. Ambily V.R. (Department of Clinical Medicine)	Clinico-therapeutic and ultrastructural studies on canine atopic dermatitis with special reference to filaggrin gene polymorphism	Screening of animals for atopic dermatitis.
Dr. Shreyansh Hosure (Department of Veterinary and Animal Husbandry Extension)	Institutionalized livestock service delivery system in Kerala	Data collection
Dr. L. Arun (Department of Veterinary and Animal Husbandry Extension)	Impact of Kerala flood 2018 on the milk production and socio-economic status of dairy farmers in Ernakulum and Thrissur districts	Data collection
Dr. Reshma P. S. (Department of Veterinary Microbiology)	Genotyping, antimicrobial susceptibility profiling and characterisation of biofilms of clinical isolates of <i>Leptospira</i> from Kerala	Synopsis submitted for approval
Dr. Sarika N. (ONGOING) (Department of Veterinary Microbiology)	Comparative efficacy of different tests for ante-mortem diagnosis of bovine tuberculosis	Collected and processed samples for the standardisation of different tests
Dr. Jasmine Rani K (Department of Animal Nutrition)	Improving efficiency of production in early lactating dairy cows through augmentation of rumen biomass production	<i>In vitro</i> trial started and completed phase I
Dr. Amritha Aravind (Department of Animal Reproduction, Gynaecology and Obstetrics) (Ongoing)	Follicular dynamics and expression profile of B cell Lymphoma – 2 gene in malabari doelings supplemented with Moringa Oleifera leaves	Feed formulation and feeding trial completed in Malabari kids Ultrasonographic assessment of follicular phases of oestrous cycle ongoing
Dr. Magnus Paul (Department of Animal Reproduction, Gynaecology and Obstetrics) (Ongoing)	Assessment of myometrial contractility, gene expression of hormone receptors in uterus and foeto-maternal velocity indices in canine	Assessment of uterine contractility characteristics by non-invasive technique; Association of the gene expressions of oxytocin receptor (<i>OXTR</i>), oestrogen receptor 1 and 2 (<i>ESR 1</i> and 2) and progesterone receptor (<i>PGR</i>) with uterine

	uterine inertia	inertia in dogs; Assessment of change in velocity indices of maternal and foetal arteries using colour Doppler ultrasonography in uterine inertia; elucidate the hormonal, haematological and serum biochemical changes in dam with uterine inertia
Dr. Devi S. S.(Department of Veterinary Pathology)	Histomorphological, immunohistochemical and molecular studies on desmoplastic reactions in canine mammary tumours	Histomorphological characterisation of desmoplastic reactions in canine mammary tumours (CMTs). Detection of α - smooth muscle actin (α -SMA) and fibroblast activation protein (FAP) in cancer associated fibroblasts (CAFs) and transforming growth factor- β (TGF- β) in tumour associated macrophages (TAMs) by immunohistochemistry (IHC). Immunohistochemical detection of metastasis markers namely matrix metalloproteinase-9 (MMP-9) and stromal derived factor-1 (SDF-1). Expression profiling of α -SMA, TGF- β and MMP-9 in CMTs
Dr. Divya P.D. (Department of Veterinary Biochemistry)	Analysis of differential expression of micro RNA in lipopolysaccharide challenged lymphocytes of Vechur and crossbred cattle of Kerala	Standardization of protocols for PBMC isolation and culture of PBMCs
Deepak Mathew D. K. (Department of Livestock Production Management)	Nutrient recycling potential of fly larvae for bio waste management	Waste management
Benjamin E. D. (Department of Livestock Production Management)	Improving reproductive efficiency of breeding females in commercial pig breeding farms of the state through oestrous synchronization	Pig production management
P. B. Giridas (Department of Livestock Production Management)	Evaluation of stress biomarkers in captive and semi captive elephants (Elephas maximus)	Stress management in elephant
Dr. Deepa Jolly (Department of Veterinary Public Health)	Occurrence and molecular characterisation of Campylobacter spp. in seafoods and associated	1. Screening for Campylobacter spp. in fishes, shellfishes, environmental sources and stool samples 2. Survivability study of Campylobacter

	environment of Kerala and control of biofilm formation	jejunum in seawater and freshwater at 4°C and 25°C 3. . Biofilm studies
Dr Binsy Mathew (Department of Veterinary Public Health)	Detection of drug resistant and biofilm forming foodborne pathogenic bacteria in broiler chicken and mitigation using plant extracts	1. Screening of chicken samples for E coli, Salmonella spp. and Campylobacter spp. 2. Standardisation of multiplex PCR for virulence genes of Salmonella and Campylobacter 3. Antibigram of the isolates 4. Standardisation of antibiotic resistant genes
Dr. R Vivekanandhan (Department of Veterinary Public Health)	Efficacy of campylophages and selected phytochemicals in the control of campylobacter biofilms	1) Pilot study on isolation of Campylobacter spp. and campylophages from pig farm (Erumapetty) 2) Collected orange peel from nelliampathy
Dr. Sudhakar Goud (Department of Veterinary Epidemiology and Preventive Medicine)	Molecular characterisation of Theilaria orientalis and clinico-therapeutic studies on infection in dairy cattle	Samples collected, treatment trial and molecular characterisation
Dr. Sudheesh S Nair (Department of Veterinary Surgery and Radiology)	Streamlining surgical approaches of skin and mammary tissue / subcutaneous neoplasms in dogs with special reference to neo-adjuvant and adjuvant chemotherapeutic protocols.	Assessed occurrence of various types of neoplasms in dogs Staging and grading of skin and soft tissue neoplasms in dogs Evaluated the efficacy of concurrent neo-adjuvant and adjuvant chemotherapeutic protocols for effective management of skin and soft tissue neoplasms in dogs Work completed and thesis writing started.
Dr. Laiju M. Philip (Department of Veterinary Surgery and Radiology)	Autologous platelet rich plasma for treatment of sole lesions and expression profile of associated biomarkers in dairy cattle	Preliminary preparation of execution of work Screening of lame animals and preparation of plate rich plasma- in progress
Dr. Preethy John (Department of Veterinary Pharmacology and Toxicology)	Antineoplastic activity of biosynthesised baicalein and piper longumine nanoparticles	Animal studies on going Invitro studies standardised

MVSc Research Projects (Ongoing)

Name of the Scholar	Title of thesis	Research activities undertaken
Dr. C. A. Dharamshaw (Department of Animal Breeding and Genetics)	Title of Thesis: Molecular characterisation and expression profiling of <i>Vasorin</i> gene in native goats of Kerala	<p>tissue samples (ovary, uterus, fallopian tube) collected from 6 Female Malabari goats from slaughter house.</p> <p>RNA isolated from the tissue samples and cDNA was synthesised.</p> <p>PCR amplified amplicons of cds sent for sequencing from Attapady black and Malabari goats- no SNPs observed.</p> <p>PCR amplification for gene <i>ADAM</i> 17 exons 2,19 and 11 for sequencing progressing.</p>
Dr. Akhila M. R. (Department of Animal Breeding and Genetics)	Characterisation of <i>Integrin beta-6</i> gene and analysis of its expression with reference to foot and mouth disease	<p>Blood samples were collected from 150 animals and DNA isolated</p> <p>RNA isolated from 20 blood samples and cDNA was synthesised</p> <p>PCR amplified samples sent for sequencing and observed two SNPs in Exon 14</p> <p>Currently carrying out SSCP analysis for identifying genotypes</p>
Dr. Kiyevi G. Chishi (Department of Animal Breeding and Genetics)	Genetic variability of Toll Like Receptor 4 and Beta Defensin 4 genes and their association with somatic cell score in crossbred cattle of Kerala	Blood sample of 200 crossbred cattle collected. Identified genetic polymorphism of Beta Defensin 4 gene
Dr. M. Priyadharshini (Department of Animal Breeding and Genetics)	Assessment of sire evaluation methods in crossbred cattle of Kerala	<p>Test day milk yield and pedigree information of progenies of test bulls were collected from the history –cum pedigree sheet and milk records registers of ICAR-FPT scheme, Kerala.</p> <p>Records on first lactation milk yields of 898 crossbred cattle sired by 203 bulls spread over a period of 13 years (2000-2019) were collected.</p> <p>Standardization and Normalization of the data within mean \pm 3 standard deviation. The statistical analysis</p>

		of data was carried with the help of Least Square method (Harvey, 1987).
Dr. Abhin Raj K P (Department of Veterinary Anatomy) (Ongoing)	Structural and physico-chemical evaluation of porcine tunica vaginalis as a raw material for development of acellular matrix	Study the morphological features of porcine tunica vaginalis Evaluate the physico-chemical properties of porcine tunica vaginalis Investigate the histomorphological and ultrastructural characteristics of porcine tunica vaginalis Conduct spectroscopic studies on porcine tunica vaginalis Investigate the suitability of porcine tunica vaginalis as a raw material for the development of acellular matrix
Dr. Lhingneivah Dounge (Department of Veterinary Anatomy) (Ongoing)	Histomorphology and physicochemical evaluation of raw and decellularised tunica vaginalis of buffalo as a promising biomaterial in regenerative medicine (Ongoing)	Conduct gross anatomical, Histological and ultrastructural studies on tunica vaginalis of buffalo Standardization of procedure for maximum removal of cellular components of tunica vaginalis Investigate the Histomorphological, ultrastructural and physicochemical characteristics of the developed decellularised matrix
Dr. Avinash Nilugonda (Department of Poultry Science)	Evaluation of production performance of Gramasree hens by feeding black soldier fly larvae as a protein replacer	Ongoing
Dr. Sreyass K S (Department of Poultry Science)	Effect of reduced dietary crude protein with balanced limiting amino acids on growth and carcass characteristics of Gramasree male chicks	Ongoing
Dr. Devavratha (Department of Poultry Science)	Evaluation of production performance of Athulya (IWN X IWP), native and IWN x native crossbred layers under backyard system	Ongoing

Dr. Anaz S. R. (Department of Clinical Medicine)	Suitability of saline. adenine, glucose. mannitol additive in citrate, phosphate, dextrose, adenine for storing packed red blood cells of goats	Research work on evaluation of clinical cases is going on
Dr. Anjaly M.V. (Department of Clinical Medicine)	Clinicopathological investigations on thrombocytopenic dogs with hemostatic disorders	Research work on evaluation of clinical cases is going on
Dr. Ashi R. Krishna (Department of Clinical Medicine)	Management of feline lower urinary tract disease	Research work on evaluation of clinical cases is going on
Dr. Gouree Krishna U. (Department of Clinical Medicine)	Storage lesion and post transfusion studies of canine packed red blood cells using saline-adenine, glucose-mannitol additive in citrate-phosphate dextrose-adenine solution	Research work on evaluation of clinical cases is going on
Nandhini G. (Department of Veterinary and Animal Husbandry Extension)	Assessment of the goat production and meat marketing systems of Malappuram district	Review of literature, Preparation of interview schedule, Initiation of the pilot study, Discontinued 3rd and 4th semesters temporarily, not registered in 5th sem
Dr.Saranya.V (Department of Veterinary and Animal Husbandry Extension)	Feasibility of Geographical Indication registration for Attappady Black goat and its products	Review of literature, Preparation of interview schedule, Initiation of the pilot study, Discontinued 3rd and 4th semesters temporarily, not registered in 5th sem
Dr. Chithra S. (Department of Veterinary and Animal Husbandry Extension)	Assessment of the livestock biodiversity management system under selected local self-governments of Kerala	Data collection
Dr.Muhammed Asif. M (Department of Veterinary and Animal Husbandry Extension)	Keeping system of Wayanad dwarf cattle: A hermeneutic phenomenological analysis of the bio-cultural landscape	Data collection
Dr. Demian.C.Johnson (Department of Veterinary and Animal Husbandry Extension)	Development and assessment of a mobile application on canine health care and management for enhanced client-veterinarian engagement	Data collection
Dr. Nakka Aiswarya (Department of Veterinary Microbiology) (ongoing)	Serological and molecular diagnosis of campylobacteriosis associated with bovine abortion	Collected and processed samples from cases of early abortion in bovines for isolation and molecular detection of C. foetus subsp. foetus and C. foetus subsp. venalis. Standardised PCR and Real-time PCR.

Dr. Rashi U. (Department of Veterinary Microbiology) (ongoing)	Characterisation of Newcastle disease virus isolates prevalent in Kerala	RT- PCR was standardised FOR Newcastle disease virus. Isolation and characterisation of Newcastle disease virus going on
Dr. Divya D. (Department of Veterinary Microbiology) (ongoing)	Multi-Locus Sequence Typing for species/serovar identification of clinical isolates of Leptospira	Microscopic agglutination test AND PCR of clinical samples going on
Dr. Resmi T. R. (Department of Veterinary Microbiology) (ongoing)	Serological and molecular diagnosis of peste des petits ruminants in goats	Conventional PCR was standardised and standardisation of Real time PCR going on. Collection of samples and PCR going on
Dr. Santhiya P. (Department of Veterinary Microbiology) (ongoing)	Development of an antigen detection latex agglutination test for the diagnosis of mycoplasmosis in goats	Collection of samples and isolation trials going on
Dr. Nandana Chandrasekhar (Department of Animal Nutrition)	Nutritional Evaluation of feeding practices of captive Asian elephants (Elephas maximus) in Kerala	Field survey and proximate analysis of feed samples were completed. Digestion trials completed
Dr. Neelima Jayaraj (Department of Animal Nutrition)	Effect of supplementation of rumen protected choline and methionine on early lactating dairy cows	Feeding trial completed
Dr. Sreemol S Nair (Department of Animal Nutrition)	Metabolic and productive responses to dietary protein levels in transition cows	Feeding trial completed
Sophia Xavier (Department of Animal Reproduction, Gynaecology and Obstetrics) (Ongoing)	Maternal and neonatal outcome following elective caesarean section in dogs based on progesterone levels	Assess the maternal and neonatal outcome in dogs with high risk pregnancy subjected to elective caesarean section (CS) based on progesterone levels

Ambily K. G. (Department of Animal Reproduction, Gynaecology and Obstetrics(Ongoing))	Freezability of specific fractions of Large White Yorkshire boar semen supplemented with sodium dodecyl sulphate	Collection of boar semen as fractions has been completed involving collection and assessment of SRF quality and harvest of seminal plasma
Arya T. S. (Department of Animal Reproduction, Gynaecology and Obstetrics)	Developmental competence of goat oocytes in different maturation media	1. Standardization of oocyte retrieval , <i>Invitro</i> maturation and fertilization of goat oocytes (ongoing) 2. standardization of brilliant cresyl blue staining for goat oocytes for its developmental competence
Deepak Joshi (Department of Animal Reproduction, Gynaecology and Obstetrics)	Modulation of inter – oestrous interval in dogs using gnRH agonist and pgf2alpha at different stages of dioestrus	The study focused on the factors involved in the cervical patency in pyometric bitches. The study concluded that <i>ER-α</i> and <i>PR</i> were not involved in controlling the cervical patency, whereas an increased expression of <i>IL-8</i> in the uterine cervix of open pyometric bitches, might be involved in collagen degradation and connective tissue remodeling to increase cervical patency in pyometric dogs.
Minu Xaviour (Department of Animal Reproduction, Gynaecology and Obstetrics)	Effect of prematuration with cyclic adenosine monophosphate modulators on the developmental competence of bovine oocytes	Oocytes subjected to pre maturation in a medium containing high levels of cyclic AMP and will be subjected to in vitro maturation and fertilization. Effect of pre-maturation on developmental competence of bovine oocytes will be studied
Nayana Devarajan (Department of Animal Reproduction, Gynaecology and Obstetrics)	Clinico-therapeutic studies in dogs with open and closed cervix pyometra	Samples including blood, serum, vaginal swabs, ultrasonographic observations, and cytology readings have been collected from 5 number of cases. The treatment for the same are being conducted
Raghavendra A (Department of Animal Reproduction, Gynaecology and Obstetrics)	Echobiometric and doppler studies of the canine prostate and testes	Ultrasonographic examination of the prostate and testis of 9 animals have been conducted. The semen samples and its microscopic evaluation and serum evaluation of these 9 dogs have

		been carried out
Vinay Kumar R. H. (Department of Animal Reproduction, Gynaecology and Obstetrics)	Development of model for predicting whelping date in small breeds of dogs	Accuracy of prediction of whelping date depends on different breeds and those bearing small litter size. breeds and those bearing small litter size. The present study is designed to develop a linear regression model specific for estimating the date of pregnancy in small breeds and verify the accuracy of prediction formul
Karthika, R. (Department of Veterinary Parasitology)	Serological and molecular detection of <i>Toxoplasma gondii</i> associated with abortions in goats	Blood Sample collection for ELISA from aborted goats DNA isolation from tissues of aborted foetus
Pooja G. Mankani (Department of Veterinary Parasitology)	Occurrence and identification of Eimeria species in chicken, turkey and quail in different poultry production systems	Poultry farm visits and sample collection Morphological identification of oocysts Isolation of DNA from oocysts
Christy Margrat Joy (Department of Veterinary Pathology)	Immunohistochemical analysis of p70S6 kinase protein in mammary tumours of dogs	Gross, histopathology and grading of canine mammary tumours. Immunohistochemical localisation of p70S6 kinase protein with respect to grade of tumours.
Megha K G (Department of Veterinary Pathology)	Evaluation of omentum based extracellular matrix scaffolds for soft tissue repair	Evaluation of biomechanical properties of gluteraldehyde decellularised bovine omental scaffold and uncrosslinked decellularised bovine omental scaffold Comparison of cellular responses to that of a commercially available decellularised bovine pericardium.
Shabeeba P M (Department of Veterinary Pathology)	Immunohistochemical analysis of p70S6 kinase protein in superficial tumours of dogs	Classification of superficial tumours of dogs based on gross and histopathology. Immunohistochemical localization of p70S6 kinase protein and comparision of its expression with respect to grade of tumours.

Vijayaragavan S (Department of Veterinary Pathology)	Pathological evaluation of mucosa associated lymphoid tissue in porcine circo virus infected piglets	Molecular detection of porcine circovirus-2 (PCV-2) by PCR and gross and histopathology of MALT and bone marrow in PCV-2 infected pigs Ultrastructural evaluation of soft palate tonsil
Shabeeba P M (Department of Veterinary Pathology)	Immunohistochemical analysis of p70S6 kinase protein in superficial tumours of dogs	Classification of superficial tumours of dogs based on gross and histopathology. Immunohistochemical localization of p70S6 kinase protein and comparison of its expression with respect to grade of tumours.
Vijayaragavan S (Department of Veterinary Pathology)	Pathological evaluation of mucosa associated lymphoid tissue in porcine circo virus infected piglets	Molecular detection of porcine circovirus-2 (PCV-2) by PCR and gross and histopathology of MALT and bone marrow in PCV-2 infected pigs Ultrastructural evaluation of soft palate tonsil
Navya Elizabeth Sajeev (Department of Veterinary Pathology)	Implication of M2 macrophage phenotype in the pathology of canine mammary tumours	Gross, histopathology and grading of canine mammary tumours. Immunohistochemical localisation of M2 macrophages using CD163 marker and elucidation of its association with histological type and grade of the tumour (not yet approved)
Mukul C. G. (Department of Veterinary Biochemistry)	Antineoplastic activities of lactoferrin from Malabari goat	Isolation and characterization of goat lactoferrin from colostrum Standardization of induction of experimental tumors in mice
S. Sreejisha (Department of Veterinary Biochemistry)	Assessment of the effect of β hydroxy butyrate on bovine neutrophil function in vitro	Thesis writing
Debia Yamin (Department of Veterinary Physiology) (Ongoing)	Association of temperature humidity index with physiological, biochemical and behavioural responses in native and crossbred goats	Collection of literature Procurement of essential chemicals Conducting the experiment Collection of data

Megha P.S. (Department of Veterinary Physiology) (Ongoing)	Production of designer chicken eggs fortified with vitamin D3 and zinc	Conducting the experiment and standardization of data
Bhagathsingh D. (Department of Livestock Production Management)	Evaluation of rabbit farming under different management conditions	SWOT analysis of rabbit production system
R. Thiruvikraman (Department of Livestock Production Management)	Effect of <i>Asparagus racemosus</i> (Shatavari) on the lactation performance of crossbred cows	Shatavari root analysis
Praveenkumar N.B. (Department of Livestock Production Management)	Effectiveness of illuminated fly traps using coloured plastic pots coated with castor oil to control biting fly (Order: Diptera) annoyance in dairy farms.	Dairy farm management
Sachin B. Patil (Department of Livestock Production Management)	Impact of the 2018 flood on the milk production and socio-economic status of dairy farmers in Ernakulam and Thrissur districts of Kerala	Flood impact analysis
Saravanan M. (Department of Livestock Production Management)	Assessment of impact of 2018 flood on the biodiversity and Livestock Farming Systems (LFSs) of Pariyaram panchayath in Thrissur district of Kerala	Flood impact analysis
Afsal S (Department of Veterinary Public Health)	Cloacal carriage and antimicrobial resistance profiling of extended spectrum beta-lactamase producing <i>Escherichia coli</i> and <i>Salmonella</i> Enteritidis in broiler chicken	Conducted pilot study to standardise the procedure Collected 50 cloacal samples from Kottayam district (Total sample size: 300) Isolated <i>Salmonella</i> colonies in XLD agar and <i>E. coli</i> colonies in EMB agar
Athulya T R (Department of Veterinary Public Health)	Prevalence of <i>Campylobacter</i> spp. in duck, quail, backyard chicken and associated environmental samples	Collected cloacal swabs from duck (100% sample size), quail (50% sample size) and backyard chicken (40% sample size) Collected environmental samples- Water samples and soil samples (30% of total sample size collected) Isolated <i>Campylobacter</i> colonies in mCCDA agar Done molecular characterization of

		10% of the colonies positive in mCCDA agar
Murugavelu M(Department of Veterinary Public Health)	Detection of pathogenic Leptospire in slaughtered cattle of Thrissur	ee samples each of blood, urine and kidney were collected from Municipal slaughter house, Kuriachira, Thrissur (total sample size- 75 each) Y gene standardised using positive DNA and DNA from kidney sample
Sruthi C (Department of Veterinary Public Health)	Isolation and molecular characterization of <i>Escherichia coli</i> pathotypes in drinking Water and identification of the possible sources of contamination	75 water samples were subjected to analysis by MPN method (100% of sample size) 5 soil samples, 2 infant fecal samples, 5 poultry fecal samples, 3 cattle and 2 goat fecal sample were also analysed
Athira K(Department of Veterinary Epidemiology and Preventive Medicine)	Bacterial aetiology of infertility in dogs with special reference to brucellosis	Ongoing
Bhagya J Nissar(Department of Veterinary Epidemiology and Preventive Medicine)	Screening for MRSA associated with caprine mastitis	Ongoing
Gagana H S(Department of Veterinary Epidemiology and Preventive Medicine)	Virulence factors and antimicrobial resistance of <i>Malassezia pachydermatis</i> from dogs	Ongoing
Krupa Rose Jose(Department of Veterinary Epidemiology and Preventive Medicine)	Antimicrobial resistance profiling of <i>Staphylococcus aureus</i> isolated from bovine mastitis	Ongoing
Meenu Manohar(Department of Veterinary Epidemiology and Preventive Medicine)	Etiology and therapeutic management of theileriosis in goats	Ongoing
Punya M S(Department of Veterinary Epidemiology and Preventive Medicine)	Detection of EEHV from captive Asian elephants	Ongoing

Sukanta datta(Department of Veterinary Epidemiology and Preventive Medicine)	Aetiopathology of upper respiratory infection in domestic cats	Ongoing
Rugma V(Department of Veterinary Epidemiology and Preventive Medicine)	Identification of genus encoding spectrum betalactamase production in E Coli and Klebsiella spp associated with bovine coliform mastitis	Ongoing
Juby Thankachan(Department of Veterinary Epidemiology and Preventive Medicine)	Screening for parasitic infection among exotic and zoo birds	Ongoing
M K Praveen(Department of Veterinary Surgery and Radiology)	Clinical efficacy of midazolam - ketamine-isoflurane anaesthesia in butorphanol-xylazine premedicated bovines'	Research work –in progress
Badda Lavanya(Department of Veterinary Surgery and Radiology)	Ultrasonographic ocular biometry for the diagnosis of ophthalmic disorders in dogs	Research work –in progress
Lekshmi S.L. (Department of Veterinary Surgery and Radiology)	Radiographic evaluation of thorax to aid staging of superficial and mammary neoplasms in dogs	Research work –in progress
Manasa M. R. (Department of Veterinary Surgery and Radiology)	Clinical efficacy of propofol induced isoflurane anaesthesia in geriatric dogs premedicated with diazepam and butorphanol	Research work –in progress
Salumol S(Department of Veterinary Surgery and Radiology)	Comparative efficacy of 4-aminopyridine and polyethylene glycol in combination with methyl prednisolone sodium succinate for the treatment of spinal cord injury in dogs	Research work –in progress
Sharat Joshi(Department of Veterinary Surgery and Radiology)	Management of fracture of long bones using string of pearls plating technique in dogs	Research work –in progress
Anvitha Hansoge (Department of Veterinary Surgery and Radiology)	Comparative evaluation of modified perineal urethrostomy and tube cystostomy for the treatment of	Research work –in progress

	chronic obstructive urolithiasis in male goats	
Aathira K K (Department of Veterinary Pharmacology and Toxicology)	Anticancer activity of <i>Creteva nurvala</i> and <i>Garcinia gummigutta</i> targeting NFkB in triple negative breast cancer cell line	Standardization going on
Akshay Rajkumar Dhabolkar (Department of Veterinary Pharmacology and Toxicology)	Cytotoxic, carcinogenic and genotoxic effects of carbosulfan in cultured mammalian cells	Work going on
Dhanusha G (Department of Veterinary Pharmacology and Toxicology)	Modulation of oestrogenic activity by alcoholic extracts of <i>Asparagus racemosus</i> and <i>Boerhavia diffusa</i> in MCF-7 cell line	Work on going
Haima G S (Department of Veterinary Pharmacology and Toxicology)	Wound healing activity and dermal pharmacokinetics of Borneol incorporated K-carrageenan hydrogel in diabetic wound model in rats	Work on going
Jisha S (Department of Veterinary Pharmacology and Toxicology)	Effect of lemon grass oil and citral in combating antibiotic resistance in methicillin resistance <i>Staphylococcus aureus</i> isolates from bovine mastitis	Thesis submitted

MSc Research Projects (Ongoing and Completed)

Amrutha M.S. (Department of Veterinary Microbiology) (Ongoing)	Detection of biofilm producing <i>Escherichia coli</i> and <i>Staphylococcus aureus</i> associated with canine pyometra	Collection of samples from dogs with pyometra, isolation and identification of <i>Escherichia coli</i> and <i>Staphylococcus aureus</i> going on
Athira A. (Department of Veterinary Microbiology) (Ongoing)	Comparison of different staining techniques for the detection of blood borne bacteria in animals	Collection of blood samples, standardisation of staining techniques going on
Karishma P.S. (Department of Veterinary Microbiology) (Ongoing)	Isolation and antibiogram of <i>Corynebacterium pseudotuberculosis</i> from goats	Collection of samples from goats, isolation and identification of <i>Corynebacterium pseudotuberculosis</i> going on
Nisha B.V. (Department of Veterinary Microbiology) (Ongoing)	Isolation of infectious bursal disease virus in embryonated chicken eggs	Collection of samples from suspected birds, isolation in embryonated eggs going on

Aravind (Department of Statistics)	Effect of flood on the livestock sector in Kadukutty panchayath of Thrissur district	Data collection
Bisty P. Johnson (Department of Statistics)	Autoregressive Integrated Moving Average (ARIMA) model for forecasting production of milk, egg and meat	Data collection
Delna Rose K. D. (Department of Statistics)	Forecasting rainfall in Thrissur district of Kerala using Artificial Neural Network	Data collection
Nandu Mohan (Department of Statistics)	Comparison of Autoregressive Integrated Moving Average (ARIMA) and Multi - Gene Genetic Programming Models for temperature prediction in Thrissur district of Kerala	Data collection
Vishnupriya Balakrishnan (Department of Statistics)	Developing model for lactation curve in Malabari goats	Data collection

Total no. of Ph.D scholars: 40

Total no. of M.V. Sc scholars: 130

Total no of M.Sc Scholars: 42

KVASU Research Projects (Ongoing):

Name of the Project	Name of PI	Activities undertaken
1. Establishment of germplasm repository of domestic animals of Kerala Fund transferred: Rs. 42589/-	Dr. Elizabeth Kurian	<ul style="list-style-type: none"> Freezing of semen of 5 bulls maintained in the nucleus stock
2. Conservation unit of Vechur and Kasargode Fund transferred: Rs 6,40861/-	Dr. Elizabeth Kurian	<ul style="list-style-type: none"> Maintenance of breeding stock of Vechur and Kasargode animals Supply of chilled semen of pedigreed Vechur and Kasargode bulls to farmer field units Registered two new field units

Publications

Books:-

1. **S. Maya**, K.D.John Martin, R. S. Jiji. Indu V Raj, M.Shynu, N S Sunilkumar, Aziz Zarina, S Harikumar, R Uma, S Sujith and M K Narayanan. 2020. A roadmap to enhance core teaching competencies in academic landscape- Compendium. Published by Dr S Maya, Director, Academic Staff College. KVASU. ISBN: 978-93-5396-866-3.
2. **S. Maya**, K.D.John Martin, R. S. Jiji. Indu V Raj, M.Shynu, N S Sunilkumar, Aziz Zarina, S Harikumar, R Uma, S Sujith and M K Narayanan. 2020. A healthy ecosystem

Articles:

1. M.V. Silpa, **T. Naicy**, T. V. Aravindakshan, G. Radhika, J. Joan and S. Jinty. 2020. Ovarian expression, polymorphism identification and association of SIRT3 gene with reproduction traits in goats, *Animal Biotechnology*, DOI: 10.1080/10495398.2020.1726363
2. Silpa, M.V., **Thomas Naicy**, T.V. Aravindakshan, G. Radhika, G., R.T. venkatachalapathy, Elizabeth Kurian. 2019. Sirtuin3 gene tissue expression profiling, SNP detection and its association with body conformation traits in goats. *Small Ruminant Research*. 184: 106017. <https://doi.org/10.1016/j.smallrumres.2019.11.003>
3. Rajashailesha. N.M, Prasad. R.V, **Sunil Kumar. N.S**, Girish. M.H, Jamuna. K.V, Suguna Rao, Ganga Naik. S, and Vinuthan. M.K. 2019. Studies on Morphology of Medial Cuneate Nucleus in Buffalo (*Bubalus bubalis*). *Indian Journal of Veterinary Anatomy*. 31 (2):141-143
4. Rajashailesha NM, Prasad RV, **Sunil Kumar NS**, Girish MH, Jamuna KV, Ganga Naik S, Vinuthan MK and Chandrashekhara NC. 2020. Cytoarchitecture of lateral cuneate nucleus in the buffalo (*Bubalus bubalis*). *The Pharma Innovation Journal*. 9(2): 312-315.
5. **Harikrishnan, S.**, Binoj Chacko, P. Anitha, Beena C. Joseph, Anilkumar, K. and Joseph Mathew. 2019. Performance of the Production Characteristics of the Reciprocal Crosses of Native Chicken of Kerala and N Strain (IWN) of White Leghorn. *Int.J.Curr.Microbiol.App.Sci* 8: 1562-1567.
6. **Harikrishnan, S.**, Binoj Chacko, P. Anitha, Beena C. Joseph, Anilkumar, K. and Joseph Mathew. 2019. Phenotypic Characterization of Native Chicken of Kerala Reared Under Intensive System of Management. *Ind. J. Pure App. Biosci*. 7: 402-407.
7. Dhanasree, G., **Usha Narayana Pillai**, Deepa Chirayath, Ambily V.R., Shynu, M. and Sunanda C. 2019. Evaluation of oxidative stress in caprine anaplasmosis and effect of Vitamin E- selenium in monitoring oxidative stress. *Tropical Animal Health and Production*.
8. Parvathy, E. K., **Usha N Pillai**, Madhavan Unny N., S indhu K. Rajan and Tresamol , P.V. 2019. Management of osteodystrophia fibrosa in stall fed caprine kids. *The Pharma Innovation Journal*. 8(12). 211-213
9. Johnson, J. and **Mini, M.** 2020. Molecular diagnosis of campylobacteriosis in diarrhoeic poultry. *Int. Res. J. Eng. Tech*. 7 (2): 850-858.
10. Sairam R, **Krishna B D**, Krithiga K, Sajitha I S, Priya P M, Ravishankar C, Abraham M J (2019). Molecular and pathological studies of post-weaning multi-systemic wasting syndrome among piglets in Kerala, India. *Explo. Anim. Med. Res*. 9(2): 137-144.
11. Ashna S, **Dhanush Krishna B**, Sajitha I S, Vasudevan V N, Pavan M, Abraham M J (2019). Effect of gamma ray sterilisation on differently de-cellularised omentum based scaffolds. *Explor. Anim. Med. Res*. 9(2): 174-179

12. Dulama Richani, Cathy F. Lavea, **Raji Kanakkaparambil**, Angelique H. Riepsamen, Michael J. Bertoldo, Sonia Bustamante & Robert B. Gilchrist (2019). Participation of the adenosine salvage pathway and cyclic AMP modulation in oocyte energy metabolism. *Scientific Reports*. 9, 18395 doi: 10.1038/s41598-019-54693-y
13. Shiji S Saju, Bhuvana Plakkot and **V Babitha** (2020). Expression of angiopoietin-1 (ANPT-1) gene in different categories of ovarian antral follicles in tropical goats. *The Pharma Innovation Journal*. 9:235-238.
14. Suraj, S.V., **Nair, S.N.**, Juliet, S., Sanjay, B.M., Saranya, C., Asaf, M., Shijin, M.S., Nisha, A.R. and Anoopraj, R., 2019. Single dose oral pharmacokinetics of sparfloxacin in rats.
15. Mridula Steephen., **Geetha R.** and Sathian CT. (2020) Activity profile of starter cultures maintained in whey based medium. *The Pharma Innovation Journal* 9(2): 127-129.
16. Wenyu Deng, Crystal Liu, Carlos Parra, Jeffrey R. Sims, Muneeb A. Faiq, **Anoop Sainulabdeen**, Hana Song, Kevin C. Chan 2019. Quantitative imaging of the clearance systems in the eye and the brain. *Quant Imaging Med Surg*. **10**: 1–14.
17. Rizwana Qadri, Rayees A. Sofi , **Anoop Sainulabdeen**, Muzafar A. Pandit , Shibal Bhartiya , Mohd Sharique , Moien Lone , Ali Mashook, Muneeb A. Faiq. 2019. Vaccine development for glaucoma: From skepticism to certitude. *Clinical and Experimental Vision and Eye Research* **2**: 24–30

Abstract in Seminar / Workshop

1. Hemanth Potu, Lali F. A., Sariga, Aravindakshan T. V. and Magnus Paul K. 2020. Novel SNP (g.T19624C) in Guanylate Cyclase 1 Soluble Subunit Beta (GUCY1B3) gene in Malabari goats of Kerala. XVII Annual Convention of Society for Conservation of Domestic Animal Biodiversity (SOCDAB) College of Veterinary Science and Animal Husbandry, Mhow, Madhya Pradesh from February 10-11, 2020.

