



KARNATAKA VETERINARY, ANIMAL AND FISHERIES SCIENCES UNIVERSITY

Nandinagar, BIDAR - 585 226, Karnataka

16th Annual Report

2020-21





Publisher:
Prof. H.D. Narayanaswamy
Vice-Chancellor

Editor:
Dr. N.A. Patil
Director of Extension



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PREFACE

The sixteenth annual report of the Karnataka Veterinary, Animal, and Fisheries Sciences University Bidar is a testimony to the institution's efforts to promote research and develop human resources to serve the farmers. The COVID19 pandemic in the country created challenges for education and extension activities, prompting to shift towards online platforms. The University is committed to serve farmers by disseminating technologies, extension activities in the field of Veterinary, Dairy and Fishery Sciences across the state in these challenging times.

The University is constituted of five Veterinary Colleges at Bengaluru, Bidar, Shivamogga, Hassan and Gadag, two Dairy Science Colleges at Bengaluru and Kalaburagi. College of Fisheries at Mangaluru has reached milestone of completing fifty years of service in strengthening fisheries education. The University offers graduate, postgraduate, and doctoral degree programs in Veterinary and Animal Sciences, Fishery Sciences and Dairy Sciences. The University also offers a diploma in animal husbandry exclusive for rural youths of Karnataka at five Animal Husbandry Polytechnics across the state. Research institutes including Institute of Animal Health and Veterinary Biologicals (IAH&VB), Bengaluru, Institute of Wildlife Veterinary Research, Kodagu, five Livestock and four Fisheries Research and Information Centers have been established across the state. During the academic year 2020-21, a total of 474 degree comprising of 369 undergraduate, 73 masters and 32 doctoral degrees were provisionally awarded in Veterinary, Dairy and Fisheries Sciences. The students excelled not only academically but also in other activities such as sports and NSS programs.

The University has become a center for research in veterinary, animal, and fisheries sciences. In the current year, 31 projects worth 607.68 lakhs have been completed and 94 projects worth 4139.46 lakhs are underway that are funded by the government and outside agencies. Many International virtual training programs were conducted during the period for SAARC Veterinarians and Nationals on various topics like 'Diagnosis of Rabies', 'Livestock Products and Food Safety Realities and Imperatives for Global Health'. The faculty and scientists of all the constituent institutions of the University located across the state are engaged actively in research and extension activities.

I express sincere thanks and gratitude to the Government of India, Government of Karnataka, Indian Council of Agricultural Research-New Delhi, DBT/DST/ RKVY and other funding agencies for assisting in the overall integrated development of the University and complement members of the Board of Management, Officers of the University, Faculty members, students and staff of the University and all those who have contributed in building the University to the present status.

Place: Bidar

Sd/-
(H.D. Narayanaswamy)
Vice-Chancellor

EDITORIAL

Animal husbandry and fishery are vital component in Doubling Farmer's Income (DFI) by 2022 which account for quarter of GDP of agriculture. Today, India is self-sufficient in its demand for food and occupies the seventh position globally when it comes to agriculture exports. However, to attain nutritional security for most people and achieve sustainable productivity, it is very essential that extension activities are strengthened.

Karnataka Veterinary, Animal and Fisheries Sciences University, Bidar is working to build human resources, capacity development with five Veterinary Colleges, two Dairy Science Colleges and one Fisheries College across the state. During the period of COVID-19 Pandemic, small farmers and youth were attracted towards Animal Husbandry enterprises / activities for their livelihood security. University made its prompt effort to provide best possible technical support and services to these needy farmers. Several research projects have been sanctioned to the University during the period. Excellent research works are being carried out in ongoing and new research projects. Research publications brought out by faculty members and students are included in this report. The Livestock Research and Information Centers, Extension Education Centers and Krishi Vigyana Kendra are actively engaged in dissemination of developed technologies and practices to the farming community of the state. I am happy to share that the pride canine breed of KVAFSU, Bidar the 'Mudhol Hound' was introduced to Indian Army, RVC, SSR, CRPF, CISE, BSF and Air Force to serve the nation.

The university is offering diploma in animal husbandry in Kannada to 10th passed rural youths of the state to promote entrepreneurial activities related to animal husbandry. 'Diploma in Agricultural Extension Services to Agri-Input Dealers (DAESI)' program in collaboration with SAMETI, UAS, Bengaluru and National Institute of Agricultural Extension Management, Hyderabad is also being offered at KVK, Dakshina Kannada to strengthen FPOs. Many International virtual training programs were conducted during the period for SAARC Veterinarians and Nationals on various topics like 'Diagnosis of Rabies', 'Livestock Products and Food Safety Realities and Imperatives for Global Health'. Various extension programs, outreach activities and capacity development programs like training programs, workshops, seminars, animal health camps, village adoption, radio talks, TV programs, field days, demonstrations, field visits, front line demonstrations, on-farm trials, and farmers-scientists interaction sessions across the state are included in this report.

I express my gratitude to all government and non-government agencies, administrators, policymakers, University officials, faculties and students for their contribution in building our university. All the major achievements and works carried out by the University during the period in the areas of education, research and extension have been documented in this report. It is hoped that data and information compiled in this report will be of immense use to administrators, researchers, policymakers, extension personnel, farmers and other stakeholders for devising policy, education, research, and development projects.

Place: Bidar

Sd/-
(N.A. Patil)

Editor & Director of Extension

Mandate of the University

The prime objective and mandate of the University are to uplift the rural livestock, poultry and fish farmers with a motto of “Rural oriented and Farmer Friendly Activities”. The university has a territorial jurisdiction of entire state of Karnataka covering the 30 districts. The major objectives of the university include,

- ❖ To impart higher quality education in different branches of study, particularly veterinary and animal sciences, fisheries and other allied sciences.
- ❖ Advancement of learning and research, particularly in veterinary science, dairy science, fisheries science and other allied sciences to the rural people of the state
- ❖ To undertake the extension education service in veterinary and animal science, dairy science, fisheries science and other allied sciences to the rural people of the state.
- ❖ Such other purpose as the State Government may specify by notification.

Mission of the University

The Mission of the Karnataka Veterinary, Animal and Fisheries Sciences University, Bidar, is to strive hard and provide leadership in teaching, research and extension education services related to veterinary, animal and fisheries to keep pace with new frontiers of science and contemporary developments with social and technical relevance. In this context, the Karnataka Veterinary, Animal and Fisheries Sciences University is strongly committed in absorbing newer paradigms and using them to develop excellent human resource, innovative technologies and their dissemination so as to serve the livestock and fish farming community of the state.

Governance

BOARD OF MANAGEMENT OF THE UNIVERSITY

Chairman : Vice-Chancellor, KVAFSU, Bidar

Ex- Officio Members: Principal Secretary to Government, Department of Animal Husbandry & Fisheries or his nominee not below the rank of Joint Secretary
Principal Secretary to Government, Department of Finance or his nominee not below the rank of Joint Secretary
Principal Secretary to Government, Department of Law or his nominee not below the rank of Joint Secretary
Director, Department of Animal Husbandry & Veterinary Services, Government of Karnataka, Bengaluru
Director, Department of Fisheries, Government of Karnataka, Bengaluru
President, Karnataka Veterinary Council, Bengaluru
Registrar, KVAFSU, Bidar - Member Secretary

Other Members: Sri. Iresh, B. Anchatageri
Smt. Lumbini Goutam
Sri. Mukunda Varma
Dr. K. Venkat Reddy
Sri. K.C. Shankaregowda
Sri. B Shriharsha
Dr. R. Narendra
Smt. Kavita Umashankar Mishra
Sri. Deepak Doddaiah
Dr. Yathiraj, S.
Dr. N.M. Dinesh
Sri. Bhojanaik
Dr. V. Padmanabha Reddy, SVVU, Tirupati (VC Nominee)
Dr. K.P. Ramesha, NDRI, Bengaluru (ICAR Nominee)
Dr. N.K. Sudeep Kumar, TANVASU, Chennai (VC Nominee)
Dr. S.T. Viroji Rao, PVNRTVU, Hyderabad (VC Nominee)

Constituent Institutions

1. Colleges

- 1) Veterinary College, Hebbal, Bengaluru, established in 1958
- 2) Veterinary College, Nandi Nagar, Bidar, established in 1984
- 3) Veterinary College, Shivamogga, established in 2006
- 4) Veterinary College, Hassan, established in 2007
- 5) Veterinary College, Gadag, established in 2017
- 6) Dairy Science College, Hebbal, Bengaluru, established in 1980
- 7) Dairy Science College, Kalaburagi, established in 2008
- 8) Fisheries College, Mangaluru, established in 1969
- 9) Veterinary College, Athani, Belgaum (to be established)
- 10) Veterinary College, Puttur, Dakshina Kannada (to be established)

2. Animal Husbandry Polytechnics

- 1) Animal Husbandry Polytechnic, Konehalli, Tiptur Taluk, Tumakuru District
- 2) Animal Husbandry Polytechnic, Kunnur, Shiggaon Taluk, Haveri District
- 3) Animal Husbandry Polytechnic, Koravangala, Hassan Taluk & District
- 4) Animal Husbandry Polytechnic, Baragi, Gundlupet Taluk, Chamarajanagara District
- 5) Animal Husbandry Polytechnic, Dornahalli, Shahapur Taluk, Yadgir District

3. Research Institute

- 1) Institute of Animal Health and Veterinary Biologicals (IAH&VB), Hebbal, Bengaluru
- 2) Institute of Wild Life Veterinary Research (IWVR), Doddaluvara, Dist. Coorg
- 3) Livestock Research and Information Center, (Deoni), Hallikhed, Bidar Taluk & District
- 4) Livestock Research and Information Center (Amruth Mahal and Hallikar), Konehalli, Tumkur
- 5) Livestock Research & Information Center (Sheep), Nagamangala
- 6) Livestock Research & Information Center (Buffalo), Dornahalli, Shahapur Tq, Yadgir Dist
- 7) Canine Research and Information Center Timmapur, Mudhol Taluk, Bagalkot District
- 8) Fisheries Research & Information Center (Inland), Hebbal, Bengaluru Urban Tq. & District.
- 9) Fisheries Research & Information Center (Inland), Hesaraghatta, Bengaluru North Taluk. Bengaluru Rural District
- 10) Fisheries Research and Information Centre (Marine), Ankola, Uttar Kannada District
- 11) Livestock Research & Information Center, Gollahalli, Mulabagilu Taluk, Kolar District
- 12) Fish Seed Production Farm, Shivapura, Koppal District (to be taken over / established)
- 13) Rural Veterinary Hospital, Yelahanka, Bengaluru
- 14) Veterinary Hospital, APMC, Bidar Taluk & District

3. Krishi Vigyan Kendra

- 1) Krishi Vigyan Kendra-Dakshina Kannada, Mangaluru

4. Extension Education Centers/ Institutes

- 1) Extension Education Center, Bengaluru
- 2) Extension Education Center, Bidar
- 3) Extension Education Center, Shivamogga
- 4) Extension Education Center, Hassan

Officers of the University during the period (2020-2021)

1	Vice-Chancellor, KVAFSU, Bidar	Dr. H.D. Narayanaswamy
2	Registrar, KVAFSU, Bidar	Dr. K.C. Veeranna
3	Director of Extension, KVAFSU, Bidar	Dr. N.A. Patil
4	Director of Research, KVAFSU, Bidar	Dr. B.V. Shivaprakash
5	Director of Instruction (PGS), KVAFSU, Bidar	Dr. M.K. Tandale
6	Controller of Examinations, KVAFSU, Bidar	Dr. Basawaraj Awati
7	Director of Student Welfare, KVAFSU, Bidar	Dr. Yashwanth Kumar
8	University Librarian, KVAFSU, Bidar	Dr. Gangadhara Gowda Dr. U.S. Jadhav
9	Dean, Veterinary College, Bidar	Dr. D. Dilipkumar
10	Dean, Veterinary College, Bengaluru	Dr. M. Narayana Bhat Dr. H.A. Upendra Dr. C.S.Nagaraja
11	Dean, Veterinary College, Shivamogga	Dr. N. Prakash
12	Dean, Veterinary College, Hassan	Dr. M.C. Shivakumar
13	Dean, Veterinary College, Gadag	Dr. R. Nagaraja
14	Dean, Dairy Science College, Bengaluru	Dr. H.M. Jayaprakasha
15	Dean, Dairy Science College, Kalaburagi	Dr. H. Manjunatha
16	Dean, College of Fisheries, Mangaluru	Dr. Sentil Vel, A.
17	Director, IAH&VB, Hebbal, Bengaluru	Dr. S.M. Byregowda
18	Director, IWVR, Doddaluvara, Kodagu	Dr. L. Ranganath
19	Head of Division-Pre & Para Clinical Sciences	Dr. M.L. Satyanarayan Dr. V. Girish Kumar
20	Head of Division-Clinical Sciences	Dr. H.A. Upendra Dr. P.T. Ramesh
21	Head of Division-Animal and Poultry Sciences	Dr. C.S. Nagaraj
22	Head of Division-Fisheries Science	Dr. Gangadhar Gowda Dr. Shivakumar Magad
23	Head of Division-Dairy Science	Dr. D.B. Puranik
24	Comptroller, KVAFSU, Bidar	Dr. C.V. Raju Mr. Mallikarjun Ligade Mr. Subhash Hosur
25	Estate Officer, KVAFSU, Bidar	Er. Ramappa Korwar

EXECUTIVE SUMMARY

'Animal wealth is Nation's wealth'.

In order to realize this and to accomplish productivity in animal husbandry, dairying, poultry and fisheries, Government of Karnataka embarked on starting the state's first Veterinary, Animal and Fisheries Sciences University at Bidar in the year 2005. With its motto of 'Rural Oriented and Farmer Friendly', the University has initiated several measures to help farmers to improve their livelihood security through livestock activities.

EDUCATION

Education is the prime concern of the University. The teaching activities are being carried out in three major disciplines at seven campuses through eight colleges under the jurisdiction of this University. Undergraduate degree programmes in Veterinary and Animal Husbandry are being offered at Bidar, Bengaluru, Shivamogga, Hassan and Gadag, while, Dairy Science and Technology at Bengaluru and Kalaburagi and similarly, Fisheries Science at Mangaluru. In addition to these, the Government of Karnataka has sanctioned two more Veterinary Colleges at Athani and Puttur, which are at different final stages of development to start academic programme. Further, five Animal Husbandry Polytechnics are functioning at Konehalli of Tumkur district, Kunnur of Haveri district, Koravangala of Hassan district, Bargi of Chamarajanagar district and Dornalli of Yadgir district.

The University offers Masters program in 18 disciplines and Doctoral program in 14 disciplines in Veterinary and Animal Sciences. In Dairy Science 04 Master's and 03 Doctoral programmes are currently underway. Similarly, in Fisheries science 06 Masters and 05 Doctoral degree programmes are being offered. In Veterinary and Animal Sciences 54 students graduated Master's degree and 28 received Doctoral degrees. In Dairy science, 14 students graduated Master's degree and 01 students

were awarded Doctoral degrees. In Fisheries science, 05 and 03 students were awarded Master's degree and Doctoral degrees respectively.

Admission under various degree programmes to KVAFSU was undertaken during 2020-21 and the intake was 443 students for UG programmes. Among 443 under graduate students, admitted to various degree programmes 329 were for BVSc&AH degree at Bengaluru, Bidar, Shivamogga, Hassan and Gadag campuses and 67 for B.Tech (Dairy), Degree at Bengaluru and Kalaburagi and 47 for Bachelor in Fisheries Science Degree at Mangaluru. A total 245 students were admitted for Animal Husbandry Polytechnics at Konehalli, Kunnur, Bargi, Koravangala and Dornahalli respectively.

A good number of graduates of this University qualified in ICAR Junior Research Fellowship and secured PG admissions in many prestigious institutes like IVRI, CIFE, NDRI and also in overseas institutions.

RESEARCH

“Research without extension is hobby, but extension without research is shallow and teaching without research and extension is hollow”. But, KVAFSU being a farm varsity, it carries out teaching, research and extension under its three tier system to enable its pupils to come out with good knowledge practical exposure to become entrepreneurs. Further, the teachers, scientists and extension functionaries will be able to address field oriented problems to find suitable solutions through research and practical demonstrations. KVAFSU has completed 31 Research Projects with the funding support from State Government, GoI, Dept. of Bio-technology, ICAR, private institutions and National and International organizations during 2020-21. Besides, 94 Ongoing Projects amounting to Rs. 4139.36 lakhs are in progress.

In order to cater to the needs of farmers in rural areas, the University has been carrying out need based research in various institutes and also established Research & Information Centers across the state. Our scientists of the University have published 431 Research Papers in Journals and Conferences / Symposia / Seminars / Workshops of National and International repute. Our scientists have developed several diagnostic kits, vaccines for diagnosis and prevention of diseases in animals, poultry, and fisheries sector.

To strengthen the research activities within the University and to provide opportunities for scientists and students of the University, the University has been making efforts to collaborate with National and International organizations. In this direction, the University has signed 14 MoU's with National organizations during the period. It is hoped that the collaborative works will be of immense value to the society.

EXTENSION

The University has established Extension Education Centers (EECs) at Bengaluru, Bidar, Shivamogga and Hassan Campuses for the transfer of technologies developed by KVAFSU scientists to the un-reached farming community. The University is propagating and popularizing its technologies to the farmers through series of training programmes, demonstrations, animal health camps, field days, farmer-scientists interaction, awareness programmes, treatment of medical, surgical and reproductive problems at Veterinary Colleges, Krishi melas, Farmers Meet, Village adoption, Publication of folders, Bulletins and Books on Package of practices in local language for the benefit of farming community and News Letters and Annual Reports of the University. Besides farmers, the university also trains departmental staff / KVK SMSs

regarding latest technological advancements and shares the knowledge with neighboring state's scientists through model training courses etc.