Seminar / Workshop / Training Programme Attended:

Sl No.	Name of Faculty	Programme	Date and Venue
1	Dr K Anilkumar	32 nd Kerala Science Congress Chair of session on Livestock and Fisheries sciences	26.01.2020, Yuvakshetra Institute of Management Studies , Mundur, Palakkad
2	Dr K Anilkumar	Class “Institutional Animal Ethics Committee” in the two day workshop on “Introduction to Molecular Biology Techniques , Bioinformatics and Animal Ethics in health science Research”	Kerala University of Health Sciences, Mulankunnathukavu, Thrissur
3	Dr K Anilkumar	Lead paper entitled” Challenges and Strategies for Conservation and Management of Animal Genetic Resources in the Era of Climatic Changes” in the national symposium “Enhancement of Farmers	10-11 th February 2020, College of Veterinary Sciences and Animal Husbandry, Mhow, MP

		income through management of Animal Genetic Resources”	
4	Dr K Anilkumar	Class on “Adopting social media as teaching tool “ in 3 rd Refresher Course of Academic Staff college, KVASU	20.2.2020. CVAS Mannuthy
5	Dr.R.Thirupathy Venkatachalapathy	Quinquennial Review Team (QRT) Meeting	23/02/2020 Central Institute for Research on Goats, Makhdoom, Farah, Mathura
6	Dr Radhika G	National Seminar on “Agrometeorological Interventions for Enhancing Farmers Income (AGMET-2020)”	20-22 January 2020 at College of Horticulture, Kerala Agricultural University, Vellanikkara, Thrissur
7	Dr. Jamuna Valsalan	Hands on Training in Medical Genomics and Metagenomics	Feb 12-15, 2020 CUSAT, Cochin
8	Dr. S. Maya	XIX Annual Conference of Indian Society of Veterinary Pharmacology and Toxicology and National Symposium on "Pharmacogenomics in the development and validation of indigenous drugs.	College of Veterinary and Animal Sciences, Mannuthy from 18.12.2019 to 20.12.2019.
9	Dr. S. Maya	Go beyond- state leadership training camp of IVA, Kerala Unit.	Sargalaya Craft Village Iringal, Kozhikode from 08.02.2020 to 09.02.2020.
10	Dr Indu V Raj	XIX Annual Conference of Indian Society of Veterinary Pharmacology and Toxicology and National Symposium on "Pharmacogenomics in the development and validation of indigenous drugs.	College of Veterinary and Animal Sciences, Mannuthy from 18.12.2019 to 20.12.2019.
11	Dr A R Sreeranjini	XIX Annual Conference of Indian Society of Veterinary Pharmacology and Toxicology and National Symposium on "Pharmacogenomics in the development and validation of indigenous drugs.	College of Veterinary and Animal Sciences, Mannuthy from 18.12.2019 to 20.12.2019.
12	Dr N S Sunilkumar	XIX Annual Conference of Indian Society of Veterinary Pharmacology and Toxicology and National Symposium on "Pharmacogenomics in the	College of Veterinary and Animal Sciences, Mannuthy from 18.12.2019 to 20.12.2019.

		development and validation of indigenous drugs.	
13	Dr K B Sumena	XIX Annual Conference of Indian Society of Veterinary Pharmacology and Toxicology and National Symposium on "Pharmacogenomics in the development and validation of indigenous drugs.	College of Veterinary and Animal Sciences, Mannuthy from 18.12.2019 to 20.12.2019.
14	Dr. Sreeranjini. A.R.	Orientation course for NSS Programme Officers	Empanelled Training Institute, University of Calicut from 14-01-2020 to 20-01-2020.
15	Dr. C.S.Suja	XXXVI Annual IPSA conference	Dec 11-13, Durg, Chhattisgarh
16	Dr. C.S.Suja	XIX Annual ISVPT conference	Dec 18-20, Mannuthy
17	Dr. P. Anitha	XIX Annual ISVPT conference	Dec 18-20, Mannuthy
18	Dr. Beena C Joseph	XIX Annual ISVPT conference	Dec 18-20, Mannuthy
19	Dr Harikrishnan S	XIX Annual ISVPT conference	Dec 18-20, Mannuthy
20	Dr Usha Narayana Pillai	ISVM National Symposium on Advancement in veterinary medicine in mitigating challenges to Animal Health	5 to 7 Feb 2020 Veterinary College Bangalore
21	Dr Usha Narayana Pillai	National seminar of Indian society of veterinary Pharmacology and Toxicology	College of Veterinary and animal sciences, Mannuthy
22	Dr Madhavan Unny	ISVM National Symposium on Advancement in veterinary medicine in mitigating challenges to Animal Health	5 to 7 Feb 2020
23	Dr Madhavan Unny	National seminar of Indian society of veterinary Pharmacology and Toxicology	College of Veterinary and animal sciences, Mannuthy
24	Dr Deepa Chirayath	National seminar of Indian society of veterinary Pharmacology and Toxicology	College of Veterinary and animal sciences, Mannuthy
25	Dr Sindhu K rajan	National seminar of Indian society of veterinary Pharmacology and Toxicology	College of Veterinary and animal sciences, Mannuthy
26	Dr Arun George	National seminar of Indian society of veterinary Pharmacology and Toxicology	College of Veterinary and animal sciences, Mannuthy
27	Dr. Priya P. M.	IPSACON	11/12/2019 to 13/12/2019, CGKV, Durg, Chattisgarh
28	Dr. Surya Sankar	1st regional workshop for developing SAPCAR	31/01/2020 and 01/02/2020, Kochi
29	Dr. M. Mini	Strategic planning session for University initiatives on	04/02/2020, Keral University of Health

		coronavirus outbreak	Sciences Head quarters, Thrissur
30	Dr. Surya Sankar	Group monitoring workshop on Early Career Research award by Dept. of Science and Technology	14/02/2020 BITS, Pilani, Hyderabad
31	Dr. Ambily R.	Model training course on 'Field based diagnostic techniques in animal husbandry for improving animal health status'	19/02/2020 to 26/02/2020 at VCRI, Namakkal
32	Dr. Ambily R.	Swadeshi Science Congress	27/02/2020 to 29/02/2020 at CPCRI, Kasaragod
33	Dr Sajith Purushothaman	A healthy ecosystem for effective pedagogy	14-02-2020 to 27-02-2020, CVAS, Mannuthy
34	Dr Dipu M T	A healthy ecosystem for effective pedagogy	14-02-2020 to 27-02-2020, CVAS, Mannuthy
35	Dr. Ajith K.S	National Seminar on Agrometeorological interventions for enhancing farmer's income	20/1/2020 – 22/1/2020 Vellanikkara, Thrissur
36	Dr. Sajith Purushothaman	"Pharmacogenomics in the development and validation of indigenous drugs" ISVPT 2019	18-12-2019 to 20-12-2019 CVAS, Mannuthy
37	Dr Jasmine Rani K	"Pharmacogenomics in the development and validation of indigenous drugs" ISVPT 2019	18-12-2019 to 20-12-2019 CVAS, Mannuthy
38	Dr. C. Jayakumar	XXXV Annual Convention of ISSAR and International Symposium on "Global Perspectives to Enhance Livestock Fertility through Modern Reproductive Techniques for Doubling Farmer's Income	VCRI, Namakkal 18-20th December, 2019
39	Dr. C. Jayakumar	National congress on canine practice and 17th Convention of Indian Society for Advancement of Canine Practice & National Symposium on Maximizing Diagnosis, Therapy and Welfare in Canine Practice in Current Scenario	CVAS, Jabalpur, 21st – 23rd January, 2020
40	Dr. Shibu Simon	XXXV Annual Convention of ISSAR and International Symposium on "Global	VCRI, Namakkal 18-20th December, 2019

		Perspectives to Enhance Livestock Fertility through Modern Reproductive Techniques for Doubling Farmer's Income	
41	Dr. Hiron M. Harshan	XXXV Annual Convention of ISSAR and International Symposium on "Global Perspectives to Enhance Livestock Fertility through Modern Reproductive Techniques for Doubling Farmer's Income	VCRI, Namakkal 18-20th December, 2019
42	Dr. Hiron M. Harshan	National congress on canine practice and 17th Convention of Indian Society for Advancement of Canine Practice & National Symposium on Maximizing Diagnosis, Therapy and Welfare in Canine Practice in Current Scenario	CVAS, Jabalpur, 21st – 23rd January, 2020
43	Dr. Hiron M. Harshan	Continuing Professional development programme organized by SAVAK	Thrissur, 16th Feb, 2020
44	Dr. Bibin Becha B.	National congress on canine practice and 17th Convention of Indian Society for Advancement of Canine Practice & National Symposium on Maximizing Diagnosis, Therapy and Welfare in Canine Practice in Current Scenario	CVAS, Jabalpur, 21st – 23rd January, 2020
45	Dr. Abhilash R. S.	XXXV Annual Convention of ISSAR and International Symposium on "Global Perspectives to Enhance Livestock Fertility through Modern Reproductive Techniques for Doubling Farmer's Income	VCRI, Namakkal 18-20th December, 2019
46	Dr. Magnus Paul K.	Continuing Professional development programme organized by SAVAK	Thrissur, 16th Feb, 2020
47	Dr.K.Devada, Dr.Bindu Lakshmanan, Dr.Asha Rajagopal, Dr. R.Radhika, Dr.Priya ,M.N	XIX annual conference of ISVPT and national symposium	18,19 & 20 Dec, 2019 CVAS, Mannuthy

48	Dr.Asha Rajagopal and Dr.R.Radhika	Kerala Science Congress	25,26,27 January, 2020, Mundur, Palakkad
49	Dr.K.Devada, Dr.Bindu Lakshmanan, Dr.Asha Rajagopal, Dr. R.Radhika, Dr.Priya ,M.N	29th National Congress of Veterinary Parasitology and National symposium	5,6,7 February, CVS & AH, Jabalpur
50	Dr. Sajitha I S	XIX Annual conference of Indian society of Veterinary pharmacology and toxicology and National symposium on Pharmacogenomics in the development and validation of indigenous drugs – Presented poster on “Elucidation of drug resistance in cancer”	18-20 Dec 2019 College of Veterinary and Animal Sciences, Mannuthy
51	Dr. Dhanush Krishna B	XIX Annual conference of Indian society of Veterinary pharmacology and toxicology and National symposium on Pharmacogenomics in the development and validation of indigenous drugs (18-20 Dec 2019) – Presented poster on “Different methods for assessing decellularisation efficiency of extracellular matrix-based bioscaffolds for translational research”	18-20 Dec 2019 College of Veterinary and Animal Sciences, Mannuthy
52	Dr. Devi S S	XIX Annual conference of Indian society of Veterinary pharmacology and toxicology and National symposium on Pharmacogenomics in the development and validation of indigenous drugs (18-20 Dec 2019) – Presented poster on “Evaluation of antimicrobial activity of herbal extracts against clinical isolates of Staphylococcus aureus”	18-20 Dec 2019 College of Veterinary and Animal Sciences, Mannuthy
53	Dr. Divya C	XIX Annual conference of Indian society of Veterinary pharmacology and toxicology and National symposium on Pharmacogenomics in the development and validation of indigenous drugs (18-20 Dec	18-20 Dec 2019 College of Veterinary and Animal Sciences, Mannuthy

		2019) – Presented poster on “Pathology of haemotoxic snake envenomation in a dog”	
54	Dr. Gleeja V.L.	Resource person for Two Day National workshop on ‘Statistics for Biologists’	16th & 17th December 2019 by the Department of Zoology, SNGS College, Pattambi
55	Dr. Gleeja V.L.	Chaired session in National seminar in Applied Statistics and Symposium on Stochastic Modelling	04/02/2020 St. Thomas College, Thrissur.
56	Dr. Gleeja V.L.	Resource person for 3rd Refresher Course	21/02/2020 Academic Staff college, KVASU
57	Dr. Divya P.D.	presented research paper in XIX Annual Conference of Indian society of Veterinary Pharmacology and Toxicology (ISVPT-2019) and National Symposium on “Pharmacogenomics in the development and validation of indigenous drugs” held at CVAS, Mannuthy	18-20, December 2019
58	Dr. Divya P.D.	Presented research paper in IV th National seminar and Annual Convention of Society of Veterinary Biochemists and Biotechnologists of India(SVBBI) on Current Research in Veterinary Biochemistry and Biotechnology in the improvement of Animal Health and Production’held at college of Veterinary Science, SVVU, Tirupati.	4 th February,2020
59	Dr. Shynu .M.	XIX Annual Conference of Indian society of Veterinary Pharmacology and Toxicology (ISVPT-2019) and National Symposium on “Pharmacogenomics in the development and validation of indigenous drugs” held at CVAS, Mannuthy	18-20, December 2019
60	Dr.Uma R.	XIX Annual Conference of Indian society of Veterinary Pharmacology and Toxicology (ISVPT-2019) and National Symposium on	18-20, December 2019

		“Pharmacogenomics in the development and validation of indigenous drugs” held at CVAS, Mannuthy	
61	Dr.Uma R.	Presented research paper IV th National seminar and Annual Convention of Society of Veterinary Biochemists and Biotechnologists of India(SVBBI) on Current Research in Veterinary Biochemistry and Biotechnology in the improvement of Animal Health and Production’held at college of Veterinary Science, SVVU, Tirupati.	4 th February,2020
62	Dr. Varuna P. Panicker	XIX Annual Conference of Indian society of Veterinary Pharmacology and Toxicology (ISVPT-2019) and National Symposium on “Pharmacogenomics in the development and validation of indigenous drugs” held at CVAS, Mannuthy	18-20, December 2019
63	Dr. Chinnu M.V.	XIX Annual Conference of Indian society of Veterinary Pharmacology and Toxicology (ISVPT-2019) and National Symposium on “Pharmacogenomics in the development and validation of indigenous drugs” held at CVAS, Mannuthy	18-20, December 2019
64	Dr. Ramnath V.	XIX Annual Conference of Indian Society of Veterinary Pharmacology and Toxicology and National Symposium on “Pharmacogenomics in the development and validation of indigenous drugs	18-20 December 2019, Mannuthy, Thrissur
65	Dr. K. Raji	XIX Annual Conference of Indian Society of Veterinary Pharmacology and Toxicology and National Symposium on “Pharmacogenomics in the development and validation of indigenous drugs	18-20 December 2019, Mannuthy, Thrissur

66	Dr. K. Raji	Hands-on-Workshop on RNA-seq Library Preparation and Data Analysis	05th to 07th February 2020 at The Institute of Bioinformatics and Applied Biotechnology, Biotech Park, Bangalore
67	Dr. V. Babitha	XIX Annual Conference of Indian Society of Veterinary Pharmacology and Toxicology and National Symposium on “Pharmacogenomics in the development and validation of indigenous drugs	18-20 December 2019, Mannuthy, Thrissur
68	Dr. Aziz Zarina	XIX Annual Conference of Indian Society of Veterinary Pharmacology and Toxicology and National Symposium on “Pharmacogenomics in the development and validation of indigenous drugs	18-20 December 2019, Mannuthy, Thrissur
69	Dr. S. Harikumar	Indo-Australian International Workshop on “Transfer of Mitigation Technologies for Heat Stress in Farm Animals”	5-2-2020 to 7-2-2020 NIANP Bangalore
70	Dr. Suraj P. T.	International Workshop on Animal Welfare Behaviour Research	18-2-2020 to 20-2-2020 Veterinary College, Hebbal Bangalore in association with Common Wealth Veterinary Association
71	Dr. A. Prasad	International Workshop on Animal Welfare Behaviour Research	18-2-2020 to 20-2-2020 Veterinary College, Hebbal Bangalore in association with Common Wealth Veterinary Association
72	Dr. Anil K. S.	Annual Convention and National Conference of Indian Society of Animal Production and Management	4-6th February 2020, PGIVER Jaipur
73	Dr. Justin Davis	Annual Convention and National Conference of Indian Society of Animal Production and Management	4-6th February 2020, PGIVER Jaipur
74	Dr. Varuna P. Panicker	Presented research paper in 38 th Annual Convention of Indian Society for Veterinary Medicine & National Symposium on “Advancement in Veterinary Medicine in Mitigating	6 th February 2020

		Challenges to Animal Health” held at Veterinary College, KVAFSU, Hebbal, Bengaluru.	
75	Dr. C. T. Sathyan, Dr. Radha and Dr. R. Geetha	XIX Annual Conference of Indian Society of Veterinary Pharmacology and Toxicology and National Symposium on “Pharmacogenomics in the development and validation of indigenous drugs	18-20 December 2019, Mannuthy, Thrissur
76	Dr K Vrinda Menon	Training on Risk factors and economic impact analysis of zoonotic diseases	NIVEDI, Bangalore 18th- 20th December, 2019
77	Dr Binsy Mathew Dr Deepa Jolly	National Symposium on “Pharmacogenomics in the development and validation of indigenous drugs	18th- 20th December, 2019, COVAS, Mannuthy
78	Dr C Latha	APHV conference	20th-22nd January, 2020
79	Dr. Usha PTA, Dr. Nisha A R, Dr. Suresh N Nair, Dr. Suja Ranis, S, Dr. Sujith S, Dr..Preethy John	XIX Annual Conference of Indian Society of Veterinary Pharmacology and Toxicology (ISVPT) and National Symposium on “Pharmacogenomics in the development and Validation of indigenous drugs” at	College of Veterinary and Animal Sciences, Mannuthy during 18-20 December 2020
80	Dr. Nisha A R	Kerala Science Congress	Sivakshethra Institute Palakkad, January 25-27, 2020
81	Dr. Sujith S	Indian Science Congress	UAS Bangalore January 3-7, 2020

Outstanding achievements, technologies developed, awards and other distinctions obtained by Institutions, scientists and staff

1. **Dr. Sreeranjini. A.R.** Assistant professor bagged best poster presentation award in the session Clinical and Regulatory Pharmacology/Toxicology in the National Symposium on “Pharmacogenomics in the Development and Validation of indigenous Drugs” held at CVAS, Mannuthy from 18th to 20th December 2019 for the paper entitled “Antibacterial Enhancing Effect of Methanolic Extract from the Leaves of *Oroxylum indicum* with Antibiotics in Bacterial Isolates from Bovine Mastitis” authored by A.R. Sreeranjini., Nisha, A.R., Arya, M., Keerthika, V., Preethy, J. and Maya, S.
2. Best Poster award- **Beena C Joseph., C.S.Suja, Binoj Chacko, P. Anitha, S. Hari krishnan and Geo Joseph.** Performance evaluation of Tellicherry breeds of Kerala under intensive system. XXXVI Annual IPSA conference. Dec 11-13, Durg, Chhattisgarh

3. **Dr Usha Narayana Pillai**, Dr. P.K. Das Gold medal award 2019. ISVM .Indian Society of Veterinary Medicine 2020
4. **Dr Usha Narayana Pillai**, Co-author of the paper - Second best oral presentation – Molecular diagnosis of Lumpy skin disease in cross bred cows, ISVM 5th -7th Feb 2020
5. **Dr. Priya P. M.**, Assistant Professor received Best oral presentation award and Best poster award (session III) in IPSACON conducted at CGKV, Durg, Chattisgarh during 11th to 13th December, 2019.
6. **Dr Sajith Purushothaman** bagged best thesis award for PhD by Indian Veterinary Association, Kerala
7. **Dr. Jasmine Rani K.** received approval for the student project entitled “*In vitro* evaluation of *Couroupita guianensis* flowers on rumen metabolism and methane production in cross bred cattle’ from KSCSTE, Thiruvananthapuram.
8. **Dr. Abhilash** - best research paper- in reproductive biotechnology session (RBT) of XXXV Annual Convention of ISSAR and International Symposium on “Global Perspectives to Enhance Livestock Fertility through Modern Reproductive Techniques for Doubling Farmer’s Income held at VCRI, Namakkal, 18-20th December, 2019
9. **Dr. Hiron M. Harshan** – co-author best research paper- small ruminants and swine reproduction session of XXXV Annual Convention of ISSAR and International Symposium on “Global Perspectives to Enhance Livestock Fertility through Modern Reproductive Techniques for Doubling Farmer’s Income held at VCRI, Namakkal, 18-20th December, 2019
10. **Dr. Shibu Simon** - co-author - young scientist- infertility in bovines session of XXXV Annual Convention of ISSAR and International Symposium on “Global Perspectives to Enhance Livestock Fertility through Modern Reproductive Techniques for Doubling Farmer’s Income held at VCRI, Namakkal, 18-20th December, 2019
11. **Dr. Hiron M. Harshan** – co-author young scientist - small ruminants and swine reproduction session of XXXV Annual Convention of ISSAR and International Symposium on “Global Perspectives to Enhance Livestock Fertility through Modern Reproductive
12. **Dr. Magnus Paul K.** - co-author young scientist - small ruminants and swine reproduction (SRS) session of XXXV Annual Convention of ISSAR and International Symposium on “Global Perspectives to Enhance Livestock Fertility through Modern Reproductive Techniques for Doubling Farmer’s Income held at VCRI, Namakkal, 18-20th December, 2019
13. **Dr.Asha Rajagopal** –First Prize for Oral Presentation at XIX annual conference of ISVPT and national symposium
14. **Dr.R.Radhika** –second prize for best poster at 29th National Congress of Veterinary Parasitology and National symposium, Jabalpur
15. **Dr. Priya , M.N** –Second prize for best oral presentation at 29th National Congress of Veterinary Parasitology and National symposium, Jabalpur
16. **Dr. Uma R** ,Best paper award , IVth National seminar and Annual Convention of Society of Veterinary Biochemists and Biotechnologists of India (SVBBI) on “Current

Research in Veterinary Biochemistry and Biotechnology in the improvement of Animal Health and Production” held at college of Veterinary Science, SVVU, Tirupati.

17. **Dr, Divya P.D.**, Best paper award IVth National seminar and Annual Convention of Society of Veterinary Biochemists and Biotechnologists of India (SVBBI) on “Current Research in Veterinary Biochemistry and Biotechnology in the improvement of Animal Health and Production” held at college of Veterinary Science, SVVU, Tirupati
18. **Dr B Sunil** , Professor, Department of Veterinary Public Health received Best Teacher Award from Indian Veterinary Association, Kerala
19. **Dr, Sulficar S.** bagged first prize in oral presentation at ISVM conference held at Bengaluru
20. **Dr. Shyma V. H.** bagged third prize in poster presentation in ISVM conference held at Bengaluru from February 5th to 7th
21. Post doctoral fellowship for **Dr. S. Anoop** in Ophthalmic Imaging from New York University, Langone Health, New York, USA.
22. Best oral presentation award for **Dr. Nisha A R** in Kerala Science Congress, January 2020
23. Best oral presentation award for **Dr.Suja Rani S** in National conference of ISVPT 2019 held at Dept. of Veterinary Pharmacology & Toxicology CVAS Mannuthy
24. Best oral presentation award for **Dr.Sujith S** in National conference of ISVPT 2019 held at Dept. of Veterinary Pharmacology & Toxicology CVAS Mannuthy
25. Best poster presentation award for **Dr. Preethy John** in National conference of ISVPT 2019 held at Dept. of Veterinary Pharmacology & Toxicology CVAS Mannuthy

Awards by students

1. Champions of Adhilsha memorial football tournament- TACKLE 2020
2. **Sneha K. S.** secured Bronze medal in Hacks in 2020 Republic Day Celebrations held at New Delhi
3. State media award by Dairy department Kerala to **Dr. Muhammed Asif** of Department of Extension
4. **Akshatha G. Desai**- M.V.Sc. student won Best paper Presentation award for the paper Akshatha. G.D., Naicy. T., Aravindakshan. T. V., Muhasin. V. N. A. and Bindu. L. Differential expression of growth related genes in placenta of Malabari goats associated with survivability of kids .SOCDAB-XVII National symposium on Enhancement of farmer’s income through Management of Animal Genetic Resources, Madhya Pradesh. February 10-11, 2020.
5. **Akhil C.G** Research associate of ICAR Project on ethnopharmacology Best Poster presentation in Ethnopharmacology session Annual conference and national Symposium ISVPT -18-20 Dec 2020n CVAS Mannuthy
6. **Anaz S.R.** MVSc student Second best poster presentation in infectious disease of ruminant/farm animal Session ISVM National Symposium on Advancement in veterinary medicine in mitigating challenges to Animal Health 5th. 7th Feb 2020, Veterinary College , Bangalore

7. **Dr. Reshma P. S.**, Ph.D Scholar (2019 admission) and Dr. C. Devigasri, M.V.Sc. scholar (2017 admission) were qualified in **ICAR-NET examination**
8. **Dr.Rakshita** - young scientist-RBT session of XXXV Annual Convention of ISSAR and International Symposium on “Global Perspectives to Enhance Livestock Fertility through Modern Reproductive Techniques for Doubling Farmer’s Income held at VCRI, Namakkal, 18-20th December, 2019
9. **Dr.Niyas E**- young scientist- infertility in bovines session of XXXV Annual Convention of ISSAR and International Symposium on “Global Perspectives to Enhance Livestock Fertility through Modern Reproductive Techniques for Doubling Farmer’s Income held at VCRI, Namakkal, 18-20th December, 2019
10. **Dr. Gayatri P**- young scientist- infertility session of XXXV Annual Convention of ISSAR and International Symposium on “Global Perspectives to Enhance Livestock Fertility through Modern Reproductive Techniques for Doubling Farmer’s Income held at VCRI, Namakkal, 18-20th December, 2019
11. **Dr.Vidya V.K**- young scientist- canine, pet and equine session of XXXV Annual Convention of ISSAR and International Symposium on “Global Perspectives to Enhance Livestock Fertility through Modern Reproductive Techniques for Doubling Farmer’s Income held at VCRI, Namakkal, 18-20th December, 2019
12. **Dr. Vinayak.B**- young scientist- small ruminants and swine reproduction (SRS) session of XXXV Annual Convention of ISSAR and International Symposium on “Global Perspectives to Enhance Livestock Fertility through Modern Reproductive Techniques for Doubling Farmer’s Income held at VCRI, Namakkal, 18-20th December, 2019
13. **Dr.Nayana.Devarajan** - young scientist- clinical case session of XXXV Annual Convention of ISSAR and International Symposium on “Global Perspectives to Enhance Livestock Fertility through Modern Reproductive Techniques for Doubling Farmer’s Income held at VCRI, Namakkal, 18-20th December, 2019
14. **Dr. Niyas E.** - Best Poster presentation National congress on canine practice and 17th Convention of Indian Society for Advancement of Canine Practice & National Symposium on Maximizing Diagnosis, Therapy and Welfare in Canine Practice in Current Scenario 21st – 23rd January, 2020
15. **Dr.R.Karthika (PG student)** –Second prize for best poster at 29th National Congress of Veterinary Parasitology and National symposium, Jabalpur
16. **Dr. Sahana M.**, PhD scholar in the department of Livestock Production Management received Young Scientist Award (Female) of Indian Society of Animal Production Management during February 2020.
17. ICMR PhD scholarship **Dr Vivekanandhan R** (PhD Scholar, Department of veterinary Public Health)
18. Best oral presentation award for **Dr. Arya Mohan** (Department of Veterinary Pharmacology and Toxicology) in National conference of ISVPT 2019 held at Dept. of Veterinary Pharmacology & Toxicology CVAS Mannuthy.

19. Best poster presentation award for **Dr. Aathira K K** (Department of Veterinary Pharmacology and Toxicology) in National conference of ISVPT 2019 held at Dept. of Veterinary Pharmacology & Toxicology CVAS Mannuthy.

Consultancy Services:

Sl. No.	Department	Services provided	Date/ no. of sample	Income generated
1.	Animal Genetics and Breeding	Commercial Goat Farming for two days (Number of participants-56)	5/12/2019 – 6/12/2019 & 13/2/2020 – 14/2/2020	Services provided
		Vechur Conservation unit Semen Milk Sale of breeding animals Culled Animals to meat plant Dung Urine TOTAL		Rs. 2600/- Rs. 26507/- Rs. 75000/- Rs. 29464/- Rs. 21560/- Rs. 1730/- Rs. 1,56,861/-
2	Veterinary Anatomy	Engaged 40 groups of students and faculty from different institutions counting to 1200 numbers as visitors of Anatomy Museum during the period		Services provided
3	CAS Poultry	Farmer's counseling		Services provided
4	Veterinary Microbiology	Over Phone- In person – MAT Culture and sensitivity Fungal/ bacterial culture Blood smear PCR RBPT	10 15 102 42 6 4 7 26	Rs. 23,120/-
5	Animal Nutrition	<ul style="list-style-type: none"> A training programme was conducted in the Department of Animal Nutrition, CVAS, Mannuthy for 2 days entitled "Newer trends in cattle feeding and feed production" for entrepreneurs in Kudumbasree, Wayanad on. Ten entrepreneurs attended the programme Dr Sajith Purushothaman has taken class for VHSE students on the topic feed formulation and effective feeding of dairy animal for optimum health and 	12.12.2019 - 13.12.2019	Rs. 2,33,11,202/- (Total sales of feed, mineral mixture, feed analysis and lab animals) -

		production		
6	Veterinary Parasitology	Clinical samples examined Faeces/Dung Blood Others	18 98 4	Rs. 1130/-
		Advising parasite control measures to farmers and entrepreneurs		Services provided
7	Veterinary Pathology	Post mortem examination of large animals Post mortem examination of birds Rabies diagnosis Cytology	371 475 51 9	Rs. 20,670/-
8	Livestock Production Management	consultations to farmers on dairy cattle and buffalo management, pig farming		Rs. 40,000.00/-
9	Department of Veterinary Public Health	Revolving Fund Project		Rs. 70800/-
10	Department of Veterinary Surgery and Radiology	Revolving fund project on “comprehensive surgical care”		Rs. 289500/-

Any other Relevant Activities:

1. Dr S Maya is the Joint convener and Dr Indu V Raj, Dr A R Sreeranjini, Dr N S Sunilkumar, Dr K B Sumena are members of various committees of Third convocation of KVASU scheduled on 28th March 2020.
2. Dr S Maya, Director Academic Staff College, KVASU conducted 14 days Refresher Course – A Roadmap to Enhance Core Teaching Competencies in Academic Landscape from February 14th to 27th 2020 in which 51 participants from various parts of Kerala participated. Dr Indu V Raj and Dr N S Sunilkumar were the course coordinators.
3. Dr. Sreeranjini. A.R., Assistant professor and NSS Programme Officer organized a special camp “Jeevanam” in the division-18 of Thrissur Corporation from 10-02-2020 to 16-02-2020. Activities of the camp included public awareness campaign by NSS volunteers on corona viral infection, milk, meat and water hygiene, waste management and zoonotic diseases, volunteer-farmer interactions, motivation classes to volunteers, awareness classes to dairy farmers etc. As part of the camp, the NSS volunteers had visited nearly 1200 houses of division-18 including flats and staff quarters within the campus.
4. Dr. Sreeranjini. A.R., Assistant Professor and NSS Programme Officer organized a motivation class to first year students on “Students’ Initiative in Palliative Care” in association with Pain and Palliative Care Society, Thrissur on 25-02-2020 at CVAS, Mannuthy.
5. Dr. Sreeranjini. A.R., Assistant Professor and NSS Programme Officer organized a fund raising to the Pain and Palliative Care Society, Thrissur by NSS units and Dean i/c,

CVAS Mannuthy handed over Rs.31500/- to the society on 25-02-2020 at CVAS, Mannuthy.

6. Dr. Sreeranjini. A.R., Assistant Professor and NSS Programme Officer organized and initiated “NSS Paper Pen Scheme” at CVAS, Mannuthy on 25-02-2020 as a complimentary step to the Green Protocol that is being followed in the college campus.
7. Dr. S. Maya is the Nodal Officer of the committee constituted for the submission of application for the NAAC & SAAC accreditation for the KVASU- Submitted the 12 B document of KVASU in November 2019.
8. Dr S Maya was the University level coordinator, Dr Indu V Raj was the college level coordinator and Dr A R Sreeranjini, Dr N S Sunilkumar, Dr K B Sumena were the members of the committee constituted for submission of application for Chancellor’s Award-2019 for the Established Universities and Emerging Young University.
9. Dr S Maya was the co chairman, Dr Indu V Raj, Dr A R Sreeranjini, Dr N S Sunilkumar, Dr K B Sumena were members of various committees for the conduct of XIX Annual Conference of Indian Society of Veterinary Pharmacology and Toxicology and National Symposium on "Pharmacogenomics in the development and validation of indigenous drugs” to be conducted at CVAS, Mannuthy from 18.12.2019 to 20.12.2019.
10. Dr. Indu V. Raj was the course coordinator of the three months obligatory training for the Assistant Directors from Animal Husbandry Department during October- December- 2019.
11. Dr. Indu V. Raj was the course coordinator of the three months obligatory training for the Assistant Directors from Animal Husbandry Department during November-2019- January- 2020.
12. Dr. N S Sunilkumar was member in the committee constituted for the submission of application for the 12B accreditation for the College of Veterinary & Animal Sciences, Mannuthy.
13. Dr. N S Sunilkumar and Dr. Sumena K.B. were members in the committee constituted for the submission of application for the NAAC accreditation for KVASU.
14. Dr. Sunilkumar N.S., Associate Editor, Journal of Veterinary and Animal Sciences took part in editing and releasing of Volume 50, Issue 2 (July- December- 2019) of Journal of Veterinary and Animal Sciences.
15. Dr. Sunilkumar N.S., Associate Editor, Journal of Veterinary and Animal Sciences along with other members prepared and submitted the Application for revising the NAAS rating of Journal of Veterinary and Animal Sciences from the year 2020.
16. Dr N S Sunilkumar and Dr K B Sumena were the members of committee constituted to assist Registrar for the conduct of Career Advancement Scheme- interview scheduled on 4th December 2019 and 5th December,2019.
17. Dr. Jiji. R.S.- Resource person handling session on ‘Intellectual Property Rights in Animal Production’ on 29.01.2020, as part of Three Months Obligatory Training programme for Assistant Directors of Animal Husbandry Department organized by Directorate of Entrepreneurship of Kerala Veterinary & Animal Sciences University, at College of Veterinary & Animal Sciences, Mannuthy.

18. Dr. Jiji. R.S.- Resource person handling session on ‘Implications of Intellectual Property Rights in Education’ on 25.02.2020, as part of Refresher Programme on ‘A Roadmap to Enhance Core Teaching Competencies in Academic Landscape’ organized by Academic Staff College and Directorate of Entrepreneurship of Kerala Veterinary & Animal Sciences University, at College of Veterinary & Animal Sciences.
19. Dr. Jiji. R.S.- Coordinator, Refresher Programme on ‘A Roadmap to Enhance Core Teaching Competencies in Academic Landscape’ organized by Academic Staff College and Directorate of Entrepreneurship of Kerala Veterinary & Animal Sciences University, at College of Veterinary & Animal Sciences from 14th to 27th February, 2020.
20. Dr. T.S. Rajeev- Attended two-day captive elephant management and health care monitoring committee meeting, Govt. of India at Muthumalai on 9th and 10th January
21. Dr. T.S. Rajeev- Resource person handling session on ‘ICT in livestock production and elephant management’ on 29.01.2020, as part of Three Months Obligatory Training programme for Assistant Directors of Animal Husbandry Department organized by Directorate of Entrepreneurship of Kerala Veterinary & Animal Sciences University, at College of Veterinary & Animal Sciences, Mannuthy.
22. Dr. Surya Sankar conducted Training on embryonated chicken egg inoculation techniques and animal handling on 10/12/2020 for M.Sc. MLT students , MIMS College of Allied Health Sciences, Malappuram.
23. Dr. Priya P.M. conducted Training on embryonated chicken egg inoculation techniques and animal handling on 01/02/2020 for 4th year B.Sc. MLT students , MTIMS, Irumpanam, Ernakulam
24. Awareness class for Veterinary surgeons, Para veterinarians and Farmers- Goat rearing, Animal Husbandry Department, Lakshadweep- Dr. Ajith K.S attended-16/1/2020 – 17/1/2020
25. 42nd Agri- Horti society flower show- Dr Deepa Ananth and Dr Jasmine Rani K attended- 24-01-2020
26. Dairy Entrepreneurship for VHSE -Veterinary doctors- Dr Deepa Ananth attended- KLDB, Mattupetty- 05-01-2020
27. Feeding of Dogs”- Kerala Police Academy- Dr Ajith K S attended-- 15-02-2020
28. Dr. Bindu Lakshmanan, Dr. Priya, M. N. and Dr. K. Syamala- conducted classes on “Parasites and diagnostic methods to Assistant directors from AHD from 27-01-2020
29. Conducting Diploma Course in Laboratory Techniques – Parasitology
30. Two days training cum workshop on Introduction to molecular biology techniques, Bioinformatics tools and Animal Ethics in Health Science Research was organized by Kerala University of Health Sciences along with Centre for Advanced Studies in Animal Genetics and Breeding from 29-01-2020 to 30-01-2020 for faculty members of Kerala University of Health Sciences.
31. Training programmes conducted in the OG department- Training for Assistant Directors of AHD, Kerala given by the staff of the department – two sets of 25 persons each for two days.
32. Dr Justin Davis handled a technical session at Police Academy, Thrissur

33. Dr Biju S handled two technical sessions at Police Academy, Thrissur
34. Dr A Prasad handled a technical session at Police Academy, Thrissur
35. Dr. Suraj P T participated as Project Consultant in the Vanamitra Project for establishing 50 dairy farms at Chakkittapara tribal colony by Kerala State Women's Development Corporation
36. Two days experiential training on hoof trimming by Department of Veterinary Surgery and Radiology in dairy cattle for 6 veterinarians under the revolving fund of Director of Clinics (from 28.2.2020. to 29.2.2020.)
37. Faculty from OG department presented lead papers and acted as rapporteurs
 1. Dr. Shibu Simon – Presented lead paper at XXXV Annual Convention of ISSAR and International Symposium on “Global Perspectives to Enhance Livestock Fertility through Modern Reproductive Techniques for Doubling Farmer's Income held at VCRI, Namakkal, 18-20th December, 2019
 2. Dr. Hiron M. Harshan – acted as rapporteur in a session at XXXV Annual Convention of ISSAR and International Symposium on “Global Perspectives to Enhance Livestock Fertility through Modern Reproductive Techniques for Doubling Farmer's Income held at VCRI, Namakkal, 18-20th December, 2019
 3. Dr. Hiron M. Harshan - acted as rapporteur in a session of National congress on canine practice and 17th Convention of Indian Society for Advancement of Canine Practice & National Symposium on Maximizing Diagnosis, Therapy and Welfare in Canine Practice in Current Scenario 21st – 23rd January, 2020
38. Additional duties handled by the faculties of Anatomy department
 - Dr. S Maya :
 1. Director, Academic Staff College
 2. Professor I/C PG Academics, CVAS, Mannuthy
 3. Nodal officer, AISHE
 - Dr. Indu V Raj :

Officer i/c UG academics, CVAS, Mannuthy
 - Dr. A R Sreeranjini :

Programme Officer NSS unit, CVAS, Mannuthy
 Director Board Member, KAU Employees cooperative Society.
 Editorial Board Member of Journal of Indian Veterinary Association.
 - Dr. N S Sunilkumar :
 1. Vice patron, ARIS Cell & the Students' Computer Club
 2. Associate Editor, Journal of Veterinary and Animal Sciences
 - Dr. K B Sumena :

Course Director, Distance Learning Centre, DoE, KVASU
39. Editors of Journals
 - Dr. Hiron M. Harshan, Editor JIVA for the year 201
 - Dr. Magnus Paul K: member editorial board JIVA, for the year 2020
40. Acad cell-2 arranged a walk in interview on 17-2-2020 for recruitment of staff on contract basis to new courses at CV&AS, Mannuthy

41. Exhibition on “ Know zoonoses to no zoonoses “ conducted by School of zoonoses, Public Health and Pathobiology, Dept VPH and NSS unit at Pazhani , Kunnankulam on 31st December, 2019.
42. Department of Veterinary pharmacology and Toxicology organized XIX Annual Conference of Indian Society of Veterinary Pharmacology and Toxicology (ISVPT) and National Symposium on “ Pharmacogenomics in the development and Validation of indigenous drugs” at College of Veterinary and Animal Sciences, Mannuthy during 18-20 December 2020
43. Department of Veterinary pharmacology and Toxicology conducted National preconference Workshop on *Insilico* and cell culture techniques as alternatives to animal use on 17th December 2019 at College of Veterinary and Animal Sciences, Mannuthy.

PUBLICATIONS

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6. Amel Dev, Tresamol, P. V., Deepa, P.M., Prejit and Amrutha,C.n. 2019.occurrence and distribution of *Leptospira* serovars in canines and its occupational risk in humans *J. Foodborne Zoonotic Dis.* **7**(3):21-25
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10. Anju, S.K. and Sunilkumar, n.S. 2019. Proximate analysis of hoof capsule in buffaloes. *Int. J. Multidiscip. Res. Dev.* **6**(4):144-145.
11. Archana, S.n., Menon, K.V., Latha, C., Sunil, B. and Joseph, S. 2019. occurrence of

- Leptospira* species in paddy field water samples in and around thrissur district. *Int. J. Curr. Microbiol. Appl. Sci.* **8**: 2211-2115.
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 13. Ashna, S., Sajitha, I.S., Devi S.S., Sairam, R., Dhanush, K.B. and Mammen, J.A. 2019. Squamous cell carcinoma in a hallikar bullock. *J. Livest. Sci.* **10**:29-31.
 14. Aswathy, n., Priya, P.M., Ambily, R., niyas, e., Sudheesh, S. n., Balan, R. and Mini, M. 2019. isolation and identification of *Corynebacterium jeikeium* from synovial fluid of joint ill affected calf. *Int. J. Curr. Microbiol. App. Sci.* **8**(9): 2875-2880.
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COMPENDIUM ARTICLES

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114. Livin Raj VL. and Deepak Mathew DK. 2019. *Cyclea peltata*-A herbal ectoparasiticide.

- In: Compendium of 19th national symposium on pharmacogenomics in the development and validation of indigenous drugs, 18-20 December 2019, CVAS, Mannuthy
115. Justin Davis, Anil KS, Suraj PT, Joseph Mathew, Ally K and Ramnath V. 2020. Mineral profile of soil for sustainable fodder production. in: compendium of national conference of Indian Society for animal Production and Management, 4-6, February 2020, Jaipur
 116. Justin Davis. 2019. Mineral profile of cow dung and farm slurry for use as biomanure lead paper. In: Compendium of International seminar on climate change: a call to action, 21-22, november 2019, govt College, Thrissur, Kerala
 117. Murugesan V, tresamol PV, Vijayakumar K and Saseendranath Mr. 2019. Effects of an intranasal canine parvo virus -2 vaccine in pups as humoral immune response and its impact on mucosal immunity. In: Compendium of 11th Kerala Veterinary Science Congress; 9-10 november 2019, KVASU, Pookode
 118. PVTresamol and SaseendranathMR. 2019. Antibigram of bacterial isolates from bovine dermatitis. In: Compendium of 19th annual conference of ISVPT and national Symposium on Pharmacogenomics in the development and validation of indigenous drugs from 18-20 December 2019, CVAS, Mannuthy
 119. Tresamol PV, Amulya VR, AmelDev P, MeryRincyK and VinodkumarK. 2020. In: Compendium of 38th Annual convention of Indian Society for Veterinary Medicine and national symposium on advancement in veterinary Medicine in mitigating challenges to Animal health. 5-7 February 2020, hebbal Bangalore
 120. Tresamol PV, Mery Rincy K, Sukanya S, Arthi, A, AmelDev P. 2020. Molecular identification of Ehrlichiosis in naturally infected Dogs of Kerala. in: Compendium of 38th Annual convention of Indian Society for Veterinary Medicine and national symposium on advancement in veterinary Medicine in mitigating challenges to Animal health, 5-7 February 2020, hebbal Bangalore
 121. Juby T, ShymaVh, Anaz SR, Anugraha Me, Tresamol PV and Vijayakumar K. 2020. Successful Management of trypanosomosis in a buffalo farm. in: compendium of 38th Annual convention of Indian Society for Veterinary Medicine and national symposium on advancement in veterinary Medicine in mitigating challenges to Animal health. 5-7 February 2020, hebbal Bangalore

BOOKLETS

1. Sunil, B., Vrinda Menon, K., Latha, C., Binsy Mathew, Deepa Jolly, nithya, K. R. and Ashok Kumar. 2019. West Nile Fever. ICAR outreach Programme on Zoonotic Diseases
2. Sunil, B., Vrinda Menon, K., Latha, C., Binsy Mathew, Deepa Jolly, nithya, K. R. and Ashok Kumar. 2019. Nipah

POPULAR ARTICLE

1. Bindu, L. and Syamala, K. 2019. Kannukalikalile paraadaniyanthranam-chila noothana pravanathakal. Kerala Karshakan, May 2019, pp-64-67

HRD ACTIVITIES

Seminars attended

1. Dr. Sethulekshmi C., Dr. Binsy Mathew and Dr. K. Radha attended national seminar on “emerging trends in quality assurance of milk and milk products” and participated in e-poster competition on quality assurance of food products on 20/05/19 at CDST, Mannuthy.
2. Dr. A. R. Sreeranjini, Dr. N. S. Sunilkumar and Dr. K. B. Sumena attended seminar

- on “Veterinary Practice- Mastering the Art through Self-Motivation, Client Management and ethics” on 26/04/ 2019 at Veterinary College Mannuthy, Thrissur, Kerala.
3. Dr. Vinodkumar K. attended 7th Pan common wealth veterinary conference from 03/03/19 to 08/03/19 at Bengaluru and presented lead paper.
 4. Dr. Vinodkumar K. attended national seminar conducted by KgVoA on 28/04/19 at Kottayam and presented a lead paper.
 5. Dr. K. Anilkumar attended 32nd Kerala Science Congress and chaired the session on Livestock and Fisheries lead paper entitled “Challenges and Strategies for Conservation and Management of sciences on 26/01/2020 at Yuvakshetra Institute of Management Studies, Mundur, Palakkad
 6. Dr. K. Anilkumar presented Animal genetic Resources in the era of Climatic Changes” in the national symposium on “enhancement of farmers’ income through management of Animal genetic Resources” from 10/02/2020 to 11/02/2020 at College of Veterinary Sciences and Animal husbandry, Mhow, MP.
 7. DrRadhikag.andDr.AjithK.S. attendednational Seminaron“Agrometeorological interventions for enhancing farmers income (AgMeT-2020)” from 20/01/2020 to 22/01/2020 at College of horticulture, Kerala Agricultural University, Vellanikkara, Thrissur.
 8. Dr. Usha PTA, Dr. nisha A R, Dr. Suresh n nair, Dr. Suja Rani S., Dr. Sujith S., Dr. Preethy John, Dr. S. Maya, Dr. Indu V. Raj, Dr. A. R. Sreeranjini, Dr. n. S. Sunilkumar, Dr. K. B. Sumena, Dr. P. Anitha, Dr. C.S. Suja, Dr. Beena C. Joseph, Dr. harikrishnan S., Dr. Usha narayana Pillai, Dr. Madhavan Unny, Dr. Deepa Chirayath, Dr. Sindhu K. Rajan, Dr. Arun george, Dr. Sajith Purushothaman, Dr. Jasmine Rani, Dr. K. Devada, Dr. Bindu Lakshmanan, Dr. Asha Rajagopal, Dr. R. Radhika, Dr. Priya M.n., Dr. Sajitha I. S., Dr. Dhanush Krishna B., Dr. Devi S. S., Dr. Divya C., Dr. Divya P.D., Dr. Shynu M., Dr. Uma R., Dr. Varuna P. Panicker, Dr. M. Mini, Dr. Ambily R., Dr. Surya Sankar, Dr. Chinnu M.V., Dr. Ramnath V., Dr. Babitha V., Dr. Raji K., Dr. Aziz Zarina, Dr. Binsy Mathew, Dr. Deepa Jolly, Dr. C. T. Sathian, Dr. Radha K .,r. P. V. Tresamol and Dr. R. geetha attended XIX Annual Conference of Indian Society of Veterinary Pharmacology and Toxicology and national Symposium on “Pharmacogenomics in the development and validation of indigenous drugs from 18.12.2019 to 20.12.2019 at College of Veterinary and Animal Sciences, Mannuthy.
 9. Dr. C.S. Suja, Dr. Priya P.M. attended XXXVI Annual IPSA conference from 11/12/2020 to 13/12/2020 at Durg, Chattisgarh
 10. Dr. K. Vijayakumar,Dr. usha narayana Pillai, Dr. P. V. tresamol, Dr. S. Sulficar, Dr. V.h.Shyma and Dr. Madhavan Unny attended ISVM national Symposium on Advancement in Veterinary Medicine in mitigating challenges to Animal health from 05/02/2020 to 07/02/2020 at Veterinary College, Bangalore
 11. Dr. Ambily R. attended Swadeshi Science Congress from 27/02/2020 to 29/02/2020 at CPCRI, Kasaragod.
 12. Dr. C. Jayakumar, Dr. Shibu Simon, Dr. hiron M. harshan, and Dr. Abhilash R. S. attended XXXV Annual Convention of ISSAR and International Symposium on

“global Perspectives to enhance Livestock Fertility through Modern Reproductive Techniques for Doubling Farmer’s Income 18/12/2020 to 20/12/2020 at VCRI, namakkal

13. Dr. C. Jayakumar, Dr. hiron M. harshan and Dr. Bibin Becha B. attended national congress on canine practice and 17th Convention of Indian Society for Advancement of Canine Practice & national Symposium on Maximizing Diagnosis, Therapy and Welfare in Canine Practice in Current Scenario from 21/01/2020 to 23/01/2020 at CVAS, Jabalpur
14. Dr. hiron M. harshan, and Dr. Magnus Paul K. attended continuing Professional development programme on 16/02/2020 organised by SAVAK, Thrissur.
15. Dr. nisha A. R., Dr. Asha Rajagopal and Dr. R. Radhika attended Kerala Science Congress from 25/01/2020 to 27/01/2020 at Yuvakshethra, Mundur, Palakkad
16. Dr. K. Devada, Dr. Bindu Lakshmanan, Dr. Asha Rajagopal, Dr. R. Radhika and Dr. Priya M.n. attended 29th national Congress of Veterinary Parasitology and national symposium from 05/02/2020 to 07/02/2020 at CVS & Ah, Jabalpur
17. Dr. gleeja V.L. chaired session in national seminar in Applied Statistics and Symposium on Stochastic Modelling on 04/02/2020 at St. Thomas College, Thrissur.
18. Dr. Divya P.D. and Dr. Uma R. presented research paper in IVth national seminar and Annual Convention of Society of Veterinary Biochemists and Biotechnologists of India(SVBBI) on Current Research in Veterinary Biochemistry and Biotechnology in the improvement of Animal health and Production’ on 04/02/2020 held at College of Veterinary Science, SVVU, Tirupati.
19. Dr. S. harikumar attended Indo-Australian International Workshop on “Transfer of Mitigation Technologies for heat Stress in Farm Animals” from 05/02/2020 to 07/02/2020 at nIANP Bangalore
20. Dr. Suraj P. T. and Dr. A. Prasad attended International Workshop on Animal Welfare Behaviour Research from 18/02/2020 to 20/02/2020 at Veterinary College, hebbal Bangalore in association with Common Wealth Veterinary Association
21. Dr. Anil K. S. and Dr. Justin Davis attended Annual Convention and national Conference of Indian Society of Animal Production and Management from 04/02/2020 to 06/02/2020 at PgIVeR, Jaipur
22. Dr. Varuna P. Panicker presented research paper in 38th Annual Convention of Indian Society for Veterinary Medicine & national Symposium on “Advancement in Veterinary Medicine in Mitigating Challenges to Animal health” on 06/02/2020 held at Veterinary College, KVAFSU, hebbal, Bengaluru
23. Dr. K. Vrinda Menon attended training on ‘Risk factors and economic impact analysis of zoonotic diseases’ from 18/12/2020 to 20/12/2020 at nIVeDI, Bangalore.
24. Dr. C. Latha attended Conference of Association of Public health Veterinarians from 20th to 22nd January 2020 at College of Veterinary Sciences Mathura

25. Dr. Sujith S. attended Indian Science Congress from 03/01/2020 to 07/01/2020 at UAS, Bangalore
26. Dr. Devanand C B, Dr. Dileepkumar K M and Dr. Sudheesh S. nair attended national Symposium and 43RD Annual Congress of Indian Society for Veterinary Surgery on 14 to 16 novemebr 2019 at LUVAS, hissar
27. Dr. Subin K Mohan attended national Conference on “Food Technology innovations for food security- FoodZone 19”, at VKDIFT on 18.10.2019
28. Dr. T.S. Rajeev attended International Seminar on ‘Innovative extension Management for uplifting livelihood of farmers – Status, Initiatives and Way forward’ on 27/06/2019 and 28/06/2019, at TAnUVAS, Chennai.

Workshops attended

1. Dr. Surya Sankar attended 1st regional workshop for developing SAPCAR from 31/01/2020 and 01/02/2020 at CMFRI, Kochi.
2. Dr. M. Mini attended Strategic planning session for University initiatives on coronavirus outbreak on 04/02/2020 at Kerala University of health Sciences head quarters, Thrissur.
3. Dr. K. Raji attended hands-on-Workshop on RnA-seq Library Preparation and Data Analysis from 05/02/2020to 07/02/2020at The Institute of Bioinformatics and Applied Biotechnology, Biotech Park, Bangalore.
4. Dr. Surya Sankar attended group monitoring workshop on early Career Research award by Dept. of Science and Technology on 14/02/2020 at BITS, Pilani, hyderabad.
5. Dr. R. Thirupathy Venkatachalapathy attended Quinquennial Review Team(QRT) Meeting on 23/02/2020 at Central Institute for Research on goats, Makhdoom, Farah, Mathura.
6. Dr. Jiji R.S. Participated as Coordinator in the workshop on ‘Prioritization of thrust areas for research in livestock sector of Kerala’ on 1/10/2019 at Directorate of Animal husbandry, Thiruvananthapuram
7. Dr. Subin K. Mohan attended State level workshop on ‘Impact of RCeP agreement on Indian Dairy Sector’, organized by Indian Dairy Association at VKDIFT on 21.10.2019

Training programmes attended

1. Dr. Sajitha I.S. attended training on Cell culture techniques from 11/04/19 to 10/05/19 at Integrated Cancer research lab, RgCB, Trivandrum
2. Dr. B. Sunil and Dr. K. Vrinda Menon attended training on ‘Prevention and control for human foods-USFDA’ from 13/05/2019 to 15/05/2019 organised by export inspection council, Mumbai.
3. Dr. B. Sunil and Dr. K. Vrinda Menon attended Lead instruction training for PCQI-US-FDA from 16/05/2019 to 17/05/2019 at Mumbai.
4. Dr. K.A. Mercey, Dr. gleeja V.L., Dr. Lucy Sabu, Dr. K. Devada, Dr. Bindu

Lakshmanan, Dr. R. Radhika, Dr. Asha Rajagopal, Dr. K. Syamala , Dr. M. n. Priya , Dr. K. Raji, Dr. V. Beena, Dr. V. Babitha, Dr. C.T. Sathian, Dr. K. Radha, Dr. R. geetha, Dr. Sethulekshmi C., Dr. T.S. Rajeev and Dr. R. Senthilkumar attended hRD training programme on “Moving towards professional excellence” on 23/03/19 at CVAS, Mannuthy

5. Dr. Deepa Jolly attended 5 days Training on “Research Techniques used in Veterinary and allied Sciences” from 12/03/19 to 16/03/19 at CIL, CVAS, Mannuthy.
6. Dr. Usha narayana Pillai, Dr. Deepa Chirayath , Dr. Bindu Lakshmanan, Dr. gleeja V.L., Dr. K. Raji, Dr. V. Beena and Dr. V. Babitha attended Training on “Advanced Counselling and Mentoring for teachers” on 3.5.2019 at CVAS, Mannuthy
7. Dr. Jamuna Valsalan attended hands on Training in Medical genomics and Metagenomics from 12/02/2020 to 15/02/2020 at CUSAT, Cochin
8. Dr. S. Maya attended go beyond- state leadership training camp of IVA, Kerala Unit from 08/02/2020 to 09/02/2020 at Sargalaya Craft Village Iringal, Kozhikode.
9. Dr. Sreeranjini a.r. attended orientation course for nSS Programme officers from 14/01/2020 to 20/01/2020 at empanelled Training Institute, University of Calicut.
10. Dr. Ambily R. attended Model training course on ‘Field based diagnostic techniques in animal husbandry for improving animal health status’ from 19/02/2020 to 26/02/2020 at VCRI, namakkal
11. Dr Sajith Purushothaman and Dr Dipu M. T. attended training on A healthy ecosystem for effective pedagogy from 14/02/2020 to 27/02/2020 at cVaS, Mannuthy

Resource persons in trainings

1. Dr. K. Anilkumar conducted class on “Institutional Animal ethics Committee” in the two day workshop on “Introduction to Molecular Biology Techniques, Bioinformatics and Animal ethics in health science Research” at Kerala University of health Sciences, Mulankunnathukavu, Thrissur on 29/01/2020 and 30/01/2020
2. Dr. K. Anilkumar conducted class on “Adopting social media as teaching tool “ in 3rd refresher course of academic Staff college, KVaSu on 20/2/2020 at cVaS, Mannuthy
3. Dr. gleeja V.L. acted as resource person for Two Day national workshop on ‘Statistics for Biologists’ from 16/12/2019 to 17/12/2019 at the Department of Zoology, SngS College, Pattambi.
4. Dr. gleeja V.L. acted as resource person for 3rd Refresher Course on 21/02/2020 at academic Staff college, KVaSu.
5. Dr. K. Vrinda Menon conducted class on Rural health & sanitation for Veo 29/05/2019, KILA, Mannuthy, Thrissur
6. Dr. John Martin, Dr. Syam K Venugopal, Dr. Sudheesh S. nair, Dr. Laiju M Philip, Dr. Dileepkumar K M and Dr. Soumy Ramankutty handled various sessions for three

months training for Assistant Directors of Department of Animal husbandry, Kerala – 24 officers for 3 batches iii (august, December 2019 and February 2020).

7. Dr. M K narayanan and Dr. Sudheesh S nair handled sessions in “national Workshop on Comprehensive management of Working Dogs” jointly organised by KVASU and Kerala Police Academy, Ramavarmapuram 28 to 30 oct. 2019
8. Dr. John Martin K D acted as course Director for the 3rd Faculty Refresher Training Programme ‘A Roadmap to enhance Core Teaching Competencies in academic landscape’organised by academic Staff college, KVaSu from 14.02.2019 to 27.02.2020 at CVAS, Mannuthy
9. Dr. John Martin K D handled a session on ‘Core Teaching Competencies’ in the 3rd Faculty Refresher Training Programme ‘A Roadmap to enhance Core teaching competencies in academic landscape’organised by academic Staff College, KVASU on 14.02.2019
10. Dr Subin K Mohan conducted a class on ‘entrepreneurial development among dairy farmers’, organized by Dairy Development Department and ATMA on 16.11.2019 at CVAS, Mannuthy as Subject Matter expert.
11. Dr. T.S. Rajeev handled session on ‘ICT in livestock production and elephant management’ on 29.01.2020, as part of Three Months obligatory Training programme for Assistant Directors of Animal husbandry Department organized by Directorate of entrepreneurship, KVASU, at CVAS, Mannuthy.
12. Dr. T.S. Rajeev acted as Resource Person in a Training Programme on ‘Integrated Farming System for Sustainable livelihood’ for Dairy Extension officers, agricultural, fisheriesandsoilconservationofficersfrom 27/05/19 to 29/05/19 at SAMeTI, Thiruvananthapuram
13. Dr. T.S. Rajeev acted as member of State Jury board for Chief Minister’s award for the best Local Self government implemented programme of green Kerala Mission for the competition convened at KILA, Thrissur on 27/09/19 and 28/09/19.
14. Dr. Jiji. R.S. handled a session on ‘Technological Creativity and Intellectual Property Rights’ in Refresher Programme on ‘Sharpening soft skills for academic excellence’ organized by academic Staff college, KVaSu on 15/07/2019, at CVAS, Mannuthy.
15. Dr. Jiji. R.S. took class on ‘An overview of Intellectual Property Rights in livestock sector’ on 28.09.2019 as part of Training programme for Assistant Directors of Animal husbandry Department organized by Directorate of entrepreneurship, KVASU at CVAS, Mannuthy.
16. Dr. Jiji. R.S. delivered talk on ‘Introduction to Intellectual Property Rights’ on 29/10/2019 at Department of economics, Sree Kerala Varma College, Thrissur.
17. Dr. Jiji. R.S. acted as Resource person for seminar on ‘Intellectual Property Rights promoting innovation’ on 05/11/2019 at IPR Cell, Vimala College, Thrissur
18. Dr. Jiji. R.S. delivered talk on ‘An overview of Intellectual Property Rights’ on 06/11/2019 at Department of Microbiology, St. Mary’s College, Thrissur.

19. Dr. Jiji. R.S. took class on ‘Intellectual Property Rights in Animal Production’ on 29/01/2020, as part of Three Months obligatory Training programme for Assistant Directors of Animal husbandry Department, organized by Directorate of entrepreneurship, KVASU at CVAS, Mannuthy.
20. Dr. Jiji. R.S. handled a session on ‘Implications of Intellectual Property Rights in education’ on 25/02/2020, as part of Refresher Programme on ‘A Roadmap to enhance Core Teaching Competencies in Academic Landscape’ organized by academic Staff college, KVaSu at cVaS, Mannuthy.

Trainings conducted

1. Skill development Training on Animal Birth Control Surgery from July to October 2019 at the Department of Veterinary Surgery and Radiology, College of Veterinary and Animal Sciences, Mannuthy in 5 batches. Fifty veterinarians from Animal husbandry Department were given hands on training in various aspects of aseptic surgery, anaesthesia under field conditions, monitoring, critical care management, spaying and castration.
2. Co organised Annual Conference of Indian Society for Veterinary Surgery - Kerala chapter, first Prof.(Dr.) P.O. George commemoration speech and continuing Veterinary education programme on topic ‘new perspectives in Large Animal anaesthesia’ on 20th October 2019. Dr. S. Senthil Kumar, Associate Professor, Tamil Nadu Veterinary Animal Sciences University handled hands-on training in inhalation anaesthesia techniques in cattle, with 58 including veterinarians from AhD and Pg students.
3. Padma Shree Dr. Kushal Kumar Sharma visited the Department of Veterinary Surgery and Radiology and interacted with faculty and students on 20.2.2020.
4. experiential training on ‘hoof trimming in dairy cattle’ was conducted at the Department of Veterinary Surgery and Radiology, CVAS, Mannuthy from 28th to 29th February 2020 under the auspices of the Directorate of Clinics, Kerala Veterinary and Animal Sciences University. Six participants from Department of Animal husbandry, Kerala and Tamilnadu including two retired Veterinarians attended the training programme.
5. XIX Annual Conference of “Indian Society of Veterinary Pharmacology and Toxicology” and national Symposium on Pharmacogenomics in the development and validation of indigenous drugs., Thrissur was organised by Department of Veterinary Pharmacology and Toxicology, College of Veterinary and Animal Sciences, Mannuthy from December 18-20, 2019

SPORTS, PHYSICAL EDUCATION AND CO-CURRICULAR ACTIVITIES 2019-20

Physical education department CVAS Mannuthy promotes student participation in various outdoor and indoor sports activities. Students are encouraged to participate in various games and sports activities, which include Cricket, Football, Table Tennis, Volleyball, Basketball, Shuttle Badminton and Athletics. Participation of students in the sports activities equips them to enhance their leadership, communication skills and interpersonal skills, develop their organizational ability and also helps to develop the

time management, decision making, and problem solving abilities and also sharpen their competitive skills and team spirit.

Intra morals competitions were organized on batch basis for the match and competition experience. This year seven students were selected to participate in All India ICAR Sports and games championship held at Venketeswara Veterinary University, Thirupathy. Students are also encouraged to participate outside the university to develop their self confidence.

A well established health club is functioning under the department to enhance the health related Physical fitness of the students and staff in the Mannuthy campus.

KVASU inter collegiate games overall champions.

1. Volleyball men –Winners
2. Volleyball women - Runner-up
3. Cricket men –Winner
4. Football men- Runner up
5. Shuttle badminton women - Runner up
6. Shuttle badminton men –Runner up
7. Table tennis –men & women –Runner up
8. Chess men –Winner
9. Chess women - Runner up
10. Athletics-Runner up

INTER CLASS ATHLETICS



International Yoga Day

Fifth International Yoga Day had been celebrated zealously in the College of Veterinary and Animal Sciences Mannuthy on 21st June, 2019 organized by Department of Physical education, C V & A S, Mannuthy along with 1(K) R&V SQn nCC, Mannuthy at golden Jubilee hall with the theme of this year's event "Yoga for heart".



Kerala Remount & Veterinary Squadron NCC

The 1(K) R&V Sqn nCC, Mannuthy was established in the year 1986. This is the only R&V nCC unit in Kerala and one among the 17 such units in India. This specialized wing of nCC provides equestrian training to the cadets enrolled in this unit. The squadron has the strength of 200 cadets with Senior Division (boys) and Senior Wing (girls) and the unit is allotted with 13 horses for the nCC training.

The Squadron is under the command of officer commanding and controlled by nCC group, ernakulam and nCC Directorate, Kerala & Lakshadweep. The commanding officer of the Squadron is a serving officer of remount & Veterinary Corps (RVC) of Indian Army and is a Veterinarian. The JCo and nCos of the unit train our cadets in horse riding and other equestrian sports. The associate ncc officers of the Squadron are faculties of this College and in charge of all training and welfare of ncc cadets and are the liaison officers between the ncc unit and colleges. The cadets of the unit are mainly from the College of Veterinary and Animal Sciences (CVAS), Mannuthy; College of Dairy Science and Technology (CDST), Mannuthy; College of Forestry (CoF), Vellanikkara and Prajyoti Niketan College (PnC), Pudukad.

- Officer commanding: col P.K. Soni
- Associate NCC officer: Lt (Dr) S. Sankaralingam
- Associate NCC officer: Lt (Dr) Justin Davis K.

The nCC unit of our college imparts training to the cadets in drill, weapon training, firing etc. in 35 weekly parades per year. The horse riding and other equitation training are imparted on every day morning and evening. As per the new Vci syllabus the associate ncc officers (ano) are offering compulsory course rV nCC to 1st, 2nd and 3rd year students of College of Veterinary and Animal Sciences, Mannuthy. The anos are offering Bass 1106 & Bass 1210 courses of college of Forestry, Vellanikkara.

In the year 2019-20, cadets attended Annual Training Camps; Army attachment Camp at RVC Center and College, Meerut and Republic Day Camp - 2020 at new Delhi. one of our college cadet SgT Sneha K.S. won bronze medal in hacks and she will get a cash price of Rs. 30,000 from government of Kerala. The cadets also participated in Social service activities like World environment Day celebration by planting tree saplings, International Yoga day celebration, Independence day celebration, Republic day celebration and 'Swatchhtha Pakhwada activities of campus cleaning etc. at CVAS, Mannuthy.

The meritorious NCC cadets after completion of their training wrote the examinations and passed the NCC 'B' certificate (33 cadets) and 'c' certificate (36 cadets) examinations.

The following cadets participated in Republic Day Camp (RDC) 2020 at New Delhi

1. SgT Bastin D. Das, CVAS, Mannuthy
2. SgT M.S. Mridul., CVAS, Mannuthy
3. CPL AnnmaryRaju., CVAS, Mannuthy
4. SgT Sneha K.S., CVAS, Mannuthy
5. SgT Aswin K.S., CoF, Vellanikkara

Medal Winners - RDC 2019

1. SgT Sneha K.S., CVAS, Mannuthy got Bronze medal in hacks competition; she will get a cash award of Rs. 30,000 from government of Kerala.



Tree plantation camp held on the World Environment Day

On World environment Day (05.06.2019), around 25 cadets of CVAS, Mannuthy had participated in the Tree Plantation camp held at College of Veterinary & Animal Sciences, Mannuthy and planted 75 saplings within the campus. They assured that they will look after the saplings for a year and saplings survive.



Blood donation camp: Blood donation camp was jointly organised by RV nCC unit and nSS unit of College of Veterinary & Animal Sciences (CVAS), Mannuthy with the help of IMA blood bank, Thrissur. The camp was inaugurated by Dr. C. Latha, Dean, CVAS, Mannuthy at 9.30 am. Col. P.K. Soni, officer commanding, 1(K) r&V Sqn. nCC, Dr. Tresamol, P.V., Associate Dean, CVAS, Mannuthy, Dr. Rajeev, T.S., Director of Student's Welfare, KVASU and Dr. Radhakrishnan, Medical officer, iMa Blood bank, Thrissur made felicitation speech. Blood donation started at 10.30 am and extended up to 3.30 pm. 82 persons including BVSc, MVSc, MSc, Diploma, students, faculties, farm officials and labourers donated blood. a certificate of Appreciation was awarded to the College by IMA Blood for organising the Blood donation camp



NCC cadets' participation in the KVASU flood relief camp UNARVU

On 16.08.2019 ncc cadets and associate NCC officer Lt. (Dr.) S. Sankaralingam actively participated in the KVasU flood relief camp UNARVU held at Karulai panchayath and helped the officials of the university in the flood relief programme.



NCC cadets' participation in the function "Inauguration of the University Centres and the visit of the Honorable Minister on 25th October, 2019" at CVAS, Mannuthy

On 25.10.2019, thirty cadets had actively participated in the University function "Inauguration of the University Centres and the visit of the honorable Minister on 25th October, 2019" at CVAS, Mannuthy. They had received the honorable Minister Sri. K. Raju by Piloting on the horse and also honoured him by giving Salute in uniform

Plastic free campus programme as part of Swatchhta Pakhwada programme at CVAS, Mannuthy

On 07.12.2019, Plastic free campus programme was organised by RV nCC unit of College of Veterinary & Animal Sciences (CVAS), Mannuthy as part of Swatchhta Pakhwada programme. the programme was presided by col. P.K. Soni, officer Commanding, 1(K) R&V Sqn. nCC, Mannuthy and inaugurated by Dr. C. Latha, Dean, CVAS, Mannuthy at 8.30 am. A total of 55 cadets had participated in the programme and they have collected plastic and other non-degradable wastes from the entire campus of CVAS, Mannuthy. Same were cleaned by the cadets, dried and stored by the cadets which was handed over to the Thrissur Corporation.



Seminar on “Plastic Waste Management - The Way ahead” as part of Swatchhta Pakhwada programme at CVAS, Mannuthy

On 13.12.2019, Seminar on “Plastic Waste Management – The Way head” was organised by RV nCC unit at College of Veterinary & Animal Sciences (CVAS), Mannuthy as part of Swatchhta Pakhwada programme. The seminar was inaugurated by Dr. C. Latha, Dean, College of Veterinary & Animal Sciences, Mannuthy and class was taken by Smt. Sangeetha from Thanal ngo, Thrissur. Around 120 cadets and students of CVAS, Mannuthy, College of Forestry, Vellanikkara and Prajyoti niketan College, Pudukad had participated in the Seminar.



World Environment Day celebrations

CAADeCCS and NSS units of College of Veterinary and Animal Sciences, Mannuthy jointly organized the “World environment Day” celebrations at CVAS, Mannuthy on 10.06.2019. Dr P. V. Tresamol, Associate Dean, CVAS, Mannuthy chaired the function. Dr. V. Beena (implementing officer, caaDEccS) welcomed the gathering. Mr. Vinson Kurian (Deputy editor, hindu Business line and column writer on weather events) delivered a talk on the subject of “Climate Change and Animals”.



International Day Against Drug abuse and illicit trafficking-2019

In connection with International day against drug abuse and illicit trafficking an awareness rally against the use of tobacco, liquor and drugs was organised by the national Service Scheme Units and Social Service League of CVAS, Mannuthy on 26th June 2019



Awareness Camp at Pope Nagar Colony, Mullakkara

national Service Scheme Units of College of Veterinary and Animal Sciences, Mannuthy, conducted an awareness camp at Pope nagar Colony, Mullakkara on 04- 08-2019. 50 nSS volunteers visited 200 houses and explained about the importance of segregation of biodegradable and non-biodegradable waste and its proper management.



NSS Units of CVAS, Mannuthy actively participated in UnARVU-2019, the flood relief operation organized by KVASu. the nSS units started collection point of flood relief materials in the month of august-2019 and distributed 33 complete kits to flood affected families of Wayanad and the remaining materials were handed over in the collection centre operated by Malappuram District collectorate.



Foundation Day, CVAS, Mannuthy-2019

The foundation day of College of Veterinary and Animal Sciences, Mannuthy was celebrated on 1st August, 2019 to mark the 64th anniversary of this institution. The function was arranged in the elegantly decorated reception area of the college and was attended by students, teaching and non-teaching staff as well as labourers. Dr. C. Latha Dean, welcomed the gathering. A formal inauguration was done by Dr.

M.R Saseendranath, hon'ble Vice chancellor, KVASU, by lighting the lamp along with senior teachers, Dr C.B Devanad, Dr. Mammen J Abraham and Dr. Usha PTA who were to retire within a year. In his address, hon'ble Vice Chancellor urged each and every segment of KVaSu family to put in sincere and concerted efforts for improvement of the university to serve the society in an excellent way the university officers, Dr. Joseph Mathew, Registrar, Dr. N Ashok, Director (Academics & Research) and Dr. M.K Narayanan, DE also addressed the audience. Representatives of teaching, non-teaching, labourer and students spoke on the occasion. Sweets were distributed to all the staff and students of the college. the guest lounge in front of the college was also inaugurated by hon'ble Vice chancellor



Training programme on “Newer trends in cattle feeding and feed production” conclude at CVAS Mannuthy

A two day's training programme on “newer trends in cattle feeding and feed production” was conducted at the Department of Animal nutrition, College of Veterinary and Animal Sciences, Mannuthy for farmers and entrepreneurs on 25th and 26th June 2019. Thirty seven participants from various districts of Kerala including farmers and entrepreneurs attended the above programme.

Inauguration of open air class room at CVAS, Mannuthy



A unique and natural model of class room without the conventional closed walls is materialised at Mannuthy Veterinary College campus. A small class room facility with forty seats made of natural materials was inaugurated by the Registrar Dr Joseph Mathew

Visit of Biology Students, James Madison University, Harrisonburg, Virginia, USA

Dr. Pradeep Vasudevan and Dr. Bisi Velayudhan, alumni of CVAS, Mannuthy, currently faculty in Department of Biology, James Madison University, Harrisonburg, Virginia, USA along with ten graduate students of biology visited K R narayanan Teaching Veterinary Clinical Complex (KRnTVCC), KVASU, Mannuthy on 2nd July and acquainted with facilities put in place. The visit was part of student's study abroad programme in tropics on different livestock and laboratory animal management practices. They could witness surgery of cat in the Lecture hall of Department of Surgery and Radiology via CCTV system installed in all speciality theatres of operation Theatre Complex of TVCC.



Skill development training on Animal Birth Control surgery

Skill development training on animal birth control surgery, for Animal husbandry officers, who completed six day long hands on training conducted for two batches at Dept of Veterinary Surgery and Radiology, KRnTVCC.

Pulmocon 2019

Workshop on Interventional Pulmonology conducted on 17.5.2019 at Department of Surgery and Radiology, College of Veterinary and Animal Sciences, KVASU, Mannuthy as part of PULMoCon 2019 - Annual national Conference of Academy of Pulmonology and Critical Care Medicine (APCCM) & Association of Pulmonologists Thrissur (APT).

Farmer's seminar

The 'Farmer's seminar' organised by Indian Veterinary Association, CVAS Mannuthy unit was held at College of Veterinary and Animal Sciences, Mannuthy on 20/07/2019 from 9.30 A.M. to 3.30 P.M. A total of 285 farmers from various districts of Kerala registered for the seminar



An interactive session with student entrepreneur

Department of Dairy Science CV&AS Mannuthy in association with Students counseling centre has organized an interactive session with Mr. Jamsheer P.c., a young farmer and B. tech final year student of CDST Mannuthy. It was held at the college seminar hall on 27/06/2019.



Training Programme on Laboratory Animal Models and Biomethodology

A training programme on 'Laboratory Animal Models and Biomethodology' was organised by Dept. of Veterinary Pharmacology & Toxicology, CVAS, Mannuthy from 24th to 26th October 2019. The training was inaugurated by the Faculty Dean, Dr. C. Latha. The function was chaired by Dr. Usha PTA, Professor and head, Dept. of Veterinary Pharmacology & Toxicology, CVAS, Mannuthy. Ten participants from various Medical colleges of Kerala and six participants from CVAS, Mannuthy attended the training.



**COLLEGE OF VETERINARY AND ANIMAL SCIENCES,
POOKODE KERALA VETERINARY AND ANIMAL SCIENCES
UNIVERSITY LAKKIDI PO, WAYANAD**



1. Name of Station: College of Veterinary and Animal Sciences, Pookode
2. Name of Station Head: Dr. Koshy John
3. Faculty Position :Dean
4. Details of Teaching Staff as on 11/03/2020

Sl No	Faculty	Sanctioned	In position
1	Professor	19	3
2	Associate	17	10
3	Assistant Professor	74	68
4.	Non-Teaching	47	30

PROGRAMMES TO IMPROVE EFFICIENCY OF FACULTY SEMINAR / CONFERENCE / WORKSHOP / OTHER ACTIVITIES ETC

Sl. No.	Programme	Name of faculty
1	National conference on “ Paradigm shift in Livestock management to obtain high quality animal products for enhancing Farm Economy and Entrepreneurship” and 27 th Annual Convention of Livestock Production Management(ISAPM) held at Department of Livestock Production & Management, Post Graduate Institute of Veterinary education & Research(PGIVER) of Rajasthan University of Veterinary and Animal Sciences,Jaipur	Dr. Balusami C. Dr. John Abraham Dr.N.Geetha (All faculty from Department of Livestock Production & Management)
2	National Seminar on “Agro meteorological Interventions for enhancing farmers income(AGMET-2020)” held at College of Horticulture, Kerala Agriculture University, Thrissur from 20 th to 22 nd January 2020	Dr.V.Beena (Department of Veterinary Physiology)
3	ICAR-NASF launching workshopentitled “Exploiting encapsulated nanoparticle conjugated phytochemicals to combat antimicrobial resistance in Poultry”, held on January 27-28,2020 at ICAR National Research Centre on Meat, Hyderabad	Dr. Jess Vergis (Department of Veterinary Public Health)
4	Kerala Science Congress held on 25-26,January 2020 at Yuvakshetra Institute of Management Studies,Mundoor,Palakkad	Dr.ReghuRavindran Dr. ChintuRavishankar Dr. Pradeep M
5	Institutional Animal Ethics committee(IAEC) meeting of CARE- KERALAM Ltd held Koratty,Thrissur on 25.01.2020	Dr.Bibu John Kariyil (Department of Veterinary Pharmacology & Toxicology)
6	One day congress on the topic “Advances in Poultry science for One Health” organized by WVPA on	Dr.Aswathi P.B(Dept.of Poultry Science)

	28.02.2020 held at NIANP, Bangalore	
7	CAFT training programme on “Advanced Bioinformatics Techniques for Mapping and GWAS using NGS Data” from February 6 th to 26 th , 2020 held at ICAR-IASRI, New Delhi	Dr.Renjith Sebastian(Department of Veterinary Biochemistry)
8	National Seminar “Agro meteorological Interventions for enhancing farmers income(AGMET-2020)” held at College of Horticulture, Kerala Agriculture University Thrissur held from 20 th to 22 nd January 2020	Dr.Bimal P Basheer(Department of Veterinary& Animal Husbandry Extension)

SEMINAR / CONFERENCE / WORKSHOPS CONDUCTED

Organizers	Name of the workshop	Venue	Date
Department of Veterinary and Animal Husbandry Extension	Orientation programme arranged for the BVSc&AH, BSc PPBM and Dairy Diploma students of 2018 and 2019 batch admission of CVAS Pookode on	COVAS Pookode	February 17 th to 18 th , 2020
Department of Veterinary and Animal Husbandry Extension	“Lectures under Expert session for NSQF curriculum” conducted for first years student of G.V.H.S.S. Kalpetta, Wayanad.Course entitled as ‘Dairy Farm Entrepreneur’ held from 3 rd to 5 th January 2020” at CVAS, Pookode	COVAS Pookode	February 3-5, 2020

RESEARCH

Department	Students enrolled
PG	
Microbiology	04
Animal Nutrition	09
Anatomy	01
Parasitology	02
Pathology	07
ARGO	07
Vet. Surgery & Radiology	10
Pharmacology and Toxicology	04
LPM	2
Vet.Physiology	02
AGB	03
VPH	03
PHD	
Biosciences Vaccinology – Preventive Medicine	1+1
LPM	4
Parasitology	01
ARGO	02
Microbiology	01

COLLABORATIVE RESEARCH PROJECTS

Funding agency	Budget	Implementing Officer
University of Minnesota (USA)	82 Lakhs	Dr.ChinthuRavisankar
ICAR-NASF Project	34.18879	Dr.Sanis Juliet, Dr.ReghuRavindran, Dr.Ajith Kumar K.G, Dr.Suresh N Nair
ICAR-NASF Project	41.22476	Dr.Jess Vergiss

ACADEMIC ACTIVITIES - DETAILS OF STUDENTS

Sl No.	Batch	No.of Students		
		Male	Female	Total
1.	MVSc	26	44	70
2.	BVSc	227	354	581
3.	Diploma in dairy Science	33	23	56
4.	BSc. PP & BM	58	38	96
5.	PhD	3	7	10
	Total	347	466	813

COLLEGE OF DAIRY SCIENCE AND TECHNOLOGY MANNUTHY, THRISSUR



OVERVIEW

College of Dairy Science and Technology, Mannuthy have been instrumental in contributing quality manpower to the dairy and allied industries in India and abroad for last twenty five years. The college witnessed its dream of an independent building as Dr. Verghese Kurien Institute of Dairy and Food Technology (VKIDFT) amidst the celebration of its successful completion of 25 years in 2019. The Institute offers a four year graduate professional program in B.Tech Dairy Technology and Post graduate and Doctoral programs in M.Tech Dairy Technology, Dairy Chemistry and Dairy Microbiology. Various academic activities of the college are harnessed through the seven different departments namely Dairy Technology, Dairy Engineering, Dairy Microbiology, Dairy Chemistry, Dairy Business Management, Dairy Husbandry and Dairy Extension in terms of Milk Production, Processing and Marketing. The course curricula for B. Tech (Dairy Science & Technology), is prepared as a unique job oriented degree programme which leads to a total development of graduates and make them capable to face varied situations in their field of work. 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. The Annual Arts Fest, Intercollegiate meets, Students' Union Activities through various clubs, NSS and NCC units, seminars, debates, quiz, etc add colour to the campus life. The aim of the Institute is to provide quality education of the highest standard in the field of Dairy Science and Technology to cater the need of Dairy professionals in the field of Dairy and Food processing in the country.

ACADEMICS

i. Admission Procedure

The college is offering four year professional B.Tech Programme (4 years), M.Tech (2 years) in Dairy Microbiology, Dairy Chemistry and Dairy Technology and PhD in Dairy Microbiology and Dairy Technology. Candidates admitted to B. Tech (DSc. & Tech.) programme are selected through the Common Engineering Entrance Examination conducted by Govt. of Kerala. The candidates who have passed the Higher Secondary Examination, Kerala or examinations recognized as equivalent thereto, with 50% marks in Mathematics separately, and 50% marks in

Mathematics, Physics and Chemistry put together are eligible for admission. The college also admits students from ICAR quota for the UG programme. The admission to M. Tech and PhD programmes is done through the Entrance examination conducted by the University. One seat in the M. Tech course is earmarked for student admitted under the Senior Residency programme.