A total of 73 Radio / TV programmes were given of which 47 were Radio talks and 26 were TV programmes. A total of 35 Animal Health Camps were conducted and 13194 animals were treated in the camp. A total of 216 demonstrations were conducted. A total of 78,809 services were provided to the farmers and diagnostic services provided were 1,68,237 and 34,197 consultancy / advisory services were provided. A total of 234 Training Programmes / Workshops / Conferences / Seminars / Symposia were conducted in 2020-21 and a total of 462 scientists were participated in the Training Programmes / Workshops / Conference / Seminars as Resource Scientists and 732 scientists were participated in the Training Programmes / Workshops / Conference / Seminars as Trainee Scientists.

The most significant part of the University is the health care service being extended to the ailing cattle of poor farmers by our doctors. Innumerable surgeries are performed on small and large animals by our doctors thereby saving the lives of animals that are the economic backbone of poor farmers, especially in Northern Karnataka.



IMPORTANT MEETINGS HELD BY KVAFSU, BIDAR DURING 2020-21

#	<i>Meetings</i>	<i>Date</i>	<i>Place</i>
Meetings of Board of Management			
1	92 nd Meeting of Board of Management	19.05.2020	Bengaluru
2	93 rd Meeting of Board of Management	14.07.2020	Bengaluru
3	94 th Meeting of Board of Management	05.10.2020	Bidar
4	95 th Meeting of Board of Management	16.01.2021	Bidar
5	96 th Meeting of Board of Management	03.03.2021	Bidar
Academic Council Meetings			
1	34 th Meeting of Academic Council	18.08.2020	Bengaluru
Finance Committee Meetings			
1	42 nd Finance Committee Meeting	18.05.2020	Bengaluru
2	43 rd Finance Committee Meeting	31.08.2020	Bengaluru
Extension Education Council Meetings			
1	15 th Extension Education Council Meeting	30.12.2020	Bengaluru
Research Council Meetings			
1	15 th Research Council Meeting	30.12.2020	Bengaluru
Sports and Cultural Council Meetings			
1	15 th Sports and Cultural Council Meeting	31.12.2020	Bengaluru

Important Meetings / Events attended by the Vice-Chancellor, KVAFSU, Bidar during 2020-21

#	Date	Meetings / Events Attended
1	19.05.2020	Chaired 92 nd Board of Management meeting at Bengaluru
2	14.07.2020	Chaired 93 rd Board of Management meeting at Bengaluru
3	18.08.2020	Chaired 34 th Academic Council meeting at Bengaluru
4	05.10.2020	Chaired 94 th Board of Management meeting at Bidar
5	09.10.2020	Met Hon'ble Excise Minister & Kolar District in-charge Minister and discussed regarding farm developmental works of LRIC, Mulbagilu, Kolar
6	12.10.2020	Inaugurated the Poultry Farmers Training Programme at Bengaluru
7	17.11.2020	Attended the Selection Committee Meeting as External Expert for the appointment of Registrar at Kerala Veterinary & Animal Sciences University, Pookode, Wayanad, Kerala
8	19.11.2020	Attended "Kannadda Pathya Rachana Samiti" Meeting at Hebbal-Bengaluru
9	29.12.2020	Attended Animal Husbandry Polytechnic Admission Counseling at Hebbal Bengaluru
10	30.12.2020	Chaired 15 th Research Council and 15 th Extension Education Council Meeting of KVAFSU, at Hebbal Bengaluru
11	31.12.2020	Chaired 15 th Sports Council Meeting of KVAFSU at Hebbal, Bengaluru
12	11.01.2021	Inaugurated New Post Office at Hebbal Campus, Bengaluru
13	16.01.2021	Chaired 95 th Board of Management Meeting at Bidar
14	21.01.2021	Chaired IAH&VB Scientists Meeting
15	22.01.2021	Attended NRI Admissions at Hebbal, Bengaluru
16	26.01.2021	Attended Flag Hoisting program on the occasion of Republic Day of India at Regional Campus, Bengaluru on 26 th January, 2021
17	27.01.2021	Attended "Sadana Samithi Meeting" at Vidhan Soudha, Bengaluru
18	12.02.2021	Attended PG Admission Committee Meeting at Regional Campus, Hebbal, Bengaluru
19	03.03.2021	Chaired 96 th Board of Management Meeting at Bidar

I. TEACHING

1) Teaching Institutions

#	<i>Teaching Institute with Location</i>	<i>Year of Establishment</i>	<i>Name of the Dean / Director / Principal</i>	<i>Degree Programmes Offered</i>
1	Veterinary College, Bengaluru	1958	Dr. C.S. Nagaraja	B.V.Sc.&A.H. M.V.Sc. Ph.D.
2	Veterinary College, Bidar	1984	Dr. Dilipkumar, D.	B.V.Sc.&A.H. M.V.Sc. Ph.D.
3	Veterinary College, Shivamogga	2006	Dr. Prakash, N.	B.V.Sc.&A.H. M.V.Sc.
4	Veterinary College, Hassan	2007	Dr. M.C. Shivakumar	B.V.Sc.&A.H. M.V.Sc.
5	Veterinary College, Gadag	2017	Dr. R. Nagaraja	B.V.Sc.&A.H.
6	Dairy Science College, Bengaluru	1980	Dr. H.M. Jayaprakasha	B.Tech. (D.Tech) M.Tech. (Dairy Science) Ph.D. (Dairy Science) MBA (Food and Dairy Business)
7	Dairy Science College, Kalaburagi	2008	Dr. H. Manjunatha	B.Tech. (D.Tech)
8	College of Fisheries, Mangaluru	1969	Dr. A. Senthil Vel	B.F.Sc. M.F.Sc. Ph.D.
9	Institute of Wildlife and Veterinary Research, Kodagu	2007	Dr. L. Ranganath	M.V.Sc. (Wildlife) (Presently running at Bengaluru)
10	Animal Husbandry Polytechnic, Konehalli-Tumakuru	2011	Dr. Shivakumar, R.	Animal Husbandry Diploma
11	Animal Husbandry Polytechnic, Kunnur-Haveri	2012	Dr. Shambulingappa, Y. Baddi	Animal Husbandry Diploma
12	Animal Husbandry Polytechnic, Koravangala-Hassan	2017	Dr. Guruprasad, R.	Animal Husbandry Diploma
13	Animal Husbandry Polytechnic, Bargi-Chamarajanagar	2017	Dr. Ravikumar, C.	Animal Husbandry Diploma
14	Animal Husbandry Polytechnic, Dornahalli-Yadgir	2017	Dr. Channappagouda Biradar	Animal Husbandry Diploma

2) Number of Students admitted/on roll to undergraduate degree programme

Sl. No.	Degree Programme	Year					No. Passed out	College / Institute
		I	II	III	IV	V		
1	B.V.Sc.&A.H.	75	78	68	71	62	75	Veterinary College, Bengaluru
2	B.V.Sc.&A.H.	51	61	53	47	67	67	Veterinary College, Bidar
3	B.V.Sc.&A.H.	80	81	68	72	61	56	Veterinary College, Shivamogga
4	B.V.Sc.&A.H.	73	70	75	57	66	74	Veterinary College, Hassan
5	B.V.Sc.&A.H.	50	50	48	45	-	-	Veterinary College, Gadag
6	B.Tech. (D.Tech)	43	41	41	38	NA	37	Dairy Science College, Bengaluru
7	B.Tech. (D.Tech)	24	22	24	23	NA	22	Dairy Science College, Kalaburagi
8	B.F.Sc.	47	41	45	39	NA	38	College of Fisheries, Mangaluru
9	Animal Husbandry Diploma	49	36	NA	NA	NA	45	Animal Husbandry Polytechnic, Konehalli-Tumakuru
10	Animal Husbandry Diploma	50	39	NA	NA	NA	41	Animal Husbandry Polytechnic, Kunnur-Haveri
11	Animal Husbandry Diploma	47	37	NA	NA	NA	42	Animal Husbandry Polytechnic, Koravangala-Hassan
12	Animal Husbandry Diploma	49	11	NA	NA	NA	11	Animal Husbandry Polytechnic, Bargi-Chamarajanagar
13	Animal Husbandry Diploma	50	36	NA	NA	NA	42	Animal Husbandry Polytechnic, Dornahalli-Yadgir

*NA:- Not Applicable

3) Number of Students admitted to postgraduate degree and Ph.D. programmes

#	Department	Master's degree			Ph.D.			
		On roll		Completed	On roll			Completed
		I	II	2020-21	I	II	III	2020-21
VETERINARY COLLEGE, BENGALURU								
1	Animal Genetics and Breeding	3	1	4	-	1	-	2
2	Animal Nutrition	4	8	2	1	-	2	-
3	Livestock Production and Management	2	8	3	-	-	-	1
4	Livestock Productions & Technology	5	4	4	-	-	-	-
5	Poultry Science	6	6	5	-	-	3	1
6	Veterinary Animal Husbandry Extension	2	5	2	-	-	-	-
7	Veterinary Anatomy & Histology	-	1	-	-	2	1	1
8	Veterinary Biochemistry	-	-	1	-	1	1	1
9	Veterinary Gynecology & Obstetrics	8	7	4	-	-	1	2
10	Veterinary Medicine	5	7	9	4	-	4	5
11	Veterinary Microbiology	4	5	1	3	3	2	1
12	Veterinary Parasitology	4	9	-	-	-	-	3
13	Veterinary Pathology	2	3	5	-	2	1	5
14	Veterinary Pharmacology & Toxicology	4	3	2	-	1	1	1
15	Veterinary Physiology	3	-	-	-	-	-	2
16	Veterinary Surgery & Radiology	8	8	4	1	-	-	1
17	Wildlife	-	1	1	-	-	-	-
Total (A)		60	76	47	9	10	16	26
VETERINARY COLLEGE, BIDAR								
1	Livestock Production and Management	6	1	1	-	-	-	-
2	Veterinary Gynaecology and Obstetrics	6	3	3	1	-	-	1
3	Veterinary Medicine	7	4	-	1	-	2	-
4	Veterinary Physiology	4	1	-	-	-	-	-
5	Veterinary Surgery and Radiology	6	4	3	3	-	1	1
6	Animal Nutrition	-	-	-	-	1	-	-
7	Veterinary Microbiology	-	-	-	-	2	-	-
Total (B)		29	13	7	5	3	3	2



VETERINARY COLLEGE, SHIVAMOGGA								
1	Veterinary Anatomy	1	1	-	-	-	-	-
2	Veterinary Physiology & Biochemistry	3	3	-	-	-	-	-
3	Veterinary Pharmacology & Toxicology	2	5	-	-	-	-	-
4	Veterinary Microbiology	2	1	-	-	-	-	-
5	Veterinary Pathology	4	3	-	-	-	-	-
6	Veterinary Public Health & Epidemiology	2	2	-	-	-	-	-
7	Animal Nutrition	4	4	-	-	-	-	-
8	Veterinary Medicine	2	-	-	-	-	-	-
9	Veterinary & Animal Husbandry Extension	4	3	-	-	-	-	-
Total (C)		24	22	-	-	-	-	-
VETERINARY COLLEGE, HASSAN								
1	Veterinary Surgery & Radiology	5	2	-	-	-	-	-
2	Veterinary Pathology	3	4	-	-	-	-	-
3	Veterinary Animal Nutrition	2	2	-	-	-	-	-
4	Veterinary Animal Genetics and breeding	1	1	-	-	-	-	-
5	Livestock production and management	4	4	-	-	-	-	-
Total (D)		15	13	-	-	-	-	-
DAIRY SCIENCE COLLEGE, BENGALURU								
1	Dairy Technology	4	8	3	-	1	2	-
2	Dairy Chemistry	-	4	-	-	-	2	-
3	Dairy Microbiology	2	4	1	-	2	-	1
4	Dairy Engineering	2	-	-	-	-	-	-
5	Dairy Business Management	6	8	10	-	-	-	-
Total (E)		14	24	14	-	3	4	1
COLLEGE OF FISHERIES, MANGALURU								
1	Aquaculture	1	4	-	-	-	3	-
2	Aquatic Animal Health Management	2	4	-	1	1	-	-
3	Fisheries Microbiology	-	-	2	-	-	-	-
4	Aquatic Environment Management	7	6	2	1	1	2	1
5	Fish Processing Technology	2	3	1	-	2	-	2
6	Fisheries Engineering Technology	5	3	-	-	-	-	-
7	Fisheries Resources and Management	6	11	-	1	3	3	-
Total (F)		23	31	5	3	7	8	3
Grand Total		165	179	73	17	23	31	32

4) Academic Excellence

(i) Scholarships / Fellowships received

UNDERGRADUATE

ANIMAL AND VETERINARY SCIENCES

#	Scholarship	Year					Total
		I	II	III	IV	V	
General Scholarship							
1	Veterinary College, Bengaluru	1	5	5	4	-	15
2	Veterinary College, Bidar	-	-	-	2	-	2
3	Veterinary College, Shivamogga	1	-	-	-	-	1
4	Veterinary College, Hassan	-	-	9	-	-	9
5	Veterinary College, Gadag	-	-	-	-	-	-
Merit Scholarship							
1	Veterinary College, Bengaluru	2	2	2	2	-	8
2	Veterinary College, Bidar	1	2	2	2	1	8
3	Veterinary College, Shivamogga	2	2	2	2	-	8
4	Veterinary College, Hassan	2	2	2	2	-	8
5	Veterinary College, Gadag	-	-	-	-	-	-
National Talent Scholarship							
1	Veterinary College, Bengaluru	11	6	1	2	-	20
2	Veterinary College, Bidar	-	-	-	-	-	-
3	Veterinary College, Shivamogga	9	-	1	1	-	11
4	Veterinary College, Hassan	11	7	5	1	-	24
5	Veterinary College, Gadag	-	-	-	-	-	-
Student Aid Fund							
1	Veterinary College, Bengaluru	-	9	6	13	-	28
2	Veterinary College, Bidar	-	-	-	1	-	1
3	Veterinary College, Shivamogga	-	-	-	-	-	-
4	Veterinary College, Hassan	-	-	-	-	-	-
5	Veterinary College, Gadag	-	-	-	-	-	-
Fee Concession							
1	Veterinary College, Bengaluru	-	-	-	-	-	-
2	Veterinary College, Bidar	-	-	-	-	-	-
3	Veterinary College, Shivamogga	-	-	-	-	-	-
4	Veterinary College, Hassan	19	28	35	33	5	120
5	Veterinary College, Gadag	-	-	-	-	-	-
SC/ST GoI Scholarship							
1	Veterinary College, Bengaluru	-	-	-	-	-	-
2	Veterinary College, Bidar	-	-	-	-	-	-
3	Veterinary College, Shivamogga	9	4	5	8	5	31
4	Veterinary College, Hassan	5	10	11	10	1	37
5	Veterinary College, Gadag	-	-	-	-	-	-
Defense Scholarship							
1	Veterinary College, Bengaluru	-	-	-	-	-	-
2	Veterinary College, Bidar	-	-	-	-	-	-
3	Veterinary College, Shivamogga	-	-	-	-	-	-
4	Veterinary College, Hassan	2	3	2	2	-	9
5	Veterinary College, Gadag	-	-	-	-	-	-

Handicaps Scholarship							
1	Veterinary College, Bengaluru	-	-	-	-	-	-
2	Veterinary College, Bidar	-	-	-	-	-	-
3	Veterinary College, Shivamogga	-	-	-	-	-	-
4	Veterinary College, Hassan	2	3	2	2	1	10
5	Veterinary College, Gadag	-	-	-	-	-	-
Minority Scholarship							
1	Veterinary College, Bengaluru	-	-	-	-	-	-
2	Veterinary College, Bidar	-	-	-	-	-	-
3	Veterinary College, Shivamogga	-	-	-	-	-	-
4	Veterinary College, Hassan	4	3	5	4	-	16
5	Veterinary College, Gadag	-	-	-	-	-	-
Total		81	86	95	91	13	366

DAIRY SCIENCE

#	Scholarship	Year				Total
		I	II	III	IV	
General Scholarship						
1	Dairy Science College, Bengaluru	5	5	5	5	20
2	Dairy Science College, Kalaburagi	3	3	3	3	12
Merit Scholarship						
1	Dairy Science College, Bengaluru	2	2	2	2	8
2	Dairy Science College, Kalaburagi	2	2	2	2	8
Student Aid Fund						
1	Dairy Science College, Bengaluru	-	-	-	-	-
2	Dairy Science College, Kalaburagi	2	2	2	2	8
Fee Concession						
1	Dairy Science College, Bengaluru	-	-	-	-	-
2	Dairy Science College, Kalaburagi	2	2	2	2	8
Total		16	16	16	16	64

FISHERY SCIENCE (COLLEGE OF FISHERIES, MANGALURU)

#	Scholarship / Fellowship	B.F.Sc.				Total
		I	II	III	IV	
1	Merit Scholarship	2	2	2	2	8
2	BCM Scholarship	16	26	17	22	81
3	NTS-ICAR	4	-	4	3	11
4	MCM-ICAR	-	-	-	-	-
5	EBL – GOI Scholarship	5	8	8	8	29
6	Internship – ICAR	-	-	-	39	39
7	In-Plant Training	-	-	-	39	39
8	General Scholarship	-	-	-	-	-
9	Minority Scholarship	-	1	-	1	2
Total		27	37	31	114	209

ABSTRACT OF UNDERGRADUATE SCHOLARSHIP

#	Scholarship	VCH	VCB	VCS	HVC	VCG	DSCH	DSCK	FCM	Total
1	General Scholarship	15	2	1	9	-	20	12	8	67
2	Merit Scholarship	8	8	8	8	-	8	8	-	48
3	National Talent Scholarship	20	-	11	24	-	-	-	11	66
4	Student Aid Fund	28	1	-	-	-	-	8	-	37
5	Fee Concession	-	-	-	120	-	-	8	-	128
6	SC/ST GoI Scholarship	-	-	31	37	-	-	-	-	68
7	Defense Scholarship	-	-	-	9	-	-	-	-	9
8	Handicaps Scholarship	-	-	-	10	-	-	-	-	10
9	Minority Scholarship	-	-	-	16	-	-	-	2	18
10	BCM Scholarship	-	-	-	-	-	-	-	81	81
11	MCM-ICAR	-	-	-	-	-	-	-		
12	EBL – GOI Scholarship	-	-	-	-	-	-	-	29	29
13	Internship – ICAR	-	-	-	-	-	-	-	39	39
14	In-Plant Training	-	-	-	-	-	-	-	39	39
Total		71	11	51	233	-	28	36	209	639