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	2 regular + 1resident
4	M.Tech (DM)	PG	2	2017	2 regular + 1resident
5	PhD (DT)		3	2019	1
6	PhD (DM)		3	2019	1

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

PhD programme**PhD (Dairy Technology and Microbiology) Course Structure - at a Glance**

Major	17
Minor& Supporting	11
Seminar	02
Research	45
Total Credits	75

+Non credit compulsory courses – 04, if not taken for masters' programme

iv. Student Profile

Total Student Strength	253
UG Student Strength (2019-2020)	235
PG Student Strength (2019-2020)	16
Dairy Technology	4+1
Dairy Microbiology	4+1
Dairy Chemistry	5+1
PhD Student Strength (2019-2020)	2
Dairy Technology	1
Dairy Microbiology	1

Student Details	2019-2020	
	Male	Female
UG		
Students admitted	12	26
PG		
Students admitted	2	4
PhD		
Students admitted	0	2

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	Ammu S	B. Tech	20000/-
2	Arya Aravindakshan	B. Tech	20000/-
3	Rasha V P	B. Tech	20000/-
4	Sreelakshmi O S	B. Tech	20000/-
5	Devika Sivan	B. Tech	20000/-
6	Fathimath Shahna Nesli	B. Tech	20000/-
7	Muhammed Midlaj A B	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. KVASU PG Scholarship (monthly)

Sl. No.	Name of the Student	Course	Amount
1	Sharath .S	M. Tech	Rs.4000/
2	Ajmi S Shams	M. Tech	Rs.4000/
3	Archana S	M. Tech	Rs.4000/
4	Aleena K S	M. Tech	Rs.4000/
5	Arya P R	M. Tech	Rs.4000/
6	Mariya Divanshi A S	M. Tech	Rs.4000/
7	Vishnu Suresh	M. Tech	Rs.4000/

FACULTY PROFILE

Sl No	Department	Present Status				
		Prof	Asso. Prof	Asst. Prof.	TA	Total
1	Dairy Technology	1 (Special Officer at CFT,Thumbumuzhy)	0	2 (1 AP – Deputation)	8	11
2	Dairy Engineering	1	0	1 (AP – KVASU Dairy Plant)	4	6
3	Dairy	0	0	2 +	3	6

	Chemistry			1 AP on working arrangement		
4	Dairy Microbiology	1	0	2	2	5
5	Dairy Husbandry	0	0	1	0	1
6	Dairy Business Management	0	0	0	4	4
7	Dairy Extension	0	0	1	0	1
8	Physical Education	0	0	1	0	1
	Total	3	0	11	21	35

Administrative Status

Category	Sanctioned	Permanent	Temporary	Vacant	Total	Remarks
Administrative Officer	1	1	0	0	1	
Section Officers	2	2	0	0	2	One SO is on maternity leave
Office superintendent(HG)	1	1	0	0	1	
Office superintendent	1	1	0	0	1	
Assistants	5	5	0	0	5	
Computer Assistant	1	0	1	0	1	
Clerical Assistant	2	2	0	0	2	1 post is on working arrangement at LRS, Thiruvazhamkunnu
LDV Driver	1	0	1	0	1	
Class IV	5	3	1	1	5	
TOTAL	19	15	3	1	19	

COLLEGE OF DAIRY SCIENCE AND TECHNOLOGY, MANNUTHY DEAN Dr.P. Sudheer Babu Ph: 9446229673 E mail: deancdstmtv@gmail.com , sudheer@kvasu.ac.in					
Sl No	DEPARTMENT	NAME	DESIGNATION	Contact No.	E mail ID
I DAIRY TECHNOLOGY					
1	DAIRY TECHNOLOGY	Dr. S. N. RAJAKUMAR	HEAD KVASU DAIRY PLANT	9495882953	rajakumar@kvasu.ac.in nageshrajakumar@yahoo.co.in
2	DAIRY TECHNOLOGY	Ms. DIVYA K B	Assistant Professor	9495796738	kbddivya2002@gmail.com
3	DAIRY TECHNOLOGY	Ms. RASHMI K.G	Assistant Professor (Deputation)	9895245661	rashmikhg85@gmail.com
II DAIRY ENGINEERING					
4	DAIRY ENGINEERING	Dr. P SUDHEER BABU	HEAD	9447331231	sudheer@kvasu.co.in
5	DAIRY ENGINEERING	Er. ASWIN S WARRIER	Assistant Professor Kvasu Dairy Plant	7559067959	aswinswarrier@kvasu.ac.in
III DAIRY MICROBIOLOGY					
6	DAIRY MICRO BIOLOGY	Dr. A K BEENA	HEAD	9446293686	akbeena@kvasu.ac.in
7	DAIRY MICRO BIOLOGY	Dr. LIJIMOL JAMES	Assistant Professor	9567086007	lijimoljames@kvasu.ac.in ligi11@rediffmail.com
8	DAIRY MICRO BIOLOGY	Dr. APARNA. SUDHAKARAN. V	Assistant Professor	7558067959	aparna@kvasu.ac.in aparna.asv@gmail.com
IV DAIRY CHEMISTRY					
9	DAIRY CHEMISTRY	Dr. DIVYA M P	Assistant Professor	9895424209	divya@kvasu.ac.in
10	DAIRY CHEMISTRY	Ms. INDU B	Assistant Professor	9400503677	indubthayyil@gmail.com
11	DAIRY CHEMISTRY	MS. SMITHA J LUKOSE	Assistant Professor (Working Arrangement)	9495866742	smitha.lukose@kvasu.ac.in
V DAIRY HUSBANDRY					
12	DAIRY HUSBANDRY	Dr. C.T SATHIAN	Professor &Head (I/c)	9495039707	ctsathian@gmail.com
13	DAIRY HUSBANDRY	Dr. YANCY MARY ISSAC	Assistant Professor	9440027590	dryancymaryissac@gmail.com
VI DAIRY EXTENSION					
14	DAIRY EXTENSION	Mr. SHYAM SURAJ S.R	Assistant Professor	9496447537	shyamsura@gmail.com
VII PHYSICAL EDUCATION					
15	PHYSICAL EDUCATION	Dr. JOSE MATHEW	Assistant Professor	9448743373	josemathew@kvasu.ac.in

Faculty Improvement Programme

a) Deputation of Scientists for Seminars/ Workshops/ Symposia/ training /summer school/winter school/ short course/ higher studies

Name & Designation	Name of event	Venue	Date
Dr. P Sudheer Babu, Dean, Dr. A. K. Beena, Professor and Head, Dr. Lijimol James, Assistant Professor, Dr. Aparna Sudhakaran V,	National seminar on 'Emerging Trends in Quality Assurance of Milk and Milk Products'	Seminar hall, VKIDFT, College of Dairy Science and Technology, Mannuthy, Thrissur	20/ 05/2019

AssistantProfessor, Dr. Yancy Mary Issac , AssistantProfessor, Dr. Divya M.P , AssistantProfessor, Er. Aswin S Warriar , Assistant Professor, Dr. S N Rajakumar , Professor, Ms. Divya K B , Assistant Professor, Ms. Rashmi K.G , Assistant Professor (DEO on Deputation), Department of Dairy Technology Dr. Jose Mathew , Asst. Professor,			
Er. Aswin S. Warriar , Assistant Professor, Department of Dairy Engineering	CEP Course on ‘Microwave Heating and Processing of Foods’	IIT, Bombay	13/05/2019 to 17/05/2019
Dr. Jose Mathew , Asst. Professor, Dept. of Physical Education	National Seminar on legal Ethics and Contractual Issues in sports	National Law School of India University, Nagarbhavi, Bangalore	27/07/2019 to 28/07/2019
Dr. P Sudheer Babu , Dean, CDST Mannuthy	State level conference on Regional Comprehensive Economic Partnership (RCEP) Agreement – Impact on Dairy sector conducted by Kerala Karshaka Sangam	Kollam	03/09/2019
Dr. P Sudheer Babu , Dean, CDST Mannuthy	Brain storming session organized by Ministry of Micro, Small and Medium Enterprises	Thrissur	06/08/2019
Dr. P Sudheer Babu , Dean, CDST Mannuthy	State level workshop on “Regional Comprehensive Economic Partnership (RCEP) Agreement – Impact on Dairy sector” by Indian Dairy Association (Kerala Chapter)	Seminar Hall, Verghese Kurien Institute of Dairy and Food Technology, Mannuthy, Thrissur, Kerala	21/10/2019
Dr. P Sudheer Babu , Dean, CDST Mannuthy	Talk on Regional Comprehensive Economic Partnership (RCEP)	Avian Disease Diagnostic Lab Thiruvalla	26/10/2019
Dr. Jose Mathew , Asst. Professor, Dept. of Physical Education	International Multidisciplinary Conference 2019 on Issues and Challenges in Higher Education. Paper entitled “Recreation – Need and Importance in Modern Society ”	Haldia institute of Management at Jnana Jyothi Auditorium, Central College Campus Bangalore, Karnataka	11/11/2019 to 12/11/2019
Er. Aswin S Warriar , Assistant Professor, Department of Dairy Engineering	Empanelled training Institute for NSS	University of Calicut	26/11/2019 to 02/12/2019
Dr. Aparna Sudhakaran V , Assistant Professor, Department of Dairy Microbiology	One day National Workshop on Research Publishing and Plagiarism control	KAU Central Library, Thriisur	07/12/2019

Dr. Ligimol James, AssistantProfessor, Department of Dairy Microbiology	32 nd Kerala Science Congress	Yuvakshetra Institute of Management Studies, Mundoor, Palakkad District	25/01/2020 to 27/01/2020
Dr. Divya M.P, AssistantProfessor, Department of Dairy Chemistry	32 nd Kerala Science Congress	Yuvakshetra Institute of Management Studies, Mundoor, Palakkad District	25/01/2020 to 27/01/2020
Dr. Ligimol James, AssistantProfessor, Department of Dairy Microbiology	International conference on livestock, food security and food safety- Challenges, opportunities and strategies	Madras Veterinary College	28/01/2020 to 29/01/2020

b) Details of Seminars/ Workshops/ Symposia/Trainings conducted at the College:

- College of Dairy Science and Technology, Mannuthy, Thrissur, Kerala in association with Indian Dairy Association Kerala Chapter organized a national seminar on 'Emerging Trends in Quality Assurance of Milk and Milk Products' on 20/05/2019 at Seminar Hall, Verghese Kurien Institute of Dairy and Food Technology (VKIDFT) building.



- Indian Dairy Association (Kerala Chapter) organized a state level workshop on “Regional Comprehensive Economic Partnership (RCEP) Agreement – Impact on Dairy sector” on 21/10/2019 at Seminar Hall, Verghese Kurien Institute of Dairy and Food technology, Mannuthy, Thrissur, Kerala in connection with the death anniversary of Dr. Verghese Kurien.



- NABARD Thrisuur organized a “WORKSHOP ON DEDS” in association with College of Dairy Science and Technology , Mannuthy on 20/11/2019 Seminar Hall, Verghese Kurien Institute of Dairy and Food Technology, Mannuthy, Thrissur, Kerala



- As part of National Milk Day celebrations the Indian Dairy Association (IDA) Kerala chapter and CDST Students' union 19-20 organized an All Kerala Level Quiz Competition for the UG and PG students across the state at Seminar Hall, Verghese Kurien Institute of Dairy and Food technology, Mannuthy, Thrissur, Kerala on 26/11/2019.



Department of Dairy Technology – 3 trainings

Department of Dairy Technology conducted three days hands on training programme on preparation of milk products for small scale entrepreneurs –Batch II on 19/06/2019 – 21/06/2019



- Department of Dairy Technology conducted three days hands on training programme on preparation of milk products for small scale entrepreneurs – Batch III on 24/07/2019 – 26/07/2019
- Department of Dairy Technology conducted One day training programme on preparation of milk products for farmers on 29/11/2019

Department of Dairy Microbiology – 3 trainings

- One day training programme on “Preparation of Fermented Dairy Products” was successfully conducted with the collective effort of Dairy Microbiology Department (CDST, Mannuthy) and Indian Dairy Association- Kerala Chapter (IDA-KC) for selected 10 women entrepreneurs on 26/11/2019.

- One day training on ‘Preparation of Fermented Milk Products’ was conducted by Department of Dairy Microbiology on 30/11/2019 for the participants of short term training on ‘Clean milk production and preparation of milk products’ for SHG/Kudumbasree members organized by Extension Training Centre, Mannuthy from 28/11/2019 to 30/11/2019.
- Department of dairy Microbiology conducted a training on ‘Starter cultures for Fermented milk products’ on 4th and 5th of December, 2019 by Revolving Fund Starter Cultures.

Department of Dairy Chemistry

- As part of World Milk Day Celebrations, ‘Milk quality Awareness Training programme – JEEVA’ was conducted by Department of Dairy Chemistry in association with IDA-KC on 01/06/2019 at Seminar Hall, Kerala Veterinary and Animal Sciences University, Dairy Plant



c) Awards/ Scholarships/Recognition to staff:

- Dr. P Sudheer Babu, Dean, College of Dairy Science and Technology attended the high level committee meeting of Dairy Development Department on 27/04/2019
- Dr. P Sudheer Babu, Dean, College of Dairy Science and Technology attended the brain storming session of KDIS on 24/05/2019
- Dr. P. Sudheer Babu, Dean, College of Dairy Science and Technology participated in the state ‘Ksheera Sangamam’ organized by Department of Dairy development at Kanakakkunnu, Thiruvananthapuram during 25-28 February 2020
- Dr. P Sudheer Babu, Dean, College of Dairy Science and Technology, Mannuthy got selected as Expert Member of State High level committee on Dairy Development
- Mrs. Divya K.B served as convener of National seminar on 'Emerging Trends in Quality Assurance of Milk and Milk Products' jointly organized by College of Dairy Science and technology and IDA, Kerala Chapter on 20/05/2019 at Seminar Hall, Verghese Kurien Institute of Dairy and Food Technology (VKIDFT) building.
- Dr. A K Beena served as Course Director for the training Programme on ‘Starter cultures for Fermented milk products’ held during 4th and 5th of December, 2019.
- Er. Aswin S warrier served as organizing committee member and Rapporteur for a session at 35th National Convention of Architectural Engineers held at Thrissur during 7th and 8th of December, 2019
- Dr. Jose Mathew, Asst. Professor, Dept. of Physical Education- Life Member of the international Federation of Physical Education, Fitness and Sports Science Associations from the year 2019
- Dr. Jose Mathew, Asst. Professor, Dept. of Physical Education served as Team Coach of KVASU Football team for All Kerala universities 7's Football Tournament conducted at The National University of Advanced Legal Studies, Kochi (NUALS), Ernakulam from 3rd to 5th February, 2020

d) Other Details (if any): External Examiner/ Reviewer of the Journal/ Thesis evaluation

➤ **Dr. Jose Mathew**, Assistant Professor, Department of Physical Education got deputed as Team Manager of Second set of KVASU intercollegiate games is scheduled on 11&12 of April 2019 at CVAS, Pookode

i. Reviewer:Dr. Divya M P, Assistant Professor, Department of Dairy Chemistry acted as a reviewer for Journal of Food Science and Technology

ii. External Examiner

Dr. A. K Beena, Professor and Head, Department of Dairy Microbiology

- External exam Question paper Setter for B.Tech Dairy Technology, College of Food and Dairy Technology, Koduvalli, Chennai, Tamil Nadu Veterinary and Animal Sciences

Dr. Aparna Sudhakaran V, Assistant Professor, Department of Dairy Microbiology

- External exam Question paper Setter for B.Tech Dairy Technology, P.V Narasimha Rao Telangana Veterinary University
- External exam Question paper Setter for B.Tech Dairy Technology Birsa Agricultural University, Ranchi
- Examiner for evaluation of Final exam, College of Food Technology, Thumburmuzhy

Dr. Ligimol James, Assistant Professor, Department of Dairy Microbiology

- Examiner for evaluation of Final exam, B.Tech Food Technology, College of Food Technology, Thumburmuzhy

Er. Aswin S Warriar, Assistant Professor, Department of Dairy Engineering

- External exam Question paper Setter for B.Tech Dairy Technology, P.V Narasimha Rao Telangana Veterinary University
- External examiner for Kerala Agricultural University
- Examiner for evaluation of Final exam, B.Tech Food Technology College of Food Technology, Thumburmuzhy

Dr. Divya M P, Assistant Professor, Department of Dairy Chemistry

- External Question paper setter for B.Tech Dairy Technology, P.V Narasimha Rao Telangana Veterinary University
- External Examiner for VHSE students at GVHSS Ayyanthole on 7/11/19 and 08/11/19
- External Examiner for VHSE students at GVHSS Ayyanthole on 05/02/2020 and 10/02/2020

iii. Thesis Evaluation

Dr. A.K Beena, Professor and Head, Department of Dairy Microbiology

- Evaluation of PhD Thesis of Mrs. Subhashree S, Mahatma Gandhi University
- Evaluation of M.Tech Food Technology Thesis, Tamil Nadu Veterinary and Animal Sciences University

RESEARCH PROGRAMMES

a) Major research achievements (highlights) :

- Development of a technique for detection of presence of cow milk in goat milk by Department of Dairy Chemistry

b) Details of research projects:

Ongoing projects:

Name of Project	Funding Agency	Name of PI	Name of Co-PI	Outlay (Rs.) lakhs
Research on Fermented and Functional Dairy Foods	State Government	Dr. S N Rajakumar	Ms. Divya K B	5.0
Value Addition for Skim milk through Product Diversification	State Government	Dr. S N Rajakumar	Ms. Divya K B	6.0
Revolving fund project for expanding the starter Culture Sales"	KVASU revolving fund	Dr. A. K. Beena		0.5

Approved Projects

Name of Project	Funding Agency	Name of PI	Outlay (Rs.)
Detection of harmful ingredients added to enhance shelf life in different market samples of Dahi	State Plan	Head,DC	Rs. 5,00,000
Study on the suitability of formula method using lactometer for determining the SNF content in milk with different fat content	State Plan	Head,DC	Rs.3,00,000
Extent of variation in physico chemical properties and compositional parameters of milk upon addition of adulterants	State Plan	Head,DC	Rs.3,00,000

c) Other Details (if any):

i) Project work for Master's degree M.Tech completed

Sl.No	Name of the student	Admission No.	Name of project	Department
1	Ms.Vandana P.S.	17-MDM-04	Development of a technique for detection of presence of cow milk in goat milk (completed)	Dairy Chemistry
2	Dhanya Suresh	17-MDM-02	Process Standardisation of Fat Replaced Low Calorie Chhana Podo Incorporated With <i>Punica granatum</i> Peel Powder (completed)	Dairy Technology

3	Amrutha T A	17-MDM-05	Evaluation of Functional Characteristics of Exopolysaccharide Producing Lactic Acid Bacteria (completed)	Dairy Microbiology
4	Ms. Farzana Beegum M A	17- BDM- 06	Biopreservative Potential of Lactic Acid bacterial Metabolites on Paneer	Dairy Microbiology

ii) Research projects-External students

Sl. No	Department	Name of the student & Institution	Name of project
1	Dairy Chemistry	Shadiya Sultana V P, University of Calicut	Enhancing Antioxidant, Anti microbial and Nutritional properties of Probiotic yoghurt by addition of Aloe Vera Whole Leaf Extraxt
2	Dairy Chemistry	Amrutha C V, University of Calicut	Development of paneer with Enhanced Nutritional and Antioxidant properties by using the mixture of Buffalo and Flaxseed milk
3	Dairy Chemistry	Shijah.K, University of Calicut	Development of burfi incorporated with guava leaf powder to enhance nutritional quality
4	Dairy Chemistry	Arya A.S, University of Calicut	Development of ginger incorporated peda with enhanced sensory quality and fibre content
5	Dairy Chemistry	Pranav V B, Mother Arts & Science College, Peruvallur	Physico- chemical properties of Cow milk Alternatives Affected by Different Processing Variables
6	Dairy Chemistry	Sandra Anto C, Mother Arts & Science College, Peruvallur	Casein precipitation by Different Methods and Study On Physico-chemical Properties of Casein
7	Dairy Chemistry	Priyanka S, Bharathiar University, Coimbatore	Effect of Processing Condition On Compositional And Physico-chemical Properties of Different Milk
8	Dairy Chemistry	Salabha P, Bharathiar University, Coimbatore	Effect of Processing Condition On Compositional And Physico-chemical Properties of Different Milk
9	Dairy Chemistry	Simple K J, Bharathiar University, Coimbatore	Effect of Processing Condition On Compositional And Physico-chemical Properties of Different Milk
10	Dairy Chemistry	Aswathi E, Bharathiar University,	Effect of Alkali & Salt on solubilisation of Casein at different temperatures

		Coimbatore	
11	Dairy Chemistry	Sreelakshmi S, Bharathiar University, Coimbatore	Effect of Alkali & Salt on solubilisation of Casein at Different Temperatures

iii) Internship programme (One month) under Revolving Fund ‘Starter culture’

- Department of Dairy Microbiology offered One month internship programme on ‘**Dairy Starter Culture Technology**’ from 16/04/2019 to 15/05/2019 to Ms. Neema Anto of St.Mary’s College, Thrissur
- Department of Dairy Microbiology offered Internship programme on ‘**Starter Culture Technology and Quality Assurance of Fermented milk products**’ from 09/05/2019 to 29/05/2019 to Ms. Athira A.R., Ms. Akshaya Das P.and Ms. Anusree A. R.of Periyar University
- Department of Dairy Microbiology offered One month internship programme for Five students of CFRD, Konni

iv) Allocation of Accession number to bacterial cultures isolated in Department of Dairy Microbiology

- 16S ribosomal RNA gene partial sequence *Lactobacillus fermentum* strain FH01 16 , deposited by Beena,A.K., James,L., Aparna,S.V., Viswanath,V. and Beegum,F.M.. was allotted the Accession number- MK743953.1 by NCBI (National Center for Biotechnology Information). -10-Apr-2019.
- 16S ribosomal RNA gene partial sequence of *Lactobacillus fermentum* strain FC01 16S deposited by Beena,A.K., James,L., Aparna,S.V., Viswanath,V. and Beegum,F.M. was allotted the Accession number- MK743952.1 by NCBI (National Center for Biotechnology Information. 10-Apr-2019.
- 16S ribosomal RNA gene partial sequence of *Lactobacillus fermentum* strain FT01 deposited by. Beena,A.K., James,L., Aparna,S.V., Viswanath,V. and Beegum,F.M. was allotted the Accession number- MK743954.1 by NCBI (National Center for Biotechnology Information. 10-Apr-2019.
- 16S ribosomal RNA gene partial sequence of *Leclercia adecarboxylata* strain DM102deposited by.. Beena,A.K., Aparna,S.V., James,L., Viswanath,V. and Anju,P.R. was allotted the Accession number- MK774705.1by NCBI (National Center for Biotechnology Information. 15-Apr-2019.
- 16S ribosomal RNA gene partial sequence of *Pediococcus pentosaceus* strain DM101 deposited by Beena,A.K., James,L., Aparna,S.V., Viswanath,V. and Rappai,J. was allotted the Accession number- MK774704.1 by NCBI (National Center for Biotechnology Information. 15-Apr-2019.
- 16S ribosomal RNA gene partial sequence of *Pseudomonas putida* strain NW1 deposited by Beena,A.K., Aparna,S.V., James,L., Viswanath,V. and Nivedya,M. was allotted the Accession number- MK835667.1by NCBI (National Center for Biotechnology Information. 30-Apr-2019
- 16S ribosomal RNA gene partial sequence *Acinetobacter baylyi* strain SKC deposited by Beena,A.K., Aparna,S.V., James,L., Viswanath,V. and Nivedya,M. was allotted the Accession number- MK835664.1 by NCBI (National Center for Biotechnology Information). 30-Apr-2019.

- *Candida orthopsilosis* strain DM-CAIT internal transcribed spacer 1, partial sequence; 5.8S ribosomal RNA gene, complete sequence; and internal transcribed spacer 2, partial sequence deposited by Beena, A.K., Aparna, S.V., James, L., Viswanath, V. and Rappai, J. was allotted the Accession number- MK841039.1 by NCBI (National Center for Biotechnology Information). 01-May-2019
- 16S ribosomal RNA gene partial sequence of *Pseudomonas aeruginosa* strain SKC01 deposited by Beena, A.K., Aparna, S.V., James, L., Viswanath, V. and Sanjana, K.C. was allotted the Accession number- MK841037.1 by NCBI (National Center for Biotechnology Information). 01-May-2019.

EXTENSION ACTIVITIES

i) Training programmes organized

- Department of Dairy Technology organized a Three day Hands on Training programme on ‘Preparation of milk products for small scale enterprises’-“Amruth- 2019” from 08/05/2019
- Department of Dairy Chemistry in association with IDA (Kerala Chapter) Organized a Milk Quality Awareness Training Programme on 01/06/2019 in connection with World Milk day celebrations.
- Department of Dairy Microbiology in association with Indian Dairy Association (Kerala chapter) organized One day training programme on "Preparation of Fermented Dairy Products" on 26/12/2019.
- Department of Dairy Microbiology conducted One day training on ‘Preparation Fermented milk products’ on 30/11/2019 for the participants of short term training on ‘Clean milk production and preparation of milk products’ FOR SHG/Kudumbasree members organized by Extension Training Centre, Mannuthy from 28/11/2019 to 30/11/2019.
- Department of Dairy Microbiology organized Two days Hands on training on ‘Starter cultures for Fermented milk products’ during 4th and 5th of December 2019
- Department of Dairy Technology in association with ATMA conducted an off campus training at Alangad Block Panchayath on 26/10/2019.

ii) Farmers Seminar/Extension seminar attended by teachers

- Dr. Ligimol James, Assistant Professor, Department of Dairy Microbiology took a class on ‘Starter culture technology-Fermented milk products in ‘Hands on Training on Preparation of Milk Products for Small Scale Enterprises - “Amruth 2019”-on 08/05/2019
- Dr. Divya M.P. and Ms. Smitha J Lukose (Asst. Professors, Dept. of Dairy Chemistry) took classes for M.Sc students on 01/06/19 as part of a Milk Quality Awareness Training Programme conducted by Department of Dairy Chemistry in association with Indian Dairy Association- Kerala Chapter
- Dr. Aparna Sudhakaran V, Asst. Professor, Department of Dairy Microbiology took classes for MSc students on 01/06/2019 as part of Milk Quality Awareness Training Programme conducted by Department of Dairy Chemistry in association with Indian Dairy Association- Kerala Chapter

- Dr. Beena A.K., Professor and Head, Department of Dairy Microbiology handled various sessions in the training programmes held on 26/12/2019 and 5th December, 2019.
- Dr. Aparna Sudhakaran V, Assistant Professor, Department of Dairy Microbiology handled various sessions in the training programmes held during 4th and 5th of December, 2019.
- Dr. Ligimol James, Assistant Professor, Department of Dairy Microbiology handled various sessions in the training programmes held on 4th December, 2019
- Dr. Beena A.K., Professor and Head, Department of Dairy Microbiology handled a class in the ‘Capacity Building Programme for the Food Safety Officer aspirants of Kerala’ held at Thrissur from 6th to 9th of February 2020
- Dr. Ligimol James, Assistant Professor, Department of Dairy Microbiology handled a class in the ‘Capacity Building Programme for the Food Safety Officer aspirants of Kerala’ held at Thrissur from 6th to 9th of February 2020
- Ms. Rashmi K G, Assistant Professor, Department of Dairy Technology handled a class in the ‘Capacity Building Programme for the Food Safety Officer aspirants of Kerala’ held at Thrissur from 6th to 9th of February 2020
- Dr.Divya M.P. Assistant Professor, Department of Dairy Chemistry handled a class on Nutritional Biochemistry in the ‘Capacity Building Programme for the Food Safety Officer aspirants of Kerala’ held at Thrissur from 6th to 9th of February 2020
- Ms. Divya K B, Assistant Professor, Department of Dairy Technology participated in the 15th Professional Students summit at CUSAT, Cochin during 08/02/2020 and 09/02/2020
- Ms. Divya K B, Assistant Professor, Department of Dairy Technology handled a training class on ‘Value Added Dairy Products’ at Valakam and Thiruvallur Dairy Co-operative Societies, Ernakulam in connection with MSDP- SRP Project 2019-20 from 13th to 14th February,2020

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

- Dr. P. Sudheer Babu, Dean, College of Dairy Science and Technology delivered a key note session in “WORKSHOP ON DEDS” conducted by NABARD, Thrissur in association with College of Dairy Science and Technology , Mannuthy on 20/11/2019
- Field Extension training of 2015 batch B.Tech students conducted from 05/08/2019 to 10/08/2019 was assisted by Assistant Professors of various departments enlisted below
 - Ms. Divya K.B, Ms. Rashmi H.M, Dr. Ligimol James, Dr. Aparna , Sudhakaran V, Dr. Divya M.P, Ms. Smitha J lukose, Dr. Jose Mathew Er. Aswin S Warriar
- NSS special camp conducted at Meloor Panchayat, Thrissur from 06/01/2020 to 11/01/2020 was assisted by Assistant Professors of various departments enlisted below
 - Ms. Divya K.B, Dr. Ligimol James, Dr. Aparna Sudhakaran V, Dr. Divya M.P, Dr. Jose Mathew , Er. Aswin S Warriar

iv) Farm Advisory Services

- Consultancy services by Dr. P Sudheer Babu, Dean, College of Dairy Science and Technology, Mannuthy for Global Dairy Project Dharmadam

- Department of Dairy Chemistry analyzed Ten milk/milk product samples for compositional analysis and presence of adulterants

Department	In person	Over telephone	Through letters
Dairy Technology	8	18	
Dairy Microbiology	20	30	

v) Field Visits: Nil

vii) Other Services rendered

- B.Tech students and two M.Tech (DT) students organized exhibition of dairy products in connection with Ksheerasangamam conducted at Chalakkudy
- Supply of starter cultures by Department of Dairy Microbiology: 27.425 Ltrs

vii) List of publications

a) Scientific Papers:

- Jose Mathew. Effective managerial leadership and challenges in sport organization. 2019. International Journal of Physical education, sports and health. 4-9
- Jose Mathew. Recreation- Need and importance in modern society. 2019. International journal of Innovative Practices and applied research. ISSN 2349-8978
- Amrutha T.A, A. K. Beena, Aparna Sudhakaran V, Rejeesh,R., Archana ,C. and Vinod,V. 2019.Antioxidant property of *Weissella cibaria* DMA 18 isolated from tender coconut water. *J Pharm Innov.* 8(9): 01-06.
- Vandana P.S and Divya M.P. (2019).Detection of presence of cow milk in goat milk using ethanol stability. The Pharma Innovation Journal 8(8) 328-329.
- Saira R., Sachin M.S., Sandeep R and Aparna S.V .Assessment of awareness on probiotic foods in Thrissur district Kerala. Chapter -28. In Leveraging New Developments in Dairy Sector for Increasing Income of Milk Producers published by S.M.C College of Dairy Science, Anand Agricultural University, Anand.

b) Posters & Oral Presentations:

- Amrutha TA, A. K. Beena ,Ligimol James,Aparna Sudhakaran V. Metabolites of *Pediococcus pentosaceus* for Quality Assurance. National seminar on ' Emerging Trends in Quality Assurance of Milk and Milk Products'. 20/05/2019, College of Dairy Science and Technology, Mannuthy.
- Divi K.Tony, Ligimol James, A. K. Beena, Aparna Sudhakaran V. and Vishnu Suresh. Isolation of *Enterococcus durans* from fermented Idli batter – A Food Safety Issue. National seminar on ' Emerging Trends in Quality Assurance of Milk and Milk Products'. 20/05/2019, College of Dairy Science and Technology, Mannuthy.
- Rosemol Johnson,. A K Beena, Ligimol James, Aparna Sudhakaran V. and Jithu Rappai. Biofilm Production Potential of *Chryseobacterium species* Isolated From Pasteurized Milk. National seminar on ' Emerging Trends in Quality Assurance of Milk and Milk Products'. 20/05/2019, College of Dairy Science and Technology, Mannuthy
- Dr. Jose Mathew presented a paper entitled 'Effective Managerial Leadership and Challenges in sports organization in the National Seminar on legal Ethics and Contractual Issues in sports' conducted at National Law School of India University, Nagarbhavi, Bangalore from 27/07/2019 to 28/07/2019

- Dr. Jose Mathew presented a paper entitled “Recreation – Need and Importance in Modern Society ” conducted at International Multidisciplinary Conference 2019 on Issues and Challenges in Higher Education during 11/11/2019 and 12/11/2019
- Dr. Ligimol James , Assistant Professor, Department of Dairy Microbiology presented a poster on ‘Assessment of technological properties of four strains of *L.fermentum* for use as functional starter cultures’ in the 32nd Kerala Science Congress held from 25th-27th January, 2020 at **Yuvakshetra Institute of Management Studies, Mundoor, Palakkad District.**
- Dr. Divya M P, Assistant Professor, Department of Dairy Chemistry got selected for the poster presentation on ‘Buffer capacity of Different Milks in relation with its Protein and Mineral content’ in the 32nd Kerala Science Congress held from 25th-27th January, 2020 at **Yuvakshetra Institute of Management Studies, Mundoor, Palakkad District.**
- Dr. Ligimol James , Assistant Professor, Department of Dairy Microbiology presented a poster on ‘Assessment of Inhibitory Effect of Different Types of Cleaning Solutions on *Klebsiella pneumoniae* and *Acinetobacter radioresistens* Isolated from Dish wash Scrubbers’ in the International conference on livestock, food security and food safety- Challenges, opportunities and strategies held from January 28th -29th , 2020 held at Madras Veterinary College

c) Abstracts presented in national and international seminars:

- Amrutha T.A, A. K. Beena, Ligimol James, Aparna Sudhakaran V and Vinod Viswanath. Cell Surface Properties of *Pediococcus pentosaceus* DMG 01 Isolated from Goat Milk. International Conference on Food & Industrial Biotechnology organized by The School of Biosciences, Mar Athanasios College For Advanced Studies, Tiruvalla in association with The Biotechnology Research Society, India and CSIR-NISCAIR . 24th to 26th November, 2019.
- Aparna, S. V., Divya, S., Beena, A K., James, L Mariya ,D. A.S. and Vinod, V.2020. Petrochemical and metal tolerance ability of *Pseudomonas putida*- An evaluation. Proceedings of International conference on livestock, food security and food safety- Challenges, opportunities and strategies held from January 28th -29th , 2020 at Madras Veterinary College.p. 138.
- Beena, A. K., Anju, P. R., Ligimol, J. Aparna, S. V. and . Catherine, A.M.2020. Biofilm forming *Leclercia adecarboxylata*: A threat for safe food production Proceedings of International conference on livestock, food security and food safety- Challenges, opportunities and strategies held from January 28th -29th , 2020 at Madras Veterinary College.p. 134.
- James, L., Aswathy J., Beena A. K. and Aparna S. V . 2020. Assessment of technological properties of four strains of *L.fermentum* for use as functional starter cultures. Compendium of 32nd Kerala Science Congress held from 25th-27th January, 2020 at **Yuvakshetra Institute of Management Studies, Mundoor, Palakkad District.**

- James, L. Aswathy J., Beena A. K. and Aparna S. V. 2020. 'Assessment of Inhibitory Effect of Different Types of Cleaning Solutions on *Klebsiella pneumoniae* and *Acinetobacter radioresistens* Isolated from Dish wash Scrubbers' Proceedings of International conference on livestock, food security and food safety- Challenges, opportunities and strategies held from January 28th -29th, 2020 at Madras Veterinary College. p. 144.
- Amrutha., T.A., Beena A. K., Aparna S. V. and James, L. 2020. Technological characterization of *W. cibaria* DMA isolated from tender coconut water. c Compendium of 32nd Kerala Science Congress held from 25th-27th January, 2020 at Yuvakshetra Institute of Management Studies, Mundoor, Palakkad District
- K.S Aleena, C.V Amrutha, M.P Divya and Smitha J. Lukose. 'Development of paneer with enhanced nutritional and antioxidant properties using mixture of buffalo and flax seed milk' Proceedings of International conference on livestock, food security and food safety- Challenges, opportunities and strategies held from January 28th -29th, 2020 at Madras Veterinary College

ix) Radio talks/TV programmes/ Audio-video cassettes:

- **Dr. P Sudheer Babu**, Dean, CDST Mannuthy participated in a TV show "Naam Munnottu" in DD Malayalam

ACTIVITIES OF DEPARTMENT OF PHYSICAL EDUCATION

- **Physical Fitness Training Programme:** Physical fitness training is offered for B.Tech (D.Sc & Tech) students from 6.30 am to 8.00 am & 5.00 pm to 6.30 pm to help the students improve their physical fitness components, motor abilities and maintain good health.
- **Specific Training Programmes (Coaching Camps):** Specific training programme is conducted for selected students in various disciplines like athletics, volleyball, football, shuttle badminton, table tennis and cricket. The training is conducted in a scientific and systematic manner with the objective of preparing sportsperson with highest level of performance.
- **Interclass Competitions**
 - CDST interclass athletic meet was conducted during 26 & 27 November 2019. 55 students in total participated in various events.
 - Interclass Volleyball (M/W) Tournament was conducted on 1^{9th} Dec 2019.
 - Interclass Sevens Football Tournament was conducted from 6th to 10th December 2019

- Interclass Table Tennis(M/W) tournament was conducted during 11 & 12 November 2019
- Interclass Chess (M/W) Tournament was conducted on 13 November 2019.
- Interclass Shuttle Badminton (M/W) tournament was conducted on 8th November 2019

STUDENTS ACHIEVEMENTS

- College team of CDST Mannuthy bagged bronze medal in the 14th senior district Sepaktakraw championship held at Aloor on 14/09/2019
- Mr. Sachin MS and Ms. Saira Ranjan of 2015 Admission (B. Tech Dairy Science and Technology) got selected for oral presentation at the National level seminar on “ New Developments in Dairy Sector: Issues and strategies for increasing income of rural milk producer of India held at SMC College of Dairy Science, Gujarat on 16/11/2019.
- Chandrakiran V of 2018 batch participated in the 14th Senior state Sepakataw championship held at GHSS, Uppala, Kasarkode from 22/11/2019 to 24/11/2019, achieved gold medal and got selected to the Senior South Zone National camp
- CDST team bagged overall Third position in both Intercollegiate Games 2019-'20 conducted during 29th and 30th of November 2019 and Athletics meet 2019-'20 conducted during 23 & 24 December 2019 at CVAS Mannuthy
- KVASU Intercollegiate sports2019-2020:CDST College football team secured runners and chess women team secured third position' in KVASU Intercollegiate Games 2019-20 held at CVAS pookode during 29th and 30th of November 2019
- KVASU Intercollegiate sports2019-2020:CDST College Shuttle Badminton Women team secured First position and Volley ball Women team & Cricket Men team secured Third position' in KVASU Intercollegiate Games 2019-20 held on 30 & 31 December 2019 and 1 January 2020 at CVAS Mannuthy
- Aleena K S of 2018 admission (M. Tech Dairy Chemistry) bagged third prize in the poster presentation in Bi-functional Properties category at the ninth international SASNET-FF conference on 'Fermented Foods, Health Status and Social Wellbeing' held at Anand Agricultural University, Anand during 13-14 December 2019.
- Ms.Mariya Divanshi A. S., M.Tech. Scholar, Department of Dairy Microbiology presented a poster on 'Standardization of preparation of spicy curd incorporating aqueous extract of Pimenta dioica leaf' in the Ninth international SASNET-FF conference on 'Fermented Foods, Health Status and Social Wellbeing' held at Anand Agricultural University, Anand during 13-14 December 2019.

- . Ms. Jithu Rappai., M.Tech. Scholar, Department of Dairy Microbiology presented a poster on 'Probiotic characterization of lactic acid bacteria isolated from human breast milk' In the Ninth international SASNET-FF conference on 'Fermented Foods, Health Status and Social Wellbeing' held at Anand Agricultural University, Anand during 13-14 December 2019.
- Aleena K S of 2018 admission (M. Tech Dairy Chemistry) got selected for the oral presentation in 'Development of paneer with enhanced nutritional and antioxidant properties by using the mixture of buffalo and flax seed milk' in the International Conference on Livestock, Food security and Food safety – Challenges, opportunities and Strategies (ICFS 2020) during 28-29 January 2020 at Madras Veterinary College
- Archana S of 2018 admission (M. Tech Dairy Technology) got selected for the oral presentation in 'Antioxidant property and quality attributes of yoghurt incorporated with dates extract (*Phoenix dactylifera*)' in the International Conference on Livestock, Food security and Food safety – Challenges, opportunities and Strategies (ICFS 2020) during 28-29 January 2020 at Madras Veterinary College
- Mariya Divanshi A S of 2018 admission (M.Tech Dairy Microbiology) got selected for the oral presentation in 'Petrochemical and metal tolerance ability of *Pseudomonas putida*- An evaluation' in the International Conference on Livestock, Food security and Food safety – Challenges, opportunities and Strategies (ICFS 2020) during 28-29 January 2020 at Madras Veterinary College
- Anne Mary Catherine of 2019 admission (M.Tech Dairy Microbiology) got selected for the oral presentation in 'Biofilm forming *Leclercia adecarboxylata*: a threat for safe food consumption' in the International Conference on Livestock, Food security and Food safety – Challenges, opportunities and Strategies (ICFS 2020) during 28-29 January 2020 at Madras Veterinary College
- Helna Pious of 2018 admission (M. Tech Dairy Chemistry) presented a poster in 'Quality analysis of market samples of ghee available in Thrissur district of Kerala' in the International Conference on Livestock, Food security and Food safety – Challenges, opportunities and Strategies (ICFS 2020) during 28-29 January 2020 at Madras Veterinary College
- College team of CDST Mannuthy participated in the 4th All India Inter-university Sepaktakraw tournament held at MJP Rohilkhand University, Bareilly, UP during 19-21 February, 2020

COLLEGE AND STUDENTS UNION ACTIVITIES

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

The classes of 2019 batch B. Tech (Dairy Technology) students started at the CDST, Mannuthy on 02/09/2019. The first day included registration of students; followed by CDST PTA meeting.

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. PTA awards for the best outgoing students of 2014 batch (Ms. Anne Mary Catherine, Ms. Anjumol Jacob and Ms. Aswathy M R) were given during the function.



ii) Intercollegiate Arts Festival

Students of the college participated in the KVASU Intercollegiate Arts Festival held from 13/05/2019 to 17/05/2019 at CVAS, Pookode and bagged third position

iii) WAHDA- Ifthar meet 2019

Students Union 19-20 organized the Ifthar meet on 25/05/2019. The official programme started at 6.15 pm was inaugurated by Dr. S N Rajakumar, Head, Department of Dairy Technology. Various competitions were conducted in connection with the programme



iv) Alumni connect:

The first session of 'Alumni connect', a joint initiation of CDST-Graduates Association and Students' Union '19-20 of College of Dairy Science & Technology, Mannuthy as a part of one year long Silver Jubilee celebration of the college was held on 20th July 2019 at 12:30 pm in the mini auditorium VKIDFT, Mannuthy. The talk series is an initiation to provide a common platform for interaction between the students and the alumni adorning reputable positions in various fields. The speaker for the day was Mr. Roopesh N.P, Asst. Manager MRCMPU, Milma and alumni of 1994 batch. He detailed on various aspects of the industry and clarified the doubts on in plant training

v) **Career Guidance Programme:** Students Union '19-'20 in association with CDST Graduates Association conducted a career orientation programme on 30th July 2019 at College of Dairy Science and technology, Mannuthy. Experts from "Positive Attitude" Academy, Thrissur handled different sessions on higher studies in and abroad the country and it was followed by a well defined class on IELTS exam.



vi) Valedictory Of Students' Union 2017-'18 & Inauguration Of Students' Union 2019-'20:

Valedictory programme of Student's Union 2017-'18 was held on 1st August 2019. The official function started at 3:30pm was inaugurated by Dr. P Sudheer Babu, Dean, CDST Mannuthy. The presidential address was delivered by Ms. Manjusree N.S, President Students' union 2017-'18.

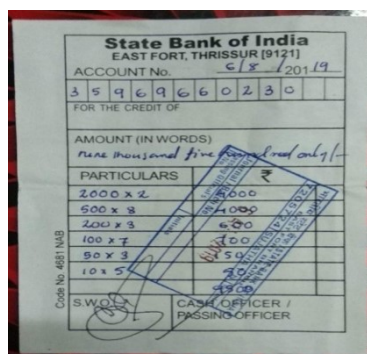
Inauguration of Students' Union 2019-'20 'Padhika' of College of Dairy Science and Technology was held on 1st August 2019, Thursday. The presidential address was delivered by Ms. Treesa Antony, President, Student's Union 2019- '20. Chief Guest of the function, Mr. Priyanandan, renowned drama and film director, delivered the keynote talk. Hon.Vice Chancellor Dr. M.R. Saseendranath inaugurated the Students' Union 2019- '20 by lighting the lamp. Dr. P. Sudheer Babu, Dean, CDST Mannuthy addressed the gathering. Mr.Jamsheer P.C. (2015 batch), Young Dairy Entrepreneur and Mr. Rohith A, (2016 batch), Kalathilakam of "Yuga'19" intercollegiate arts were honoured for their achievements in this function.



vii) Monsoon Soccer League: Monsoon Soccer League organised by Physical Education Department and Students' Union 2019-2020 of College of Dairy Science & Technology, Mannuthy was held on 2nd and 3rd of August 2019. Six teams participated in the competition. Team 'Onnarakilo FC' led by Mr. Jishnu P.C won the finals and team "Targeryans" led by Mr.Vaishak V.L. was the runner up.



viii) Assam-flood relief campaign:



A flood relief campaign for Assam was organized by the Students' Union 2019-'20 and SFI Dairy unit. Packed baby food, sanitary napkins, baby diaper, first aid medicine, biscuits, rusk, tarpaulin sheet, torch, candles, match box, rice, salt, toothpaste, phenol, detol, mosquito nets, mosquito coil, soap, dresses etc. were collected



from the students, staff and teachers of CDST Mannuthy and CFT Thumburmuzhy and was made available at the collection point in Irinjalakuda on 3rd August, which was handed over to the Goonj, a Non Governmental organization. An amount of Rs.9500/- was given to the Chief Minister's Relief Fund, Assam account.

ix) Hiroshima Nagasaki Remembrance Day:

Hiroshima- Nagasaki Remembrance Day was organized by the Students' Union 2019-'20 of College of Dairy science and Technology on August 7th, 2019 as a part of the one year long Silver Jubilee celebrations of this college in the mini-auditorium, VKIDFT, Mannuthy. Dr.P. Sudheer Babu, Dean CDST Mannuthy delivered the commemoration speech. Screening of a documentary film on the bombing of Hiroshima and Nagasaki and the Italian movie "Life is beautiful" were also held as part of this programme.



x) Idanazhi - Wall Magazine Inauguration:

'Idanazhi', wall magazine of Students' union was inaugurated on 8th August 2019 at 10:30am at VKIDFT, Mannuthy.



Ms.Ersha Mohan, Student editor, Students' Union 2019-2020 addressed the gathering and Dr.P.Sudheer Babu, Dean CDST Mannuthy inaugurated the wall magazine by cutting the ribbon. The first prize winning T-shirt of the T-shirt designing competition conducted in connection with Hiroshima day based on the topic "War and Peace" was also displayed on the wall magazine.

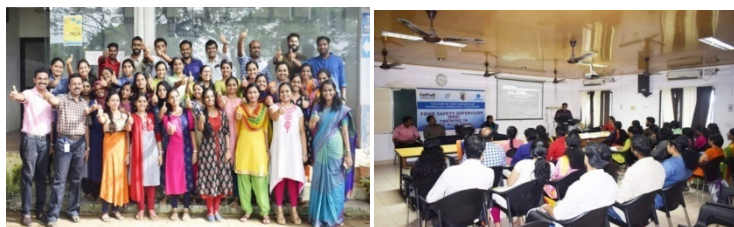
xi) Flood Relief Activities:

Students of College of Dairy Science and Technology, Mannuthy actively involved in the flood relief activities initiated by Dairy development Department to help the affected dairy farmers in various districts. Students accompanied by officers from Dairy Development Department visited the affected areas to extend helping hands to the farmers and to evaluate the extent of loss and destruction caused by the flood.



xii) FoSTaC Training:

CDST Graduates Association organized Food Safety Supervisor Training in Milk and Milk Products in collaboration with Milma. Mr. Roopesh N P (Milma) and Mr. Adarsh C (Milma) were the trainers of the programme.



xiii) Alumni Connect (Second Session):

Second session of the Alumni Connect jointly organized by Students Union and CDST Graduates Association was held on 29th August 2019. Mr. Balachandran M K, Vice president, HDFC ERGO GIC LTD., led the session covering the management aspects.



xiv) Teachers Day Celebration:

Students Union '19-'20 organized the Teachers day celebrations on 31st of August. All the Teachers of the college were honoured by the students and different programmes were conducted in connection with the celebration.



xv) Seminar on RCEP Agreement and Dairy Sector:

College of Dairy Science and Technology organized a seminar on 'RCEP Agreement and Dairy Sector' in connection with the death anniversary of Dr. Verghese Kurien on 19/09/2019. Dr. P Sudheer Babu, Dean, CDST Mannuthy detailed on various dimensions of the agreement and its impacts on Dairy sector. The session was followed by an effective interactive session



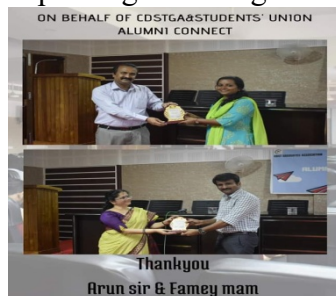
xvi) SAY NO TO PLASTIC Campaign:

Students Union '19-'20 in association with College of Food Technology, Thumburmuzhy and NSS Unit, organized a campus cleaning programme on 25th of September to make the campus plastic free in connection with 'SAY NO TO PLASTIC CAMPAIGN' and birth anniversary of Mahatma Gandhi. Students and staffs of both colleges actively participated in the programme.



xvii) Alumni Connect

Third session of the Alumni Connect was held on 28th September 2019. Mr.Arun and Ms. Famey Mathew, Extension Officers in the Dept. of Dairy Development handled the sessions and explained the activities of Dairy Development Department and role of extension officers in improving the living standards of dairy stakeholders.



(Third Session):

xviii) NISSARAM-Fresher's day:

Nissaram, fresher's day organised by Students' Union 2019-'20 of College of Dairy Science & Technology, Mannuthy on 3rd October 2019 started at 4 pm with an official function presided by Ms.Treesa Antony, President Students' Union 2019-'20. The function was inaugurated by Dr.P.Sudheer Babu, Dean CDST Mannuthy. Various programs of first year students were arranged and cultural programs of all the students were also conducted.

xix) Book fest:

Book fest organised by Students' Union 2019-'20 of College of Dairy Science & Technology, Mannuthy and College of Veterinary and Animal Sciences, Mannuthy from 18th -23rd october 2019 started at 10am on 18th october by Dr.P.Sudheer Babu inaugurated the program at VKIDFT. From 21st -23rd October, the book fest was conducted in collaboration with Students' Union of CoVAS Mannuthy at Veterinary college auditorium. Students, staff and many others visited and the book fest was a great success.

xx)



Interclass table tennis

competition:

Interclass table tennis competition, organised by Physical Education Department and Students' Union 2019-'20 of College of Dairy Science & Technology, Mannuthy on 30th October 2019 as a part of one year long Silver Jubilee celebration of the college started at 4:00pm in the VKIDFT Mannuthy. Dr.P.Sudheer Babu, Dean College of Dairy Science and Technology, Mannuthy and Dr.S.N.Rajakumar, Head KVASU Dairy plant inaugurated the competition by playing table tennis. 2018 batch were the winners from Men's team and 2017 batch were the winners from women's team.



xxi) MAMANGAM-Kerala Piravi Celebrations

Mamangam, Kerala Piravi organised by Students' Union 2019-'20 of College of Dairy Science & Technology, Mannuthy on 1st November 2019 as a part of one year long Silver Jubilee celebration of the college started at 10:30 am with an official function presided by Ms.Treesa Antony, President Students' Union 2019-'20. The function was inaugurated by Dr.P.Sudheer Babu, Dean CDST Mannuthy by lighting the lamp. A surprise honouring function was also organised for Dr.P.Sudheer Babu; Dr.S.N.Rajakumar, Head KVASU Dairy plant; Sri.Rajesh V.S. Technical Superintendent grade 1 of KVASU Dairy plant for completing their 25 years of service.



xxii) Eye check-up campaign

Eye checkup campaign organised by NSS Dairy Unit and Students' Union 2019-'20 of College of Dairy Science & Technology, Mannuthy on 2nd November 2019 as a part of one year long Silver Jubilee celebration of the college started at 10:30 am. Dr.P.Sudheer Babu inaugurated the function by taking an eye checkup. Staff and Students of CDST Mannuthy, College of Food Technology, College of Veterinary and Animal Science, Mannuthy attended the campaign. Representatives of Arya medical centre, Thrissur volunteered the campaign. Health checkup was also provided.



xxiii) Stall as part of the Dairy Exhibition

Students' Union 2019-'20 of College of Dairy Science & Technology, Mannuthy set up a stall as part of the Dairy Exhibition organized in connection with the Chalakkudy block Ksheerolsavam held on 16th November, 2019

xxiv) Food stall in connection with cat show

Students' Union 2019-'20 of College of Dairy Science & Technology, Mannuthy set up a food stall in connection with cat show organized at College of Veterinary and Animal Sciences, Mannuthy play ground on 23rd and 24th November, 2019

xxv) All Kerala Quiz Competition-National Milk Day

An All Kerala Quiz Competition was organised by Indian Dairy Association Kerala Chapter and Students' Union 2019-'20 of College of Dairy Science & Technology, Mannuthy on 26th November 2019 in connection with National Milk Day. 25 teams from different colleges participated in the competition. Cash prize worth Rs. 4000 sponsored by IDA Kerala Chapter was awarded to the winners. First prize was secured by Mr.Arun Gosh (Government Medical college, Thrissur) and Mr. Akhil Gosh (University college, Trivandrum), second prize won by Ms.S reya P.S. and Ms. Aiswarya T.Pavanan (Climate Change and adaptation, KAU), third prize was won by Mr. Mohammed Asif and Mr.Midhun Mohan (Veterinary college, Mannuthy).



xxvi) Interclass athletics

Interclass athletics competition, organised by Physical Education Department and Students' Union 2019-'20 of College of Dairy Science & Technology, Mannuthy on 27th November 2019 started at 9:00 a.m. Dr. P. Sudheer Babu, Dean, CDST, Mannuthy inaugurated the function by hosting the flag and by handing over the torch to the class



representatives . Overall championship was won by 2017 batch and the runner up was 2016 batch. Mr. Gokul C.R. of 2016 batch won the individual championship of men's category and the fastest man award. Ms.Krishnakavitha K.S. won the individual championship of women's category and the fastest woman award.



xxvii) Christmas Celebration 2019

Christmas Celebration was organised by Students' Union 2019-'20 of College of Dairy Science & Technology, Mannuthy on 18th December 2019. Crib making competition, carol competition and Santa Claus competitions were conducted.

xxviii) Alumni connect

Alumni connect- fourth class of a talk series with the alumni was organised by CDST- Graduates Association and Students' Union 2019- '20 of CDST Mannuthy on 27th December 2019. An interactive session with Mr.Vinod Raj, Ms.Suman Ann Thomas, Ms.Brincy, Ms.Nisha B.S. and Mr.Avish Joseph alumni of 1994 batch was conducted. They were honoured by Dr.P.Sudheer Babu, Dean CDST Mannuthy, Dr.A.K.Beena, Dr.S.N.Rajakumar and Dr.Lijimol James for their valuable presence.



xxix) EXODUS-Farewell to 2015 batch

Exodus-farewell party of 2015 batch was organised by Students' Union 2019-'20 of CDST Mannuthy on 2nd January 2020. The function was inaugurated by Dr.P.Sudheer Babu, Dean, CDST Mannuthy. Students of 2015 batch shared their college life experiences and various cultural programs of students were also organised.



xxx) Food stall in connection with the Dog show

Students' Union 2019-'20 set up a food stall in connection with the Dog show on 19th and 20th January 2020 at CoVAS campus, Mannuthy

COLLEGE OF DAIRY SCIENCE AND TECHNOLOGY, POOKODE

An overview

College of Dairy Science and Technology, Pookode established in 2015 is located in Kerala veterinary and animal sciences university headquarters campus at Pookode Wayanad. The pristine landscape and cool climate makes Wayanad one of the most ideal places for dairying in the state. The district is also popular for implementation of contemporary methods pertaining to dairy farming. Being situated in such supportive location; this institution guarantees both field and industrial levels of exposure to the students.

The college is following the curriculum and guidelines prescribed by the Indian Council of Agricultural Research (I.C.A.R.) for B.Tech (Dairy Technology) programme. As per the curriculum, students would get exposure to the entire spectrum of operations taking place in professionally managed dairy processing units through which they acquire the required skills set and confidence to work as highly motivated professionals. The intake capacity for the B.Tech (Dairy Technology) programme is presently 20 seats owing to the shortage of infrastructure and manpower.

Admission

The candidates are selected through the Common Engineering Entrance Examination conducted by Government of Kerala. The candidates who have passed the qualifying Higher Secondary Examination, Kerala or examinations recognized as equivalent thereto, with 50% marks in Mathematics separately, and 50% marks in Mathematics, Physics and Chemistry put together are eligible for admission.

Course curriculum

The curriculum of B.Tech Dairy Technology programme comprises of 8 semesters and includes various courses of Dairy Technology, Dairy Chemistry, Dairy Engineering, Dairy Microbiology, Dairy Husbandry and Dairy Business Management. The syllabus which is suitably contrived unquestionably ensures the provision of most recent scientific knowledge, technical skill and expertise to the students. The last two semesters entirely set apart for trainings facilitate to impart practical know how and develop the entrepreneurial skills among the candidates. The hands on training cum experiential learning programme scheduled in the seventh semester encourage the students to try out innovative approaches to develop and market value added dairy products. Getting acquainted with the changing trends and technological advancement inspires them to be a job provider rather than a job seeker. Farm training for 35 days included in the 8th semester intends to familiarize the candidates with the modern and high tech farming methodologies being adopted lately. Plant training for 70 days also included in the final semester equips the students with a sound knowledge in the advanced processing techniques followed in various dairy plants like AMUL, Mother dairy, Schreiber Dynamix, hatsun, milma etc. In addition the course curriculum also incorporates industrial visits for various subjects, an all kerala study tour as well as an all india study tour which adequately provides a nationwide exposure of the dairy sector to the students.

I. 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)

Departments

The College of Dairy Science and Technology has got the following five 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

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(84+44)

Non-Credit Courses

No.	Catalogue No. of course	Name of the course	Credit Hours
1	SREV 1201	Student READY Exposure Visit I – 7 days (Summer Break)	5 (0+5)
2	SREV 2201	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)

Student Profile

Details	2015	2016	2017	2018	2019
UG					
Students admitted	40	17	14	19	20
Current strength	40	16	14	16	19
Total	105				

Faculty Strength Details as on 31/03/2019

Sl No	Department	Present Status Faculty Strength as on 31/03/2019				
		Assoc. Prof	Asst. Prof.	Deputation	TA	Total
1	Dairy Technology	0	0	2	1	3
2	Dairy Engineering	0	1 (Employment exchange)	0	2	3
3	Dairy Chemistry	0	2	0	1	3

4	Dairy Microbiology	0	2 (1 from employment exchange basis)	0	1	3
5	Dairy Business Management	0	0	0	1	1
Total						13

Faculty Profile

SL NO	DEPARTMENT	NAME	DESIGNATION	CONTACT NO.	EMAIL ID
1	OFFICE	ARUN JOY	ASSISTANT	9207594177	joyyarunn@gmail.com
2	OFFICE	PRAMADA	ASSISTANT	8281406305	Pramadabhaskar39@gmail.com
3	OFFICE	ATLANTA GEORGE	STENOGRAPHER	9048851726	atlantajoshy@gmail.com
4	OFFICE	MARIYAM THAYKATTIL	DATA ENTRY OPERATOR	9961154188	
2	DAIRY MICROBIOLOGY	HARITHA P	LAB ASSISTANT	9605184838	harithapachat@gmail.com
3	DAIRY CHEMISTRY	ABHINA P.V	LAB ASSISTANT	9745661007	abhinakankol@gmail.com
4	DAIRY TECHNOLOGY	ABISHA K G	LAB ASSISTANT	9072040103	abishakg95@gmail.com
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Non teaching staff

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4	DAIRY TECHNOLOGY	ABISHA K G	LAB ASSISTANT	9072040103	abishakg95@gmail.com

Additional Duties & Responsibilities

NAME	DESIGNATION	DUTIES/ RESPONSIBILITY
DR RAHILA M P	ASSISTANT PROFESSOR	SPECIAL OFFICER In charge, PATRON STUDENTS UNION 18-19,
Mrs. GRACE A THACHIL	DEO on deputation	ASSOCIATE PATRON STUDENTS UNION 18-19
Mrs. ANKITHA ANTO C	DEO on deputation	ACADEMICS in charge, SECRETARY PTA

INFRASTRUCTURE:

The college has excellent infrastructure facilities to support the basic theory and practical sessions prescribed for the first three academic years of B.Tech programme. The Dairy Engineering, Dairy Microbiology, Dairy Technology and Dairy Chemistry laboratories are strengthened with sophisticated equipment to meet the academic/research requirements of concerned departments. A well-equipped dairy Engineering division with drawing hall is arranged in the campus to facilitate the engineering courses prescribed in the B.Tech curricula. An experiential learning lab is newly constructed to meet the academic and extension activities of the college. A Computer Lab with 10 Desktop PCs (Pentium i3-4160 CPU@3.60 GHz

processor) with Internet connection is available for students and faculty. The College Library has excellent infrastructure with good collection of books and journals required for the B.Tech (DSc. &Tech.) students. The seminar hall is equipped with LCD projection facility and various electronic systems. The college has made arrangements with the Govt. Engineering College Kozhikode and Manathavady for the conduct of practical sessions prescribed for General Engineering courses in B.Tech curricula. In addition to this the college arrange visits to various dairy processing units in and around Wayanad.

STUDENTS' UNION ACTIVITIES

<p>IFTHAR 19 (23/05/2019)</p> 	<p>UNION INAUGURATION- YANA- (03/08/2019)</p> 
<p>YOGA DAY (21/06/2019)</p> 	<p>VAAYANADINAGHOSHAM (01/07/2019)</p> 
<p>FLOOD RELIEF ACTIVITIES (15/08/2019, 16/08/2019)</p> 	<p>1. ONAM CELEBRATION (29/08/2019)</p> 

FODDER SLIP and CALCIUM SUPPLEMENT
DISTRIBUTION (24/08/2019)



ESHERS DAY (25/09/2019)



DEBATE NH 766 (03/10/2019)



FOOTBALL COMPETITION (10/10/2019)



KERALA PIRAVI CELEBRATIONS- PAYASAM
MAKING COMPETITION (01/11/2019)



FAREWELL TO 2015 BATCH- VIBHA
(23/11/2019)



NATIONAL MILK DAY CELEBRATIONS
(26/11/2019)



CHRISTMAS CELEBRATION –
FROSTY FEST (20/12/2019)



STUDENT SCHOLARSHIPS & GRANTS

Students at College of Dairy Science and Technology receives various scholarships during their degree programme that are KVASU merit scholarship by the university, Merit cum means scholarship, CH Muhammed Koya Scholarship by ministry of minority affairs and E grants by government of Kerala.

SPORTS & CO-CURRICULAR ACTIVITIES

1. Inter college games- 2018-19 (11.04.2019)

Students participated in inter college games held at Pookode and won third position. Some of their notable achievements include

1. Table Tennis women- 3rd Prize
2. Table Tennis men- 3rd Prize

2. Inter college Arts YUGA 2019 (13/05/2019-17/05/2019)

Students participated in inter college games held at Pookode. Some of their notable achievements include

1. Poster making 1st – Sooryakiran
2. Short Story English 1st – Sreelakshmi
3. English Versification 2nd – Shana
4. English Versification 3rd - Aarathy Bose
5. Short story hindi 1st – Aparana S Krishnan
6. Versification hindi 1st - Aparana S Krishnan
7. Malayalam Versification 1st – Jumana
8. Nostalgia 3rd position



3. District level FSSAI quiz (29/052019)

Nimmy and Harikrishna secured 2nd position

4. Wayanad district association athletic meet 2019 (21/09/2019)

1. Shotput 2nd – Gayathri
2. Triple jump 3rd – Mishal
3. High Jump 2nd - Siddharth Vijay

5. Inter college games 2019-20 (29/11/2019)

Students participated in inter college. Some of their notable achievements include

1. Chess women 1st position



2. Table tennis men 3rd position
3. Table tennis women 3rd position

6. Inter college athletic meet colossus-19 (23/12/2019)

1. Short put 3rd – Gayathri
2. High Jump 1st - Siddharth



3. Long jump 3rd - Mishal
4. 4x100 m relay men third position

Report from the library

The college of Dairy Science and Technology has a Library which possess an excellent collection of scientific books, journals, research papers, publications, annual reports, and electronic media. The library facilities are made available to all the students, trainees, faculty members and non-teaching staff.



ACHIEVEMENTS MADE IN SCIENCE AND TECHNOLOGY

- Standardised the procedure for preparation of fermented whey incorporated probiotic yogurt drink.
- Standardised the procedure for preparation of jackfruit fibre and milk protein enriched cupcake.
- Standardised the procedure for preparation of Arrowroot incorporated probiotic drink.
- Standardised the procedure for preparation of sprouted green gram flour incorporated dahi and evaluation of nutritional quality.
- Standardised the procedure for preparation of bougainvillea coloured strawberry pudding.
- Standardised the procedure for preparation of bamboo rice phirni.
- Transferred technology for development of value added milk products for entrepreneurs, students and farmers.

VALUE ADDED PRODUCTS

- Development of fermented whey incorporated probiotic yogurt drink.
- Development of jackfruit fibre and milk protein enriched cupcake.
- Development of Arrowroot incorporated probiotic drink.
- Development of sprouted green gram flour incorporated dahi and evaluation of nutritional quality.
- Development of bougainvillea coloured strawberry pudding.
- Development of bamboo rice phirni.

CONSULTANCY


- Provide consultancy for setting up of Dairy Plant at Pallikunu Wayanad.
- Member of Expert Investigation Agency.

TRAINING PROGRAMME

Value added milk products training for students 29/04/2019

As a part of the programme four students were given training on preparation of value added dairy products.



<p>One month Training Programme for BAPCO- Kudumbasree 13/05/2019-18/06/2019</p> <p>Ten members of Banasura Agro Producers Company were given training for a period of 31 days. As a part of training programme theory and practical session were conducted within the campus and on-site guidance was also carried out at their plant at Pandinjarethara</p>	
<p>VHSE training 21/11/2019</p> <p>Students from GVHSS Ambalavayal, were given classes and practicals on dairy subjects. They were also exposed to a wide variety of equipments used in dairy plants.</p>	
<p>Hands on training for entrepreneurs 25th -27th November 2019</p> <p>Students of 2015 Batch conducted a well-organized hands on training programme for entrepreneurs on preparation of commercially viable dairy products</p>	
<p>National milk day celebrations 26/11/2019</p> <p>The National milk day was celebrated on 26th November at Thariyode milk society and a training on preparation of milk products were organized by students of this institution.</p>	

<p>Training for coffee board nominees 16/12/19</p> <p>One day training was conducted to the farmers from coffee board about the concepts in dairying</p>	
<p>COFFEE BOARD Training on 18/12/19</p> <p>One day training was conducted to the second batch of farmers from coffee board about the concepts in dairying</p>	
<p>One day training for COFFEE BOARD nominee 29/01/2020</p> <p>One day training was conducted to the third batch of farmers from coffee board about the concepts in dairying</p>	

AWARDS AND HONOURS/ ENDOWMENTS

1. Dr.Rahila M P , Assistant Professor, secured the second prize in e-poster competition on “Quality Assurance of Food Products” in the National Seminar on ‘Emerging Trends in Quality Assurance of Milk and Milk Products’ jointly organised by Indian Dairy Association (Kerala chapter) and College of Dairy Science and Technology Mannuthy Thrissur held on 20th May 2019
2. Ms.Arathy Bose and Mr.ArunDev won the first prize in e-poster competition held in connection with the National Conference on Food Technology innovation for Food Security – Foodzone 19 organised by Dr.Verghese Kurien Institute of Dairy and Food Technology, Mannuthy on 18th October 2019.



OTHER ACTIVITIES

1. Experiential learning programme

The experiential learning programme for the students of 2015 Batch admission was held for a period of 65 days from 22/08/2019 onwards. During this period the students developed , standardised and profitably sold a wide variety of dairy products.



2. Extension training programme-Ksheeraprabha 19

The programme was held from 2/12/2019 to 09/12/2019 in wayanad district for the students of 2015 admission with the assistance from Dairy Development Department Wayanad. The students were assigned various activities like farm visits, milk cooperative society visits, dairy extension service unit visits, collection and analysis of milk samples, survey of livestock population etc.



INFRASTRUCTURE CREATED

Experiential Learning Programme (ELP) Lab

Lab facility created for experiential learning programme prescribed in last semester of B.tech Dairy technology course curriculum.



HOSTEL FACILITIES

Students of 2019 batch admission are accommodated at Thalippuzha outside the institutional campus and the remaining students are accommodated in the campus hostels.

COLLEGE OF DAIRY SCIENCE AND TECHNOLOGY, KAIMANAM, THIRUVANANTHAPURAM

1. ABOUT THE COLLEGE

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). College of Dairy Science and Technology, Thiruvananthapuram (presently functioning at Academic Block, BSNL - RTTC, Kaimanam, Thiruvananthapuram -695040) under the faculty of Dairy Science and Technology of Kerala Veterinary and Animal Sciences University started functioning on 14.09.2015 to advance, disseminate and foster the developments in the field of Dairy Science and Technology. The College offers 4 year undergraduate B. Tech. (Dairy Technology) degree programme, with intensive training in processing, quality control and engineering of milk and milk products

Objectives of the Institution:

- To undertake appropriate academic programmes at the undergraduate and postgraduate professional levels in various branches of Dairy Sciences and Technology.
 - To create necessary infrastructure to house class rooms, laboratories, library, computer lab, sports amenities and other allied facilities.
 - To set up an Experimental Dairy plant for students with the state of art facilities for undertaking academic, research and training activities related to dairy processing.
 - To provide R&D support to the Dairy and Food processing industry for developing new value added products and to take up problem oriented research based on feedback from different extension agencies and field feedback from dairy farmers.
 - To develop new energy efficient production systems utilizing the emerging technologies in the processing of value added dairy products for minimizing processing cost, energy management etc.
-
- To undertake collaborative research projects with industries and renowned research institutions to develop products and technologies for entrepreneurs. To organize training programmes, farmer-scientist interactions, dairy-clinics, seminars, technology demonstrations and print and visual media programmes for dairy plant personnel, researchers, small entrepreneurs and others in the field of Dairy and Food Processing.
 - To publish books, booklets and popular articles for the dissemination of new technologies to the dairy farming community and dairy processing industry.

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.

COLLEGE OF DAIRY SCIENCE AND TECHNOLOGY KOLAHALAMEDU, IDUKKI (DIST)

ABOUT THE COLLEGE

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 Elappara Panchayath 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.

COLLEGE OF AVIAN SCIENCES AND MANAGEMENT (CASM) THIRUVAZHAKUNNU, 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, hatchery etc.

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 Kerala Veterinary and Animal University.

The College is having the following six departments.

1. Poultry Breeding and Genetics
3. Poultry Nutrition
4. Poultry Production Management
5. Avian Disease Management
6. Poultry Processing Technology
7. Poultry Business and Entrepreneurship

Infrastructure Facilities

- Smart classroom, library
- Informatic labs and 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

COLLEGE OF FOOD TECHNOLOGY, THUMBURMUZHY

DETAILS ABOUT THE COLLEGE

B. Tech (Food Technology) programme started 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 Pariyaram Panchayath and Chalakudy Constituency. 80% of the students are hostellers, but college has no hostel facility now.

During the month of August, Thumburmuzhy Cattle Breeding Farm adjacent to the college and the college premises were badly affected in the flood mishap and severe landslide and for time being college is now shifted to Mannuthy campus

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.

SCOPE OF FOOD TECHNOLOGY IN INDIA

India's food processing industry is growing annually about 9% and investment in registered food processing sector grows at about 20% per annum. Food technology courses attract a large number of students because of its novelty as an educational course and also because of the growing demand for food technologists in today's world of packaged and fast foods. Food Technologists are mainly required in food industries, rice mills and packaging industries. The food process industry is one of the largest employment creators in the country.

A food technologist can get the job of a Food Safety Officer, Quality Assurance Manager, Production Manager, Laboratory Supervisor, Food Packaging Manager or as a technician in food processing and packaging industry or even as a Research Associate in premier institutes, universities and research and development units. A Post - graduate in Food Technology can work as an Asst.

Professor or an advisor in Government Colleges, Inspection Boards or Quality Control Cells. Companies like Hindustan Lever, Heinz, Kellogg's, Nestle, ITC and many others recruit food technologists periodically for bringing about an improvement in their products.

Both the public and the private sectors provide lucrative job opportunities to food technologists. Food Technologist can work as food packaging technologist and food preservation managers in various food packaging industries.

Food Processing Industry is a sun rise industry with tremendous job prospects in India and abroad. Food Technology has revolutionized the food habits of the people in our country by offering cooked and securely packaged foods in attractive forms. Consumption of processed foods is noticeable across almost all sections of the population. As a result, the market for processed food is growing very fast. Food Processing Industry in India is employment intensive and currently generates employment for about 20 lakhs people. Every year the industry will also generate prospective jobs to an extend of 2.5 lakhs. In many advanced countries, food industry is the largest industry contributing much to their GDP. With the growth of food processing sector speeding up from 6-7 percent prior to 2004 to around 14 percent at present (2015), the level of processing has gone up from 6 percent to 10 percent and of value addition from 20 percent to 26 percent. In this scenario, there will not be any problem of employment for qualified food technologists in our country.

SCOPE OF FOOD TECHNOLOGY ABROAD

A Food Technologist can work as a product development manager in a food research company to devise food products according to the needs of the consumers and effectively implement the products in an innovative way. He can pursue his research work as a scientist abroad to formulate new product range and enhance the existing portfolio of products in various food research institutes and also work as a sensory scientist to monitor organic properties like aroma, flavour and more. Even companies abroad recruit food technologists to ensure and monitor the quality and hygiene of food products in their contamination and adulteration prevention units.

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.

The college is also looking forward for offering Diploma/PG Diploma, Post Graduate and Doctoral programmes in Food Technology. A consultancy cell will soon be functioning in the department delivering services to industries, professionals, entrepreneurs, small scale industries, NGOs, Government Departments & Institutes and research organizations. Collaborative action research projects will be undertaken with industries and renowned research institutions to develop products and technologies for entrepreneurs. Various courses offered by the college shall be open to Indian and foreign students especially for those from African and South East-Asian countries, commonwealth countries in association with FAO.

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.

Title of the Programme	Level	Duration (Yrs)	Year of Admission	Sanctioned annual intake	Total student strength
B.Tech (Food Technology)	UG	4	2015	40 students	25 students
			2016	20 students	20 students
			2017	20 students	18 students
			2018	20 students	19 students
			2019	20 students	19 students

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

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

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	Regular	Contract	Regular	Contract			
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	7	0	0	2	8	8
Assistant Professor (Deputation) (ALL UGC/ICARQUALIFIED)	NIL	0	0	1	0	0	0	1	0	0
TOTAL	10	1	1	2	7	0	0	3	8	8

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 well equipped Food Microbiology and Food Chemistry laboratories etc. for the estimation of microbiological and chemical quality of food and dairy products. The other practical 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 college library 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.

Construction of Food Park as well as the second floor of the College of Food Technology has completed during this tenure. A cricket pitch was made for the students in the college for practising of the students

FACULTY DETAILS:

Sl. No	Name and designation of the Teaching Staff	Discipline	Email ID	Contact No.	
				Land line	Mobile
1	Dr. S N Rajakumar (Special officer and Head)(On additional charge)	Dairy Technology	rajakumar@kvasu.ac.in	0478 2370848	9495882953
2	Dr. Athira S. (Assistant professor)	Food Chemistry	athira05dairy@gmail.com		9497888348
3	Ms. Aysha C. H. (Assistant professor)	Food Microbiology	chaysha@gmail.com, aysha@kvasu.ac.in		9605373428
4	Mr Faisal I	Food Technology	ismailfaisal90@gmail.com		9947039755

STUDENTS ACHIEVEMENTS

1.Prize, awards etc.

- Students of 2016 admission, Mr Janish C and Ms Annu Joseph bagged first prize and Ms Sheba Sunny M and Ms Neethu bagged Third place in the quiz competition organized by the Department of Food Safety on 29th of May 2019 in connection with the celebration of World Food Safety Day.
- Deepika M of 2019 admission bagged 2nd prize in 14th Kerala State Senior (Men's & Women's) - Kerala State Sepak Takraw Championship 2019 –Uppala, Kasargod held from 22.11.2019 to 24.11.2019
- Sheba and Neethu Saji, of 2016 admission won 4th prize for Quiz competition in connection with National Milk Day conducted at VKDIFT Seminar hall, KVASU, Mannuthy on 26.11.2019.
- Sheba Sunny, Annu, & Anusree of 2016 admission got selection for the first round Young Innovators Challenge 2019-22 conducted by Kerala Development and Innovation Strategic Council (K-DISC) on 13.12.2019
- Sheba Sunny, Annu, & Anusree of 2016 admission had done their presentation for the state level evaluation of Young Innovators Challenge 2019-22 conducted by Kerala Development and Innovation Strategic Council (K-DISC) held from 16.12.2019 to 31.12.2019
- CFT achieved 2nd runner up position in intercollegiate athletics 'COLOSSUS' held at CVAS Mannuthy on 23rd and 24th of December 2019
 - Sheba Sunny: Individual champion of 5th intercollegiate athletic meet, 2nd prize in 200m race, 1st in long jump & 1st in 400m race with a meet record
 - Annu Ann Joseph: 3rd in high jump, 3rd in long jump & 2nd in 100m race
 - Navya M: Selected for inter-agri table tennis
 - Annu, Sheba, Deepika & Sujaya: 2nd prize in 4 x 100m relay

2. Foreign visits

- Dr Baby Salini attended the 13th International Session for Educators of Higher Institutes of Physical Education from 1st to 6th of July 2019 at Athens Greece organized by International Olympic Association

3. Extracurricular

- Ms Sheba Sunny M won Second place for Dr Ashish memorial quiz competition organized by ROOF Pookode and University Union 18-19
- Deepika M of 2019 admission, participated in team events representing Palakkad district in 14th Kerala Junior Sepak Takraw Championship conducted at Don Bosco School, Mannuthy from 11.10.2019 to 13.10.2019.
- CFT conducted quiz for school students' on behalf of World Food Day on 16.10.2019
- CFT distributed packed meals in Thrissur round on behalf of Food day on 17.10.2019
- Students' Union of CFT organized film festival 28 to 30.10.2019
- Students of CFT visited Snehadeepthi Special School at Mannuthy and organized a programme 'Kolumuttai' to enlighten the children at Snehadeepthi on 14.11.2019.
- Students of CFT conducted 'Aagneya' - Interclass Arts Fest 2020, Off stage items competition from 16.01.2020 to 18.01.2020

- CFT students set up a food stall in connection with Thrissur dog show from 18.01.2020 to 19.01.2020 conducted at KVASU, Mannuthy
- CFT students conducted an exhibition in connection with 42nd Annual Flower –Fruit- Plant show “The Thrissur Pushpolsavam 2020” at Thekkinkad Maithan, Thrissur from 24.01.2020 to 02.02.2020
- Interclass arts fest Aagneya’20 was conducted at CVAS auditorium by CFT students union 19-20, Chief guest- Smt. Renu Ramanath & inauguration- Dr. T S Rajeev from 19.02.2020 to 20.02.2020

Industry connect and internships

- 3 days Hands on Training was conducted by 2015 Admission on the topic ‘Value Added Food Products’ for selected beneficiaries as part of Experiential Learning Programme in the VIIth semester of their curriculum
- 2015 Admission students of the college entered to their internship on 18.06.19 and successfully completed their internship programme at the following prestigious institutions:
- UNIVERSITY MEAT PLANT, MANNUTHY
- UNIVERSITY DAIRY PLANT MANNUTHY
- ELITE YAMUNA FLOUR MILLS PVT LTD,
- ELITE TASTY TOAST PVT LTD, THRISSUR
- ARTOCARPUS PVT LTD, KANNUR
- KEERTHI AGRO MILLS PVT LTD, KALADY
- MEAT PRODUCTS OF INDIA LTD
- MILMA, (PATHANAMTHITTA, KOLLAM, THIRUVANANTHAPURAM, THRISSUR)
- RAIDCO, KANNUR
- SWAD FOOD PRODUCTS, THRISSUR
- PLANT LIPIDS PVT LTD, KOLENCHERY
- CRUST N CRUMBS FOOD INGREDIENTS PVT LTD
- 2017 batch visited the Centre for Plant Biotechnology and Molecular Biology lab (CPBMB) of Horticulture college on 01.10.2019.
- B.Tech Food Technology, 2018 batch went for All Kerala Tour ‘Gumugumancham’-Industrial Visit from 04.01.2020 to 13.01.2020
- 2018 batch visited the CIFT, Modern Bread, MILMA & CMFRI from 12.02.2020 to 13.02.2020.
- B.Tech Food Technology, 2017 batch went for All India Tour- TROEZIANZZ from 02.03.2020 to 21.03.2020.

Trainings/ seminars and conferences

Organized

- Special Officer, 3 Assistant Professors and 3 Teaching Assistants of the college participated in a one day National Seminar on *Emerging trends in quality assurance of milk and milk products* jointly organized by Dairy Technology Department of Dairy College, Mannuthy and Indian Dairy Association, Kerala Chapter on 20th of May 2019. Participated members were also the committee members of the seminar in various aspects.