POSTGRADUATE

ANIMAL AND VETERINARY SCIENCES

#	Scholarship	MVSc.		Ph.D.			Total
		I	II	I	II	III	
Merit Scholarship							
1	Veterinary College, Bengaluru	12	11	3	1	-	12
2	Veterinary College, Bidar	1	5	-	-	-	6
3	Veterinary College, Shivamogga	4	2	-	-	-	6
4	Veterinary College, Hassan	2	3	-	-	-	5
Student Aid Fund							
1	Veterinary College, Bengaluru	2	3	-	-	-	5
2	Veterinary College, Bidar	-	-	-	-	-	-
3	Veterinary College, Shivamogga	-	-	-	-	-	-
4	Veterinary College, Hassan	-	-	-	-	-	-
General Scholarship							
1	Veterinary College, Bengaluru	-	-	-	-	-	-
2	Veterinary College, Bidar	-	1	-	-	-	1
3	Veterinary College, Shivamogga	-	-	-	-	-	-
4	Veterinary College, Hassan	-	-	-	-	-	-
National Talent Scholarship							
1	Veterinary College, Bengaluru	7	-	-	-	-	7
2	Veterinary College, Bidar	-	-	-	-	-	-
3	Veterinary College, Shivamogga	1	-	-	-	-	1
4	Veterinary College, Hassan	1	-	-	-	-	1
Indo-Afghanistan Fellowship							
1	Veterinary College, Bengaluru	-	-	-	-	3	3
2	Veterinary College, Bidar	-	-	-	-	-	-
3	Veterinary College, Shivamogga	-	-	-	-	-	-
4	Veterinary College, Hassan	-	-	-	-	-	-
Netaji Subhas Fellowship							
1	Veterinary College, Bengaluru	-	-	-	-	1	1
2	Veterinary College, Bidar	-	-	-	-	-	-
3	Veterinary College, Shivamogga	-	-	-	-	-	-
4	Veterinary College, Hassan	-	-	-	-	-	-
GOI Scholarship							
1	Veterinary College, Bengaluru	-	-	-	-	-	-
2	Veterinary College, Bidar	-	-	-	-	-	-
3	Veterinary College, Shivamogga	-	-	-	-	-	-
4	Veterinary College, Hassan	1	1	-	-	-	2
Fee Concession from BCM							
1	Veterinary College, Bengaluru	-	-	-	-	-	-
2	Veterinary College, Bidar	-	-	-	-	-	-
3	Veterinary College, Shivamogga	-	-	-	-	-	-
4	Veterinary College, Hassan	4	-	-	-	-	4
University Resident Merit Scholarship							
1	Veterinary College, Bengaluru	10	14	-	01	03	28
2	Veterinary College, Bidar	-	-	-	-	-	-
3	Veterinary College, Shivamogga	-	-	-	-	-	-
4	Veterinary College, Hassan	-	-	-	-	-	-
Total		45	40	3	2	7	82

DAIRY SCIENCE

#	Scholarship	M.Tech.		Ph.D.			Total
		I	II	I	II	III	
Dairy Science College, Bengaluru							
1	Merit Scholarship	3	2	-	1	-	6
Total		3	2	-	1	-	6

FISHERY SCIENCE

#	Scholarship / Fellowship	M.F.Sc.		Ph.D.			Total
		I	II	I	II	III	
1	Merit Scholarship	1	-	-	1	-	2
2	EBL – GOI Scholarship	2	4	1	3	-	10
3	BCM Scholarship	8	6	-	3	2	19
4	NTS - ICAR	-	2	-	-	-	2
5	Student Aid Fund	1	-	-	-	-	1
Total		12	12	1	7	2	34

Abstract of Postgraduate (Masters & Doctoral) Scholarship

#	Scholarship	VCH	VCB	VCS	HVC	DSCH	FCM	Total
1	Merit Scholarship	12	6	6	5	6	2	37
2	Student Aid Fund	5	-	-	-	-	1	6
3	General Scholarship	-	1	-	-	-	-	1
4	National Talent Scholarship	7	-	1	1	-	2	11
5	Indo-Afghanistan Fellowship	3	-	-	-	-	-	3
6	Netaji Subhas Fellowship	1	-	-	-	-	-	1
7	GOI Scholarship	-	-	-	2	-	-	2
8	Fee Concession from BCM	-	-	-	4	-	-	4
9	University Resident Merit Scholarship	28	-	-	-	-	-	28
10	EBL – GOI Scholarship	-	-	-	-	-	10	10
11	BCM Scholarship	-	-	-	-	-	19	19
Total		56	7	7	12	6	37	122

(ii) UG Gold Medals Awarded: - Convocation has not been conducted due to COVID-19

(iii) PG Gold Medals Awarded: - Convocation has not been conducted due to COVID-19

5) Academic Research (Postgraduate Research)

Thesis accepted during the year 2020-21 for Masters and Doctoral Degree

i) Master's Degree:

#	Thesis Title	Name of the Student	Major Advisor and Dept.
VETERINARY COLLEGE, BENGALURU			
1	Lactation induction in unproductive dairy cattle	K. Nagaraja	Jagadeesh, S. Sanganal VPT
2	Studies on induced diabetes in rats with special emphasis on combined efficacy of <i>gymnema sylvestre</i> and <i>coccinia indica</i> extracts	Rakshith, K.	M.L. Satyanarayana VPP
3	Studies on induced diabetes in rats with special emphasis on combined efficacy of <i>gymnema sylvestre</i> and <i>Eugenia jambolana</i>	Nagabhushan, C.	Suguna Rao VPP
4	Studies on induced diabetes in rats with Special emphasis on combined efficacy of <i>gymnema sylvestre</i> and <i>momordica charantia</i> extracts	Kavyashree, T.L.	M.L. Satyanarayana VPP
5	Study on the evaluation of diagnostic methods of animal rabies using brain tissues collected by different approaches	Mohamed Ghouse	M.L. Satyanarayana VPP
6	Studies on prognostic value of p63 in cutaneous and subcutaneous neoplasms in dogs	Netra, K. Gowda	Suguna Rao VPP
7	Effect of post-insemination progesterone supplementation on the conception rate in repeat breeding cows	Ramya, R.	V.C. Murthy VGO
8	Studies on occurrence and immunological diagnosis of canine a topic dermatitis	Aishwarya, N.	M A. Kshama VMD
9	Studies on sub-clinical ketosis in crossbred cows	Paramesha, S.C.	Anil Kumar. M.C. VMD
10	Studies on internal prosthetic for amputated carpal joint in dogs	Sandesh, K.V.	K.M. Srinivasmurthy VSR
11	Studies on glass ionomer cement and nano-hybrid resin composite as treatment for dental caries in dogs	Koushiek Yadav	K.M. Srinivasmurthy VSR
12	Studies on laxity of hip joints by computed tomography scan in skeletally immature labrador retriever dogs	Puneetha, S.C.	V. Mahesh VSR
13	Identification of genetic variations in <i>tlr4</i> and <i>md-2</i> genes among Giriraja and indigenous chicken	Sarathi Nihar Ramesh	Nagaraja AGB
14	Molecular genetic study of Pouifi gene in Mandya and Nari-Suwarna sheep	Abhilash, H.R.	Naveen Kumar, S. AGB

15	Determination of beneficial effects of yeast cell wall extract in broilers fed diet contaminated with T-2 toxin	Mohammed Ubaid Ahmed	Jayanaik PSC
16	Effect of bentonite and yeast cell wall fraction on performance and health of broiler chicken during multiple mycotoxin challenge	Sattar Sab	Malathi, V. PSC
17	A study on growth performance of native chicken under intensive and semi-intensive systems of rearing	Laxmesh Kattimani	M.C. Shivakumar LPM
18	Comparative study of automation and conventional system on production performance in poultry and dairy farms	Abhijeet Kumar	S.B. Prasanna LPM
19	Isolation and molecular characterization of antimicrobial resistant <i>salmonella</i> in broiler production chain	Namaratha, K.	Wilfred Ruban, S. LPT
20	Effect of pomelo (<i>citrus maxima</i>) on physico-chemical and textural characteristics of spent goat meat	Prasad, M.G.	Wilfred Ruban, S. LPT
21	Social media in livestock production and management – A multi stakeholder analysis	Rakshith Raj, U.M.	K. Satyanarayan VAHE

VETERINARY COLLEGE, BIDAR

1	Diagnosis and therapeutic management of bacterial enteritis in calves	Neelesh	Ravindra, B.G. VMD
2	Effect of supplementation of glutathione and honey in skim milk based extenders for preservation of boer buck semen at refrigeration temperature	Suresh Arakeri	M.K. Tandle VGO
3	Effect of supplementation of safflower oil in ovsynch on fertility of postpartum Bidri Goats	Ravikiran, S.	R.G. Bijurkar VGO
4	Comparative evaluation of locking reconstructive plate and non-locking reconstructive plate for long bone fracture repair in dogs	Beerappa, G.N.	Dilip Kumar, D. VSR
5	Romifidine and xylazine sedation with ketamine-isoflurane anaesthesia for surgeries in buffaloes	Sagar Pandav	Shivashnkar Usturge VSR
6	Comparative evaluation of titanium and stainless steel locking reconstruction bone plates for tibiotarsus fracture repair in backyard poultry	Pallavi	Dilip Kumar, D. VSR

VETERINARY COLLEGE, HASSAN			
1	Studies on induced diabetes in rats with special emphasis on efficacy of combined herbal extract	Rashmi Wali	M.L. Satyanarayana VPP
2	Nutritional evaluation of maha neem (<i>melia dubia</i>) by chemical, <i>in situ</i> and <i>in vivo</i> methods	Farha Yasmeen	Prabhu, T.M. ANN
3	Studies on induced diabetes in rats With special emphasis on combined Efficacy of <i>gymnema sylvestre</i> and <i>Swertia chirayita</i> extracts	Bharath Kumar, K.	Suguna Rao VPP
DAIRY SCIENCE COLLEGE, BENGALURU			
1	Development of coconut based enriched paneer	Ashoka, S.M.	H. Arun kumar Dairy Technology
2	Development of low calorie rasogolla and sandesh	Nitishkumar, G.M.	H.M. Jayaprakasha Dairy Technology
3	Development of jack fruit (<i>artocarpusheterophyllus</i>) rag based paneer	H.S. Raghu	D.B. Puranik Dairy Technology
4	Incidence of listeria species from dairy environmental samples	Chaitra, S.	R. Prabha Dairy Microbiology
COLLEGE OF FISHERIES, MANGALURU			
1	Development of fish crackers utilizing snapper filleted frame meat	Jyoti Ganachari	S. Siddappaji FPT
2	Isolation and characterization of <i>vibrio mimicus</i> and <i>vibrio (grimontia) hollisae</i> from seafood	Pavana, V.	M.N. Venugopal FMB
3	Evaluation of outer membrane protein k (ompk) in protecting <i>litopenaeus vannamei</i> against <i>vibrio harveyi</i> infection	Saptami, R. Jogalkar	M.N. Venugopal FMB

ii) Doctoral Degree:

<i>Sl. No.</i>	<i>Thesis Title</i>	<i>Name of the Student Degree</i>	<i>Major Advisor and Dept.</i>
VETERINARY COLLEGE, BENGALURU			
1	Characterisation of nasal associated lymphoid tissue (nalt) and follicle associated epithelia (fae) in sheep (<i>ovis aries</i>)	Girish, M. Halemani	K.V. Jamuna VAN
2	Cellular and genomic studies on ovineocyte-granulosa cell interaction and apoptosis	Ramesh, H.S.	Girish Kumar VBC
3	Studies on clonal distribution of staphylococci associated with bovine and bubaline mastitis	P. Sheela	Shrikrishna Isloor VMC
4	Morphological and molecular identification of tabanids in western ghats of Karnataka and evaluation of fly traps	Raju Metri	G.C. Puttalakshamma VPA
5	Pathomorphological studies on induced diabetes in rats and evaluation of antidiabetic efficacy of <i>coumarin (umbelliferone)</i>	Anjankumar, K.R.	M.L. Satyanarayana VPP
6	Pathological and molecular studies in induced hyperlipidemia and its amelioration using aged garlic extract in wistar rats	Shashidhar Ballari	M.L. Satyanarayana VPP
7	Synchronization of estrus in sirohi and jamnapari goats outside the breeding tract and its effect on reproductive performance: a field study	Babu, M.	V. Chandrashekar Murthy VGO
8	Studies on certain reproductive parameters in Malnad Gidda breed of cattle	A. Murugeppa	M.K. Tandle VGO
9	Studies on management of chronic kidney disease in dogs	Chethan Kumar, G.K.	C. Ansar Kamran VMD
10	Diagnostic and managemental aspects of certain geriatric diseases in dogs	D. Srikala	C. Ansar Kamran VMD
11	Genetic characterization of selective goat populations in Karnataka	Basavraj Inamdar	R. Nagaraja AGB
12	Characterization and performance evaluation of indigenous chicken of Belgaum division of Karnataka state	Veeranna Gowda, B.G.	Jayanaik PSC
13	A study on the management practices of Malnad Gidda cattle in Shivamogga district with special reference to management interventions	Lohith, J.	Y.B. Rajeshwari LPM

VETERINARY COLLEGE, BIDAR			
1	Repair of femoral fractures using titanium implants of intramedullary inter locking nail, dynamic compression plate and locking compression plate in dogs	Jagan Mohan Reddy, K.	Dilip Kumar, D. VSR
2	Effect of semen extenders on sperm parameters during storage at refrigeration temperature in cross-breed rams during breeding and non-breeding season	Venkana Gouda, D.	M.K. Tandle VGO
COLLEGE OF FISHERIES, MANGALURU			
1	Assessment of productivity of freshwater fish ponds	Kishor, C.	A.T. Ramchandra Naik AEM
2	Utilization of fish filleting waste or skeletal frames as a source of essential minerals	Amitha	C.V. Raju FPT
3	Studies on the extraction of fish oil rich in omega-3 fatty acids by ph shift method and its storage stability using natural preservatives	Sarojini, A.	C.V. Raju FPT

ABSTRACT

#	<i>Name of the College</i>	<i>Master Degree Thesis Accepted</i>	<i>Doctoral Degree Programme Thesis Accepted</i>	<i>Total</i>
1	Veterinary College, Bengaluru	21	13	34
2	Veterinary College, Bidar	06	02	08
3	Veterinary College, Shivamogga	00	00	00
4	Veterinary College, Hassan	03	00	03
5	Dairy Science College, Bengaluru	04	00	04
6	College of Fisheries, Mangaluru	03	03	06
Total		37	18	55

6) Library and Information Services

(i) Print Media (books, journals/periodicals) as on 31.03.2021

#	Particulars	L&IC VCH& DSCH	UL&IC Main Campus, Bidar	L&IC VCS	L&IC HVC	L&IC DSCK	L&IC FCM	L&IC VCG	Total	
1	Books	21334	13753	7270	7048	2486	18130	1629	71650	
2	Theses	2027	1041	25	11	--	919	Nil	4023	
3	Reports	1004	299	25	158	--	3238	Nil	4724	
4	Pamphlets	712	45	33	74	--	965	Nil	1829	
5	Bound Volumes	12710	2803	127	1042	--	6405	Nil	23087	
6	Gift Books	1522	02	146	Nil	95	650	25	2440	
7	SC/ST Books	2616	2747	1258	850	818	1810	226	10325	
8	Indian Journals	017	-	09	45	--	-	Nil	71	
9	Foreign Journals	006	-	--	02	--	-	Nil	08	
10	Back Volumes	12710	2803	127	1042	--	6405	Nil	23087	
11	Others									
	News papers	10	10	07	05	06	08	04	50	
	Magazine	05	16	14	05	06	14	07	67	
12	E-Books		1338 e-books are purchased and made available to all campus libraries through EZyproxy server from main campus library and also provided all e- books in soft copy to all campus libraries.							1338

(ii) Non-print Media (e-resources) - list of e-journals/CD

#	Particulars	L&IC VCH& DSCH	UL&IC Main Campus , Bidar	L&IC VCS	L&IC HVC	L&IC DSCK	L&IC FCM	L&IC VCG	Total
1	e-journals / CD	CeRA + Vet Med Resources CABI Database + 21 Indian online Journals accessing through EZYproxy server	CeRA + Vet Med Resources CABI Database + 21 Indian online Journals accessing	CeRA + Vet Med Resources CABI Database	CeRA + Vet Med Resources CABI Database	Not getting due to net and accreditation problem	CeRA Consortium Accessing	--	** VMR
2	CD's	280	140	55	159	-	50	-	684

(iii) Membership Usage

#	Particulars	L&IC VCH& DSCH	UL&IC Main Campus, Bidar	L&IC VCS	L&IC HVC	L&IC DSCK	L&IC FCM	L&IC VCG	Total
1	Students at UG Level / per day average	460/day	130/day	80/day	75/day	93/day	143/day	30/day	1011/day
2	Students at PG Level / per day average	183/day	20/day	10/day	15/day	-	61/day	-	289/day
3	Staffs / per day average	10/day	06day	15/day	12/day	14/day	15/day	10/day	82/day
Total		653/day	156/day	105/day	102day	107/day	219/day	40/day	1382/day

7) Student Welfare Activities

DIRECTORATE OF STUDENT WELFARE, KVAFSU, BIDAR

KVAFSU Inter Collegiate Cricket & Volley Ball(M&W) Tournament 2020 -21 held at KVAFSU Sports Complex, Bidar from 19th to 21st March-2021

KVAFSU Intercollegiate Cricket & Volleyball (M&W) Tournament -2020-21 was organized by **Veterinary College, Bidar** from 19th to 21st March-2021. All constituent colleges viz, Veterinary College, Bidar / Shivamogga / Hassan / Bengaluru / Gadag, Dairy Sciences College Bengaluru / Kalaburagi and College of Fisheries, Mangaluru teams were participated in the events. The Intercollegiate Cricket & Volleyball (M&W) Tournament -2020-21 was inaugurated by Dr. B.V. Shivaprakash, Director of Research, KVAFSU, Bidar as a Chief Guest. Dr. Dilip Kumar, Dean, Veterinary College, Bidar was presided over the inaugural function. Dr. Yeshwanthkumar, Director of Students Welfare, KVAFSU, Bidar was the organized the event.