- Students of CFT also become a major part in the organization of ‘Food Zone’ conducted by University Union on 18.10.2019
- **Attended**
- Sheba, Annu & Anusree (2016 batch) participated in the IEDC Summit – Asia’s largest entrepreneur summit conducted by Sahrdaya College of Engineering & Technology, Thrissur on 19.10.2019
- Dr. Baby Salini E – presented paper titled ‘Role of Olympic values education in sports which inspire social peace’ at the National Seminar on “*The New Dimensions of Sports Law and Physical Education in the Globalized Era*” organized by the Centre for Sports Law (CSL) at the National University of Advanced Legal Studies, Kochi from 21.10.2019 to 22.10.2019
- Dr Athira Assistant Professor Dept of Food Chemistry is participating an Induction Training Program from 23.09.19 to 22.10.19 at Central University of Kerala Kasargode.
- Dr Athira participated in a two day Facilitator Workshop on ‘Design for Kerala’ under Young Innovators Programme at Kollam from 18.11.19 to 19.11.19
- Mrs Aysha C H participated in a two day Facilitator Workshop on ‘Design for Kerala’ under Young Innovators Programme at Kasargode from 9.12.19 to 10.12.19
- FSO training (ISO 9000 – ISO 22000) & HACCP awareness Level 3 was conducted for CFT 2015 batch students by PRIME from 03.02.2020 to 05.02.2020.
- Dr. Baby Salini E participated in the two days Scientific International Conference on Physical Education and Allied Sciences, on the theme “*Holistic Development for Excellence in Sport Performance, Health & Well being*” and also presented a paper titled “*Nutrition and holistic development of special children: Conceptualizing the notion of yoga*” from 27.02.2020 to 29.02.2020
- Dr. Baby Salini E has been conferred as the Life Member of National Association of Physical Education and Sports Science (NAPESS)

INSTRUCTIONAL FARMS, KVASU

1.CENTER FOR PIG PRODUCTION AND RESEARCH

Stock position as on 31/03/2020:

Age group	CPPR	Megaseed	AICRP	Total
0-2 months	623	139	119	881
2-3 months	151	0	10	161
3-5 months	67	0	0	67
Adults	1024	127	102	1203
Total	1865	266	231	2312

Age group	CPPR		Megaseed		AICRP	
Gender	Male	Female	Male	Female	Male	Female
0-2 months	333	290	69	70	64	55
2-3 months	90	61	0	0	8	2
3-5 months	10	57	0	0	0	0
Adults	201	823	24	103	13	89
Total	634	1231	93	173	85	146

Production and reproduction data:

Trait	Large White Yorkshire	Landrace	Duroc	Indigenous	Crossbred
Litter size at birth	10.02	9.78	7.43	8.50	10.00
Litter size at weaning	9.59	8.87	6.14	7.50	9.42
Litter weight at birth (kg)	10.91	11.13	10.10	5.86	9.76
Litter weight at weaning (kg)	89.84	88.51	59.80	42.60	84.57

Average individual weight at birth (kg)	1.07	1.12	1.35	0.69	0.96
Average individual weight at weaning (kg)	9.27	9.87	9.90	5.68	8.88
No. of Piglets born	1603	455	70	17	1510
No. of Piglets sold	506	95	-	-	1113

Reproduction data:

Sl. No.	Month	No. of piglets born		
		CPPR	Megaseed	AICRP
1	April 2019	226	76	64
2	May 2019	102	75	35
3	June 2019	71	36	22
4	July 2019	189	60	31
5	August 2019	135	91	54
6	September 2019	115	57	34
7	October 2019	210	31	27
8	November 2019	201	36	24
9	December 2019	214	55	31
10	January 2020	331	43	32
11	February 2020	322	113	97
12	March 2020	323	52	40
	Total	2439	725	491
Sl. No.	Month	No. of piglets sold		
		CPPR	Megaseed	AICRP
1	April 2019	16	41	14
2	May 2019	59	70	33
3	June 2019	105	24	40
4	July 2019	151	25	30
5	August 2019	26	29	10
6	September 2019	91	22	17
7	October 2019	99	34	15

8	November 2019	159	35	23
9	December 2019	47	32	20
10	January 2020	159	54	11
11	February 2020	71	26	15
12	March 2020	64	30	20
	Total	1047	422	248

Monthly production data:

Sl. No.	Month	No. of piglets born	No. of piglets sold
1	April 2019	366	71
2	May 2019	212	162
3	June 2019	129	169
4	July 2019	280	206
5	August 2019	280	65
6	September 2019	206	130
7	October 2019	268	148
8	November 2019	261	217
9	December 2019	300	99
10	January 2020	406	224
11	February 2020	532	112
12	March 2020	415	114
	Total	3655	1717

Details of supply of germplasm and other inputs to farmers& institutions:

Sl. No.	Sale category	Number of animals		
		CPPR	Megaseed	AICRP
1	Breeding	166	0	0
2	Culled	308	0	3
3	Fattening	573	422	245
	Total	1047	422	248

Details on new strains/ varieties/ synthetics developed:

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. VineetBhasin, Principal Scientist and Dr. D.K. Sarma, Director ICAR NRC on Pig in the year 2017.

Revenue generated by sale of animals:

Sl. No.	Sale category	Revenue (Rs.)		
		CPPR	Megaseed	AICRP
1	Breeding	2548800	0	0
2	Culled	3302020	0	26760
3	Fattening	1754297	1186101	705468
	Total	7605067	1186101	732228

The total revenue generated by the sale of animals is **Rs. 10144000/-**

Revenue generated:

Sl. No.	Category	Revenue (Rs.)
1	Sales	10144000
2	Advance booking	308000
3	Others	110657
4	Bank interest received	7227
	Total	10569884.00
	Opening balance as on 01.04.2020	170.36
	Grand Total	10570054.36

Details of training conducted:

Sl. No.	Dates	Topic
1.	September 02-06, 2019	Profitable pig farming

Consultancy services:

Consultancy services have been provided to around 1800 farmers, during the year 2019-20 through personal and telephonic interactions. 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.

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	Outlay (Lakhs)	Amount released (Lakhs)
Plan projects			
1	Scaling up of piglets production	103.00	40.0
2	Conservation of Ankamali pigs		
3	Evaluation of crossbred pigs(25% AICRP share)	24.0	24.0
4	Strengthening of CPPR	0	0
5	Whole exome capture and next generation sequencing in Ankamali pigs	0	0
6	Artificial Insemination for improving reproductive efficiency in pigs	0	0
7	Waste water management for eco friendly swine production	0	0
Total		127.0	64.0
EAPs			
1	AICRP on pigs(75% Share)	8636000	8636000
2	Mega seed project	4150000	4150000
Total		12786000	12786000

Year	EXPENDITURE (Lakhs Rs)					REVENUE (Lakhs Rs)	
	AICRP	Mega Seed	Plan	Non Plan	Total Expenditure	Pigs Sold	Total Revenue Generated
2019-20	8563484	4110931	6342098	6401165	25417678	1717	10144000

List of student projects (MVSc.)

1. Dietary incorporation of cooked barley and spent grapes as energy source in Large White Yorkshire sows
2. A comprehensive approach for diagnosis of leptospirosis in domestic pigs
3. Occurrence and characterizations of methicillin resistant *Staphylococcus aureus* in pigs
4. Effect of weaning age on performance of Large White Yorkshire pigs

Extension:

1. The Centre for Pig Production and Research, Mannuthy conducted a sale of piglets to pig farmers whose livelihood was affected due to the 2019 Kerala floods. The farmers were directed to bring with them, a certificate from the Village Office and from the concerned Veterinary doctor to certify that their livestock was affected in the floods.
2. 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.
3. Farmers & students from different states all over India visit the farm.
4. 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.
5. The centre has been conducting field visits on demand by the farmers to solve their problems.
6. The Centre recommended integrated farming system, centered on pigs to farmers.
7. 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.

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

Satellite units:

Sl. No.	Name	Address	Phone
Breeding Units			
1	Mr.Joy P.J.	Puthuvalappil, Karimannoor, Idukki	9947856622
2	Mr.Wilson Antony	Meleveetil, Monippally, Kottayam	7544264877
3	Mr.Manoharan	Cheriyath, Kattilapooam	8129329551
Fattening Units			
1	Mr.Roy Lonappan	Vallachirakkarran, Pala	9874949873
2	Mr.Francis alappat	Alappat, Thekkumbhagom, Idukki	9951244689

Photographs of new strains/ varieties and those highlighting the activities of the farm:



Mannuthy White

Sale at farm premises



Training for farmers



**UNIVERSITY LIVESTOCK FARM AND FODDER RESEARCH
& DEVELOPMENT SCHEME, MANNUTHY**

No	Particulars	2019-20
1	Year of Establishment	May 1917
2	Total area of the farm	80 Ha
3	(Sanctioned strength/in position as x/y) with designation of each post	
	Scientific staff	
	Professor	1
	Associate Professor	Vacant
	Assistant Professor	2 (One on working arrangement from COVAS, Mannuthy)
	Administrative staff	6
	Farm Supervisors	8
	Class IV	3
	Labourers - permanent	100
	Labourers - casual	6
	Others- Specify	-
4	Total number of permanent staff	119
	Contract staff	-
	Daily wage employees	4
5	Whether the farm land/part is occupied by any agency/govt. dept in last five years, if yes details with area	1 acre land for KSEB sub-station, Mannuthy
6	Details of Budget allocation and Expenditure	
	Fund released (Non Plan + Plan + EAP)	79796639
	Expenditure (Non Plan + Plan + EAP)	73710282
	Revenue Generated	18480367
	Cost benefit ratio	3.98
7	Objectives of running the farm	To act as a Instructional farm for teaching UG, PG and Diploma students of KVASU To act as a Research and Development centre for

		scientific cattle & buffalo husbandry, nutrition, genetics, reproduction and other avenues To act as a nodal centre for fodder seed supply and research on fodder cultivation
	Level of achievement of above objectives	Achieved
8	Status of maintenance of mandatory registers in the farm (up to date/pending)	Up to date
9	Suggestions/recommendation of the superior officers who have visited the farm	
10	Details of farm produce	
	Total Egg/Year	
	Milk/Year	Rs 14888730/- generated vide sale of milk @ Rs 43.61 Rs/L for cow milk & Rs 45.39 Rs/L for buffalo milk (Cow milk- 308863.17 Liters (Rs.12959986) Buffalo milk- 45406.49 Liters (Rs.1928744) including those fed to calves) -
	Total Revenue from Milk	14809209
	Birds sold/year (Chicks)	
	Birds sold/year (Adult)	
	Animals sold/year (Young Stock)	899385
	Animals sold/year (Adult Stock)	374430
	Others (specify)	
	Urine @ Rs 8 (18726 L)	151530
	Vermicompost 6410 @ Rs 15	96150
	Raw cow dung 286214 kg @ 1.10	314835
	Fodder slips CO3 & CO5 @ 1.30 for 160436 Guinea 20630@ 1	230227
	Dry Cow dung Powder 41380 kg @14/kg	579320
	Green Grass Sale @4 /kg 143610 Kg	574442
	Benefit From Farm (sum of a to j)	18029528
11	Mechanism adopted for the sale of the farm produce	1 Milk sold to Dairy Plant 2 Dung sold as dry and fresh as per public demand 3 Fodder slips sold as per public demand
12	Method of purchase of feed	Purchased on credit basis from KVASU Feed mill

	Source of purchase of feed		KVASU Feed mill run by School of Animal Nutrition
A	Cattle pellet feed @ 25/kg for 325900 kg		8147500
B	Calf starter @ 32/kg for 8550 kg		273600
C	Green grass @ 1985425 kg @2 /kg		3970850
D	Paddy straw @ Rs 8.25/kg for 154247 kg		1272538
	Total Cost (a+b+c+d)		13664488
13	Additional facilities created during the year	1	Fodder land expansion with 2 acre new cultivation and 4.5 acre replanting
		2	CO 3 Guinea and CO5 varieties tested and promoted to farming community
		4	Renovated mist cooling facilities at buffalo farm
14	Mechanisms and methods adopted to improve the functioning of the farm (Ten points minimum)	1 2 3 4 5 6	Initiated steps for irrigating dry land in the hilly area and to revamp fodder production Increasing conception rate by better reproductive management Initiated steps for construction of a milking parlour A wallowing tank was constructed for improving the welfare of buffaloes and enhancing productivity Foggers and sprinklers were installed in buffalo farm New pond dug to reduce water scarcity during summer was provided with motor facilities
15	Student research during the year		A. PhD 1. Improving efficiency of production in early lactating dairy cows through augmentation of rumen biomass production- Dr. Jasmine Rani (PhD) B. MVSc 1. Effect of supplementation of rumen protected choline and methionine in early lactating dairy cows- Dr. Neelima Jayaraj 2. Metabolic and productive responses to dietary protein levels in transition cows- Dr. Sreemol S Nair 3. Antimicrobial resistance profiling of Staphylococcus aureus isolated from bovine mastitis Dr Krupa
16	Student training during the year		Farm training for 25 Dairy Diploma students Farm training for 53 B Tech Dairy students Farm Clinics for IV and V Year BVSc students Internship Training Programme for 13 BVSc & AH students OJT programmes for 94 Vocational Higher

		secondary students
17	Farmers training during the year	Training programme on cattle and buffalo production conducted for 94 rural youth
18	No. of farmers visited the farm during the year	4550
19	Number and type of publications during the year	3 research publications
20	Present stock position of animals/birds category wise	
	Total number of Cattle	284
	Milch animals	99
	Dry animals	18
	Greater than 20 months	82
	15-20 months	17
	9-15 months	14
	6-9 months	12
	3-6 months	20
	Less than 3 months	22
	Total number of Buffaloes	98
	Milch animals	28
	Dry animals	16
	Greater than 20 months	12
	15-20 months	13
	9-15 months	6
	6-9 months	4
	3-6 months	12
	Less than 3 months	7

GOAT AND SHEEP FARM, MANNUTHY

Brief introduction

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 crossbreds and sheep of Mecheri and Ramanad White breeds.

No	Particulars	2019-20
1	Year of Establishment	1965
2	Total area of the farm	4.10 acres
3	(Sanctioned strength/in position as x/y) with designation of each post	
	Scientific staff	
	Professor	Nil
	Associate Professor	Nil
	Assistant Professor	Nil
	Administrative staff	1
	Farm Supervisors	2
	Class IV	1
	Labourers - permanent	11
	Labourers - casual	Nil
	Others- Specify	
4	Total number of permanent staff	15
	Contract staff	Nil
	Daily wage employees	1 (Security)
5	Whether the farm land/part is occupied by any agency/govt. dept in last five years, if yes details with area	No
6	Details of Budget allocation and Expenditure	
	Fund released (Non Plan + Plan + EAP)	80.35 Lakhs
	Expenditure (Non Plan + Plan + EAP)	143.11 Lakhs

	Revenue Generated	17.47 Lakhs
7	Objectives of running the farm	Promote and undertake research on all aspects of goat production and health. Operate as an instructional farm to students Conduct extension activities as model unit and supply breeding animals to farmers.
	Level of achievement of above objectives	Fully achieved
8	Status of maintenance of mandatory registers in the farm (up to date/pending)	Up to Date
	Milk/Year	9657 Ltrs
	Animals sold/year (Young Stock)	174
	Animals sold/year (Adult Stock)	167
	Goat manure	16000 Kg
11	Mechanism adopted for the sale of the farm produce	Direct to farmers
12	Method of purchase of feed	Direct
	Source of purchase of feed	SANFT, KVASU
14	Mechanisms and methods adopted to improve the functioning of the farm (Ten points minimum)	Introduced complete feed Systematic breeding and buck rotation Regular screening for ecto and endo parasites Routine vaccination against PPR, ET and FMD Fodder cultivation extended to more area utilizing slurry
16	Student training during the year	Livestock Farm Practice - Entrepreneurship training on Goat Production – Internship to B.V.Sc. & AH -
17	Farmers training during the year	101

18	No. of farmers visited the farm during the year	512
20	Present stock position of animals/birds category wise as on 31.03.2020	
	Malabari Goats	100
	Attappadi Goats	66
	Crossbred	120
	Sheep	38

UNIVERSITY POULTRY AND DUCK FARM

INTRODUCTION

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 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.

CATTLE BREEDING FARM, THUMBURMUZHY

The Cattle Breeding Farm, Thumburmuzhy, is situated in Pariyaram Panchayat of Chalakkudy, in the district of Thrissur, Kerala and it shares border with the Kumblanmudy forest about 216 numbers of Frieswal crossbreds are reared. The livestock are housed in different barns and maintained in different age groups such as calves, heifers, lactating, pregnant and dry animals. This farm will also conduct training for farmers in collaboration with Animal Husbandry department, ATMA, Milma, Dairy Development Department and Kudumbasree. The farm provides facilities for dairy farmers, entrepreneurs, school children and peoples representatives for visit and on-farm discussions.

The Cattle Breeding Farm Thumburmuzhy has 216 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 make up 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.

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	3		

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

I. Major activities

- Teaching and research activities in the field of Livestock Products Technology
- Regular production, processing and marketing of meat and meat products and by-products and close interaction with State Agricultural Universities, Veterinary Officers, Local Self Government authorities, Industries Department, Suchitwa Mission, Health professionals, FSSAI, Animal Husbandry Departments
- Technical advice to entrepreneurs, Food Safety Commissionerate
- Conducted classes for Nursing, Pharmacy, MBBS, BAMS and Food Technology students.
- Hands-on training on slaughter practices and meat inspection to Veterinary Officers and on meat processing to Self Help Groups
- Conducted training programmes for staffs and faculty in relation with Covid – 19 and prepared operational guidelines for Meat Technology Unit during lock down period

II. Research Highlights

- Development of organic briquettes from slaughter house waste as a nutrient source for plant growth
- Development of poultry meat cocktail nuggets incorporating jackfruit (*Artocarpus heterophyllus*) and Shatavari(*Asparagus racemosus*)
- Application of entomological tools to determine the time of exposure of carcasses at retail and poultry outlets
- Development and evaluation of functional chicken noodles
- Development of blue print for consumer handling buffalo meat for optimum quality
- Application of image analysis to evaluate buffalo meat tenderness

RESEARCH

PROJECTS COMPLETED / CONTINUING

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

: IdentificaDevelopment of novel affordable technologies for added-value agricultural andtherapeutic products for management of wastes and inedible tissues from large animaland poultry slaughter establishmentstion and extraction of active colouring compound for imparting natural colour to various value-added meat products

2. Name of the funding agency : Govt of Kerala
3. Date of start and closure :01-04-2019
4. Budget : **Rs 10 lakh**
5. Principal Investigator & Co-PIs : Dr. Irshad A(PI), Dr.Vasudevan& Dr. Sathu T(Co-PIs)
6. Research highlights :
 - A technology for cost-effective management of poultry slaughter-waste to minimise environmental impact and which yields agricultural inputs developed. There is an urgent need for such a technology based on the feed-back from the stake-holders of the sector. The technology can be transferred to LSG institutions for effective management of poultry slaughter wastes.
 - The extracellular matrices developed from animal tissues can be used for various applications in veterinary and human clinical practice including full thickness skin wounds and also as tissue engineering scaffolds

2. 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

KVASU RESEARCH PROJECT: ONGOING

Sl No.	Name of the Student	Name of the project	MVSc/ PhD	Major Advisor	Year of Admission
1	Dr Arun Sankar K J	Development of organic briquettes from slaughter house waste as a nutrient source for plant growth	MVSc	Dr. V.N. Vasudevan	2018
2	Vandana Sasidharan	Application of FTIR- Spectroscopy for the identification of cold slaughtered meat	MVSc	Dr. V.N. Vasudevan	2018
3	Yazhinidevi R	Development and evaluation of pet treat incorporating buffalo byproducts	MVSc	Dr. Sathu T	2018
4	Prajwal S	Development of a blue print for consumer handling of buffalo meat for optimum quality	Ph.D	Dr. V.N. Vasudevan	2016
5	Pavan M	Development and evaluation of functional chicken noodles	Ph.D	Dr. Sathu T	2016
6	Ann Theres John	Development and evaluation of chickenmeat spread	MVSc	Dr. Sathu T	2019
7	Jishnu P.	Ultrasonic measurement of back fat thickness and loin eye area in crossbredpigs and their correlation with meat yieldand fatty acid profile	MVSc	Dr. V.N. Vasudevan	2019
8	Rintu Joseph	Abattoir sludge as substrate for biomass productivity of Black Soldier Fly Larvae	MVSc	Dr. Sathu T	2019

Income Expenditure Statement (in Lakhs) in Last Seven Years

Financial Years	Expenditure	Revenue	Fund Transferred to University (Lakhs)
	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
2018-19	174.76	244.51	70
2019-20	170.56	237.13	72

2018-19

Meat and Meat Products sold (Frozen and Products)

Name of the food product manufactured	Size of the package	Quantity	Sale price per unit of packing- (Rs.)	Value
1	2	3	4	5
Beef	1 kg	23190	320	7420800
Veal	1 kg	1604	340	545360
Keema	500 kg	2006	180	361080
Beef cutlet	200 g	3207	110	352770
Beef sausage	250 g	1095	120	131400
Beef pickle	150 g	712	110	78320
Beef fry	200 g	616	120	73920
Smoked beef	120 g	56	210	11760
Premium Fresh Beef	500 g	914	200	182800
Pork	1 kg	28958	280	8108240
Pork Low Fat	500 g	55	200	11000
Pork sausage	250 g	1003	120	120360
Pork Pickle	150 g	267	120	32040
Pork Fry	200 g	593	110	65230
Cocktail sausage	250 g	0	100	0
Mutton	1 kg	1028	580	596240
Broiler Duck	1 kg	4336	350	1517600
Quail Egg Pickle	250 g	181	90	16290
Chicken Sausage	250 g	1407	110	154770
Chicken Cutlet	200 g	2996	100	299600
Broiler chicken	1 kg	9480	230	2180400
Chicken Pickle	150 g	356	100	35600
Chicken Tikka	100 g	261	65	16965
Turkey	500 g	123	200	24600
Chicken Nuggets	200 g	550	100	55000
Ordinary Duck	1 kg	94	230	21620
Quail Dressed	500 g	226	220	49720

Animals slaughtered (Species wise)

Cattle	No of animals
Cow	162
Vechur	12
CJ	2
CH	4
Bull	102

Vechur	11
CJ	11
CH	2
Male calf	189
Vechur	0
Female calf	0

Heifer	32
CH	2
Total	529
Buffalao	26
Pig	
LWY Female	290
Male	235
Duroc Female	40
Male	110
CB Female	3
Male	12
Desi Female	0
Landrace Female	5
Total	695
Goat	
Female	60
Male	75
Sheep	
Female	12
Male	6
Chicken	3650
Chicken broiler	4520
Duck broiler	650
Duck Kuttanad	60
Quil	2500
Turkey	5
Total	12788

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.

Events/ activities/ achievements

- 1 Minister visit to the unit and release of three products – Egg Bhurji, Breakfast Omelet, Beef Omelet - 25th October 2019
- 2 Dr. V N Vasudevan, Assistant Professor Presented a lead paper on Forward and backward linkages in meat industry on 10-11-2019 at Kerala Veterinary Science Congress, CVAS, Pookode
Second best oral presentation – Dr. Vandana Sasidaran - 11th November 2019
3. Cuppa Parleys – Design Thinking delivered by Deepa Ananth at TBIC, CVAS, Mannuthy for staff and students of MTU - 11th November 2019
4. Workshop on Living in Harmony at work place - 16th November 2019
5. Workshop on “One Health” - 30th November 2019
6. Athijeevanam workshop on Development of Wayanad Model at KVASU HQR, Pookode. Lead paper in the session on Meat Processing Technology/Value Addition -7th December 2019
7. Radio talk on meat handling and hygiene, AIR thrissur, -16th September 2019

Detailed Reports of Events

RELEASE OF PRISTINE PRODUCTS OF MEAT TECHNOLOGY UNIT

Centre of Excellence in Meat Science and Technology was graced by the presence of Honorable Minister, Adv. K. Raju, Minister of Forests, Wildlife Protection, Animal husbandry, Dairy Development, Milk- Co-operatives, Zoos of Kerala Legislative Assembly on October 25th, 2019. He was accompanied by honorable Vice Chancellor of Kerala Veterinary and Animal Sciences University, Prof. (Dr.) M.R.Saseendranath, Registrar Prof. (Dr.) N. Ashok, Director of Academics and Research Prof. (Dr.) Ajith Jacob George, Director of Entrepreneurship Prof. (Dr.) M K Narayanan, Dean, College of Veterinary and Animal Sciences, Mannuthy Prof. (Dr.) C. Latha and Associate Dean, Prof. (Dr.) P.V. Tresamol. All the dignitaries monitored the activities & functioning of the unit which was duly explained by Dr. B. Sunil, Professor & Head, Centre of Excellence in Meat Science and Technology. All the products were exhibited and the minister appreciated the efforts and functioning of the Unit. Also, we were privileged to bring out ready to eat products and minister released these new products (Egg bhurji, Breakfast Omelet and Beef Omelet).



Breakfast Omelet 200 g

An ultimate breakfast cuisine in the breakfast hierarchy. Also a power breakfast which is ready in minutes and perfect protein-packed vehicle for all kinds of ingredients, when you're hungry for an over-the-top brunch.

Ingredients : Egg, Ginger, Garlic, Vegetables, Spices, Condiments
Curry leaves, Salt

Storage : Under refrigeration for two months

"The little energy obtained from breakfast omelet can ignite your villages to kick start"

IN TUNE WITH ENDLESS ARRAY OF DELICIOUS RECIPES FROM MEAT TECHNOLOGY UNIT

NEW PRODUCT LAUNCHES

On 25 October 2019

Safemart

Meat Technology Unit &
Department of Livestock Products Technology
Kerala Veterinary and Animal Sciences University
Mannuthy, Thrissur, Kerala - 680 651

Released Newly Developed Products Brochure and Revised Price List of MTU

OTHER POULTRY PRODUCTS

- Turkey 500 g
- Quail Dressed 500 g
- Quail Egg Pickle 150 g

EGG PRODUCTS

- Beef Omelet 250 g
- Egg Bhury 200 g
- Breakfast Omelet 200 g

MEAT & MEAT PRODUCTS

- MCB Meal FEED 2 kg pkt
- MCB Meal FEED 5 kg pkt
- MCIM Fertilizer 2 kg pkt
- MCIM Fertilizer 5 kg pkt
- MCIM Fertilizer 25 kg Bag
- MCIM Fertilizer 50 kg Bag
- Rendered Fat 1 kg (c 20 kg)
- Bile 1 kg
- Aerobic compost 25 kg

BEFF & BEFF PRODUCTS

- Fresh Chilled Buffalo Meat 1 kg
- Fresh Chilled Buffalo Meat 500 g
- Buffalo 1 kg
- Buffalo 500 g
- Fresh Buffalo Curry Bones 500 g
- Premium Fresh Buffalo 1 kg
- Premium Fresh Buffalo Beef/Butt (Tipe/Bottu) on demand 500 g
- Fresh Prime Beef cuts 500 g
- Beef 1 kg
- Fresh Chilled Beef 1 kg
- Beef 1 kg
- Beef Minced (Keema) 1 kg
- Beef Cubed 200 g
- Beef Curry 250 g
- Beef Curry 250 g
- Beef Pickle 150 g
- Beef Fry 200 g
- BDF 100 g
- Beef Smoked 120 g
- Premium Fresh Beef 500 g
- Beef Tripe (on Demand) 500 g

PORK & PORK PRODUCTS

- Pork 1 kg
- Fresh Chilled Pork 1 kg
- Pork Low Fat 500 g
- Pork Sausage 250 g
- Pork Pickle 150 g
- Pork 200 g
- Pork Fry 200 g
- Cocktail Sausage 250 g
- Bacon Backs 250 g
- Pork Breast Bone Chopped 1 kg

CHICKEN & CHICKEN PRODUCTS

- Chicken Broiler 1 kg
- Chicken Cutlet 200 g
- Chicken Sausage 250 g
- Chicken Curry Cut 500 g
- Chicken Tikka 100 g
- Chicken Pickle 150 g
- Spiced Chicken 1 kg
- Chicken Fry 100 g
- Chicken Sausage 1 kg
- Chicken Nugget 200 g
- Egg & Chicken Roll 1 pkt

MUTTON

- Mutton 1 kg
- Mutton Curry Cut 500 g
- Mutton Curry 250 g
- Goat Head 1 pkt
- Goat Feet 1 pkt
- Goat Head & Feet 1 pkt
- Goat Tripe 1 no.

RABBIT

- Rabbit Meat 1 kg

DUCK

- Duck Keema 1 kg
- Broiler Duck 1 kg
- Broiler Duck Curry Cut 500 g

Release of Training Brochure of Meat Technology Unit

TRAINING ON MEAT ANALYSIS AND QUALITY MANAGEMENT FOR FOOD SAFETY OFFICIALS

The booming global food industry offers opportunities for Food Business Operators to produce and sell safe food for domestic and export market. For those responsible for quality assurance and regulating food safety, food analysis poses a challenge. Meat and Food analysis is an integral part of implementation of FSSAI and catering to the requirement for Food Analysts, Food safety audit and accredited laboratories.

Training syllabus

- ◆ Food chemistry, microbiology and quality with special reference to food of animal origin
- ◆ Quality - control, assurance and management in meat industry
- ◆ Food safety and food analysis
- ◆ Good laboratory management practices (GLP)
- ◆ Sanitation and hygiene in labs
- ◆ Handling of hazardous chemicals and biological samples

Duration: Three days to one weeks



For further information about programmes, Please contact

Course Director

Dr. B. Sunil, Ph.D, FNAVSc. (sunil@kvasu.ac.in; 9497626575)

Course Coordinators

Dr. V. N. Vasudevan (vasudevan@kvasu.ac.in; 9447382558)
Dr. Sathu T. (sathu@kvasu.ac.in; 9447293042)
Dr. Irshad A. (irshad@kvasu.ac.in; 9895213500)

Office Address

Meat Technology Unit & Department of Livestock Products Technology
Kerala Veterinary and Animal Sciences University
Mannthi, Thrissur, Kerala - 680 651
Email : lptmt@kvasu.ac.in; Phone : 8301860956
www.kvasu.ac.in

MTU - KVASU

Meat Technology Unit

Kerala Veterinary and Animal Sciences University

Trainings

Entrepreneurship Development Programmes



Meat Technology Unit &
Department of Livestock Products Technology
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STIPENDIARY TRAINING PROGRAMMES ON MEAT PROCESSING

The acute shortage of trained manpower in the field of Meat Trade in Kerala and India is a major drawback for wholesome meat production and modernization of slaughterhouses. Operation and routine maintenance of meat processing equipments, overhead rail, refrigeration plant and other plant machinery are essential for the hygienic production of meat and meat products. MTU has been conducting hands-on Stipendiary Training Programmes to address these requirement since 1993.

Sl. No.	Name of training	Qualification	Stipend per month	Duration
1.	Meat processing cum plant operation	VHSE Animal Husbandry/Dairying	Rs. 5500/-	2 years
2.	Wholesome meat production & meat processing	VHSE Animal Husbandry/Dairying /SSLC	Rs. 4500/-	1 years
3.	Meat plant operation & maintenance	ITI/ VHSE in refrigeration & air conditioning/ VHSE Animal Husbandry/Dairying	Rs. 5500/-	1 years

Training syllabus

- ◆ General aspects of meat production
- ◆ Transportation and handling of slaughter animals
- ◆ Hygienic meat production & byproducts utilization
- ◆ Sanitation and hygiene in meat processing and carcass utilization plant
- ◆ Maintenance of refrigeration system
- ◆ Meat cutting, packaging, storage and marketing of meat and meat products
- ◆ Preparation of different meat products and their storage
- ◆ Disposal of animal byproducts, liquid effluent and solid waste Management

TRAINING FOR FACULTY AND STAFF FROM ALL OVER INDIA

Faculty and staff from the department of LPT and VPH of various veterinary colleges, DRDO and DFRL etc., usually undergoing the training programme.

Objectives

1. Training to Veterinarians on recent developments in Meat Science and Technology
2. Quality management of abattoirs and meat processing plant
3. Environmental management and byproducts utilization

Duration: One to Two Weeks

TRAINING TO STAFF OF LOCAL BODIES AND PRIVATE INSTITUTIONS

Training programmes for the staff of local bodies, NGOs and private institution from different states, who are engaged in meat inspection, slaughterhouse management, environment hygiene and public health.

Objectives

Awareness on abattoir management, design, wholesome meat production, meat inspection, hygienic collection, storage and treatment of abattoir by products, condemned materials and effluent treatment.

Duration: One day to one week

ENTREPRENEURSHIP DEVELOPMENT PROGRAMMES

EDP organized for the entrepreneurs from different states of India.

- Training on meat and value-added products development, poultry and pig processing
- Hands on training in poultry processing
- Meat processing and quality control for meat handlers
- Training on hygienic butchering practices for butchers / meat handlers
- Training programme on hygienic slaughtering, meat processing and quality control

Objectives

- ◆ Create awareness about meat processing and value addition among SHG / Entrepreneurs / youngsters
- ◆ Encourage self employment tendencies
- ◆ Provide knowledge about government schemes and programmes
- ◆ Make a aware about emerging issues that could change or enhance the meat industry in the technology and the environment and how to leverage them

Duration: One to Three days

IN-PLANT TRAINING TO FOOD TECHNOLOGISTS

We provide excellent training on various fields such as abattoir management, wholesome meat production, meat inspection, hygienic collection, storage and treatment of abattoir by products, condemned materials and effluent treatment to Food Technology Students in India.

Duration: One to Six Months

Dr. V N Vasudevan, Assistant Professor Presented a lead paper on **Forward and backward linkages in meat industry** on 10-11-2019 at Kerala Veterinary Science Congress, CVAS, Pookode, and MVSc Student Dr. Vandana Sasidaran Secured Second best oral presentation award



Cuppa Parleys – Design Thinking delivered by Deepa Ananth at TBIC, CVAS, Mannuthy for staff and students of MTU

Cuppa Parleys is the bimonthly lecture series on topics related to all aspects of meat science and technology with the objective of broadening our areas of engagement and reflection relevant to the discipline.

The third edition of Cuppa Parleys on Design Thinking was delivered by Dr. Deepa Ananth, Implementing Officer, TBIC on 6-11-2019 at the Technology Business Incubation Centre (TBIC), Mannuthy. Dr. Deepa elaborated different scientific processes involved in the evolution of innovative ideas into a prototype and further lab-scale testing. Faculty, undergrads and PG students attended the lecture and participated in the interactions.



Workshop on “One Health”

Meat Technology Unit, Mannuthy KVASU organized one-day workshop on “One Health” in association with Dept of Community Medicine and Public Health, Amrita Institute of Medical Sciences, Kochi on 30th November 2019. Workshop discussed about the importance of partnerships in comprising of Student and faculty exchange programmes and Extension activities in terms of investigation of epidemic and awareness among the public and observation of World Zoonoses day. Dr.Sunil B. Professor &Head,

Department of Livestock Products Technology and Meat Technology Unit, KVASU, Mannuthy presided over the function. Dr. Vrinda Menon, Dr. Sethulekshmi, Dr. Irshad A., Dr. Vasudevan V N and faculty from Amrita Institute of Medical Sciences, Kochi delivered lectures on various topics.



Workshop on Living in Harmony at work place

Centre of Excellence in Meat Science and Technology organized a one day HR Workshop on Living in Harmony at work place on 16th November 2019 in association with Association of Meat Scientists & Technologists (AMST) at the Seminar Hall of Meat Technology Unit & Department of Livestock Products Technology, College of Veterinary and Animal Sciences, Mannuthy, Thrissur, Kerala for scientists, students and staff of Slaughter Units and Meat Processing Plants. Programme was inaugurated by Dr. N. Ashok, Registrar, KVASU and Dr. V N. Vasudevan, Asistant Professor, Dept. of LPT welcomed the gathering. Dr. J. Abraham, Patron, AMST and Founder Director, COEMST delivered the keynote address and Dr. B. Sunil, Head, MTU presided over the function. Classess were handled by Sri. C.K. Suresh, Director, ATMA Foundation, Thrissur, Kerala.



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

Internship Training Programme for Students

1. CVAS Mannuthy & Pookode
2. Avian Sciences and Management, Thiruvazhamkunnu
3. Tharananellur Arts & Science College - Irinjalakkuda

UNIVERSITY 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, 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

Topic	No. of Trainees	Institution	Venue	Date
Plant visit and briefing the Plant activities	More than 3000 visitors	Various Institutions like Schools, Medical Colleges, Aurvedic Colleges, Farmer's Groups, Dairy Extension Departments	University Dairy Plant	From 01.04.2019 to 31.03.2020

Research Projects and Extension Activities undertaken:

KVASU Dairy Plant extended its infrastructure and manpower to support various research projects of post graduate students of the university. Trainings and technical guidance were also provided to farmers and entrepreneurs.

HUMAN RESOURCES: Teaching Faculty

Cadre	Name of the Scientist	Sanctioned Posts	In position	Vacant	Contact No.
Professor& Head	Dr S N Rajakumar	1	1	Nil	9495882953
Associate Professor	Nil	Nil	Nil	Nil	
Assistant Professor	Mr.Aswin S Warriar	3	1	2	7559067959

1.5.2 Non Teaching

Cadre	Name of the staff	Sanctioned posts	In position	Vacant
Technical Supervisor	Mr. Rajesh V S	1	1	Nil
Farm Supervisor Gr.I	Smt. Mini.P A	1	1	Nil
Assistant Section Officer	Smt.Salfa Raj	1	1	Nil
Computer Assistant Gr.II	Smt. Vinitha N P	1	1	Nil
Clerical Assistant	Sri. Byjuraj C S	1	1	Nil
Technician(Dairy Mechanic)	Nil	3	0	3
Class IV	Nil	2	0	2

Labourer	Sri. Shabershan V S Sri.Sarath M S	3	2	1
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Daily wages/Employment Hands

Cadre	Name	No. appointed
Technician	Sri. Vivekraj C.V. Sri. Glimson Varghese	2
Class IV	Sri. Frijo Francis	1
Lady Labourer	Smt. Silpa Sathyan	1

Sl no.	Scheme code	Name of scheme	Plan Outlay	Revised Outlay	Outlay adjusted	Ist allotment	Total allotment	Balance
1	RSP/19-20/X-3	Doorstep veterinary services to the rural farmers of selected villages through ambulatory clinic	2,00,000			2,00,000	2,00,000	Nil

UVH &TVCC, 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.

1. Funds and Grants

2. Details of facilities/ services/programme

TVCC also offers stipendiary training to VHSE pass outs in “Animal handling, veterinary laboratory techniques, pharmacy and nursing” which equips the selected candidates with all supportive activities related to para-veterinary aspects in full fledged veterinary hospitals/ farms in public and private sectors.

- a) Study abroad programme: Nil
- b) Continuing Veterinary education-Two trainings were conducted for field Veterinarians.
 - 1) Cardiology training for Veterinarians

- 2) Training for Additional Directors of AHD
- c) Clinical meetings held: Nil
- d) Vaccination details: Around 300-350 vaccination per month for small animals and around 100 birds per month
- e) Pharmacy:
- 1) Hospital pharmacy is dispensing common drugs and emergency medicines
 - 2) Revolving fund pharmacy attached to hospital dispensing all medicines and disposables at a subsidized rate.
- f) Theatre
- 1) Major surgery:
 - 2) Minor surgery:

Minor Surgery & Major Surgery – month wise report for the year 2019-2020

SI No.	Item	April, 19	May, 19	June, 19	July, 19	Aug, 19	Sep, 19	Oct, 19	Nov, 19	Dec, 19	Jan, 20	Feb, 20	Mar, 20	Total
1.	Minor Surgery	4												4
2.	Major Surgery Package I (Rs.1000/-)	3	1	2	3	3		4	2	1		3	3	25
3.	Major Surgery Package II(Rs.1200/-)	1		1	0									2
4.	Major Surgery Package III(Rs.1500/-)		1	1	3			1	1	2				9
5.	Major Surgery V(Rs.2500/-)													0
6.	Minor Surgery (Rs500)		2	1	1	2		2	1	6	5	1		21
7.	Minor Surgery (Rs300)				4	1		11	7	5	5	9	3	45
8.	Minor Surgery (Rs 800)													0
9.	Major Surgery (1800)													0
10.	Major Surgery (1000)													0
11.	Major Surgery (1200)													0
12.	Caesarian –Dog (2000)	4												4
Total		12	4	5	11	6	0	18	11	14	10	13	6	110

g) Critical care

Separate critical care unit attached to TVCC. Average 10-15 cases/week is attended.

h) Mobile Veterinary Service

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 on an everyday basis, conducting infertility camps and awareness programmes. Average of 280 cases/month is attended.

i) Case Studies

Around 50 clinical cases were studied and presented by students and faculty at various conferences

j) Veterinary Record: Monthly report and case report is submitting before university on monthly

basis.

k) Consultancy services: About 40 consultancy services per month is conducted

l) Laboratory Services

A molecular biology based clinical lab is established in TVCC during the year 2019-2020. Molecular based diagnostic procedures are carrying out on routine for the diagnosis of selected haemoprotozoans.