The Winners and Runners of the Inter-Collegiate Cricket & Volleyball (M&W) Tournaments are as follows;

- | | |
|------------------------------|--|
| 01. Cricket | Winner- Veterinary College, Bidar .
Runners- Veterinary College, Hebbal, Bengaluru. |
| 02. Volley Ball Men | Winner- Veterinary College, Hebbal, Bengaluru.
Runners- Veterinary College, Shivamogga. |
| 03. Volley Ball Women | Winner- Veterinary College, Hassan.
Runners- Veterinary College, Gadag. |

The Valedictory function was organized on 21st March, 2021. Dr. K.C. Veeranna, Registrar, KVAFSU, Bidar was Chief Guest. Dr. Yeshwanthkumar, Director of Students Welfare, KVAFSU, Bidar. Dr. N.A. Patil, Director of Extension, KVAFSU, Bidar. Dr. Nagraj, C.S., Dean, Veterinary College, Bengaluru. Dr. Girish Kumar, Head of Division, Veterinary College, Hebbal, Bengaluru. Dr. N. Prakash, Dean, Veterinary College, Shivamogga were participated as Guests and Dr. Dilip Kumar, Dean, Veterinary College, Bidar was presided over the function.

(ii) All India Sports and Cultural Event not conducted because of COVID-19

8) National Service Scheme (NSS)

NATIONAL SERVICE SCHEME, KVAFSU, Bidar

NSS Advisory Committee Meeting of University:

The meeting of NSS Advisory Committee of the university was held on 31.12.2020 in the Conference Hall of Veterinary College, Hebbal, Bengaluru. The meeting was chaired by Prof. H D Narayanaswamy, Hon'ble Vice-Chancellor of the university as well as the Chairman of NSS Advisory Committee of the university. The meeting was attended by NSS Programme Coordinator, the Deans of constituent colleges, University Officers, NSS programme officers of constituent NSS units and student representatives. Dr. Shrikant Kulkarni, NSS Programme Co-ordinator of the university presented the brief report of NSS activities at university level during the year 2019-2020. Thereafter, NSS Programme Officers of all the constituent colleges presented the NSS regular and special camp activities carried out under their respective NSS units for the year 2019-20 and also the activities carried out during the COVID 19 pandemic and action plan for the remaining period of 2020-21.

Allotment of volunteer strength and Budget for the year 2020-21:

The following numbers of NSS volunteers were allocated to NSS units of constituent colleges;

#	Name of the college and unit	Volunteer's Strength for regular activities	Volunteer's Strength for Special camp activities
1	Veterinary College, Bengaluru (Unit I)	80	40
2	Veterinary College, Bengaluru (Unit II)	80	40
3	Veterinary College, Bidar (Unit I)	70	35
4	Veterinary College, Bidar (Unit II)	70	35
5	Veterinary College, Shivamogga (Unit I)	86	43
6	Veterinary College, Shivamogga (Unit II)	86	43
7	Veterinary College, Hassan (Unit I)	80	40
8	Veterinary College, Hassan (Unit II)	80	40
9	Veterinary College, Gadag (Unit I)	56	28
10	Veterinary College, Gadag (Unit II)	56	28
11	College of Fisheries, Mangaluru	100	50
12	Dairy Science College, Bengaluru	90	45
13	Dairy Science College, Kalaburgi	66	33
	TOTAL	1000	500

Allotment of budget to NSS units for the year 2020-2021:

The budget for the NSS Regular activities and NSS Special camp activities was not released by the state NSS cell for the financial year 2020-2021. However, the second installment of budget for the year 2019-2020 (20%) has been released by the government on 18th May, 2020 i.e Rs. 48,789.00 for Regular activities and Rs. 45,000.00 for Special camp activities. The released grant has been distributed to the constituent colleges for the utilization in the year 2020-2021 as detailed below;

#	Name of the college and unit	Regular activities	Special camp	Total budget
1	Veterinary College, Bengaluru (Unit I)	2800.00	3600.00	6400.00
2	Veterinary College, Bengaluru (Unit II)	2800.00	3600.00	6400.00
3	Veterinary College, Bidar (Unit I)	2800.00	3600.00	6400.00
4	Veterinary College, Bidar (Unit II)	2800.00	3600.00	6400.00
5	Veterinary College, Shivamogga (Unit I)	2800.00	3600.00	6400.00
6	Veterinary College, Shivamogga (Unit II)	2800.00	3600.00	6400.00
7	Veterinary College, Hassan (Unit I)	2800.00	3600.00	6400.00
8	Veterinary College, Hassan (Unit II)	2800.00	3600.00	6400.00
9	Veterinary College, Gadag	3300.00	4050.00	7350.00
10	College of Fisheries, Mangaluru	3300.00	4050.00	7350.00
11	Dairy Science College, Bengaluru	3300.00	4050.00	7350.00
12	Dairy Science College, Kalaburagi	3300.00	4050.00	7350.00
13	NSS Cell, KVAFSU, Bidar	13189.00	-	13189.00
	TOTAL	48789.00	45000.00	93789.00

Participation of NSS Volunteers in State level/ National level events:

Most of the regular State/ National level NSS events were not organized in the year 2020-2021 due to COVID 19 pandemic. However, the NSS Volunteer's of the university participated in few State/National level NSS events as detailed below during this period;

#	Name, ID No. and College	Class	Details of Event, organizer, place and date
1	Mahanth Mallikarjun Doni DHK 1918 Dairy Science College, Bengaluru	2 nd year B.Tech (D.Tech)	2 nd prize in World Milk Day-2020 photo contest, organized by Indian veterinary extension Forum and Agricultural extension in South India
2	Chandana R DHK 1908 Dairy Science College, Bengaluru	2 nd year B.Tech (D.Tech)	Participated as volunteer during covid pandemic time at her village; during SSLC examination and as volunteer on independence day Aug, 2020
3	Bhargav KS VSK 1707 Veterinary College, Shivamogga	3 rd B.V.Sc& A.H.	NSS COVID quiz organized by BHU
4	Masiyanna H.M. HVK 1727 Veterinary College, Hassan	4 th B.V.Sc.& A.H.	3 rd Prize – National Level online Quiz competition organized by KVASU, Kerala on 09.07.2020
5	Masiyanna H.M. HVK 1727 Veterinary College, Hassan	4 th B.V.Sc.& A.H.	1 st Prize –State Level Picture Poetry competition organized by DARPANA
6	Masiyanna H.M. HVK 1727 Veterinary College, Hassan	4 th B.V.Sc.& A.H.	Participation in 3 days International webinar organized by KVASU, Kerala (6 th to 8 th July, 2020)

Training of NSS Programme Officers:

The following NSS Programme Officers of different constituent colleges of Karnataka Veterinary, Animal and Fisheries Sciences University, Bidar were deputed for the training at “NSS Empanelled Training Institute”, Gangothri Layout, Saraswathipuram, Mysore-570009;

#	Name and Address	Training Period
1	Dr. Prasanna, S.B. NSS Programme Officer Veterinary College, Bengaluru	23.03.2021 to 29.03.2021

Meeting/ Training/ Seminars attended:

Dr. Shrikant Kulkarni, Programme Coordinator, National Service Scheme, KVAFSU, Bidar attended the following state level meetings/ seminars;

#	Date	Details of Meeting/ Training/ Seminar	Venue
1	01.12.2020	State Level Meeting of NSS Program Coordinators	Vikasa Soudha, Bengaluru

NSS regular activities:

Along with the regular NSS activities like shramadhan, campus cleaning, watering to the plants in the campus etc., the following important events were celebrated by different NSS units of constituent colleges of the university;

Date	Events
VETERINARY COLLEGE, BIDAR	
31.07.2020	Vanama hotsava
07.09.2020	Fit India Freedom Run
07.10.2020	COVID 19 Awareness Programme and COVID 19 Pledge programme
26.11.2020	Constitution Day Celebration and taking of Constitution Pledge
VETERINARY COLLEGE, BENGALURU	
31.03.2021	A workshop on “Developing soft skills competency in veterinary Profession” Resource Person: Dr. K.A. Swamy Naidu, Master Trainer, Winning skills foundation, Bengaluru
VETERINARY COLLEGE, SHIVAMOGGA	
22.04.2020	Online Awareness Programme on COVID-19
14.10.2020	Virtual Orientation Program for NSS Volunteers
12.03.2021	Workshop Cum Brian Storming Session on “Awareness, Budgeting & Conservation of Water” on the occasion of World Water Day in collaboration with Rotary International Foundation/Club Shivamogga North
VETERINARY COLLEGE, HASSAN	
11.04.2020	Online Programme for creation of awareness about COVID-19 to NSS Program Officers and Volunteers of KVAFSU(B)
22.05.2020	Celebration of International Day for Biological Diversity
05.06.2020	Celebration of World Environment Day by planting trees
21.06.2020	Online Yogabhyasa on the occasion of 6 th International Day of Yoga under the theme “Yoga at Home & Yoga with Family”
14.08.2020	Volunteer participation in Pledge For Life NSS Spit Free India Movement

15.08.2020 to 14.09.2020	Under Fit-India Youth Club organized fitness sessions and sports in the campus
07.09.2020	Fit India Freedom Run
24.09.2020	Celebration of NSS Day
02.10.2020	Celebration of Mahatma Gandhi Jayanti under the theme ' <i>Cleanliness is next to godliness</i> ' and taking of Covid19 pledge
07.10.2020	COVID-19 Pledge programme
26.11.2020	Celebration of Constitution Day and taking of Constitution Pledge
16.01.2021	Celebration of National Youth Day
VETERINARY COLLEGE, GADAG	
07.09.2020	Fit India Freedom Run
12.10.2020	COVID 19 Awareness Programme and COVID 19 Pledge programme
04.12.2020	Fitness ka Doz Ek Ada Ganta Roz
DAIRY SCIENCE COLLEGE, HEBBAL, BENGALURU	
05.06.2020	World Environment Day
21.06.2020	International Yoga day (Online)
COLLEGE OF FISHERIES, MANGALURU	
15.05.2020 to 20.05.2020	Creation of small forest in collaboration with forest department
05.06.2020	World Environment Day
21.06.2020	International yoga day (Online)
DAIRY SCIENCE COLLEGE, KALABURAGI	
01.06.2020	Observance of World Milk Day
21.06.2020	Observance of Yoga Day
20.08.2020	Observance of Sadhbhavana Diwas
24.09.2020	Observance of NSS Day

NSS Annual Special Camp:

The details of the NSS Annual Special Camp organized by different constituent colleges are given below;

#	Name of the college	Place of Camp	Date
1	Veterinary College, Bengaluru (Unit-I and Unit-II)	Shivakote Village Hessaraghatta Hobli Yelhanka (Taluk) Bengaluru (District)	24.02.2021 to 02.03.2021

9) Other co-curricular activities

VETERINARY COLLEGE, BIDAR

#	Date	Activity
1	31.07.2020	Celebration of Van Mahotsava at Veterinary College, Bidar
2	02.10.2020	Celebration of 151 st Mahatma Gandhi Jayanti at Veterinary College, Bidar
3	15.10.2020	Organized the online /offline Essay Competition for the students of Veterinary College, Bidar on topic entitled "Empowering Women through Animal Husbandry" on the occasion of Mahila Kisan Diwas

4	31.10.2020	Celebration of Maharshi Valmiki Jayanti at Veterinary College, Bidar
5	14.11.2020	Celebration of 37 th Foundation Day of Veterinary College, Bidar
6	19.11.2020 to 23.11.2020	Organized the COVID-19 testing for students and staff of Veterinary College, Nandinagar, Bidar
7	03.12.2020	Celebration of 511 th birth anniversary of Kanaka Dasa at Veterinary College, Bidar
8	23.12.2020	Celebration of National Farmers Day programme at Veterinary College, Bidar
9	26.01.2021	Flag hoisting of 72 th Republic Day Celebration at KVAFSU, Bidar by the Dr. Dilipkumar, D
10	28.02.2021	Organized the online Essay Competition for the students of Veterinary College, Bidar on topic entitled “Future of STI (Science Technology Innovation) 2021: impact on education , skill and work on the occasion of National Science Day

VETERINARY COLLEGE, SHIVAMOGGA

#	Date	Activity
1	08.03.2021	<p>International Women’s Day Celebration:</p> <p>Dr. Veena Bhat, Nayana Hospital, Bhadravathi spoke on women empowerment and role of women in safeguarding the family health. Mr. Badrish, President of Chaitanya Rural Development Society, Shivamogga, addressed the gathering on role of women in society. 100 girl students, 50 women employees of the Veterinary College and hostels and all the teaching and non teaching staff were benefited by the program.</p> <p>The program was inaugurated by Dr Ganesh Udupa, Dean I/C on the day, Dr. P. Sheela introduced the guests, Dr. Kavitha Rani welcomed the gathering as Master of ceremony, Dr. R.Jayashree proposed vote of thanks.</p>

VETERINARY COLLEGE, HASSAN

#	Date	Activity
1	04.02.2021	Dr. Sunil Kumar MA Secured 1 st Place in Swimming Breast Stroke, District Level Government Employees Sports Meet, Hassan

VETERINARY COLLEGE, GADAG

#	Date	Activity
1	05.06.2020	Celebration of World Environment Day: World Environment Day (WED) was celebrated on 5 th June, 2020 at VCG by planting the saplings in the college premises by Dean, Faculty and Staff of the college.
2	15.08.2020	74th Independence day was celebrated in VCG: 74 th Independence Day was celebrated at VCG. Dr. R. Nagaraja, Dean, VCG hoisted the National Flag. Dean addressed the gathering and stressed upon the importance of Independence Day. Teaching and non-teaching staffs were attended the event.

3	25.09.2020	Celebration of 4th Foundation Day of Veterinary College, Gadag: 4th Foundation Day of Veterinary College, Gadag on Virtual Mode: 4 th Foundation Day of Veterinary College, Gadag was celebrated on 25 th September, 2020. Prof. H.D. Narayanaswamy, Hon'ble Vice Chancellor, KVAFSU, Bidar inaugurated the function through virtual mode. Dr. R. Nagaraja, Dean, VCG presided the occasion. Dr. G.P. Managoli Deputy Director, Dept. of Animal Husbandry and Veterinary Services of Gadag district, Govt. of Karnataka, Dr. B.V. Madivalar, Deputy Manager, DMU, KMF, Gadag were chief guests on the occasion. Students participated in the event on virtual mode and presented various cultural activities. A district level technical seminar was organized for officers of Dept. of AH&VS on the topic "Standard Veterinary surgical procedures for field level surgeries". Dr. Dhanalaxmi, Assistant Professor, VSR delivered the lecture. Various livestock products produced at Livestock Farm Complex of the college were also released for marketing by the dignitaries on the occasion.
4	28.09.2020	On the Occasion of World Rabies Day , an E-poster competition was conducted for students of Veterinary College, Gadag. Students prepared and sent e-posters through e-mail. Best three were awarded with prizes.
5	02.10.2020	Gandhi Jayanthi was celebrated at Veterinary College, Gadag: Birth anniversary of Mahatma Gandhiji was celebrated on 02-10-2020 at Veterinary College, Gadag. A campus cleaning drive led by Dean, accompanied by faculty and staff of the college campus.
6	09.10.2020	On the occasion of World Egg Day , an online quiz competition was conducted for students of Veterinary College, Gadag.
7	01.01.2021	Republic day was Celebrated at Veterinary College, Gadag. Dr. R. Nagaraja, Dean, VCG hoisted the National Flag and addressed the gathering. Students, Teaching and non-teaching staff participated in the event.

ANIMAL HUSBANDRY POLYTECHNIC, KONEHALLI-TUMAKURU

#	Date	Activity
1	14.04.2020	Celebration of Dr. B.R Ambedkar Jayanthi
2	27.04.2020	Celebration of World Veterinary Day
3	05.06.2020	Celebration of Environment Day
4	15.08.2020	Celebration of Independence day
5	05.09.2020	Celebration of Teachers Day
6	02.10.2020	Celebration of Gandhi Jayanthi
7	20.10.2020	Celebration of First Year Students Welcome Party
8	01.11.2020	Celebration of Karnataka Rajyotsava
9	14.11.2020	Celebration of Children's Day
10	01.12.2020	Celebration of World AIDS Day
11	26.01.2021	Celebration of Republic Day

ANIMAL HUSBANDRY POLYTECHNIC, KUNNUR-HAVERI

#	Date	Activity
1	14.04.2020	Celebrated Ambedkar Jayanti in which staff of Animal Husbandry Polytechnic, Kunnur, Shiggaon actively participated.
2	26.04.2020	Celebrated Basava Jayanti in which staff of Animal Husbandry Polytechnic, Kunnur, Shiggaon actively participated.
3	05.06.2020	Celebrated Environmental Day in which staff of Animal Husbandry Polytechnic, Kunnur, Shiggaon and Forest Officers Dundasi actively participated.
4	15.08.2020	Celebrated Independence day in which staff of Animal Husbandry Polytechnic, Kunnur, Shiggaon actively participated.
5	02.10.2020	Celebrated Mahatma Gandhi Jayanti in which, staff of Animal Husbandry Polytechnic, Kunnur, Shiggaon actively participated.
5	31.10.2020	Celebrated Valmiki Jayanti in which, staff of Animal Husbandry Polytechnic, Kunnur, Shiggaon actively participated.
6	01.11.2020	Celebrated Kannada Rajyotsava in which staff of Animal Husbandry Polytechnic, Kunnur, Shiggaon actively participated.
7	03.12.2020	Celebrated Kanaka Dasa Jayanti in which staff of Animal Husbandry Polytechnic, Kunnur, Shiggaon actively participated.
8	26.01.2021	Celebrated Republic Day in which staff of Animal Husbandry Polytechnic, Kunnur, Shiggaon actively participated.