In addition to this, 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

m) Summary of cases handled

Table showing summary of cases handled in 2019-2020

SI No.	Item	April 19	May 19	June 19	July 19	Aug 19	Sept 19	Oct 19	Nov 19	Dec 19	Jan 20	Feb 20	Mar 20	Total
	Clinical Cases													
1.	Bovine	205	223	190	105	206	237	255	260	255	275	217	169	2597
2.	Caprine	335	298	304	647	293	308	418	446	327	366	324	226	4292
3.	Small animals (Canine & Feline) Old & new cases	866	987	844	919	774	809	976	890	1179	1826	1044	1315	12429
4.	Birds	140	123	130	115	101	67	94	86	97	108	138	88	1287
5.	Others	28	35	39	29	21	23	18	25	29	33	44	9	333
Total		1574	1666	1507	1815	1395	1444	1761	1707	1887	2608	1767	1807	20938

3. Staff details

Professor and Head (i/c)

Dr.UshaNarayanaPillai, Professor and Head, UVH and TVCC, Mannuthy

Assistant Professors

- 1) Dr. Varuna P. Panicker, Assistant Professor, Department of Veterinary Biochemistry(on working arrangement)
- 2) Dr. Reji Varghese, Assistant Professor, TVCC, Mannuthy

- 3) Dr. Preena P., Assistant Professor, Department of Veterinary Epidemiology and Preventive Medicine (on working arrangement)
- 4) Dr. Ajith Y. Assistant Professor, Department of Veterinary Clinical Medicine, Ethics and Jurisprudence (on working arrangement)

4. Revenue Generated

SI No.	Item	2019-20
1.	Registration	326,910
2.	Ultra sound scanning	182,600
3.	Endoscopy	0
4.	Minor surgery	31,100
5.	Major surgery	54,900
6.	Exfoliative vaginal cytology	82,800
7.	Clinical laboratory investigation	1,369,308
8.	House Visit	3,100
9.	Emergency charge/treatment charge	122,398
10.	Vaccine	0
11.	ECG (15x 100)	19,900
12.	Oxygen Therapy	2,000
13.	Dystocia	54,000
14.	Blood transfusion and blood bag (500x1 nos)	17,000
15.	Semen Collection	18,000
16.	Antivenom (4 nos) (600x4=2,400/-)	27,600
17.	Echocardiography(6 x400)	65,200
18.	IP charges	21,100
19.	Haemodialysis(2 nos)	103,000
20.	Parvo kit	41,400
21.	Farm Visit	4,540
22.	Essential Therapy	101,250
23.	Thoracentesis/abdominocentesis/ skin biopsy	500
24.	Cesarian	4,000
	TOTAL	2,654,606

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 8.00A.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 (Dairying and Animal Husbandry) Certificate holders and farmers, conduct of continuing veterinary education programme
6. Consultancy services to govt. and private agencies

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:	23315
	Bovine :	5433
	Caprine:	5309
	Feline :	3002
	Avian :	2559
	Others :	316
	TOTAL:	39954

In-patient facilities	:	NIL
No. of cases admitted and quarantined	:	NIL

Vaccination :

▪ Multi component Vaccine in dogs	:	2373
▪ Anti-rabies Vaccination	:	2694
▪ Cat Vaccination	:	220
▪ Ranikhet Disease Vaccine	:	1710

Referral units (No. of cases attended) : 3784

- Operation Theatre services : Major: 396 Minor :314
- Emergency and critical care service : 344
- Mobile veterinary service : NA
- Veterinary Medical Record System : Manually maintained through a nominal register and case sheets. 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 up to 31.3.2020)
 - 31.3.2020)

: Non-Plan : Rs. NIL

Revolving Fund: Rs. NIL

1. EDUCATIONAL COURSES

Undergraduate/ Post graduate/PhD/Diploma/any other

- 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.

2. CONFERENCES/SEMINARS/TRAININGS/VISIT OF INTERNATIONAL FACULTY

:

A. Conference/Seminars/Trainings/Workshops conducted: NIL

B. Visit of International Faculty

NIL

C. 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>National Congress on Canine Practice (ISACPCON-2020) and XVII Annual Convention of the Indian Society for Advancement of Canine Practice (Lead Paper Entitled “Current Trends in Management of Glaucoma in Dogs and Cats”) held at College of Veterinary Science & Animal Husbandry, Nanaji Deshmukh Veterinary</p>

	<p>Science University (NDVSU), Jabalpur, Madhya Pradesh, during 21st to 23rd January, 2020.</p> <p>Conference/Seminars/Trainings/Workshops attended:</p> <p>National Congress on Canine Practice (ISACPCON-2020) and XVII Annual Convention of the Indian Society for Advancement of Canine Practice held at College of Veterinary Science & Animal Husbandry, Nanaji Deshmukh Veterinary Science University (NDVSU), Jabalpur, Madhya Pradesh, during 21st to 23rd January, 2020.</p>
<p>Dr. Radhika, R Assistant Professor</p>	<p><u>Papers presented at seminars:</u></p> <ul style="list-style-type: none"> • International conference on recent trends in environment, sustainability, agriculture and life sciences 2018, by IMRF, Mysore chapter, Jun 2018, presented on incidence of biting louse <i>Felicola subrostratus</i> in a cat at Thrissur, Kerala • 10th Kerala Veterinary Science Congress, organized by IVA, at Kannur Infestation with the cat fur mite, <i>Lynxacarus radovskyi</i> Tenorio, 1974 (Acarina: Astigmata: Listrophoridae) in Persian cats of Thrissur, Kerala by R. Radhika, Nikhila Mohan, Abin John • Radhika R, Ramya K, Asha Rajagopal, Jain Jose K, Lucy Sabu and Devada K 2018. Molecular characterization of the ITS-1 and ITS-2 regions of <i>Mecistocirrus digitatus</i> in cattle of Kerala. National Seminar on the role of veterinary profession in sustainable development to improve livelihoods food security and safety at CVAS, Mannuthy, on 28th April 2018 <p><u>Conference/Seminars/Trainings/Workshops attended</u></p> <p>1. R. Radhika, Ramya K, Asha Rajagopal, Jain Jose K, Lucy Sabu and Devada K Molecular characterization of the ITS-1 and ITS-2 of rDNA regions of <i>Oesophagostomum radiatum</i> in cattle of Kerala 29th National Conference of Veterinary</p>

	<p>Parasitology and National Symposium On “Challenges and Innovations in Controlling Parasitic Diseases of Livestock and Poultry with Changing Climate” 05th to 07th February, 2020, pp.157.</p> <p>2. R. Radhika, Devada, K., Srubi K.R., Abin John Report of <i>Trypanosoma theileri</i> Laveran, 1902, in cattle from Thrissur, Kerala, India. 32nd Kerala Science congress, 25-27th January 2020, held at Palakkad</p>
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3. RESEARCH / INFRASTRUCTURE PROJECTS

a. Funded

Sl. No.	Name of the Project	Outlay (Lakh)	Amount Received (Lakh)	Amount Utilized (Lakh)	Source
1	Strengthening of Veterinary Hospital	18.0	0.0	0.0	State Plan Projects 2019-20
2.	Empowering Farm Animal Health Care Services for Enhancing production	10.0	0.50	0.50	-do-
3.	Breeding and Reproductive Services for Optimising Fertility of Companion Animals.	7.0	0.0	0.0	-do-
4.	Developing a protocol for evaluation and management of veterinary trauma patients and establishment of Veterinary Trauma Care Centre	7.0	0.0	0.0	-do-
5.	Detection of epidemiological pattern of mastitis pathogen and validation of management strategies for control of mastitis	6.0	0.0	0.0	-do-
6.	Strengthening of outlet at University Veterinary Hospital, kokkalai	4.0	0.0	0.0	-do-

b. Departmental projects : NIL

4. PUBLICATIONS (mention publications in recent 3 years)

a. Journals

Name of the Incumbent	Details of Article Published
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<p>Dr. Syam K. Venugopal Professor and Head</p>	<ol style="list-style-type: none"> 1. Joju Johns, Nigel Caulkett, George Chandy, Jacob Alexander, Syam Venugopal, Sooryadas Surendran and Ajithkumar Sreedharan nair (2020). Oral Haloperidol Premedication to Reduce Capture Stress Prior to Xylazine – Ketamine Anaesthesia in Captive Spotted Deer (<i>Axis axis</i>). J. ZooWildl. Med. 51(1):88-95. (IF- 0.524). 2. Prabhukumar, M. D., Dileepkumar, K. M., Devanand, C. B., Syam K. Venugopal., Indu V. Raj., Anoop. S., Sudheesh S. Nair and Laiju M. Philip (2019). Haemato-Biochemical Observations on Treatment of Long Bone Fracture Using Elastic Stable Intramedullary Nailing in Dogs. (<i>JIVA</i>) J. Ind. Vet. Assoc. 17(3): 45-49. 3. Laiju M. Philip, Prabhukumar, M. D., John Martin, K. D., Dileepkumar, K. M., Sudheesh S. Nair, Syam K. Venugopal, Adarsh, S. L and Devanand, C. B (2019). Inguinal Hernia and its Management in Dogs: A Review of Eight Cases. Indian J. Canine Pract. 11(2): 171-174. (NAAS Rating- 2.76). 4. Dhanush Krishna, B., Divakaran Nair, N., Syam K. Venugopal, Mammen J Abraham, Sunanda, C and Anilkumar, T. V (2019). Herovici's Staining: A Useful Differential Staining Method for Evaluating Collagen Distribution in Biomaterial – Mediated Hernia Repair. J. Vet. Anim. Sci. 50(2): 154 - 158.
<p>Radhika.R. Assistant professor, Clinical lab, UVH, Kokkalai</p>	<ol style="list-style-type: none"> 1. Radhika, R., Lucy Sabu, Bindu Lakshmanan and Devada, K 2019 Immunogenic profile of somatic antigen of <i>Haemonchus placei</i>. JIVA 17 (3); 37-40 2. V. Beena, V. Ramnath, D. Girija, K. Karthiayini, K.P. Sreekumar, Bindu Lakshmanan, R. Radhika 2019, <i>Bacillus thuringiensis</i> strains from Western Ghats of India possess nematocidal property against <i>Haemonchus contortus</i> larvae of goats Heliyon 5, e02724 3. Rajagopal, A.,SabuL Radhika R., Devada K and Aravindakshan TV. Detection of benzimidazole resistance polymorphisms in <i>Trichostrongylus</i> spp. of goats by PCR-RFLP. In compendium of

	29th National Conference of Veterinary Parasitology and National Symposium On “Challenges and Innovations in Controlling Parasitic Diseases of Livestock and Poultry with Changing Climate from 05th to 07th February, 2020, pp.108
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b. Books

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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. R. Radhika Assistant Professors	English

5. AWARDS/ HONOURS AND OTHER PERSONAL ACHIEVEMENTS

Dr. R. Radhika

- 2nd prize in poster session at the 29th National conference of Veterinary Parasitology and national symposium on challenges and innovations in controlling parasitic diseases of livestock and poultry with change in climate at college of Veterinary and Animal Husbandry, on Feb 05-07, 2020

6. EXTENSION ACTIVITIES

By the Institution

1. Free Anti rabies Vaccination camp
2. Advice to public on animal husbandry and welfare issues.
3. Sales outlet of KVASU Products started from 02/05/2016 and is still continuing.

By Incumbents

Name of Incumbent	Extension activity
Dr. Radhika, R Asst. Professor	<ul style="list-style-type: none"> • Handled classes to farmers under NSS programme • Training class for the senior officers of Animal Husbandry Department.
Dr. Syam K. Venugopal Professor and Head	<ul style="list-style-type: none"> • Consultancy Service for the Thrissur Zoological Park • Consultancy Service for the Department of Forests and Wildlife Department. • Consultancy Service for the Department of Kerala Police Dog Squad. • Training class for the senior officers of Animal Husbandry Department.

7. ADMINISTRATIVE, EDUCATIONAL, RESEARCH AND OTHER ASSIGNMENTS

- Biomedical waste management is being carried out in affiliation with IMAGE-IMA
- Member in the Special Purpose Vehicle for the implementation of Thrissur Zoological Park.

8. SIGNIFICANT EVENTS IN THE DEPARTMENT

Implementation of COVID -19 control strategies in the hospital by the middle of March, 2020.

9. STAFF DETAILS:

Sl.no	Name	Designation
Head of station		
1	Dr. Syam K. Venugopal	Professor and head
Teaching faculty		
2.	Dr. Radhika, R	Assistant Professor
Technical staff		
3.	Smt. Manjith Kumar T.R	Farm Supervisor, Gr. I
4.	Mrs. Divya	Pharmacist (Daily Wage appointment)
5.	Smt. Preethimol M	Radiographer (Daily Wage appointment)
Administrative Staff		
6.	Sri. Bijith Baby	Section Officer
7.	Sri. Mridul, M	Assistant
8.	Sri. Joy, A. K	Class IV

CENTRE FOR ANIMAL ADAPTATION TO ENVIRONMENT AND CLIMATE CHANGE STUDIES (CAADECCS)

BACKGROUND OF CAADECCS)

Long-term changes in average temperatures, precipitation, and climate variability threaten agricultural production, food security, and the livelihoods of farming communities globally. Whilst adaptation to climate change is necessary to ensure food security and protect livelihoods of poor farmers, mitigation of greenhouse gas (GHG) emissions can lessen the extent of climate change and future needs for adaptation. India is the third largest GHG emitter in the world where agriculture is responsible for 18% of total national emissions. Livestock constitutes an integral component of Indian agriculture sector and also a major source of GHGs emissions accounting to 247.2 Mt in terms of CO₂ equivalent emissions. Hence India has identified agriculture as one of the priority sectors for GHG emission reduction in its Nationally Determined Contributions (NDCs). Identification of emission hotspots and cost-effective

mitigation options in agriculture can inform the prioritization of efforts to reduce emissions without compromising food and nutrition security. Various climate model suggest that rise in temperature is likely to be around 2-3°C by the end of the century with the regional uncertainties in rainfall. The increased variability and uncertainty driven by global warming have made monsoon climate more unpredictable in the future. Kerala, which boasted steady monsoons and salubrious climate, is now grappling with deluge two years in a row which is followed by drought reporting a severe shortage of water, from capital Thiruvananthapuram in the south to Kozhikode in the north. World Meteorological Organization said 2019 concludes a decade of exceptional global heat and high-impact weather. On a day-to-day basis, the impacts of climate change play out through extreme and abnormal weather. Meanwhile, climate change is a threat to livestock production because of the impact on quality of feed crop and forage, water availability, animal and milk production, livestock diseases, animal reproduction, and biodiversity. Besides these contribution of livestock production to climate change, and specific climate change adaptation and mitigation strategies in the livestock sector have to be addressed with great concern as far as demand for livestock products are increasing worldwide in order to feed an expanding population.

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 Agricultural 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 has 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 (On additional duty)

2. Assistant Professor- Dr. S. Harikumar (On additional duty)

1. Education

1.1 P.G. Diploma in Climate Services

Two P.G. Diploma Programs have been launched in Climate Services. No student enrolment.

1.2 Ph.D. Climate Change and Animal Agriculture

One Ph.D. scholar had completed doctorate programme in climate change and animal agriculture. As a part of the PhD research programme, Physiological monitor (AD Instruments, Australia) has been standardised to measure the physiological parameters of cattle.

The details of the students are as follows:-

Name and admission No. of the student

Jisha N V (15-DVM-04)

Title of the thesis

Meteorological profile of Thrissur and assessing its relationship with physiological stress parameters in crossbred cattle

1.3 CAADECCS-ACCER B.Sc.-M.Sc.Climate Change Adaptation

Three students of B.Sc.-M.Sc. (Integrated) Climate Change Adaptation, ACCER, KAU opted for Animal husbandry as their elective have undergone their course work in different departments of CVAS, Mannuthy under the coordination of CAADECCS. One among them currently is doing research work under the guidance of Dr. S. Harikumar and another student is undertaking the research programme at NIANP, Bangalore in collaboration with CAADECCS. The details of the students are as follows:-

1	Reshma Nair M R	2015-20-008
2	Divya Sasi	2015-20-015
3	Amrutha M S	2015-20-006

1.4 Continuing Education

1.4.1. 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.

1.4.2. Submitted proposal for an ICAR sponsored short course entitled "Sustainable Livestock Production and Rural Livelihood Security in Changing Climate".

1.4.3. Submitted project proposal to Directorate of Environment & Climate Change for Climate Change & Climate Resilient Farming for the Year 2019-20.

1.4.4. Submitted training proposal to ICAR for organizing a Model Training Course on "Recent technologies for enhancement of dairy cattle production under changing climate".

2. Research

2.1 State Plan Projects

1. Strengthening of Centre for Animal Adaptation to Environment and Climate Change Studies (Livestock based on weather forewarning)

An amount of 6 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 Ernakulum 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. From 2019 onwards CAADECCS has been successful in recording all the important weather parameters from the surface observatory established in CVAS, Mannuthy Campus in collaboration with the India Meteorological Department (IMD). And also we are routinely providing weather information to various newspapers, online and television Medias. Furthermore, hourly/daily/monthly/yearly data recorded from automatic weather station is effectively utilized for various research works.

2.2 External Aided Projects

1. The RKVY project (2018-19) with a financial outlay of 170 lakhs has been sanctioned to CAADECCS. Ref: G.O. (Ms) No. 112/2019/AD dated 31/08/2019.

2.3. Publications

2.3.1. Articles Published in Research Journals

1. Effect of heat stress on the quantitative expression patterns of different cytokine genes in Malabari goats. V.P. Rashamol., V. Sejian., M. Bagath., G. Krishnan., **V. Beena** and

- R. Bhatta. International Journal of Biometeorology (2019)
<https://doi.org/10.1007/s00484-019-01713-1> Impact factor:2.309
2. Effect of heat stress on HSP70 gene expression pattern in different vital organs of Malabari goats, A. Afsal, M. Bagath, V. Sejian, G. Krishnan, **V. Beena** and R. Bhatta (2019). Biological Rhythm Research, DOI: 10.1080/09291016.2019.1600270 Impact factor : 0.699
 3. Crystal protein of a novel *Bacillus thuringiensis* strain inducing cellcycle arrest and apoptotic cell death in human leukemic cells. **V. Beena**, V. Ramnath, K. P . Sreekumar, K. Karthiayini, P. T. Philomina and D. Girija. (2019). [www.nature.com/scientificreports 9:9661|https://doi.org/10.1038/s41598-019-45928-z](https://doi.org/10.1038/s41598-019-45928-z) Impact factor : 4.01
 4. Effect of supra-nutritional supplementation of vitamin E and/or selenium on oxidant-antioxidant profile in transition dairy cows. Ambily TR, **Beena V**, Karthiayini K, Ramnath V, Uma R, Siddaramesh A S and Sunanda C. *The Pharma Innovation Journal* 2019; 8(8): 97-106
 5. *Bacillus thuringiensis* strains from Western Ghats of India possess nematocidal property against *Haemonchus contortus* larvae of goats. **V. Beena**, V. Ramnath, D. Girija, K. Karthiayin, K.P. Sreekumar, Bindu Lakshmanan, R. Radhika. <https://doi.org/10.1016/j.heliyon.2019.e02724>. October 2019
 6. Expression profile of insulin-like growth factor receptor –I (IGF-I) gene and the localisation of IGF-I protein in granulose cells of Malabari goats. 2019. **Bijna M** , Karthiayini K, Sreekumar T. R , Rajesh Kumar, Beena V, Supriya Raj *The Pharma Innovation*. 8(12)224-249.

2.3.2. Details of Presentations/Participation in International/National Seminars

1. Dr V Beena and Dr S Harikumar participated in the “Indo-Australian International Workshop” on “Transfer of Mitigation Technologies for Heat Stress in Farm Animals” during 5th to 7th February 2020 organised by ICAR-NIANP in collaboration with University of Melbourne, Australia
2. Participated and presented a paper entitled “Assessment of the relationship between climatic variables and milk production of stall fed cross bred dairy cows” authored by, A. Afsal, P.Pregna, V. Beena, S. Harikumar, C. Sunanda and Shibu Simon orally in the National conference on “Innovations in Animal Production for Sustainability and Doubling Farmer’s Income & XXVI Annual Convention of the Indian Society of

Animal Production and Management” held at CVAS, Mannuthy from 23rd to 25th January 2019

3. Participated and presented a paper entitled “Assessing the Economical Sustainability of Livestock Production in Context to the Changing Climate Scenario” authored by A. Afsal, V. Beena, P. Pragnaa,, S. Harikumar, C. Sunanda and Shibu Simon in International seminar on “Climate Emergency: A Call to Action organized by PG Department of Economics of Sri C Achutha Menon Govt College, Thrissur on 21st and 22nd November 2019.
4. Participated and presented a paper entitled” “Parasporal proteins of novel *Bacillus thuringiensis* strain induce necrotic cell death in Jurkat cell line” authored by V. Beena, Ramnath V, Karthiayini, K., Sreekumar K.P., Philomina P.T., Sunanda C and Girija D. orally in the XIX Annual Conference of “Indian Society of Veterinary Pharmacology and Toxicology” and National symposium on “Pharmacogenomics in the Development and Validation of Indigenous Drugs” organized at CVAS, Mannuthy from 18th to 20th December, 2019.
5. Participated and presented a paper entitled “Assessment of the relationship with respect to the impacts of climate variability on milk production of stall fed cows” authored by V. Beena, A. Afsal, P. Pragna, S. Harikumar, C. Sunanda and Shibu Simon orally in the National seminar on “Agrometeorological Interventions for Enhancing Farmers Income” held at College of Horticulture, KAU during 20-22 January 2020.

2.3.3. Popular articles

1. Contributed one chapter entitled ”Kalavasthavyathiyanavum Mrigasamrakshanavum- Oravalokanam” p 9-14 in a Malayalam book on “Kalavasthavyathiyanavum Mrigasamrakshana Meghalayum” published by Institute of Climate Change Studies, Kottayam, Kerala in the year 2019
2. Pal churathunna Vazhikal”(2019) V. Beena Kerala Karshakan 64(8) 62-64.

2.3.4. Courses or training undergone

1. HRD Training on “Moving towards Professional Excellence” organized by Academic Staff College, KVASU on 23rd March, 2019 at CVAS, Mannuthy
2. Successfully completed Massive Open Online Course(MOOC) on “Teaching Excellence” during 1-30, November, 2019 offered by ICAR- NAARM

2.3.5. Awards

1. Best paper award for the paper entitled “Assessment of the relationship with respect to the impacts of climate variability on milk production of stall fed cows” authored by V. Beena, A. Afsal, P.Pregna, S. Harikumar, C. Sunanda and Shibu Simon for the oral presentation in the National seminar on “Agrometeorological Interventions for Enhancing Farmer’s Income” at College of Horticulture, KAU during 20-22 January 2020. **Dr. S. Harikumar presented the paper.**
2. **Dr. V. Beena acted as Rapporteur** in the “Indo-Australian International Workshop” on “Transfer of Mitigation Technologies for Heat Stress in Farm Animals” during 5th to 7th February 2020 organised by ICAR-NIANP in collaboration with University of Melbourne, Australia

3. Extension Activities

3.3.1. Knowledge dissemination through mass media

- Dr V. Beena Implementing officer of CAADECCS delivered a radio talk on Climate Smart Dairying
- Various articles on awareness and management strategies were published in different newspapers and magazines.

3.3.2. World environmental day celebration

CAADECCS and NSS unit of College of Veterinary and Animal Sciences, Mannuthy jointly organized the “World Environment Day” celebration at CVAS, Mannuthy on 10.06.2019. Mr. Vinson Kurian, Deputy Editor, Hindu Business line and column writer on weather events delivered a talk on the subject of “Climate Change and Animals”. As part of the function, Smt Sandhya, Sustainable Development Officer, ESAF Small Finance Bank, Mannuthy, distributed plant saplings to CVAS. Dr Sreeranjini A R, Programme Co-ordinator, NSS unit with the participation of students planted the saplings in college campus.



3.3.3. Photography Competition

CAADECCS Organized a Photography Competition in connection with the World

Environment Day celebration 2019 based on the theme “Biodiversity of Veterinary College Campus”.

3.3.4. Information materials

Leaflets on Summer/Monsoon management of cattle and poultry are effectively circulating among farmers in the respective time periods.

Newspaper clippings



കന്നുകാലികൾ ഉഷ്ണസമ്മർദ്ദത്തിൽ; പാലുൽപാദനം കുറയും



CENTER FOR ONE HEALTH EDUCATION, ADVOCACY, RESEARCH AND TRAINING (COHEART)

1. INTRODUCTION

During the year 2019-20, the COHEART had organized various events, collaborated in national and international programs as experts 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 and have also conducted cutting edge research addressing various public health issues that we currently face. The

2. COURSES OFFERED BY COHEART

The Centre offered three courses for the year 2019-20, which included PG Diploma in One Health, PG Cert. in One Health Surveillance and PG Cert. in Community Based Disaster Management. A total of 23 students have successfully completed PG Diploma in One Health. This year there was international student enrollment for the course.

3. PROJECTS

- Occurrence and characterization of major antimicrobial resistant and zoonotic entero-pathogens at man-animal-environment interface. *Funded by Kerala Govt. State Plan- 2018-19*
- Strengthening COHEART's infrastructural capacity for improving web based tools, conducting research and organizing outreach programs for Health-for-All concept. *Funded by Kerala Govt. State Plan- 2018-19*

4. AWARDS AND RECOGNITIONS

- Award 1: PGDOH Dissertation work of Dr. Rani Maria Thomas received First prize in the Oral presentation at ISVM Annual Conference and National Symposium on Holistic approach in veterinary Medicine for better animal health to meet the challenges of One health mission held at Rajasthan from Feb. 1-3 2019. The work was done at Department of Veterinary Epidemiology and Preventive Medicine under the guidance of Dr. Deepa PM, Assistant Professor, Dept. of VEPM
- Award 2: PGDOH Dissertation work of Dr. Silpa Sasi received 2nd best paper award for XXVI Annual Convention of Indian Society of Animal Production and Management (ISAPM) and National Conference on Innovations in Animal Production for Sustainability and Doubling Farmers

Income organized by Dept of LPM, KVASU on 23-25 January 2019. The work was done at Department of Livestock Products Technology under the guidance of Dr. Sathu T, Assistant Professor

- Award 3: Pratheesh PT, KSCSTE post doc student at COHEART-Department of Veterinary Public Health, KVASU (Guide: Dr. Prejit) was awarded WVPA-Boehringer Ingelheim Innovation in Vaccination Award at XXIst World Veterinary Poultry Association Congress (WVPAC 2019) held at Bangkok from 16 - 20 September 2019. The award consist of memento, certificate and cash award of €5,000
- Award 4: PGDOH Dissertation work of Dr. Pavan M received Best Poster award during Association of Meat Scientist and Technologist conference 2019 held at Ghannavaram, Andhra Pradesh for the abstract titled "Innovative technology for composting of poultry feather waste". The work was done at Dept. of Livestock Products Technology under the guidance of Dr. Sathu T.
- Award 5: PGDOH Dissertation work of Dr. Sathya Sooryan A. M received Best research paper Award (Session on Livestock and Poultry Health and production) during the 7th Pan Commonwealth Veterinary Conference of the Commonwealth Veterinary Association that was held from 3rd to 7th March 2019 at National Institute of Animal Nutrition and Physiology, Bangalore India. The work was on occurrence and characterization of E. coli from broiler chicken. The work was done under the guidance of Dr. Senthil Murugan
- Award 6: Dr. Aswathy S received Best research paper Award (Session on Veterinary Continuing education) during the 7th Pan Commonwealth Veterinary Conference of the Commonwealth Veterinary Association that was held from 3rd to 7th March 2019 at National Institute of Animal Nutrition and Physiology, Bangalore India. The work was on Awareness survey on rabies among school students which was part of COHEART's Plan project
- Recognition 1: Dr. Pankaj, PG Diploma in One Health scholar is recognized as a mentor under the pilot "International Student One Health Alliance- Mentorship Program" (ISOHA mentorship program). He is mentoring three international graduate students via distance learning mode.
- Recognition 2: Dr. Prejit was nominated as the Asian Regional spokesperson for One Health Day 2019 by One Health Commission, United States. The goal was to bring attention around the world to the need for One Health interactions. One Health Day is commemorated on November 3 and Dr. Prejit duty was to propagate Indian Organizations and others in Asia to conduct activities to commemorate OH Day and this year there were good participation in Asian countries (Including India) to commemorate the One Health Day 2019
- Recognition 3: Dr. Prejit received International travel fellowship- United Kingdom – For attending One Health EJP Summer School program in United Kingdom organized by University of Surrey, in collaboration with Chatham House from 18/08/2019 to 30/08/2019

- **Book Release:** The Honorable Governor of Kerala released the book “**The COHEART Journey**” on 06/04/2019 as a part of “University Day Celebration - 2019”. The Book embodies a compilation of multi-faceted activities of COHEART that involves education, capacity building and training, social and extension activities, research programmes as well as technology driven activities to promulgate the ideology of One Health at regional, national and global perspective.

5. ACTIVITIES ORGANISED BY COHEART (2019-20)

- COHEART organized technical session and painting competition for the Commemoration of National Science Day 2019. Various schools from Wayanad district participated the event. Government of India to designated February 28 as National Science Day to mark the discovery of the Raman Effect by the luminary Indian physicist, Sir C. V. Raman, on 28 February 1928.
- COHEART commemorated World Water Day 2019. World Water Day is an annual UN observance day (always on 22 March) that highlights the importance of freshwater. Various sessions was convened for the BVSc students. The intention was to inspire BVSc students to learn more about water-related issues and to take action to make a difference. The sessions covered issues like water scarcity, water pollution, inadequate water supply, lack of sanitation, and the impacts of climate change. A total of 150 BVSc students actively participated in the programme. The programme then ensued with the essay competition (both English and Malayalam) on the topic “Water-Leaving no one behind”
- During 19/09/2019 to 20/09/2019 Dr. Prejit, Officer-in-Charge, COHEART was invited to attend South Asia One Health Disease Surveillance Network Workshop at Bhutan. Ending Pandemics ran a workshop in partnership with Sandia National Laboratories. The purpose of this workshop was for the eight countries in South Asia to develop a list of priority diseases for regional surveillance. Held in Paro, Bhutan, this meeting also trained participants on the PREP tool for exercise design which enables preparedness to be used regionally, as well as for their own national contexts. Key deliverables for the next year which emerged from this workshop include a network website and a repository of country capacities, disease factsheets for priority diseases, webinars for regional learning, and regular quarterly calls.
- Dr. Prejit presented poster on One Health India Conference 2019 SCOPE Complex, New Delhi, India February 18-19, 2019
- Dr. Prejit was invited to contribute for the Participatory Workshop on Childhood Infection & Pollution, that was held in Jaipur in collaboration with Save The Children India, from May 6-9, 2019
- FAO organized ToT for veterinarians at Alappuzha and Wayanad on Animal Disease Surveillance, importance of disease reporting and monitoring, Pre-disaster preparedness, Bio-security, Post disaster best practices/Management. The trained vets will further train farmers. Dr. Prejit, officer-in-Charge was the resource person for the training

- During October 30 to November 3, 2019, Dr. Prejit, officer-in-Charge, COHEART was invited to contribute for a workshop on Finding Outbreaks Faster: Metrics for One Health Surveillance organized by Salzburg Global Seminar and Ending Pandemics. The program produced a set of metrics for measuring progress in finding and responding to outbreaks faster. Here the first-ever set of One Health timeliness metrics was designed. The delegates also developed a prototyped framework for implementation. Specialists in environmental, livestock, wildlife, and human health from across the globe were present. The metrics developed have been adopted by the World Health Organization and other agencies. The developed timeliness Metrics helps to monitor progress in outbreak prevention, detection, and response to support continuous performance improvement. By contributing to the workshop, Dr. Prejit has become a designated fellow of Salzburg global seminar. Complete event details https://www.salzburgglobal.org/fileadmin/user_upload/Documents/2010-2019/2019/Session_641/SalzburgGlobal_641_FindingOutbreaks_Newsletter_FINAL.pdf

6. PGDOH RESEARCH (2019-20)

Research undertaken by COHEART scientists and the students of PG Diploma in One Health are detailed below

Sl. No	Name of the Student	Id No.	Dissertation title
1.	AFSAL S	18-PGDOH-02	Public knowledge and perception about antibiotics usage and antimicrobial resistance in Thrissur District
2.	ARUNA S	18-PGDOH-04	Screening for brucellosis in dairy cattle
3.	ATHULYA T.R.	18-PGDOH-05	Socio-demographic study on extent of knowledge, awareness and risks of zoonotic diseases among public in Thrissur District
4.	DEEPIKA PRABHAKAR	18-PGDOH-07	Knowledge assessment of canine related zoonotic diseases and dog bite management among pet owners in Goa
5.	HEMA PERSIS ANDREWS	18-PGDOH-08	Seroscreening of Toxoplasmosis in pregnant women using IgG And IgM Antibody ELISA
6.	MOHANA KRISHNAN S.	18-PGDOH-10	Socio-demographic study on awareness, knowledge and risk of zoonotic diseases among the farmers of southern region of Telangana State
7.	NIMA P.L.	18-PGDOH-11	Molecular epidemiology of extended-spectrum Beta-Lactamases (ESBL) Producing <i>E. coli</i> From Canine Pyometra
8.	NIMISHA SOMAN	18-PGDOH-12	Molecular study on antimicrobial resistance of <i>salmonella</i> spp. isolated from apparently healthy Pigeons
9.	PATKI HARSHAD SUDHIR	18-PGDOH-13	Comparative forensic craniometry and gross morphology of skull in large Ruminants
10.	PRASANNA KUMAR V	18-PGDOH-14	Effect of rabies awareness programme amongst school children in Kolar District, Karnataka

11.	SREESHMA V S	18-PGDOH-18	Public perception of health and hygiene status in Kozhikode beach premises and assessment of food safety compliance
12.	SRINIVAS K.	18-PGDOH-19	Survey on disposal of slaughter house waste generated in the road side meat shops and modern abattoirs in Krishna district of Andhra Pradesh.
13.	SRUTHI C.	18-PGDOH-20	Cross-sectional survey on hygienic milk handling practices and related hazards among households in Thrissur
14.	SWETHA P T	18-PGDOH-21	Cross sectional survey on knowledge attitude and behavior related to antibiotic use and resistance among medical, dental and veterinary students in Kerala
15.	THAMILARASAN E.	18-PGDOH-22	Knowledge, Awareness and Risk of zoonotic Canine Leptospirosis among pet owners in Coimbatore District, Tamilnadu
16.	THORAT AJAY BALKRISHNA	18-PGDOH-23	Occurrence of Enterohaemorrhagic <i>E. Coli</i> on meat and its contact surfaces in retail outlets in Sangamner, Maharashtra

7. PUBLICATION (2019-20)

- Deepika P, **Prejit**, Utkarsh B, Prashant S and Govind. 2019. Knowledge Assessment of Canine Related Zoonotic Diseases Among Pet Owners in Goa. *Journal of Foodborne and Zoonotic Diseases*, 07: 26-31
- Nikhil S. Rao, **Prejit**, Asha K and Nimisha Soman. 2019. Evaluation of the Risk of Acquiring Staphylococcus aureus and Escherichia coli through Mobile Phone Contamination of Veterinary Professionals. *Journal of Foodborne and Zoonotic Diseases*, 07: 37-41
- Raseena Beegum E.H.M, **Prejit**, Pratheesh P.T, Mahesh S.H, Megha P.U and Asha K. (2019). Molecular Detection and Characterization of Enteroaggregative Escherichia coli (EAEC) from Diarrhoeal Samples of Human Infants and Calves *Journal of Foodborne and Zoonotic Diseases*, 7: 12-16.
- P. Ameldev, P.V. Tresamol, P.M. Deepa, **Prejit**, C.N. Amrutha. 2020. Occurrence and Distribution of Leptospira Serovars in Canine's and its Occupational Risk in Humans. *Journal of Foodborne and Zoonotic Diseases*, 7: 21-25.
- **Prejit**, Pratheesh PT, Nimisha S, Jess V, Asha K and Agarwal R K. 2019. Expression and purification of an immunogenic SUMO-OmpC fusion protein of *Salmonella* Typhimurium in *Escherichia coli*. *Biologicals*. 62: 22-26
- Sathya Sooryan A.M., **Prejit**, Jess Vergis, Senthil S. Murgan, Asha K5, Hamna Hakim, Suma N, Hema Persis Andrews and Aswathy S. 2019. Occurrence of Escherichia coli in Broilers and their Farm Settings. *Journal of Foodborne and Zoonotic Diseases*. 1-4

- Aswathy S., **Prejit**, Sunanda C., Biju P. Habeeb, Sathya Sooryan A.M. and Asha K. 2019. Assessment of Knowledge of Rabies among School Children's of Kerala. *Journal of Foodborne and Zoonotic Diseases*. 5-8
- Krishna, U, **Prejit**, PU Megha, K Asha. 2019. Perception among Infertile couples on the effects of Lifestyle on Fertility and Quality of Living. *International journal of basic and applied research*. 9: 167-178
- Suma N., **Prejit**, , Pratheesh P.T., Jess Vergis, Hamna Hakim Asha K. and Hema Persis Andrews. 2018. Occurrence of ESBL Salmonella recovered from layer birds of organized poultry farm in Wayanad District, Kerala. In: Proceedings of XVI Annual Symposium and National Conference of IAPHS. February 26-27, 2019 MAFSU, Nagpur
- Hamna Hakim, **Prejit**, Muhsina RM, Pratheesh PT, JessV, Suma N and Asha K. 2019. Prevalence of Staphylococcus aureus and MRSA in Canine Population of Wayanad District. In: Proceedings of XVI Annual Symposium and National Conference of IAPHS. February 26-27, 2019 MAFSU, Nagpur
- Suma N., **Prejit**, Hamna Hakima , Pratheesh P.T., Jess Vergis, Asha K. and Hema Persis Andrews. 2019. Occurrence of ESBL Escherichia coli from layer birds of organized poultry farm in Wayanad District, Kerala. In: Proceedings of 31st Kerala Science Congress, 02-03 February, 2019, Fatima Mata National College, Kollam
- Hema Persis Andrews, **Prejit**, Sunanda C., Asha K., Jess Vergis., Suma N., Hamna Hakim. 2019. Preliminary survey on awareness of One Health knowledge among practicing veterinary and medical professionals in wayanad district, Kerala. In: Proceedings of XVI Annual Symposium and National Conference of IAPHS. February 26-27, 2019 MAFSU, Nagpur

KVASU CENTRE FOR WILDLIFE STUDIES, POOKODE

“Gothra Mission”, the tribal welfare project of KVASU being implemented by KVASU Centre for Wildlife Studies , was formally inaugurated by Sri. P. Sathasivam, Hon. Governor of Kerala, on 6.4.2019. “Gothra Kalaasangham”, the tribal cultural troupe organized under “Gothra Mission” performed traditional music and dance in the University Annual Day Programme.



<p>A field visit and training programme was organized at Peechi Wildlife Sanctuary for the 2018 Batch of Master of Science (Wildlife Studies) students from 19-05-2019 to 25-05-2019.</p>	
<p>Master of Science (Wildlife Studies) students participated in a Wildlife Monitoring Programme at Sathyamangalam Tiger Reserve during June 2019.</p>	
<p>Training was started for 16 Scheduled Caste BPL candidates under the six months certificate course titled “Multi Skill Development Programme in Integrated Resource Management Centered on Livestock And Poultry” at “Gothra Mission” on 01-07-2019.</p>	
<p>Master of Science (Wildlife Studies) students participated in a “Workshop on Native Fishes” at Kannur on 30th August 2019, organized by Malabar Awareness and Rescue Centre for Wildlife, an NGO established under the leadership of alumni of the course.</p>	
<p>An eco-friendly smart classroom of KVASU-CWS was fabricated for Master of Science (Wildlife Studies) students during September 2019.</p>	
<p>2018 and 2019 batches of Master of Science (Wildlife Studies) students participated in the Students Conference on Conservation Science (SCCS) at IISc, Bangalore, from 13-09-2019 to 20-09-2019.</p>	

Field visit and training was organized at Mysore Zoo, Ranganthittu Bird Sanctuary, Bandhipur National Park, Muthumalai Tiger Reserve and Periyar Tiger Reserve for 2018 batch of Master of Science (Wildlife Studies) students from 25-09-2019 to 02-10-2019.	
Field visit and training was organized for Master of Science (Wildlife Studies) students at Aralam Wildlife Sanctuary from 17-11-2019 to 23-11-2019.	
The students of Master of Science (Wildlife Studies) participated in human-wild boar conflict mitigation activity at a paddy field at Sulthan Bathery as a part of their social outreach activity of KVASU-CWS in October 2019.	
Dr. Jacob Thundathil, Associate Dean, Graduate Education and Internationalization, University of Calgary, Canada, visited KVASU and discussed with faculty and officials regarding collaboration with KVASU on 30 th January 2020. The visit was organized by KVASU-CWS.	

Financial Statement 2019-20

I. Course Fund

Total Receipt – Rs. 42,66,765.00

Expenditure – Rs. 51,81,197.00

Internal Receipt to KVASU (30% of Tuition Fees) – Rs. 13,44,000.00

II. Non-Plan

Total Receipt – Rs. 15,50,000.00

Total Expenditure – Rs. 13,35,979.00

III. Plan Fund

Total Receipt – Rs. 4,00,000.00

Total Expenditure – Rs. 3,33,200.00

CENTRE FOR ADVANCED STUDIES IN POULTRY SCIENCE

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.



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 2019-20, 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 2019-20, 2290.86 MT of feed was produced and supplied to various farms.** Apart from this, poultry feed in 5 kg and 50Kg packets were also supplied to farmers to promote backyard poultry production. **In 2019-20, 49.35T of Chicken breeder, 17.50T of Chicken grower & 16.00T 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	Funded by ICAR initially and after complete repayment of corpus amount, operating in revolving fund mode	PI Dr.P.Anitha Co-PIs Dr.Binoj Chacko Dr.Harikrishnan S Dr.Sankaralingam Dr.Suja C.S	25 lakhs (Corpus Fund) from ICAR

State Plan Projects 2019-20 (continuing)

- Conservation and popularization of native chicken varieties in Kerala – 6.00 lakhs (Rs. 7,00,000/- only received as e-Lams 2019-20(State Plan 2018-19))
- Advanced Studies mycotoxin testing facilities for Poultry Feed – 6.00 lakhs (No fund received)

Mycotoxin Lab

All ingredients purchased for feed production and the compounded feed produced in the feed mill under CASPS were screened for aflatoxin level using ELISA reader. In 2019-20, 209 samples were screened for Aflatoxin level. In 2019-20, an amount of Rs.14,300/- remitted to FO as internal revenue.

- Hatchery waste disposal and its effective utilization – 4.00 lakhs (No fund received)

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 finished. The protocol is adapted using the equipments installed in this project for the proper utilization of hatchery waste in the poultry farms of KVASU. From January 2019, the solar power plant has generated a power of 555 Kwh of solar energy. The equivalent amount of the power generated will be deducted from the KSEB bill of the hatchery of CASPS. The project is a game changer which not only solves the waste issue but also benefits the agricultural industries which are relying more on chemical fertilizers in the most energy efficient way.



1. Solar panels
 2. Site of installation
 3. Machinery
 4. Packed manure
- Strengthening of farmers counseling centre- Rs.2.22 Lakhs (No fund received)

SUPPORT SERVICES

Consultancy

Type of consultancy	Client details	Revenue generated
Counseling	Farmers	Nil

Research Articles

1. S. Harikrishnan*, Binoj Chacko, P. Anitha, Beena C. Jospeh, K. Anilkumar and Joseph Mathew (2019). Performance of the Production Characteristics of the Reciprocal Crosses of Native Chicken of Kerala and N Strain (IWN) of White

Leghorn. *Int.J.Curr.Microbiol.App.Sci* 8(12): 1562-1567

2. Harikrishnan S.*, Binoj Chacko, P. Anitha, Beena C. Joseph, K. Anilkumar and Joseph Mathew. 2019. Phenotypic Characterization of Native Chicken of Kerala Reared Under Intensive System of Management. *Ind. J. Pure App. Biosci.* 7 (6), 402-407
3. Rinsha Balan¹, P. M. Priya^{1*}, M. Mini¹, Binu K. Mani², Vrinda Menon³ and P. Anitha..2019.Assessment of Cell Mediated Immune Response to *Riemerella anatipestifer* Vaccines. *Int.J.Curr.Microbiol.App.Sci* 8(12): 675-679
4. Rinsha Balan¹, P. M. Priya^{1*}, M. Mini¹, Binu K. Mani², Vrinda Menon³ and P. Anitha. 2019. Determination of Lethal Dose (LD50) of *Riemerella anatipestifer*. *Int.J.Curr.Microbiol.App.Sci* 8(12): 680-684
5. Harsha Y. S., P. Anitha, Beena C. Joseph, Stella Cyriac and Ajith K. S. 2019. Effect of Citric Acid, Non Starch Polysaccharide Degrading Enzymes and Their Combination on Growth Performance of Broilers. *Ind. J. Pure App. Biosci.* (2019) 7(6), 455-459

FACULTY DETAILS

Sl. No.	Name and designation of the Teaching Staff	Discipline	Residential address	Email ID	Contact No.	
					Land line(Residence)	Mobile
1	Dr.P.Anitha, Director	Poultry Science	Nandanam, Koorkanchery, Thrissur-7	anitha@kvasu.ac.in		9447006663 (official)

SCHOOL OF APPLIED ANIMAL PRODUCTION AND BIOTECHNOLOGY (SAAPBT), Mannuthy

The School of Applied Animal Production and Biotechnology (SAAPBT) was established in 2013 with the objectives of establishing cutting edge facilities to take up research in the frontier areas of biotechnology, strengthen post-graduate education, research and training programmes and to generate specific expertise and human resource in Animal production and Biotechnology. The School has got well- equipped laboratories with all modern facilities for carrying out biological research. The School is equipped with sophisticated instruments such as PCR, Real-time PCR, high speed refrigerated centrifuges, UV spectrophotometers, CO₂ incubator, Osmometer, Gel electrophoresis systems, Pulsed Field Gel Electrophoresis, Gel documentation system, Fluorescence and inverted microscopes and bioinformatics facilities. The School has got expertise in all aspects of wet lab molecular biology techniques including nucleic acid isolation, PCR, restriction enzyme analysis, electrophoresis, SSCP, quantitative real time PCR, ELISA as well as analysis of research results with various bioinformatics tools.

Projects

Molecular characterization of genes associated with drug resistance in pathogens and disease resistance in cattle and goats of Kerala	5,00,000	90,000	<ul style="list-style-type: none"> • Purchased primary reagents for the project • Un interrupted power supply assured in the lab • DNA isolated from host (Cattle and goats) ticks
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Trainings conducted

- 1) Skill Developed Training on “Molecular Biology and Bioinformatics Tools for Advanced Life Science Research” from 01-08-2019 to 14-08-2019
- 2) Skill Developed Training on “Molecular Biology and Bioinformatics Tools for Advanced Life Science Research” from 15-10-2019 to 28-10-2019

Master Research Projects

Detection of Polymorphisms in the Chicken Growth Differentiation Factor 9 Gene Associated with Egg Production Traits	Aleesha M.L (17-MSVM-01)
Molecular Characterisation of Sodium Channel Gene Encoding Synthetic Pyrethroid Resistance in Ticks	Amrutha Anand (17-MSVM-02)
Polymorphisms in Insulin-Like Growth Factor 1 Receptor Gene (<i>IGF1R</i>) and Their Association With Production And Reproduction Traits in Native Goats Breeds of Kerala	Philip Alex (17-MSVM-03)
Polymorphism of Luteinizing Hormone Receptor (<i>LHR</i>) and Guanylate Cyclase 1 Soluble Subunit Beta (<i>GUCY1B3</i>) Genes in Native Goats of Kerala	Sariga (17-MSVM-04)

CENTRAL INSTRUMENTS LABORATORY

I. Major activities

Central instruments laboratory established in the year 2000, houses 60 sophisticated equipments with a book value of more than 15 crores and is operating six days a week from 9 a.m. to 5 p.m. with the following objectives.

- To undertake screening of biological samples for health parameters, obtained from Veterinary hospitals and Medical Centers in and around Trichur
- To undertake screening of biological samples of captive elephants for health parameters, sent by Forest department officials across Kerala state
- to test naBl accredited parameters of thyroid profile in veterinary and human subjects
- To analyze samples using sophisticated analytical equipment which are brought by research scholars outside KVASU
- To impart training on analytical techniques to research students of KVASU and others
- To undertake short term dissertation projects of Pg students outside KVASU
- To analyze samples using sophisticated analytical equipment which are brought by public

II. Staff details

Sl. No	Name	Designation	Email	Mobile
01	Dr. V.Ramnath	Professor & implementing officer	ramnath@kvasu.ac.in	9446579057
02	Dr. Chinnu	Assistant Professor	chinnu@kvasu.ac.in	9562968495
03	Er. Sarath T. M.	Instrumentation engineer	sarathtm1989@gmail.com	9746049002

SCHOOL OF ZOONOSES PUBLIC HEALTH AND PATHOBIOLOGY

Major activities

- Three day exhibition organised at ghSS, Kadikkad on ‘Know zoonoses to no Zoonoses ‘
- one day exhibition organised at ghSS, Pazhinji on ‘Know zoonoses to no Zoonoses’
- Jointly organised an exhibition, awareness class for school children on personal hygiene and zoonoses and Sanitation of water for general public with grama Panchayat Madakkathra and ICR Project outreach programme on Zoonotic disease
- organised an exhibition on ‘Know zoonoses to no Zoonoses ‘at ghSS, Amrita Institute of Medical Sciences, Cochin and also a seminar on one health and Zoonoses

SCHOOL OF APPLIED ANIMAL PRODUCTION AND BIOTECHNOLOGY

Major activities

- The School of Applied Animal Production and Biotechnology (SAAPBT) has well-equipped laboratories with all modern facilities for carrying out biological research and provides all research facilities for the staff, MVSc, MSc and PhD students of CVAS, Mannuthy
- Implementation and other academic activities of MSc Animal Biotechnology course
- Conducted “hands on training on molecular biology and bioinformatics tools for advanced life science research”
- Conducted two days seminar cum workshop on “Introduction to Molecular biology techniques, bioinformatics tools and animal ethics in health science research”
- Implementation of Plan projects
- Providing molecular biology research facilities for various externally aided projects and KVASU research project

SCHOOL OF ANIMAL NUTRITION AND FEED TECHNOLOGY

Major activities

- The feed mill installed under SAnFT is routinely producing about 13 types of compounded feed for different classes of livestock namely cattle, goat, pigs horse, rabbit and lab animals as per BIS standards
- SAnFT has an average monthly production of 250Tonnes catering to the needs of different farms under the university as well as other institutions, farmers across the state
- Production and Sale of Mineral mixture for cattle and Feed supplement for Pigs
- Production and sale of complete feed block for cattle and goat
- Training and awareness programmes for farmers and entrepreneurs on feed formulation and feed manufacturing techniques
- Diploma course on feed Technology
- The feed mill is run under the Revolving fund, and routine monitoring and reporting of production, sale and systematic evaluation as well as formulation is being carried out
- Developed and standardized complete feed block and feed pellet for lactating cows
- Developed compounded feed mixture for horse

SCHOOL OF BIOENERGY STUDIES AND FARM WASTE MANAGEMENT

The School of Bioenergy Studies and Farm Waste Management was established in 2013 with the objectives of establishing a centre to take up research in the key areas of farm biowaste management and bioenergy production, strengthen farming community, research and training programmes and to generate specific expertise and human resource in Bioenergy and Farm Waste Management. The School has got well-equipped laboratories with modern facilities for carrying out research in areas of biogas technology and bio diesel production. The school explores new and innovative technologies for management of biowaste and reduce its impact on environment and public health and to augment the income of farming community. The School is equipped with sophisticated instruments such as Bio-diesel unit at Pookode, Wayanad, Bio-diesel dispensing unit at Pookode, Wayanad, Biodiesel lab at Pookode, Wayanad, Thumburmuzhy composting unit at Farms, , Biogas unit at Men's Hostel, Mannuthy, Biogas unit at Eco-farm, Mannuthy, Restricted flow -2 stage Biogas Unit, Pookode, Wayanad, Dung dewatering machine at Pookode Wayanad, Hunter colour lab , Exhaust Gas Analyser , Brook's Field Viscometer, Biogas Analyser , Infrared Thermometer, B.O.D meter, Ammonia sensor, Biogas scrubber

The School has got expertise in biogas production, aerobic composting, biodiesel production and various aspects of waste water management. The research facilities of the School are being utilized by post-graduate PhD scholar of all disciplines for their research projects. A multi-disciplinary core group consisting of 7 scientists is entrusted with the duties of teaching, research and training activities of

the School.

1. Trainings conducted.

The School conducted two numbers of farmer training programmes during the report period and the experts served as resource persons in trainings by line departments

2. Research Activities conducted/supported under the school

i. Doctoral Research projects

1. Deepak Mathew D. K. – Nutrient recycling potential of fly larva for biowaste management

ii. Masters Research projects

1. Dr. Shrada Shetty [18-MVP-10] Evaluation of two stage restricted flow anaerobic baffled bio-gas digester and gas purification systems.-2019

iii M.Tech Projects

Sl. No	Name of Student	Year	Affiliation	Project
1.	Nimya Manoharan	2019	M. tech (Energy Systems Analysis & Design)	Investigation of emulsified fuels for Nox abatement

iv. B.Tech Student Projects

Sl. No	Name of Student	Year	Affiliation	Project
1.	Arun Kumar. C Jithin J. S Sreerag Harshan Syam O S	2019	8 th Semester, B-Tech - Mechanical Engineering students of Noorul Islan Centre for Higher Education	I.C Engine performance using bio-fuel from chicken slaughter waste
1.	Ajmal Vilakkiniyil Muneer. T. V Nidhin. K.R Mohammed Adhar Akshay Kumar	2019	8 th Semester, B-Tech - Mechanical Engineering students of Institute of Engineering Technology, Calicut University, Thenhipalam	Biolubricant from Rendered Chicken Oil
2.	Shamil Backer and Team	2019	8 th Semester, B-Tech - Mechanical Engineering students Government Engineering ollege Kozhikode	
3.	Akshay. A.K, Aswanth Kumar Sanas. T. Vishnu Prasad		8 th Semester, B-Tech - Mechanical Engineering students of the Vedavyasa Institute of Technology, Malapuram	I.C Engine performance of biodiesel extract of chicken waste
4.	Pramod. V. R Nikhil. P Pranav Nair Vishnu. A. K	2019	8 th Semester, B-Tech - Mechanical Engineering students of the N.S.S. College of Engineering, Palakkad	Optimisation of Biodiesel production from rendered chicken oil
5.	Harikrishanan K Arjun Raghav C Akarsh Edayillam	2019	8 th Semester, B-Tech - Mechanical Engineering students of the Sadguru Swami	Biodiesel production from rendered chicken oil

	Arun Kumar		Nithyananda Institute of Technology, Kanhangad	
6.	Nadeemsha K.K Vishnu P.V	2019	8 th Semester, B-Tech - Mechanical Engineering students of Adi Shankara Institute of Engineering and Technology	Comparison of different bio-diesel in I.C Engine
7.	Muneer T.V	2019	8 th Semester, B-Tech - Mechanical Engineering students of Institute of Engineering Technology, Calicut University, Thenhipalam	I.C. Engine performance testing, emission testing using bio-diesel of various proportions.



Biogas Plant and Scrubbing unit established at Mannuthy campus



Doctoral work supported by the school- Nutrient recycling potential of fly larva for biowaste management

AICRP ON POULTRY FOR EGGS, MANNUTHY

The KVASU, Mannuthy centre during 2019-20 has evaluated the S-4 generation of native chicken germplasm up to 40 weeks of age and S-5 generation up to 16 weeks of age. Egg production of native chicken germplasm up to 40 weeks of age in S-4 was 78.95 eggs with average egg weight of 43.04 g. Egg production and egg weight decreased marginally in the S-4 generation as compared to the previous generation. Good fertility (91.50%) and hatchability (89.6 and 80.13 % on FES and TES) was observed in S-5 generation. Besides, the centre evaluated IWN and IWP strains up to 64 weeks of age in S-31 generation along with layer control population. In this generation, hen day egg production up to 64 weeks of age increased by 4.5 eggs in IWN (267.7) whereas it decreased by 10.7 eggs in IWP strain (252.2) on phenotypic scale as compared to the previous generation. S-32 generation of IWN and IWP has completed evaluation up to 8 weeks of age during the period. The centre has generated the revenue of Rs. 59.92 lakhs and has supplied a total of 1, 07,142 number germplasm during the year.

Programme activity assigned

- Conservation, characterization and improvement of the native chicken germplasm collected from the field.
- The egg production up to 64 weeks will continue to be the selection criterion in IWN and IWP strains; the target is 305 eggs up to 72 weeks of age for crosses, which is to be achieved by the end of XI plan.
- The centre will maintain all the surviving birds of first hatch to record egg production till 72 weeks of age.

- To participate with IWN x IWP cross in RSPP tests being conducted by Govt. of India each year.
- The centre would supply only a single sex of the pure line parent chicks or the female chicks of IWN X IWP cross for commercial exploitation.
- Three-way/four-way crosses will be developed and evaluated.

Action taken

- 896 female birds of IWN strain and 901 female birds of IWP strain in S-31 generation have completed testing up to 64 weeks of age.
- The body weight at 16, 40 and 64 weeks of age was 1047, 1431 and 1501g, respectively for IWN and 1082, 1396 and 1497g, respectively for IWP strains in S-31 generation.
- The sexual maturity was 144.4 and 139.5 days in IWN and IWP, respectively. The egg weight at 64 weeks of age was 51.89 and 53.73g, respectively in IWN and IWP strains.
- The hen-housed egg production up to 64 weeks of age was 263.1 in IWN and 247.7 in IWP strain. The values of hen-day and survivors' egg production up to 64 weeks of age were 267.8 and 268.7 respectively in IWN and 252.2 and 259.2, respectively in IWP strain in S-31 generation.
- The native chicken belonging to S-4 generation produced has completed testing up to 40 weeks of age.
- S-5 generation of native chicken was produced and evaluated up to 16 weeks of age.
- IWN X Native (ND) was produced and the cross of ND male with RIR female (NDR) have been produced and evaluated in farm condition up to 40 weeks of age.
- The IWN X IWP birds, native chicks and their crosses were supplied to farmers and institutions.

Details of the implementation of programme and results achieved

A. Development of location specific rural germplasm (egg type)

Production traits of native chickens

A population of native chicken of S-4 generation was evaluated up to 40 weeks of age and S-5 generation up to 16 weeks of age and its production performance is presented in Table 1 and 2, respectively. Hen housed egg production up to 40 weeks of age marginally decreased in S-4 generation when compared to S-3 generation (Table 1).

Table 1. Growth and production performances in S-4 generation of native chicken

Traits	N	Mean \pm SE
Body weight (g)		
Day old	200	28.47 \pm 0.21
4 wks	224	168.4 \pm 1.93
8 wks	176	456.5 \pm 6.29
16 wks	620	917.3 \pm 4.95
40 wks	552	1320 \pm 8.92
ASM (d)	599	142.61 \pm 0.51
Egg weight (g)		
28 wks	410	38.26 \pm 0.17

40 wks	389	43.04±0.48
Egg production (17-40 wks), (Nos.)		
Hen housed	615	78.95±1.16
Hen day	-	82.3±1.10
Survivour	553	83.10±1.12

Table 2. Body weights (g) in S-5 generation of native chicken

Age	Female		Male	
	N	Mean ±SE	N	Mean ±SE
Day old	473	28.68±0.13	224	28.50±0.19
4 wks	311	236.0±2.04	217	245.6±3.24
8 wks	217	437.3±5.08	206	553.4±6.61
12 wks	102	736±11.5	103	881±16.4
16 wks	611	887±4.0	151	1164±13.9

Fertility and hatchability

S-5 generation of native chicken produced by pedigree mating and its performance was evaluated up to 16 weeks of age. The number of sires and dams used for breeding to produce the S-5 generation was 50 and 250 (1:5). Good fertility and hatchability rates were observed in native birds in S-5 generation as well (Table 3).

Table 3. Summary of incubation records for last three generations of native chicken

Gens.	No. of hatches	Eggs set (Nos.)	Infertile eggs (Nos.)	Fertility (%)	Total chicks (Nos.)	Dead germ (Nos.)	Good chicks (Nos.)	Hatchability (%)	
								TES	FES
S-3	2	3275	326	90.04	2780	181	2723	84.89	94.27
S-4	3	4196	348	91.71	3533	315	3505	84.20	91.81
S-5	2	3473	295	91.50	2783	370	2714	80.13	89.60

Growth traits

Results of body weight recorded at various intervals of both male and female birds, ASM and egg weight recorded at 28 and 40 weeks of age is presented in Table 4. Body weights at 8 and 16 weeks of age in both male and females decreased in S-5 generation over S-4 generation. The egg weight reduced marginally at 28 and 40 weeks in S-4 generation over S-3 generation (Table 4). Egg production up to 40 weeks of age of previous generation was maintained in the present generation.

Table 4. Summary of growth and production performances of native chickens for last three generations

Traits	Females	Males
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	S-5	S-4	S-3	S-5	S-4	S-3
Body weight (g)						
0 day	28.68	28.47	31.7	28.50	27.37	32.43
4 wks	236.0	168.4	260.4	245.6	171.3	247.92
8 wks	437.3	456.5	408.1	553.4	577.5	504.39
12 wks	886.9	917.3	881.6	1164	1248	1225
ASM (d)		142.6	154.2	-	-	-
Egg weight (g)						
28 wks		38.25	39.30	-	-	-
40 wks		43.04	43.37	-	-	-
EP up to 40 wks (Nos.)						
Hen Housed		78.95	79.20	-	-	-
Hen day		82.30	82.33	-	-	-
Survivors		83.10	84.90	-	-	-

Mortality in native birds

The mortality during 17-40 weeks in S-4 generation was very less when compared to the previous generation. Less mortality was observed during 0-8 and 9-16 weeks of age in S-5 generation. (Table 5).

Table 5. Mortality records of native birds for last three generations

Generation	0-8 wks			9-16 wks			17-40 wks		
	No. Housed	No. Died	Mortality (%)	No. Housed	No. Died	Mortality (%)	No. Housed	No. Died	Mortality (%)
S-3	1675	35	2.10	1583	24	1.5	530	69	13.02
S-4	1559	14	0.89	1319	17	1.28	622	21	3.38
S-5	1215	30	2.47	1185	54	4.56	-	-	-

Performance evaluation of three way cross (NDR)

As per the direction from DPR, the native chickens which were multicoloured in the earlier two generations were removed and birds which resemble Tellichery breed, the native breed of Kerala were saved. Accordingly IWN male birds were crossed with native female birds and the males of the two-way cross were selected and reared up to 40 weeks of age. RIR female birds were selected from the hatch produced from the parent stock available in the farm and are 24 weeks of age. The three way cross will be produced during the current year and will be evaluated.

B. Improvement of IWN and IWP strains of White Leghorn

The centre evaluated the S-31 generation of IWN and IWP strains up to 64 weeks of age and S-32 generation up to 8 weeks of age during the year 2019-2020.

Selection records:

The summary of selection records for last five generations is presented in Table 6.

Table 6. Summary of selection records of IWN and IWP strains for last five generations

Strains	Generations	Sires	Dams	Ne (Contributed)	SD in females	SI (σ)
IWN	S-27	50	288	170.4	21.61	0.483
	S-28	50	278	169.5	14.40	0.580
	S-29	50	277	169.4	14.39	0.320
	S-30	50	298	171.3	10.55	0.27
	S-31	50	280	169.7	8.46	0.422

IWP	S-27	50	294	179.3	20.57	0.505
	S-28	50	275	169.2	17.90	0.490
	S-29	50	263	165.2	16.66	0.330
	S-30	50	297	171.2	10.26	0.29
	S-31	50	282	169.9	11.58	0.580

Incubation records

Fertility in IWN and IWP strain was more or lesser equal to previous generation. Hatchability on total and fertile egg set basis in IWN and IWP populations were higher as compared to previous generation (Table 7).

Table 7. Incubation records in last five generations

Generations	Strains	No. of hatches	No. of eggs set	Fertility (%)	No. of good chicks	Hatchability (%)	
						TES	FES
S-28	IWN	3	6189	93.97	4561	75.20	80.02
	IWP	3	5953	91.01	4076	69.86	76.76
	Control	1	667	85.76	522	79.91	93.18
S-29	IWN	3	5707	84.72	4244	74.55	87.96
	IWP	3	5794	83.44	4081	71.76	86.01
	Control	1	499	80.10	308	64.33	80.25
S-30	IWN	3	6156	88.55	4865	79.60	89.83
	IWP	3	7017	83.64	<u>5110</u>	<u>73.34</u>	<u>87.69</u>
	Control	1	590	84.74	470	90.60	98.75
S-31	IWN	3	6980	88.86	4903	70.94	86.66
	IWP	3	6404	85.09	4073	64.27	85.58
	Control	1	595	90.42	490	84.03	92.93
S-32	IWN	2	5091	89.13	4038	79.32	87.17
	IWP	2	4631	84.30	3258	70.35	85.65
	Control	1	605	29.09	174	28.76	51.03

Mortality

The mortality of IWN and IWP birds of S-31 generation was 4.27 % and 7.87% respectively which was under the permissible limit during 17-64 weeks of age. The mortality of IWN and IWP birds of S-32 generation was 3.97% and 5.82% which was well within the specified limit of 8 % during 0-8 weeks. (Table 8).

Table 8. Mortality percentage at different ages in last five generations

Generations	Strains	0-8 wks	9-16 wks	17-40 wks	17-64 wks
S-28	IWN	6.57	7.96	6.26	10.85
	IWP	4.97	0.22	5.00	10.00
	Control	2.87	7.03	5.33	11.33
S-29	IWN	5.3	2.41	2.38	6.34
	IWP	5.8	1.39	3.98	5.18
	Control	5.4	3.82	7.62	12.38
S-30	IWN	4.89	1.45	6.75	16.08
	IWP	2.09	2.35	7.70	17.84
	Control	1.20	4.40	5.40	8.84
S-31	IWN	6.57	4.05	3.43	4.27

S-32	IWP	6.04	3.35	5.87	7.87
	Control	2.65	0	3.75	8.75
	IWN	3.97	-	-	-
	IWP	5.82	-	-	-
	Control	4.59	-	-	-

Production performance

Least square means for different economic traits up to 64 weeks of age in both selected strains (IWN and IWP) and in control population during the S-31 generation is presented in Table 9. The hen day egg production up to 64 weeks of age in S-31 generation increased by 4.5 eggs in IWN and decreased by 10 eggs in IWP strains, respectively. The survivors' egg production up to 64 weeks of age remains the same in IWN and decreased by 8 eggs in IWP strains in S-31 generation when compared to previous generation.

Table 9. Egg production up to 64 weeks of age over last five generations in different strains

Generations	IWN			IWP			Control		
	HH64	HD64	Sur64	HH64	HD64	Sur64	HH64	HD64	Sur64
S-27	264.8	270.8	272.0	255.1	262.2	262.4	218.6	218.6	218.6
S-28	256.7	261.2	263.8	261.3	266.7	268.2	177.6	192.1	194.0
S-29	254.9	260.2	261.6	261.2	267.9	268.8	174.1	184.9	187.9
S-30	245.7	263.2	268.8	247.8	262.9	267.8	176.8	185.4	186.0
S-31	263.1	267.7	268.7	247.7	252.2	259.2	174.5	180.7	184.5

Table 10. Growth and production performances in S-31 generation of IWN and IWP strains and control layer population

Traits	IWN		IWP		Control	
	N	Mean \pm SE	N	Mean \pm SE	N	Mean \pm SE
Body weight (g)						
16 wks	896	1048 \pm 3.21	901	1082.17 \pm 2.95	160	970.5 \pm 7.63
40 wks	885	1432 \pm 4.46	845	1396.24 \pm 4.94	151	1397.05 \pm 14.95
64 wks	850	1502 \pm 5.51	786	1497.23 \pm 6.02	132	1495.64 \pm 18.24
ASM (d)	894	144.37 \pm 0.32	889	139.54 \pm 0.31	160	147.43 \pm 0.86
Egg weight (g)						
28 wks	878	50.29 \pm 0.11	819	50.05 \pm 0.12	155	46.64 \pm 0.28
40 wks	872	50.99 \pm 0.11	820	50.44 \pm 0.13	137	50.78 \pm 0.31
64 wks	833	51.89 \pm 0.13	720	53.73 \pm 0.16	93	55.59 \pm 0.45
EP to 40 wks (Nos.)						
Hen housed	902	121.2 \pm 0.65	847	124.43 \pm 0.74	160	94.91 \pm 2.03
Survivors'	885	122.6 \pm 0.54	859	124.09 \pm 0.76	154	96.84 \pm 1.95
Hen day: 17-40 wks		122.1 \pm 0.73		123.03 \pm 0.73		95.87 \pm 0.57
Hen day: 21-40 wks		121.0 \pm 0.86		120.8 \pm 0.86		95.9 \pm 0.57
EP to 64 wks (Nos.)						

Hen housed	902	263.1±1.46	902	247.67±2.44	159	174.50±4.48
Survivors'	864	268.7±0.97	847	259.24±2.00	145	184.49±4.75
Hen day		267.8±0.79		252.24±0.75		180.67±0.54
EP to 72 wks (Nos.)						
Hen housed	300	306.3±2.35	300	302.9±3.08	-	-
Survivors'	290	311.6±1.06	292	308.7±1.01	-	-
Hen day		309.7		306.2		

Egg number

The birds in S-31 generation have completed the performance evaluation up to 64 weeks of age during the period under report (Table 10). The phenotypic response realized in S-31 generation for hen-housed, hen-day and survivors egg production up to 64 weeks of age were 17.48, 4.58 and -0.12 eggs in IWN strain (Response was positive for hen housed and hen day and negative for survivors). The respective values for IWP strain were -0.11, -10.7 and -8.58 eggs.

Table 11. ASM and body weights at 64 weeks of age in last five generations in different strains

Generations	IWN		IWP		Control	
	ASM (d)	BW64 (g)	ASM (d)	BW64 (g)	ASM (d)	BW64 (d)
S-27	139.0	1547	139.1	1547	145.3	1440
S-28	144.5	1544	139.6	1585	153.1	1580
S-29	141.4	1498	139.9	1486	154.6	1484
S-30	139.6	1501	135.4	1543	156.2	1521
S-31	144.3	1501	139.5	1497	147.4	1495

Frequency distribution

The frequency of egg production up to 64 weeks of age in IWN and IWP strains in S-31 generation was maximum in the class interval of 261-280 while in control population it was maximum in the class interval of 181-200 and 221-240 (Table 12). The trend is similar to that of earlier generation except in case of control population.

Table 12. Frequency distribution of egg production up to 64 weeks of age (S-31 generation)

Class interval	IWN	IWP	Control
<100	0.021	0.061	0.108
101 - 120	0.003	0.004	0.057
121 - 140	0.003	0.008	0.089
141 - 160	0.006	0.017	0.095
161 - 180	0.001	0.015	0.108
181 - 200	0.010	0.017	0.184
201 - 220	0.019	0.033	0.108
221 - 240	0.053	0.065	0.184
241 - 260	0.165	0.163	0.057
261 - 280	0.367	0.356	0.013
281 - 300	0.333	0.244	0.00
>300	0.019	0.019	0.00

Egg weight

The egg weight at 28 weeks of age increased by 2.18 and 1.43g in IWN and IWP strains in S-31 generation compared to last generation. However, egg weight at 40 and 64 weeks of age decreased by 1.04 and 1.67g in IWN and IWP line in S-31 generation compared to last generation.

Table 13. Mean egg weights at various ages in last five generations in different strains

Strains	Generations	Egg weight (g)		
		28 wks	40 wks	64 wks
IWN	S-27	48.98	51.91	55.03
	S-28	48.00±0.10	52.16±0.10	54.16±0.37
	S-29	47.33±0.10	52.15±0.10	53.19±0.11
	S-30	48.11±0.13	52.03±0.16	52.56±0.17
	S-31	50.29±0.11	50.99±0.11	51.89±0.13
IWP	S-27	49.74	52.09	56.53
	S-28	48.22±0.09	51.46±0.11	55.3±0.13
	S-29	48.39±0.09	52.13±0.09	53.58±0.11
	S-30	48.62±0.11	52.11±0.15	53.80±0.18
	S-31	50.05±0.12	50.44±0.13	53.73±0.16
Control	S-27	46.60	52.61	54.95
	S-28	48.11±0.28	52.21±0.31	51.11±0.47
	S-29	44.40±0.85	51.01±0.47	53.92±0.57
	S-30	49.05±0.27	53.01±0.29	56.28±0.48
	S-31	46.64±0.28	50.78±0.31	55.59±0.45

Heritability estimates

In IWN strain, heritability estimate (S+D) of egg production up to 40 weeks was high and the estimates of egg production up to 64 weeks was moderate in magnitude. The heritability estimate (S+D) was high in magnitude for ASM, EW28, EW40 and EW64. In egg production and egg weight traits, the heritability estimates from dam components were higher than sire component. The heritability estimates (S+D) were high in magnitude for BW16, BW40 and BW64.

In IWP strain, heritability estimate (S+D) of egg production up to 40 weeks and 64 weeks were low in magnitude. The heritability estimate (S+D) was moderate in magnitude for ASM, EW 28, EW40 and EW64. The heritability estimates (S+D) were high in magnitude for BW16, BW40 and BW64 in IWP line.

Table 14. Heritability estimates of different traits in IWN & IWP strains (S-31 generation)

Strains	Traits	Sire	Dam	Sire + Dam
IWN	ASM	0.433 ±0.142	0.406 ±0.149	0.419 ±0.078
	BW16	0.370±0.131	0.464±0.151	0.417 ±0.078
	BW40	0.538±0.159	0.346 ±0.148	0.442 ±0.079
	BW64	0.350 ±0.127	0.317±0.148	0.334 ±0.074
	EW28	0.463 ±0.148	0.622±0.155	0.542 ±0.083

IWP	EW40	0.400 ±0.137	0.482 ±0.152	0.441 ±0.079
	EW64	0.299±0.120	0.472±0.154	0.386±0.078
	EP40	0.181±0.096	0.310±0.147	0.245±0.069
	EP64	0.084 ±0.076	0.202±0.145	0.143±0.063
	ASM	0.464±0.143	0.043 ±0.132	0.253±0.067
	BW16	0.302±0.115	0.551 ±0.145	0.426±0.076
	BW40	0.365± 0.129	0.617±0.151	0.491±0.080
	BW64	0.436±0.148	0.414±0.160	0.425±0.082
	EW28	0.386±0.133	0.153±0.142	0.270±0.070
	EW40	0.211±0.103	0.298±0.150	0.255±0.071
	EW64	0.209±0.116	0.192±0.174	0.201±0.077
	EP40	0.060±0.068	0.017±0.133	0.038±0.052
	EP64	0.011±0.058	0.038±0.134	0.025±0.051

Response to selection

The phenotypic response for age at sexual maturity and egg weight at 28 weeks of age was positive in IWN and IWP strain. (Table15). Phenotypic response for hen day egg production up to 64weeks of age was positive in IWN strain and negative in IWP strain.

Table 15. Phenotypic response in primary and various correlated traits in S-31 generation

Sl. No.	Traits	IWN	IWP
1	Average age at first egg (d)	4.79	4.1
Body weight (g)			
2	16 wks	-33.0	-20.99
3	40 wks	-65.50	-104.04
4	64 wks	-0.20	-46.43
Egg weight (g)			
5	28 wks	2.18	1.43
6	40 wks	-1.04	-1.67
7	64 wks	-0.67	-0.07
Egg number at 40 wks			
8	Hen Housed	0.93	-0.4
9	Hen Day	-0.77	-4.8
10	Survivors'	-1.9	-5.42
Egg number at 64 wks			
11	Hen Housed	17.45	-0.11
12	Hen Day	4.61	-10.7
13	Survivors'	-0.14	-8.58

Table 16. Genetic gain in primary and various correlated traits in S-31 generation

Sl. No.	Traits	IWN	IWP
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1	Average age at first egg (g)	13.59	12.90
2	Body weight at 16 weeks (g)	19.90	31.91
3	Body weight at 40 weeks (g)	48.86	10.32
4	Body weight at 64 weeks (g)	26.18	-20.45
5	Egg weight at 28 weeks (g)	4.59	3.84
6	Egg weight at 40 weeks (g)	1.19	0.56
7	Egg weight at 64 weeks (g)	0.02	0.62
8	Egg number at 40 weeks (HH)	-6.95	-8.32
9	Egg number at 40 weeks (HD)	-7.58	-11.63
10	Egg number at 40 weeks (S)	-9.17	-12.72
11	Egg number at 64weeks (HH)	19.78	2.22
12	Egg number at 64 weeks (HD)	9.37	-5.94
13	Egg number at 64 weeks (S)	1.39	-7.05

The genetic response for egg weight at 28, 40 and 64 weeks and hen housed egg production up to 64 weeks was positive in both IWN and IWP strains in S-31 generation (Table 16).

Supply of germplasm

Total germplasm supply from the centre as on 31.3.2020 was 1, 07,142.

Revenue generation

The centre has generated the revenue of Rs. 59.92 lakhs as on 31.3.2020.

AWARDS

- Appreciation Award by the ICAR-DPR for the best performing centre during the period 2018-19.
- Dr Suja C.S (Farm Manager) received the ‘Achiever award 2019’ presented by Alumini, Mannuthy for the outstanding performance given in the field on Veterinary and Animal Science on August 2019.
- Dr. Suja C.S (Farm Manager) received the ‘Best poster’ for the paper ‘Performance of Native chicken of Kerala selected over three generations’ authored by Beena C Joseph, C.S Suja, Binoj Chacko, P. Anitha and S. Harikrishnan in the 11th Kerala Veterinary Science Congress held at College of Veterinary & Animal Science, Pookode, Wayanad, during December 9-10, 2019.
- Dr. Suja C.S (Farm Manager) received the ‘Best poster’ for the paper ‘Performance evaluation of Tellichery breeds of Kerala under intensive system’ authored by Beena C Joseph, C.S Suja, Binoj Chacko, P. Anitha, S. Harikrishnan and Geo Joseph in the 36th Annual Conference of Indian Poultry Science Association held at College of Veterinary

Science and Animal Husbandry, Anjora, Durg (Chhattisgarh) during 11-13 December, 2019.

- Dr. Suja C.S (Farm Manager) received the ‘Dr. Kothandaraman Memorial Award’ (Female) for the best presentation 2019 for the paper Comparative production performance of two crossbreds developed using Red Cornish and White Plymouth Rock as male parent and White Leghorn as female parent authored by C. S. Suja , Binoj Chacko, P. Anitha, Beena C. Joseph and Greeshma Girijan.

PUBLICATION

- C.S Suja, Binoj Chacko, P. Anitha and Greeshma Girijan – Effect of dietary supplementation of Marigold petals, red Amaranth leaves, Curry leaves and Turmeric powder on egg yolk pigmentation in native birds of Kerala and white leghorn layers, Veterinary Research International, September 2019 volume, page 146-148.
- Beena C Joseph, C.S Suja, Binoj Chacko, P. Anitha and S. Harikrishnan– Performance of native chicken of Kerala selected over three generations, Compendium of 11th Kerala Veterinary Science Congress, Page 311-312.

Distribution of White Leghorn Cross Bred Pullets to Scheduled Caste Beneficiaries

A public function was organized by AICRP on Poultry for Eggs, Mannuthy on 31-08-2019 at Madakkathara Grama Panchayath for distributing pullets to scheduled caste beneficiaries, utilizing an amount of Rs.4.46 lakhs under Scheduled Caste Sub Plan Scheme of ICAR – AICRP. A total of 300 scheduled caste farmers were benefited out of this scheme. Each selected farmers were supplied with 5 pullets which are ready to lay.

Hon. Vice Chancellor, Dr M.R. Saseendranath inaugurated the function. Hon. VC, in his inaugural speech, shared his views on the importance of the role to be played by poultry farmers to enhance the egg production in our state. Dr Beena C Joseph, Assistant Professor and Senior Scientist (i/c), AICRP welcomed the gathering presided by Mr. P.S. Vinayan, President, Madakkathara Grama Panchayath. Dr P. Anitha, Professor & Director, CASPS briefed on the objective and mode of implementation of the SCSP scheme. Vote of thanks was delivered by Dr Harikrishnan, Assistant Professor, Department of Poultry Science. After the inaugural function, Dr Binoj Chacko and Dr S. Sankaralingam, Assistant Professors of the same Department handled the technical sessions on Poultry Keeping in order to make the beneficiaries aware of different aspects of rearing poultry in their house hold premises.



Total number of hatching eggs purchased from this center-29103

Profit (during 2019-20) Rs.289528/-