ANIMAL HUSBANDRY POLYTECHNIC, DORNAHALLI-YADGIR

#	Date	Activity
1	14.04.2020	Ambedkar Jayanti celebration at AHP, DORNAHALLI in presence of Principal and students
2	26.04.2020	Basava Jayanti celebration at AHP, DORNAHALLI in presence of Principal and Students
3	22.08.2020	Celebration of Ganesh Chaturti
4	15.08.2020	Independence Day Celebration at AHP-Dornahalli in Presence of Staff and Students. Falg Hoisted by Dr. Channappagouda Biradar, Principal, AHP-Doranahalli
5	17.09.2020	Kalyan Karnataka Vimochana Diwas at AHP Dornahalli in Presence of Staff and Students. Falg Hoisted by Dr. Channappagouda Biradar, Principal, AHP-Doranahalli
6	02.10.2020	Gandhi Jayanti and Shramadan at AHP Dornahalli in presence of Principal and Students
7	31.10.2020	Valmiki Jayanti celebration at AHP-Dornahalli in presence of Principal and Students
8	01.11.2020	Karnataka Rajyostava day celebration at AHP-Dornahalli in presence of Principal and Students
9	26.01.2021	Republic day celebration at AHP Dornahalli in Presence of Staff and Students. Flag Hoisted by Dr. Channappagouda Biradar, Principal, AHP Doranahalli

INSTITUTE OF ANIMAL HEALTH AND VETERINARY BIOLOGICALS, BENGALURU

#	Date	Activity
1	25.06.2020	Participated in Internal Technical Committee meet as per instructions of the Director, IAH&VB, Bengaluru at IAH&VB, Bengaluru.
2	21.01.2021 to 23.01.2021	Carried out technical scrutiny at IAH & VB, Bengaluru as per instructions of Joint Director, IAH &VB, Bengaluru
3	27.01.2021 to 28.01.2021	Carried out technical scrutiny at IAH & VB, Bengaluru as per instructions of Joint Director, IAH &VB, Bengaluru.
4	02.02.2021 and 06.02.2021	Coordinated with IAH & VB, Bengaluru, Scientist team to Carry out STD screening of all breeding animals of the Khillar Breeding Station, Bankapura, Shiggaon taluk & Haveri district.
5	19.03.2021	Carried out financial bid opening of eProc.55 at IAH & VB, Bengaluru as per instructions of Joint Director, IAH &VB, Bengaluru.

II. RESEARCH

University is vested with the mandate of Teaching, Research and Extension. Various research activities in the sphere of Veterinary, Animal, Dairy and Fisheries Sciences are being undertaken at different organizations/institutions.

1) Completed Projects

a) Project Details

<i>Dept.</i>	<i>Title</i>	<i>Funding Agency</i>	<i>Budget (in lakhs)</i>	<i>Yr. of Comt.</i>	<i>Yr. of Compl</i>	<i>Principal Investigator</i>
VETERINARY COLLEGE, BENGALURU						
AGB	Genetic characterization of genes defining disease resistance in Giriraja and Indigenous chicken	KVAFSU, Bidar (SCSP)	1.00	2018	2020	Naveen Kumar, S.
AGB	Studies on gene mutations in Canine Cardiomyopathy	KVAFSU, Bidar (SCSP)	0.50	2019	2021	Naveen Kumar, S.
AGB	Establishment of Microsatellite patterns in indigenous goats	KVAFSU, Bidar (TSP)	0.50	2018	2021	R. Nagaraja
VPY	Evaluation of Anti-Diabetic and Hypolipidemic Effect of <i>Simarouba glauca</i> Leaf Powder on Induced Diabetes and Hyperlipidemia in Wistar albino Rats	SCSP/TSP Grants	0.50	2019	2021	M.P. Veena
VMC	Study on antimicrobial resistance (AMR) in Bovine Sub-clinical Mastitis pathogens to reduce it's occurrence and to improve economic status of farmers	RKVY	120.00	2017	2020	K.L. Phaniraj
VMC	Development of a quantitative <i>ELISA</i> for sero monitoring of post-anti rabies vaccinal antibody responses in dogs	DBT, GOI	21.05	2018	2020	Shrikrishna Isloor
VMC	OIE Twinning programme on 'Strengthening laboratory diagnosis of rabies in India	OIE	102.62	2016	2021	Shrikrishna Isloor

LPM	Assessment of the feed intake and digestibility of diets based on Spineless Cactus (<i>Opuntia ficus indica</i>) and Moringa (<i>Moringa oleifera</i>) in adult sheep	KVAFSU	-	2017	2020	Madhura, Y.
VGO	Development of GnRH Receptor based Contraceptive Vaccine for Dogs	DBT, New Delhi	33.50	2019	2021	Narasimha Murthy
VPP	Characterization and prognostic evaluation of embryonic stem cell signatures in canine mammary neoplasia	SERB-DBT, GoI	50.00	2020	2021	K.R. Anjan Kumar
VSR	Non surgical method of retrieval of non potential foreign bodies from the caudal cervical esophagus in Bovines	KVAFSU TSP Grants	0.75	-	2021	B.N. Nagraja
P.Sc.	Effect of Organic Magik Feed Additive on Growth Performance of Broilers	Multiplex Bio-Tech Pvt. Ltd.,	2.08	2019	2020	Jayanaik
P.Sc.	Effects of yeast cell extract enriched with fatty acids and organic mineral on health and performance of broiler chicken exposed to heat stress	Alletch, Kentucky, USA	6.65	2019	2021	Malathi. V.
ANN	Effect of supplementation of fibrolytic enzymes on growth performance of lambs fed finger millet straw based diets.	KVAFSU, Bidar	0.50	2017	2021	Umashankar, B.C.
VETERINARY COLLEGE, BIDAR						
VGO	Therapeutic management of infertile animals and organizing infertility camps for AI synchronized by use of CIDR in crossbreed cows and buffaloes in Bidar district	RKVY through GOK, Dept. of AHVS	100.00	2016	2021	M.K Tandle and DD (AH & VS), Bidar
VMD	Diagnosis and evaluation of biomarkers for cardiac disorders in bovines	KVAFSU Bidar	1.30	2019	2021	Ravindra, B.G.

VPT	Effects of Melatonin on Vascular Dysfunction in Arsenic-exposed Rats	SCP-TSP Grant, GoK	1.00	2019	2021	Prashantkumar Waghe
VPA	In-vitro study of acaricidal effects of <i>Anacardium occidentale</i> (Cashew Plant)	SCP-TSP Grant, GoK	0.50	2020	2021	Krishnamurthy, C.M.
VETERINARY COLLEGE, SHIVAMOGGA						
ANN	Feed Quality Evaluation Of Commercial Cattle Feeds	GOK, SCSP Grants	0.25	2019	2020	Giridhar, K.S.
LFC	Nutritional evaluation of Maize tops (green stalk above the cob) and its silage on Malendugidda cows	Dept of Social Welfare, GoK	1.00	2018	2021	Venkatesha, M.M.
LFC	Role of fodder cowpea genotypes as an intercrop in Hybrid Napier fodder crop under different planting designs	Dept of Social Welfare, GoK	0.25	2018	2020	Venkatesh, M.M.
VETERINARY COLLEGE, HASSAN						
AGB	Field performance recording and herd registration in Hallikar cattle of Karnataka	NAFCC	55.00	2017	2020	Naveen Kumar, G.S.
VAN	Gross Morphology and Histological studies on the mammary gland of Hallikar cow	SCSP Grant	0.50	2019	2021	Ganga Naik, S.
VAN	Histology and Histochemistry of Regional Lymphnodes, Payer Patches, Thymus and Spleen of Hassan Sheep Breed	SCSP Grant	0.50	2019	2021	N.M. Rajashailesha
VETERINARY COLLEGE, GADAG						
VPE	Prevalence of Methicillin Resistant <i>Staphylococcus aureus</i> among animals, humans and at veterinary clinical settings from Gadag area	TSP-GoK	0.50	2019	2020	Sunitha, R.
COLLEGE OF FISHERIES, MANGALURU						
AAHM	Development of therapeutic phage consortia to manage <i>Aeromonashydrophila</i> infection in aquaculture systems	DBT (NER-BPMC)	21.00	2017	2020	Giisha. S.K.

AAHM	Theoretical and Computational Biology (Bioinformatics, AI and Big Data) {DBT – Bioinformatics – “Distributed Information Sub Centre (DISC)}	DBT, GoI	14.00	2000	2020	S.K. Girisha
FPT	AICRP on PHET, CIPHET, Ludhiana	ICAR	-	2018	2020	A. SenthilVel
FISHERIES RESEARCH AND INFORMATION CENTER, HEBBAL						
FRIC	Establishment of Biofloc demonstration model unit for empowering fish farming community at FRIC, Hebbal	TSP Grants,	2.50	2020	2021	K.B. Rajann
FISHERIES RESEARCH AND INFORMATION CENTER, ANKOLA						
FRIC	All India Network Project on Mariculture	ICAR-CMFRI Kochi	57.75	2017	2020	E.G. Jayaraj
FRIC	Utilization of Marine Microalgae and Residue as Feed Ingredient in Vannamee Shrimp Diet	RR&DC, Navi Mumbai	11.98	2018	2021	E.G. Jayaraj

ABSTRACT OF COMPLETED RESEARCH PROJECTS

#	College /Institute	Research Projects	
		Total Nos.	Amount (Rs. Lakhs)
1	Veterinary College, Bengaluru	14	339.65
2	Veterinary College, Bidar	4	102.80
3	Veterinary College, Shivamogga	3	1.50
4	Veterinary College, Hassan	3	56.00
5	Veterinary College, Gadag	1	0.50
6	College of Fisheries, Mangaluru	3	35.00
7	Fisheries, Research and Information Center, Hebbal, Bengaluru	1	2.50
8	Fisheries Research and Information Center, Bela, Ankola	2	69.73
Total		31	607.68

b) Research Highlights

VETERINARY COLLEGE, BENGALURU

Title : Genetic characterization of genes defining disease resistance in Giriraja and Indigenous chicken

PCR- RFLP method was used to identify genetic polymorphism in *TLR4*, *MD-2*, *MX1* and *TVB* genes.

The indigenous, non-descript birds of Karnataka and Giriraja strain revealed no variation in Exon-3 of *TLR4* gene

Significant genetic variability existed in Exon-1 region of *MD-2* gene, Exon 14 region of *MX1* gene and Exon 3 region of *TVB* in both indigenous and Giriraja chicken.

MD-2, *MX1* and *TVB* genes may be considered as the potential gene marker for within breed selection for disease resistance in chicken provided that association is established between genotype and disease resistance traits.

Thus, there is need to conduct extensive studies within breed for association analysis between *MD-2*, *MX1* and *TVB* genes variants and disease resistance traits.

Title : Studies on gene mutations in Canine Cardiomyopathy

PCR-SSCP technique was employed to determine genetic polymorphism in β -MYH7 and MYBPC3 genes in dog

The PCR-SSCP analysis of the part of the exon 28 and part of the intron 28 region of β -MYH7 gene fragment in Group A (Healthy) and Group B (Cardiomyopathy) revealed two patterns

(A1 and A2) representing two genotypes indicating polymorphism.

In healthy dogs, the genotypic frequency of A1 and A2 patterns were 84 and 16 per cent, respectively and in cardiomyopathy dogs the genotypic frequencies were 46 and 54 per cent, respectively.

Sequence analysis of A1 and A2 patterns of β -MYH7 gene fragment revealed a SNP, A \rightarrow G transition at 175 bp of A2 pattern.

The PCR-SSCP analysis of the part of the intron 17 and part of the exon 18 region of MYBPC3 gene fragment in Group A (Healthy) and Group B (Cardiomyopathy) revealed only one band pattern indicating monomorphism.

The association of genetic polymorphism at β -MYH7 gene with canine cardiomyopathy may be validated with larger samples.

Title : Establishment of Microsatellite patterns in indigenous goats

The studied polymorphic parameters revealed the presence of high polymorphism in all the 10 different microsatellite markers, which indicated the presence of diversity among studied goat populations.

Studies on microsatellite markers also revealed the genetic distance of Bidri goats from Jayawadagi and Nandidurga goats as 0.553 and 0.584, respectively and the genetic distance between Jayawadagi and Nandidurga goats as 0.539.

The present study revealed diversity among the studied goat populations. While NBAGR has already registered Bidri and Nandidurga goats, Jayawadagi goats having unique features may be considered for their addition as new goat breed under national breed registry. However, further studies based on more number of microsatellite markers are desirable to draw valid and meaningful conclusions.

Title : Evaluation of Anti-Diabetic and Hypolipidemic Effect of *Simarouba glauca* Leaf Powder on Induced Diabetes and Hyperlipidemia in Wistar albino Rats.

The extract of the leaves of *Simarouba glauca* has showed the normoglycemic and normolipidemic effects in the diabetic and hyperlipidemic induced Wistar albino rats.

Title : Study on Antimicrobial Resistance (AMR) in Bovine Sub-clinical Mastitis Pathogens to Reduce it's Occurrence and to Improve Economic Status of Farmers

The prevalence and incidence of subclinical mastitis in bovines in 12 taluka's of Bengaluru Rural, Bengaluru Urban and Ramanagara districts were studied.

The presence of bacterial pathogens of SCM in the milk samples were studied and identified its Source of infection by examining the other environmental samples like Water, Soil and fodder.

The HOT SPOT areas of Subclinical Mastitis and Antimicrobial Resistance bacteria was identified and specific source of infection to animal was also studied

The gene responsible for antimicrobial resistance in bacteria isolated was studied by using whole genome sequencing and Sanger's sequencing.

Conducted several training programme & Workshops for Veterinarians of Karnataka state AHVS dept and KMF with emphasis to use alternate medicine to curb AMR and submitted several abstract in various national and international conferences.

Title : Development of a quantitative ELISA for sero monitoring of post-anti rabies vaccinal antibody responses in dogs.

Recombinant baculovirus stocks were amplified in *Sf-21* cells up to high titre of 8×10^7 pfu/ml. Tn-5 cells were infected with recombinant baculovirus at an m.o.i of 2-5 and expression was optimized. Protein expression was found to be maximal at 96 hr post infection of Tn-5 cells as evident from SDS-PAGE. A protein band of approximate 60kDa size was observed on by SDS-PAGE. Furthermore, protein was expressed in bulk quantity in Tn-5 cells and purified by nickel affinity chromatography. However, protein was found to be low binding to the resin resulting in poor yields of the protein. In view of this, the recombinant G protein was partially purified as described in the methodology. The reactivity of the partially purified protein with polyclonal serum from the vaccinated dog (64IU/ml) was confirmed by Western Blotting as well as indirect ELISA.

Subject to approval to continue the study in Phase II, it is proposed to lyophilize the Purified antigen, control sera and conjugates and test about 1000 serum samples of dogs (preserved in the repository) with varying RFFIT titers, by the quantitative indirect ELISA. Once this is completed, the performance of RFFIT and ELISA will be correlated. Comparative evaluation of in-house Quantitative ELISA with the commercially available quantitative ELISA kit approved by OIE will be carried out. Further, the Intra and Inter laboratory comparison (ILC) will be carried out using the blind folded samples. Finally, the assay developed will be transformed in the form of a kit that could be highly useful in sero-monitoring the anti-rabies vaccinal antibodies as a part of the Mass Dog vaccination proposed to be undertaken soon in India under National Action Plan for Rabies Elimination (NAPRE).

Title: OIE Twinning programme on 'Strengthening laboratory diagnosis of rabies in India'.

International workshops (two at APHA, UK and one at CDC, Atlanta) and several National / Regional /local workshops (21) were organized with the support from both the parent laboratories and CVA.

About 450 veterinarians were trained on Biosafety aspects, brain sample collection, packing, shipping and processing, diagnosis, reporting, documenting and knowledge transfer in various aspects. The faculty were also trained on auditing, quality control, quality assurance, Inter laboratory comparison, Proficiency Testing.

As on date, in all, 1570 brain samples of different species of animals from 18 states and two union territories of India were tested by DFA for rabies viral inclusions as of 14th February 2021. Of these, 1122 samples were positive for rabies (72%). Most of the brain samples processed were from dogs (83 % -1306/1570) and 69 % (896/1306) of dog samples were positive for rabies. In addition to these, molecular studies such as polymerase chain reaction / LN 34 real-time PCR assay for the pan Lyssa virus are being carried out for understanding the molecular epidemiology of rabies virus present in different parts of India.

The phylogenetic analyses based on complete N and G gene sequences has revealed that, some sequences from southern parts of India cluster closely with sequences of rabies virus isolates from Sri Lanka. The rabies viral N and G protein amino acid sequences showed that the viral isolates recovered belong to genotype 1 and are similar to one.

With all this, the laboratory initiated the process of accreditation in 2019 and was accredited as ISO 17025 / 2017 compliant in February 2020 and designated as OIE Reference laboratory for rabies in India. This lab being the 12th OIE Reference laboratory for rabies at the global level is expected to provide the technical inputs and scientific excellence for south Asian and South East Asian countries.

Title: Assessment of the feed intake and digestibility of diets based on Spineless Cactus (*Opuntia ficus indica*) and Moringa (*Moringa oleifera*) in adult sheep

The experiment was conducted to assess the feed intake patterns and digestibility of diets made using Cactus and Moringa in different proportions.

By analysing the chemical composition and energy content in Cactus and Moringa, 5 diets were made using different proportions of Cactus and Moringa for feeding sheep to meet the energy and protein requirements: Diet 1 (65:35), diet 2 (60:40), diet 3 (55:45), diet 4 (50:50) and diet 5 (45:55). It was concluded that nutritionally balanced and economical feeds could be formulated using Spineless Cactus and Moringa forage for feeding growing lambs and adult sheep.

Growing lambs: With the feed intake level of 4.4% of the body weight, a gain of about 75g per day was seen with diet 4 containing Cactus and Moringa in ratio of 50:50.

Adult sheep: With the feed intake level of 2.4% of the body weight, it was found that diet 3 containing Cactus and Moringa in the ratio of 55:45 was sufficient in adult animals to maintain body weight

Title: Development of GnRH Receptor based Contraceptive Vaccine for Dogs

Synthesis and subcloning of genes: The gene sequences were successfully synthesized and cloned into the expression vector and checked on Agarose Gel Electrophoresis.

Recombinant Protein Expression and Purification: The proteins were successfully expressed with 1mM IPTG and purified using Ni-NTA affinity purification.

Evaluation of proteins for contraceptive effect in mice: Purified recombinant proteins were immunized into mice and upon reaching an antibody threshold they were subjected to mating with unimmunized partners.

After the period of gestation, it was observed that the number of pups produced was less compared to control group which were not immunized. However, a complete contraceptive effect was not observed.

Title: Characterization and prognostic evaluation of embryonic stem cell signatures in canine mammary neoplasia

The mammospheres were grown up to four generations from the clinical samples. Variation in size and shape, grape-like structures to a more solid, rounded phenotype was observed. The maximum number of generations achieved with cells isolated from 54 clinical samples was four.

Cells derived from the clinical samples showed limited passage potential, as invitro environment provided doesn't support the long-term self-renewal of stem cells.

OCT4, *SOX2*, *NANOG* and *KLF4* stem cell markers expression was found in kidney of Dog and was used as control for the gene expression studies. Tumor cells express *SOX2* at 2.0 to 6.0-fold, *NANOG* at 1.5 to 8.5-fold and *KLF4* at 1 to 6-fold higher than the control cells. Since the sample number is limited, more number samples need to be experimented to conclude the exact fold difference in the expression of *SOX2*, *NANOG* and *KLF4* from the mammospheres obtained from the clinical samples.

In addition to B-27, Insulin-Transferrin-Selenium in mammosphere media, would play a vital role in the growth and proliferation of cancer stem cells. ITS in the mammosphere media would increase the growth efficiency and stimulate cell expansion of mammospheres for many generations when compared with the culture containing mammosphere media with FBS.

We are the first laboratory to establish mammosphere assay in dogs.

Title: Non surgical method of retrieval of nonpotential foreign bodies from the caudal cervical esophagus in Bovines

The study was conducted in sixteen clinical cases of caudal cervical esophageal obstructive bovines, a non-invasive retrograde retrieval of non-potential foreign bodies was evaluated for its efficacy. To conclude, the Needle and Wire Technique along with manual pushing of cervical oesophageal foreign body to take out through the mouth was successful only if the obstruction was due to round and smooth foreign body even from distal cervical region. The technique being simple, easy to practice and can avoid all esophagotomy connected complications, cost effective and consumes less time in retrieving needle penetrable foreign bodies having smooth surfaces, hence can be followed even at the field level.

Title: Effect of Organic Magik Feed Additive on Growth Performance of Broilers

Body weight recorded was better in OMFA (liquid) fed group of birds followed by OMFA (feed grade) fed group of birds. The lower body weight was recorded in control feed fed and 4g/kg OMFA fed group of birds. The feed conversion ratio was better in OMFA (liquid) fed group of birds followed by 1g/kg OMFA (feed grade) fed group of birds. The poor FCR was observed in control feed fed group of birds and birds fed 2g/kg and 4g/kg of OMFA group of birds. The survivability was better (97.50%) in 4ml/liter of OMFA fed group of birds, whereas permissible survivability percentage observed in both liquid and feed grade OMFA fed group of birds and poor survivability (90.00%) was recorded in control feed fed group of birds. The biochemical parameters viz, total protein, SGPT, SGOT, Albumen, Globulin, A/G Ratio and Triglycerides values were better in either of the OMFA (liquid and feed grade) compared to control group of birds. The cholesterol content was reduced as the level of OMFA (liquid and feed grade) included in the diet except at 4g/kg of OMFA fed group of birds. It was evident that OMFA decreases the cholesterol content of the birds.

Title: Effects of yeast cell extract enriched with fatty acids and organic mineral on health and performance of broiler chicken exposed to heat stress

Broilers were allocated to four experimental groups, control group, group 2 with No heat treatment + Yeast extract enriched with fatty acid and organic minerals @ 0.1%, Group 3 with Heat treatment (day 21-42; 32 °C; 64 % RH) and group 4 with Heat treatment (day 21-42; 32 °C; 64 % RH) + Yeast extract enriched with fatty acid and organic minerals @ 0.1%. Exposing the broilers at high temperature created stress which reflected on reduction in the production performance, lower antibody levels, increased muscle MDA content and increased liver enzymes. No significant changes were noticed in GIT pH, caecal short chain fatty acids and gut histomorphology. Supplementation of Yeast extract enriched with fatty acid and organic minerals @ 0.1% to heat stressed birds did not significantly improve the growth performance, immune response or antioxidant response. It is concluded that the Yeast extract enriched with fatty acid and organic minerals was not effective at 0.1 % level in mitigating the effects of heat stress and probably a higher dose rate could be beneficial, which needs to be tested further.

Title: Effect of supplementation of fibrolytic enzymes on growth performance of lambs fed finger millet straw based diets

***In-vitro* evaluation: Gas production and Metabolizable energy content of diet combinations**

The corrected net gas(ml/200 mg DM) produced by the RIVIGP during 24 hour period of FMS and CFM were 21.97 and 66.51 respectively, whereas for complete diets treated with different proportions of fibrolytic enzymes are as follows: Diet - 1 treated with Cellulase : Xylanase (IU/200mg sample) at the ratio 0 (control), 02:04, 04:08, 06:12, 08:16, 10:20, 12:24 has produced 38.61, 38.99, 38.81, 40.18, 40.00, 37.91 and 36.22 respectively, similar concentration ratio of enzymes treated for Diet – 2 has produced 42.76, 43.12, 43.31, 44.01, 45.24, 44.97 and 45.12 respectively, for Diet – 3 has produced 40.34, 40.43, 43.19, 45.04, 45.99, 44.18 and 45.23 respectively and for Diet – 4 has produced 51.82, 52.91, 54.51, 55.79, 56.15, 56.05 and 59.27 respectively.

Growth:

The mean initial and final bodyweight (kg) of lambs for T1, T2 and T3 groups were 18.03 and 28.04, 18.36 and 25.41, and 18.15 and 28.46, respectively. The mean body weight gain (kg) of the lambs in groups T1, T2 and T3 were 10.02, 7.05 and 10.31 respectively. The average body weight gain (g) per day for T1, T2 and T3 groups during growth trial period was 143.09, 100.69 and 147.23 respectively. It was observed that mean body weight change and Avg. Daily gain in T2 group is significantly lower compared to T1 & T3 group and no significance difference observed between T1 and T3 group.

Apparent digestibility of nutrient:

There was no significant difference in mean intake of nutrients among the treatment groups. The mean apparent digestibility (per cent) of DM, OM, CP, NDF and ADF for T1, T2 and T3 groups were 67.07, 77.81 and 73.96; 69.63, 77.81 and 73.96; 71.64, 75.98 and 73.93; 68.96, 75.63 and 71.06; and 50.52, 64.99 and 58.80, respectively. It was observed that DMD in T2 is significantly higher than T1, No significance difference between T1 & T3, and T2 & T3. OMD in T2 & T3 is significantly higher than T1, No significance difference between T2 & T3. NDFD in T1 & T3 is significantly higher than T2, No significance difference between T1 & T3. ADFD in T2 is significantly higher than T1, No significance difference between T1 & T3, and T2 & T3. The apparent digestibility for all nutrients among the treatment groups have shown significance difference except for CP digestibility. The study showed that supplementation of fibrolytic enzymes improved body weight gain, feed intake and nutrient utilization in lambs fed Finger Millet Straw (FMS) and Concentrate Feed Mix (CFM) based diet fortified with Cellulase + Xylanase enzyme at 6,000 IU & 12,000 IU respectively.

Title: Therapeutic management of infertile animals and organizing infertility camps for AI synchronized by use of CIDR in crossbreed cows and buffaloes in Bidar district

The present study was conducted to evaluate the efficacy of Co-Synch + CIDR protocol (in anoestrus and repeat breeder cows and buffaloes) and Double PG plus GnRH protocol in repeat breeder cows and buffaloes on fertility.

The recorded overall conception rate in the Co-Synch + CIDR protocol was 64.25% and 62.89% in anoestrous cows (n=800) and buffaloes (n=671), respectively.

In repeat breeder animals, the overall conception rate for Co-Synch + CIDR was higher compared to Double PG + GnRH treated repeat breeder cows (63.68 % Vs. 56.15 %; $p < 0.05$) and buffaloes (61.75% Vs 53.99, $p > 0.05$).

Progesterone and estrogen showed some significant variations between and within the days of estrus synchronization protocols.

No significant association observed between the season and conception rates in the synchronization protocols used in the present study. However, the effect of season was highly significant ($p < 0.01$) on conception rates between the first, second and third oestrus cycle's insemination for anoestrus cows and buffaloes of Co-synch + CIDR protocol and buffaloes of Double PG + GnRH oestrus synchronization protocol ($p < 0.05$).

To conclude, Co-Synch + CIDR protocol was better compared to Double PG + GnRH protocol in both cows and buffaloes.

Title: Diagnosis and evaluation of biomarkers for cardiac disorders in bovines DR/SCSP/15/2018-19 (Under SCSP/TSP grants)

Based on base-apex method using lead I and lead II may aid in monitoring cardiac electrical conducting system and with the interpretation of ECG different cardiac disorders can be diagnosed.

Specific cardiac biomarker *i.e.*, cTn-I in serum sample aid in identification of damage to cardiac tissue in different cardiac disorders in bovines and has diagnostic value.

Necropsy findings and histopathological study could able to confirm extent of damage to cardiac tissue in specific cardiac disorders.

Pericarditis, Lumpy skin disease and Foot and mouth disease of infectious origin are the predominant cardiac disorders in bovines in this area.

Title: Effects of Melatonin on Vascular Dysfunction in Arsenic-exposed Rats

Arsenic increased aortic LPO, which is an indicator of oxidative stress. Arsenic caused GSH depletion and decreased the activities of enzymatic (SOD, Catalase and GPx) antioxidants. In the arsenic-exposed rats, melatonin restored the antioxidants and attenuated lipid peroxidation. In case of NO signaling pathway, arsenic increased basal nitrite production, increased iNOS-mediated nitrite and decreased cNOS-mediated nitrite production.

Melatonin attenuated basal nitrite production, decreased iNOS-mediated nitrite and increased cNOS-mediated nitrite production. Angiotensin II level was elevated with arsenic exposure and melatonin attenuated this effect of arsenic. Arsenic increased the inflammatory cytokines IL1 β , IL-6 and TNF- α level, while melatonin reduced the arsenic-mediated effects on inflammatory cytokines. Melatonin failed to improve the arsenic-mediated reduction in body weight during the terminal weeks of the study. Arsenic and melatonin did not alter feed intake. Water intake in the arsenic-exposed rats showed a decreasing trend, which was not consistently improved by melatonin.

Melatonin has the potential to ameliorate the arsenic-mediated functional and biochemical disorders by restoring endothelial function with improvement in restoring ROS mediated redox mechanism and NO signaling and inflammatory cytokines

Title: *In-vitro* study of acaricidal effects of *Anacardium occidentale* (Cashew Plant)

Efficacy of Aqueous extracts: A decrease in egg production and hatching of eggs was recorded for 10.0% and 20.0% concentration. Ticks failed to oviposit at 10.0% and 20% concentration

Efficacy of Methanol extracts: A decrease in egg production and hatching of eggs was recorded for 5.0%, 10.0% and 20.0% concentrations. Ticks failed to oviposit at 10.0% and 20% concentration

Larval packet test (LPT): The Larval packet test against larvae of *Rhipicephalus (Boophilus) microplus* with different concentration of *Anacardium occidentale* leaf aqueous and methanol extracts revealed increased mortality with increased concentration. 100 per cent mortality was observed at 20.0% concentration

Overall, the findings reveal that *Anacardium occidentale* leaf extracts has acaricidal effects at 10.0% and above concentrations

VETERINARY COLLEGE, SHIVAMOGGA

Title: Feed Quality Evaluation of Commercial Cattle Feeds

The procured 25 samples of cattle feed from various parts of Karnataka were analyzed for proximate composition, Urea, Ca, P profile (AOAC, 2005) and Rumen *in vitro* incubation and gas production (RIVIGP) for Metabolisable Energy (ME) (Menke and Steingass, 1988). The quality of these cattle feed will be compared with the standard specified by BIS (IS 2052:2009).

Title: Livestock Support & Extension Activities at Davanagere Sujala-III

One production unit of milk by-products at Sattur village was established.

Two hatchery units at Devipura and Honnenahally village were established.

Twenty Breeding rams were introduced at 7 watershed villages in Harapanahally and Jagallur Taluks.

Title: Nutritional evaluation of Maize tops (green stalk above the cob) and its silage on Malendugidda cows

Experiment and feeding trial is completed. Statistical analysis of data is pending. The project will be concluded in the ensuing ATM 2020-21

Title: Role of fodder cowpea genotypes as an intercrop in Hybrid Napier fodder crop under different planting designs

Among the different cultivars of bajra napier hybrid, the cultivar Taiwan Super Napier-1 performed better with respect to growth and yield as well as the uptake of nutrients compared to cultivars CO-5 and Dharwad Hybrid Napier-6. Whereas, in case of fodder cowpea genotypes, MFC-09-1 performed better with respect to growth, yield and quality as well as the uptake of nutrients compared to Cowpea local.

Among different planting patterns, paired row system of planting found significantly superior over normal planting by registering higher growth attributes, fodder yield and quality parameters.

The cultivar Taiwan Super Napier-1 with fodder cowpea genotype MFC-09-1 found significantly superior over cultivars CO-5 and Dharwad Hybrid Napier-6 with different genotypes of fodder cowpea by registering higher growth attributes, fodder yield and quality parameters

Higher soil available nitrogen, phosphorous, potassium, calcium and magnesium was recorded in cultivar Taiwan Super Napier-1 with fodder cowpea genotype MFC-09-1 compared to other cultivars and fodder cowpea local.

Cultivar Taiwan Super Napier-1 with fodder cowpea genotype MFC-09-1 recorded higher net returns (1,00,509 ha⁻¹) and gross returns (1,81,860 ha⁻¹).

VETERINARY COLLEGE, HASSAN

Title: Field performance recording and herd registration in Hallikar cattle of Karnataka

Livestock survey in thirty selected villages from the study area revealed that the small farmers are the true breeders of local cattle and they use even females for ploughing activities. Hallikar males are used for draft, breeding, cart pulling, show, cart race and combinations of these. Majority of them use only for agriculture draft (60.24%), 35.3% use them for both for ploughing and pulling cart. Of the breedable Hallikar cows 41.8% were in milk and 58.2 % were dry. 67.32 % of Hallikar cow owners use them for both milk and draft. About 3% of young Hallikar heifers are not bred and are exclusively used for draft.

Gujmavu or Kardahalli, a famous variety of Hallikar said to existed in Nagamangala taluk was almost extinct, Sanna malige another Hallikar variety was referred to slim white coated animals Hallikar cattle and Bettadapura variety to the Halliakar with moderate height and stumpy lengs from Betadapura and Arkalgud region. The two coloured variants Amaravathi (Reddish Brown) and Chintamani (Black) are observed.

The prominent breed descriptors for the Hallikar cows includes Light gray coat colour with white patches surrounding eyes, and cheeks, black coloured muzzle, eye lashes & hooves, long face, slightly bulged forehead, thin and small dewlap, curved backward and forward horns and the Average morphometric measurements of Chest girth, Body length, Barrel girth, Height at withers are 126.37 ± 0.39 , 124.21 ± 0.41 , 148.63 ± 0.32 , and 122.24 ± 0.29 cm respectively.

FPR of Hallikar cows revealed an average lactation milk yield of 661.68 ± 4.41 litres, average milk fat percentage of 4.66 ± 0.06 %, average SNF of 8.91 ± 0.006 %, average lactation length of 251.43 ± 0.68 days and average intercalving of 18.16 ± 0.21 months.

Of the 1000 cows studied, top 277 cows were shortlisted and subjected to screening for four communicable diseases ie., Tuberculosis, Jhon's disease, Brucellosis and Bovine Rhinotrachitis (IBR) and list submitted to K LDA for animal procurement and induction.

Hallikar cows are also being used for draft except for two months before and after parturition. Hallikar cows showed good draft capacity with almost no sigh of fatigue during first two hours of draft and slight fatigue during fourth hour of continued draft utility. The physiological parameters as heart rate, respiration and temperature increased during slightly but with in the normal range.

Hallikar cattle have compact hooves with significantly lesser inter digital space, more better ratio of toe height to toe length, greater toe angle and claw circumference compared to hooves of crossbred cattle. However, the hardiness of Hallikar cattle was lesser compared to Amrithmahal, and require shoeing when used for work on hard surface.

Hallikar Breeders Society "Karnataka Rajya Hallikar gotali Poshakara Sangha" first of its kind for the breed was registered under Societies act with the registration number DRB-3/SDR/401/2019-20 dated 25-11-2019.

Workshop and Brain storming session on "Strategies for Climate Resilient Animal Husbandry Practices in Karnataka" was conducted and recommendations for the state of Karnataka was prepared and submitted to the funding agency.

Title: Gross Morphology and Histological studies on the mammary gland of Hallikar cow.

The mammary gland of Hallikar cows was a bowl shaped, bilaterally symmetrical organ. It suspended from the inguinal region by ligaments and other tissues. Teats projected abruptly from the body of the mammary gland; they were funnel shaped with pointed tips. Teat canal was longitudinally folded, cylinder-shaped body opening, covered with approximately the same type of epithelia as the normal skin. The mammary gland was surrounded from outside to inside by the skin and the fibroelastic capsule. The epidermis of the skin was lined by stratified squamous keratinized epithelium. The mammary glands were compound tubular glands. The glandular alveoli were round to oval lined by simple cuboidal epithelium. The corpora amylacea were dense bodies located in the alveoli and were round, oval or irregular shaped concentrically laminated bodies. The gland cistern continued downward as teat cistern and was lined by simple cuboidal epithelium. The teat canal was lined by stratified squamous keratinized epithelium. The keratin of the teat canal lining along with the lipid formed the keratin plug which prevent both leakage of milk and the entry of bacteria and thus protecting the mammary gland from mastitis.

Title: Histology and Histochemistry of Regional Lymphnodes, Payer Patches, Thymus and Spleen of Hassan Sheep Breed

The thymus of Hassan sheep had a paired cervical part, located on the sides of the trachea, and an unpaired thoracic part, located in the thoracic cavity in front of the heart. Thymus had a fibrous capsule which entered into parenchyma as septa and divided it into numerous lobules. In each lobule, there was a cortex and a medulla. Each lobule includes a dark peripheral zone, the cortex, and a clear central region - medulla in which there were small red colored zones, the Hassan corpuscles. Hassan corpuscle were made up of concentric layers of reticular cells. In the medulla there were reticular epithelial cells with concentric layers, the cytoplasm of which contained large vacuoles. Medulla was light in color due to the predominance of the reticular epithelial cells. The cortex was rich in reticular tissue and epithelial reticular cells formed a supportive network by interconnecting the ends of their cytoplasmic processes.

The spleen was oyster shell shaped similar to other breeds of sheep and average weight of spleen was 58 gm.

The lymph nodes like prescapular, prefemoral, parotid, submandibular and mesentric were bean shaped with convex surface having opening for the afferent lymphatic ducts and concave hilus for the efferent lymphatic ducts, nerves and blood vessels. Dense irregular connective tissue with presence of smooth muscles were observed in the capsule of lymph node, the parenchyma consisted of cortex with primary, secondary lymphatic nodules separated by diffuse lymphatic tissue and medulla, reticular cells and fibers were present in the stroma. The sinuses were formed by dense network of interconnected reticular cells with macrophages anchored to it, thus the lymphnodes are structurally designed to filter the antigens from the lymph before returning it to bloodstream.

The parenchyma of the spleen was covered by a thick capsule, consisting of collagen, elastic and reticular fibers and smooth muscle cells, sub-capsular and peritrabecular sinuses lined by endothelium, Parenchyma was composed of white and red pulp and the proportion of these were almost equal which indicated that the spleen of sheep belongs to intermediate type in contrast to storage and defensive type in other domestic animals. The white pulp of spleen was composed of splenic nodule and peri-arterial lymphatic sheath (PALS). The splenic lymphatic nodules were almost circular in outline composed of germinal centre at the centre

and were surrounded by marginal zone. The germinal centre was paler, composed of larger sized lymphocytes and lymphoblast. The central artery or nodular arteriole occupied the paracentral position in the nodule similar to domestic animals. Red pulp was composed of irregular splenic cords separated by splenic sinuses. Ileal Peyer's patches appeared as a aggregated lymphatic nodule in the submucosa, four regions appreciated in Peyer's patches including the corona, dome region, germinal centre and interfollicular area. Peyer's patches act as immune sensors of intestine and as a protective mechanism to the jejunum and ileum.

Title: Studies on urolithiasis in calves in and around Hassan

Percentage of occurrence of surgical affections of urinary system in calves was studied. Hemato-biochemical changes in Minimal Invasive Percutaneous Tube Cystostomy was studied.

Sediment of urine/ crystals was studied.

The percentage of occurrence of surgical affections of urinary system in calves was recorded as 1.43% eight cases of urolithiasis affected male calves were presented during the period of study.

Age group of 6-11 months were affected hematobiochemical changes were not significant in calves affected with urolithiasis. Urinalysis revealed significant changes in pH.

Ultrasound scanning confirmed the case of bladder distention and free fluid in the abdomen. Free floating hyperechoic particles were observed in the distended bladder.

Tube cystostomy was a good tool in the management of urolithiasis in calves along with modification of diet and administration of ammonium chloride 5% intra cystic administration for 3- 10days and oral administration for 1 month. Tube was removed after 6-13 days depending on the recovery of the individual cases. Range of pH was recorded was 8-9. Returned to normal pH of 7 by 2 days in all animals Bladder exercise helped the animal to stimulate normal urination. Animals resumed to normal feeding after tube cystostomy operation.

Mean days of recovery: 8 days (3-13 days)

Mean days of tube removal: 12 days

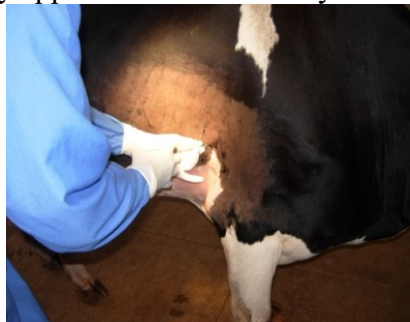
Recovery Rate: 87.5% Death rate 12.5%

Title: Development of surgical apparatus (Specimen) in Hassan

1. Surgical apparatus for tube percardiostomy procedure will be developed
2. The procedure to make it easily applicable to animals by field veterinarians will be standardized



Marking the area for pericardiocentosis



Placing pericardiocentosis catheter



Pericardiostomy and catheterization



Pericardiostomy instrument



Pericardiostomy catheter with stillet



After Rumenotomy

The pericarditis / pericarditis affected HF/ JR/ ND breed of cow were presented during the period of two years with symptoms of jugular pulsation, venous stasis, anorexia, reluctant to move and having brisket edema. Affected animal's hematobiochemical changes were significant which was documented in affected with pericarditis with or without involvement of sharp metallic foreign bodies. Ultrasound scanning confirmed the case of pericardial distention, fluid collection, fibrin strand formation. Free floating hyperechoic particles were observed in the pericardial sac. Pericardiocentesis helped in revealing the nature of contents i.e. serosanguinous, purulent, creamy pus formation, gray coloured pus formation. Which was evaluated for the 8 cases presented in VSR, HVC, Hassan. Tube pericardiostomy with a PVC and sharp stainless steel stillet was a good tool in the management of pericarditis in cows along with rumenotomy to retrieve the metallic foreign bodies in 8 cases . There is a need to evaluate different tubes for ease of insertion, draining, retention, medication of pericardium in individual cases. However, the PVC pipe was found to cause discomfort for the animal after the procedure. But helped to drain the pus / fluid from the pericardium. This was a good to relieve the pressure on the functioning heart made the animal more comfortable. It was easy to insert and quick to perform with minimum invasiveness. Museum with specimens has been established in the department of VSR, HVC, Hassan has helped in teaching the under graduate and post graduates.

VETERINARY COLLEGE, GADAG

Title: Prevalence of Methicillin Resistant Staphylococcus aureus among animals, humans and at veterinary clinical settings from Gadag area

Sample collection- Total of 110 sterile swab samples (40 nasal swabs from animals {cattle-20, dog -20}, 40 hand swabs from animal owners/handlers, 15 hand swabs from veterinary doctors and 15 swab samples {table swabs of clinics-10, scissors and equipment swabs at hospital-5}) from veterinary hospitals at VCG, VH-Naragund & betageri.

Isolation & identification of Staph.aureus- Isolation & identification protocol was carried out as described by Lancette & Bennett (2001). A total of 39 (35.45%) samples were found positive for Staph.aureus.

Phenotypic confirmation of MRSA by antibiogram profile of Staph.aureus isolates (CLSI 2019) – Antibiogram profile of Staph.aureus isolates was carried out by disc diffusion method using Mueller Hinton agar by employing 12 different antibiotics viz. Tetracyclin, - 15 -ancomycin- 15 -m- 15 -ol, novobiocin, - 15 -ancomyci, linezolid, clindamycin, - 15 -ancomycin- 15 -m, gentamycin, methicillin, - 15 -ancomycin, oxacillin, - 15 -ancomycin, penicillin, ciprofloxacin for phenotypic confirmation of MRSA. MRSA was recovered from 18(16.36%) samples.

COLLEGE OF FISHERIES, MANGALURU

Title: Development of therapeutic phage consortia to manage *Aeromonashydrophila* infection in aquaculture systems

A total of 262 samples were collected which includes water sample from fish pond, ornamental fish hatcheries, rivers, creek, sewage and also diseased fish for isolating the *Aeromonas* and their specific phages. Twenty-two phages were isolated from the collected samples which includes three from riverine environment designated as AhFM4, AhFM5 and AhFM11; five from pond water designated as AhFM1, AhFM2, AhFM7, AhFM8 and AhFM9; eleven from sewage water designated as AhFM12 to AhFM22; two phages from creek water designated as AhFM3 and AhFM10, and one from ornamental fish hatchery designated as AhFM6.

Based on TEM morphology and ICTV guidelines, the phages isolated were assigned into the family Myoviridae (AhFM1 to AhFM11) and Siphoviridae (AhFM12).

The new novel bacteriophage-based preparation is the first preliminary study in India in rohu fishes to fight against *A. hydrophila* infection. In this study, AhFM1 to AhFM11 phages were used as phage cocktail in prophylactic and therapeutic approach.

In prophylactic approach, 100%, 95.11% and 93.11% cumulative survival of fishes with respect to injection, immersion and oral feed with phage cocktails (PC) was observed.

In case of therapeutic phage injection, there was an 100% cumulative survival of fishes at 0 and 24 hr. The delay in therapy resulted in a cumulative mortality of 15% in the 48 hr and 20% in the 72 hr.

In this study, better protection was observed in case of injection in both prophylactic and therapeutic application of the phages for phage therapy.

Based on the therapeutic and prophylactic treatments, both can be used to control and prevent the spread of *A. hydrophila* infection. Thus, these findings supported that phages (AhFM1 to AhFM11) can be used to treat *A. hydrophila* infection in carps, tilapia and catfishes cultured in India.

Title: Theoretical and computational biology (bioinformatics, AI and big data) (DBT-bioinformatics- Distributed Information sub Centre (DISC))

a. Studies on microbial communities associated with *Penaeusvannamei* and rearing waters in a biofloc culture system

The biofloc system is an ecologically sustainable shrimp culture system wherein conglomerates of beneficial bacteria, algae and protozoa in pond water serve as a water quality management system and as a feed additive to the shrimps. In this study we investigated the bacterial communities associated with shrimp as well as rearing pond water cultured in a biofloc system using the IlluminaMiseq sequencing technology. Metagenomics analysis revealed that the principal bacterial phyla associated with shrimp as well as water were those belonging to the phylum Proteobacteria, Bacteroidetes, Planctomycetes and Cyanobacteria. The operational taxonomic units (OTU) shared among shrimp and water was between 18.38% - 29.35%. This study paves way to understand further the bacterial community associated with optimal water quality and shrimp health in a biofloc culture system.

b. Metagenomics analysis of sequence data generated

Pond water and shrimp incubation waters were studied for their associated microbiome by 16S RNA amplicon sequencing and finding a correlation for disease prediction. Metagenomics sequence data generated for microbiome changes in *Litopenaeusvannamei* surface and rearing water in relation to *Enterocytozoonhepatopenaei* infection and probiotic treatments was undertaken using bioinformatics tools.

c. Analysis of putative prophages associated within chromosome of *Klebsiellapneumoniae* Strains

Phages are the most abundant organisms on earth and are the major contributors in shaping the bacterial communities. While lytic bacteriophages parasitize and lyse the host, prophages are integrated into viral forms that can reside in host chromosomes or plasmids until the conditions favour their reactivation. Integrated prophages within the bacterial genome have been linked to host fitness, increased infection, antibiotic resistance, pathogenicity and virulence in several bacterial species. In this study, we tried to identify and characterize the prophages integrated within the chromosome of the bacterial pathogen *Klebsiellapneumonia*, an opportunistic pathogen found in the environment and human mucosal surfaces and a leading cause of pneumonia. Using bioinformatics tools, 254 complete genomes of *K. pneumoniae* available in the NCBI database were downloaded and analysed for the presence of prophages. Very few strains lacked prophages (3.1%), while the remaining harboured both intact (811) and defective prophages (709). A subset of 42 unique strains of *K. pneumoniae* was chosen for further analysis. Our analysis revealed the presence of 110 complete prophages which were further classified as belonging to *Myoviridae* (67.3%), *Siphoviridae* (28.2%) and *Podoviridae* family (4.5%). An alignment of the 110 complete, prophage genome sequences clustered the prophages into 16 groups and 3 singletons. While none of the prophages encoded for virulence factors, 2 (1.8%) prophages were seen to encode for the antibiotic resistance-related genes. The CRISPR-Cas system was prevalent in 10 (23.8%) out of the 42 strains. Further analysis of the CRISPR spacers revealed 11.42% of the total spacers integrated in *K.pneumoniae* chromosome to match prophage

Other activities of the Centre:

The Centre has published the following nucleotide sequences to GenBank:

1. Metagenome or environmental sample from aquatic metagenome
Biosample acc. no. SAMN13427526- SAMN13427535 SRA nos. : SRS5755449 - SRS5755458 (10 samples)
Biosample acc. no. SAMN13483507 - SAMN13483513 SRA nos. : SRS5765281- SRS5765287 (7 samples)
Biosample acc no. SAMN13531039- SAMN13531047 SRA nos. SRS5803733 - SRS5803742 (10 samples)
2. *Aeromonas* phage AP1, complete genome (acc. no. MT713136.1)
3. Red seabream iridovirus strain RSIV_121, complete genome (Acc. no. MT798582)

Title: Design and Development of Fish Sausage Tying Unit

The unit consists of 0.1hp motor, gears, shafts, belt, supportive stand, covering plates, thread holder loaded with thread, electrical pedalling mechanism to control the motor rotation.

Technical highlights: The fish sausage production is a tedious process consists of dressing, meat picking and mincing, ingredients blending, stuffing fish paste into casings, end to end trying, steaming/boiling and cooling, storage in refrigeration. The present investigation or technology intervention is at the stage of “end to end tying” of fish sausage roll. The tying is usually done at commercial level through clipping machine which is expensive and not affordable by small scale fish processing units. Hence, in order to achieve the intermediate tying of the sausage roll to the desired/customized (length and weight) quantity, a tying unit has been developed which is an assembled form of different parts as detailed above. The casings of 1-2 meter length stuffed with fish sausage will be manually tie at one end with a knot and inserted into a cylindrical housing of the sausage unit and pushed inside for the

desired length/weight (Qty.). The unit contained with electrical motor rotates upon pedalling the lever connected to electrical socket (AC) which allow the thread tied at one end of the sausage to get tighten up and the sausage roll would be manually pulled out of the cylindrical housing upon achieving three to four threaded rotations to get the intermediate tying. The process will be continued for the entire length of the sausage roll. The intermittent tied sausage rolls will be cooked in a boiling water/steam to continue the sausage preparation/production process and later it would be cut for individual pieces exactly at the tied points. The price of the Unit is Rs. 14000/- (Rupees Fourteen Thousands Only)



Fish Sausage Tying Unit

FISHERIES RESEARCH AND INFORMATION CENTER, HEBBAL

Title: Establishment of Biofloc demonstration model unit for empowering fish farming community at FRIC, Hebbal

Karnataka Veterinary Animal and fisheries Sciences University, Bidar sanctioned the budget under TSP grants (2019-20), Director of Research, KVAFSU, Bidar demonstration project entitled “Establishment of Biofloc demonstration model unit for empowering fish farming community at FRIC, Hebbal”. The total budget sanctioned for the project was 2.50 lakhs utilizing this amount, two modular biofloc tanks was set up at FRIC (I), Hebbal.

The size of the demonstration tank is 4.0m & 3.6m dia, the water holding capacity of each tank is 10000 & 120000 L. After pond preparation by following scientific method each pond was stocked with 1500 advanced fingerlings of GIFT Tilapia in one tank and in the other pangusius fingerlings was stocked.

Regular monitoring of water quality (Ammonia, Nitrate, Nitrite, C:N), feed schedule, floc preparation, water exchange and maintenance fish health and growth was recorded during the demonstration period.

FISHERIES RESEARCH AND INFORMATION CENTER, ANKOLA

Title: All India Network Project on Mariculture

A detailed report of AINP on Mariculture has been submitted during 2019-20 annual report. Project has been extended to one more year due to COVID-19 crisis. During year 2020-21 *Sillago sihama* fish brood stock has been maintained for carrying out breeding programme.

Title: Utilization of Marine Microalgae and Residue as Feed Ingredient in Vannamei Shrimp Diet

Evaluation of incorporation levels of marine microalgae/ residue in shrimp diets.
Evaluation of algal inclusion on survival and growth indices of shrimp.
Evaluation of nutrient digestibility and proximate composition of algal incorporated diets.

The trials were conducted successfully with three microalgae based formulated vannamei shrimp feeds with graded levels of incorporation of microalgae supplied by M/s Reliance Industries, Mumbai replacing fish meal. The trials report of the same has been submitted to the funding agency.

2) Ongoing Projects

a) Research Details

<i>Depts.</i>	<i>Title</i>	<i>Funding Agency</i>	<i>Budget (in lakhs)</i>	<i>Yr. of Comt.</i>	<i>Principal Investigator</i>
VETERINARY COLLEGE, BENGALURU					
AGB	Genetic Evaluation of Productive and Reproductive Traits in NARI Suwarna sheep	KVAFSU, Bidar	0.50	2018	Yathish, H.M.
VAN	Flash based innovative techniques in teaching Anatomy	VGST GoK	30.00	2013	K.V. Jamuna
VAN	Fist Infrastructure Project	Fist DBT GoI	55.00	2014	V. GirishKumar
VBC	FIST, DST	DST, Delhi	59.50	2015	V. Girish Kumar
VBC	Ethno Veterinary study for Enhancement of Reproductive Performance in Livestock	KVAFSU, Bidar	0.50	2018	V. Girish Kumar
VPT	Evaluation of apoptosis inducing potential of rutin loaded chitosan nanoparticles	SCSP/ TSP Grants,	1.50	2020	Rashmi, R
VPA	Development of point of care diagnostics for the diagnosis of theileriosis and babesiosis in cattle	SERB	18.00	2018	H. Dhanalakshmi
VMC	Indo-UK collaboration on“Chicken or eggs; Drivers of antimicrobial resistance in Poultry in India	DBT (Indo-UK), GoI	51.50	2018	Shrikrishna Isloor
VMC	Program for Strengthening Intersectoral Co-ordination for Prevention and Control of Zoonotic Diseases	NCDC, GoI	25.09	2019	Shrikrishna Isloor
VPP	Characterization and prognostic evaluation of stem cell lineage markers in canine cutaneous mast cell tumors	SCP/TSP Grants	0.50	2019	K.R. Anjan Kumar
VPE	Diagnosis of Anthrax in animals’ under Outreach Programme on Zoonotic Diseases	ICAR, New Delhi	6.69	2009	Leena, G.
P.Sc.	Effect of different sulfate polysaccharides (Sea Weeds- Powdered & liquid form) on growth performance, carcass characteristics and gut health in broiler chicken	M/s. Sea Energy Pvt. Ltd., and Molecular Platforms Bengaluru	3.74	2020	Jayanaik

P.Sc.	Determination of the mitigation effects of yeast cell wall extract in broilers fed diet naturally contaminated with Fusarium toxins	Alletch, Kentucky, USA	10.08	2019	Malathi, V.
P.Sc.	Evaluation of the Effect of Fibrolytic enzymes on rumen Invitro gas production and In vitro dry matter digestibility of various fodders	Zeus Biotech Pvt Ltd, Mysuru	1.50	2019	Malathi, V.
P.Sc.	Effect of yeast selenium on production performance, egg quality and selenium deposition in laying hens	Algebra Bio Pvt Ltd, Australia	3.78	2020	Malathi, V.
P.Sc.	Comparative evaluation of different binders to ameliorate the toxicological effects of multiple mycotoxins in broiler chicken	Nutreco, Netherlands	11.83	2020	Malathi, V.
LPT	High Resolution Genome Based Tracing of Antimicrobial Resistant Escherichia coli in Pork production chain to identify the Critical Control Points: A One Health Systems Study”	DBT BIRAC	62.00	2019	S. Wilfred Ruban
VGO	Strategies to ameliorate the effect of abiotic stress on the reproductive parameters in rams by using Nano minerals	VGST, GoK	4.64	2019	Suchitra, B.R.
VGO	Studies on Therapeutic efficacy of Botrophase and Botroclot as an adjunct therapy in TVT affected female dogs	Juggat Pharma Bengaluru	2.36	2019	Narasimha Murthy
VGO	Establishment of sheep and goat semen bank at AHP, Koravangala, Hassan	GoK	300.00	2018	A. Sahadev
VGO	Diagnostic methods for evaluation of gonadectomy status in dogs	SCSP Grants	1.00	2020	A. Sahadev
VSR	Management of complicated long bone fractures in Bovines	KVAFSU TSP Grants	0.8	-	B.N. Nagraja
VMD	An epidemiological survey of lumpy skin disease	KVAFSU Bidar	1.30	2020	P.T. Ramesh
VCC	Comparative efficacy of different treatment regimes in ovine pregnancy toxemia	Ayurved Ltd	0.81	2020	M.C. Anil Kumar

VETERINARY COLLEGE, BIDAR

VAHEE	Improving Livelihood of Scheduled Caste (SC) Community through Integrated Livestock Development and Capacity Building Activities in Bidar District of Karnataka	ICAR, New Delhi (SCSP Grants)	65.00	2020	Prakashkumar Rathod
AGB	To study the association between plumage colour and egg production performance in desi birds	SCSP Grants	0.50	2020	Shrikant Dodamani
LPM	To Study Correlation Between Body Weight and age at Sexual Maturity in Desi Birds	SCSP/TSP	0.50	2020	Vidyasagar
VCC	Epizootiological diagnosis and therapeutic studies on Lumpy skin disease in bovines in Bidar, Karnataka	SCSP Grants	0.35	2021	Ravindra, B.G.
VGO	Efficacy of herbal formulation in anoestrus dairy animals.	Rakesh Pharmaceuticals Pvt. Ltd., Ahmadabad	0.01	2020	Bijurkar, R.G.
VGO	Effect of serum gonadotrophin, estrus goat serum and estradiol 17 β on in vitro maturation of goat oocytes	SCSP/TSP Grants	0.50	2019	Malasri, G.
VGO	Comparative study of endometrial cytobrush technique as a diagnostic aid and comparative efficacy of various intrauterine infusions to resolve subclinical endometritis in buffaloes	SCSP/TSP Grants	0.75	2020	Malasri, G.
VPH	Isolation and molecular characterization of Extended Spectrum Betalactamase producing <i>E.coli</i> from foods of animal origin	SCSP Grants	1.00	2019	Arun Kharate
VSR	Management of tibiotarsal fractures in avians	KVAFSU Bidar	0.50	2019	Jahangirbasha, D.
VSR	A pilot study on phacoemulsification for cataract surgery using cadaver eye ball	KVAFSU Bidar	0.50	2019	Dilipkumar, D.
VSR	Ultrasonographic evaluation of surgical disorders in large animals	KVAFSU Bidar SCP/TSP	0.50	2020	Bhagavantappa, B.

VSR	Histopathological and electron microscopic evaluation of polyglecaprone 25 and poly diaxnone absorbable sutures for soft wound closure in canines	KVAFSU Bidar SCP/TSP	0.35	2020	Venkatgiri
VPP	Pathomorphological and p53 immunohistochemical evaluation studies in squamous cell carcinoma of eye	SCP/TSP Grants	0.50	2019	Rajendra Kumar, T.
VETERINARY COLLEGE, SHIVAMOGGA					
VPE	Studies on antimicrobial resistance, genetic diversity and pathogenesis of some zoonotic bacterial intracellular pathogens of public health significance	KVAFSU, Bidar	2.50	2019	Santosh Sajjan
VPE	“Determination of Bacteriocin genes in <i>Lactobacillus</i> Isolates from <i>Malnad Gidda Cattle</i>	SCSP/TSP Grants	0.35	2019	Prashanth, S. Bagalakote
VPE	Detection of extended spectrum beta lactamase (ESBL) producing <i>E. coli</i> isolates from diverse origin	SCSP/TSP Grants	0.24	2020	Prashanth, S. Bagalakote
ANN	Nutritive Evaluation Of <i>Melia Dubia</i> (Hebbevu) In Kids By <i>In-Vitro</i> And <i>In-Vivo</i> Methods	SCP Grants	1.00	2019	K.S. Giridhar
ANN	<i>Invitro</i> protein quality evaluation of soybean meal used by livestock feed manufacturers	SCSP Grants	0.23	2020	Giridhar, K.S.
ANN	Effect of supplementation of pre fermented urea molasses to cattle feed on rumen kinetics- A <i>In vitro</i> study	KVAFSU, Bidar	0.30	2019	Manju, G.U.
ANN	Feed Quality Evaluation of Commercial Cattle Feeds	SCP Grants	0.25	2020	K.S. Giridhar
ANN	Establishment of Model Feed Technology Unit, Fodder Museum and Strengthening of Feed Analytical Laboratory for Knowledge and Skill Empowerment of Farmers to Augment Livestock Productivity in Malnad Region	RKVY, GOK	50.00	2019	V. Nagabhushana
VMD	Clinical and laboratory diagnostic studies on Pasteurellosis in ruminants	TSP Grant	0.50	2020	Suresh Patel
AGB	Malnad Gidda Research and Information Centre	RKVY	-	2014	Head, Dept. of AGB

VPP	Obscure Diseases Research Project*	GoK	100.00	2016	N.B. Shridhar
VPP	Pathomorphological studies on mortalities in non human primates with special reference to Kyasanur Forest Disease**	KVAFSU, Bidar	2.50	2019	Kavitha Rani, B.
VPP	Studies on antimicrobial resistance, genetic diversity and pathogenesis of some zoonotic bacterial intracellular pathogens of Public health significance*	KVAFSU, Bidar	2.50	2019	Santhosh Sajjan
LFC	Effect of mixed flowers of ceremonial waste as a feed supplement on productive performance and egg quality parameters in commercial layers	Dept. of Social Welfare, GoK	1.00	2020	T. Thirumalesh
LFC	Effect of <i>Moringa olifera</i> leaf meal on production performance of Swarnadhara parent birds	Dept. of Social Welfare, GoK	0.10	2019	Bharathbhushan, M.
LFC	Effect of organic manures on growth and yield of Hybrid Napier (CO-4) fodder	KVAFSU Bidar	--	2018	Venkatesha, M.M.
LFC	In vitro evaluation of some perennial fodder grasses for their metabolisable energy, fermentation characteristics and microbial biomass synthesis efficiency	Dept. of Social Welfare, GoK	0.50	2021	T. Thirumalesh
LFC	Clinical and laboratory diagnostic studies on pasteurellosis cases in ruminants	Dept. of Social Welfare, GoK	0.50	2021	Patel Suresh Revanna

VETERINARY COLLEGE, HASSAN

VPE	Evaluation of indigenous medications for the control of ticks and mastitis in dairy cattle	NIF, Dept. of Sci. & Tech., GoI	9.13	2020	Nagappa Karabasanavar
VPE	Influence of a topical herbal formulation on the milk concentration of inflammatory marker molecules in subclinically mastitic cows	Ayurved Limited., Baddi, Solan, H.P.	2.10	2020	Nagappa Karabasanavar
VPT	Validation of Ethno veterinary practices on the management of Common ailments of Livestock.	RKVY	10.00	2017	Ravikumar, C,
AGB	Selection of Amruthmahal bull mothers based on FPR standards	NAFCC KLDA	11.00	2020	Naveen Kumar, G.S.

ANN	Assessment of productivity, in vitro digestibility and gas production characteristics of Moringa and Sesbenia tree fodder	SCSP/TSP Grants	1.00	2020	Jaishankar, N.
ANN	Effect of growth promoter on growth performance, intestinal morphology hemato-biochemical profile and digestive enzymes in commercial broilers	SCSP/TSP Grants	8.15	2020	Jaishankar, N.
LFC	Establishment of Microenterprise on Small Scale Poultry	NABARD, Bangaluru	9.87	2020	Suresh, B.N.
LFC	Promoting micronutrient enriched chicken meat and egg production using mobile app	DST, New Delhi	20.81	2019	Suresh, B.N.
VPA	Evaluation of indigenous medications for the control of ticks and mastitis in dairy cattle	NIF, Dept of Sci. & Tech., GoI	9.13	2021	M. Veena
VETERINARY COLLEGE, GADAG (VCG)					
VPB	Effect of induced feed restriction and supplementation of spirulina on performance, hematological and biochemical parameters in broiler chicken	SCSP-TSP	0.30	2019	Maneesha, H.S.
VPB	Influence of Season on Blood Biochemical and Hematological parameters in non-descript goats	SCSP-TSP	0.10	2021	Maneesha, H.S.
VMC	Isolation and phenotypic characterization of extended spectrum beta lactamase producing E. coli from ruminants	TSP Grants	0.50	2021	Rashmi, L.
VCC	Epidemiological and haematobiochemical studies on parvoviral infected dogs	SCSP Grants	0.20	2020	Panchasheel
COLLEGE OF FISHERIES, MANGALURU (FCM)					
Aqua.	Scientific validation of herbal products on fish, shrimp and prawn	IHS Pvt. Ltd., Chandigarh	12.00	2019	Ganapathi Naik, M.
Aqua.	Modernization of Research and Instructional Fish Farm for New Aquaculture Technologies	RKVY, Govt. of Karnataka	790.00	2020	Ganapathi Naik, M.
AAHM	National Surveillance Programme for Aquatic Animal Diseases: Surveillance of shrimp diseases in coastal Karnataka (Brackish water)	NFDB	3.30	2013	S.K. Girisha

AAHM	National Surveillance Programme for Aquatic Animal Diseases (Freshwater)	NFDB-NBFGR	3.30	2013	K.S. Ramesh
AAHM	Identification, cloning, characterization and assessment of the potentiality of an <i>Aeromonas</i> phage endolysin as an antimicrobial agent against multi drug resistant <i>Aeromonashydrophila</i>	DST-SERB	8.90	2019	Pallavi Baliga
FRM	Skill development programme in 'Fisheries' under Area Based Development (ABD) Mission of Mangaluru Smart City Limited (MSCL)	Mangaluru Smart City Limited (MSCL), Mangaluru	490.00	2019	Dean (Fisheries)
AEM	Monitoring of pollution impact by discharge of treated effluents from BASF, Mangalore	BASF	6.95	2020	Lakshmipathi, M.T.
AEM	Analysis of sea water monitoring at Marine outfall discharge point (MSEZ)	MSEZ Limited	4.62	2020	Lakshmipathi, M.T.
AEM	Coastal water quality monitoring near M/s. UPCL seawater intake and effluent discharge point off Padubidri	UPCL	2.24	2020	Lakshmipathi, M.T.
AEM	Bio-monitoring studies of treated effluent and soil analysis SOLARA Active Pharma Sciences Limited, Baikampady, Mangalore	SOLARA Active Pharma Sciences Limited	0.50	2020	T.S. Annappaswamy
AEM	Ecological monitoring of Arabian Sea receiving effluents from MCF Ltd	MCF	5.34	2020	A.T. Ramchandra Naik
AEM	Skill development programme in fisheries under area based development (ABD) mission of Mangaluru Smart City limited.	MSCL, Mangaluru	490.00	2020	Dean (Fisheries)
LIVESTOCK RESEARCH AND INFORMATION CENTER (DEONI), HALLIKHED					
LRIC	Field performance recording of Deoni cattle in Bidar District	NPBB	60.00	2017	Vivek, M. Patil
LRIC	Establishment of a Model Deoni Farm in Bidar District	RKVY	100.00	2017	Vivek, M. Patil
LIVESTOCK RESEARCH AND INFORMATION CENTER (SHEEP), NAGAMANGALA					
LRIC	Mega Sheep Seed Project (Mandya Sheep)	ICAR	37.20	2009	Siddalingamurthy, H.K.
LIVESTOCK RESEARCH AND INFORMATION CENTER (A), KONEHALLI					
LRIC	Establishment of Centre of Excellence for transfer of technology in animal production at LRIC, Konehalli	RKVY	410.00	2016	M.S. Rudraswamy

LIVESTOCK RESEARCH AND INFORMATION CENTER, DORNAHALLI					
LEIC	Establishment of Model Buffalo farm in Yadagir District	NITI AYOg, GoI	24.00	2020	Channappagouda Biradar
FISHERIES RESEARCH AND INFORMATION CENTER, HEBBAL, BENGALURU					
FRIC	Testing of <i>Aeromonas hydrophila</i> biofilm oral vaccine in Indian major carps	M/s. Virbac Animal Health India Pvt. Ltd. Mumbai	35.62	2018	K.B. Rajanna
FRIC	Evaluation of Insectifii (Block Soldier Fly) protein feed on growth and survival of carps.	TSP Grants	1.44	2021	K.B. Rajanna
FISHERIES RESEARCH AND INFORMATION CENTER, HESARGHATTA					
FRIC	Evaluation of heterotrophic food chain in different agro climatic regions and strategies for enhancement of fish production	DST-SSTP, New Delhi	53.27	2019	N. Manjappa
FRIC	Evaluation of different strategy for enhancement of survival rate of Amur common carp	KVAFSU, Bidar	2.50	2020	N. Manjappa
FRIC	Production of hormone-free mono sex population of Nile Tilapia <i>Oreochromis niloticus</i> (Linnaeus, 1758) for the farming community	KVAFSU, Bidar	2.00	2020	Ravindragouda Patil
FRIC	Development of captive brood stock of giant murrel, <i>Channa marulius</i> and induced spawning using different synthetic hormones	KVAFSU, Bidar	1.44	2020	N. Manjappa
FISHERIES RESEARCH AND INFORMATION CENTER (MARINE), ANKOLA					
FRIC	Development of backyard hatchery system for pearl spot (<i>Etroplus suratensis</i>) as alternative livelihood	KVAFSU Bidar	1.50	2019	Chandrakant Lingadhal
ANIMAL HUSBANDRY POLYTECHNIC, KORAVANGAL A					
AHP	Conservation of Hassan sheep Breed	GoK	325.00	2018	Guruprasad, R.
AHP	Establishment of Small Ruminant Semen Bank	GoK	300.00	2018	Guruprasad, R.

ABSTRACT OF ONGOING RESEARCH PROJECTS

#	<i>College /Institute</i>	<i>Research Projects</i>	
		<i>Total Nos.</i>	<i>Amount (Rs. Lakhs)</i>
1	Veterinary College, Bengaluru	24	652.62
2	Veterinary College, Bidar	13	70.96
3	Veterinary College, Shivamogga	18	162.47
4	Veterinary College, Hassan	9	81.19
5	Veterinary College, Gadag	4	1.10
6	College of Fisheries, Mangaluru	12	1817.15
7	LRIC, Hallikhed-Bidar	2	160.00
8	LRIC, Nagamangala-Mandya	1	37.20
9	LRIC, Konehalli-Tumakuru	1	410.00
10	LRIC, Dornahalli-Yadgir	1	24.00
11	FRIC, Hebbal-Bengaluru	2	37.06
12	FRIC, Hesaraghatta-Bengaluru	4	59.21
13	FRIC, Ankola-Uttar Kannada	1	1.50
14	AHP, Koravangala-Hassan	2	625.00
Total		94	4139.46

b) Research Highlights

VETERINARY COLLEGE, BENGALURU

Title: Genetic Evaluation of Productive and Reproductive Traits in NARI Suwarna sheep

Procurement of requisite materials, chemicals, plastic wares and other consumables is in progress.

Data collection is completed and its entry is being carried out.

Title: Evaluation of apoptosis inducing potential of rutin loaded chitosan nanoparticles

Procurement of chemicals and lab wares required for the research project work is done and research work is under progress.

Title: Development of point of care diagnostics for the diagnosis of theileriosis and babesiosis in cattle

Polymerase chain reaction for *Theileria annulata* and *Theileria orientalis* have been optimized. Sixty blood samples have been screened for the presence of *Theileria annulata* and *Theileria orientalis*. Order has been placed for procurement of *Bacillus stearothermophilus* genomic DNA for further work from ATCC.

Title: Indo-UK collaboration on “Chicken or eggs; Drivers of antimicrobial resistance in Poultry in India

Objectives:

Characterization of flow of Anti Microbial Resistance (AMR) genes through the Chicken broiler meat supply chain:

Based on the main objective of the project which is assessment of antimicrobial resistance (AMR) and its drivers in complete poultry supply chain, the present study focused on complete broiler supply chain. The study was carried out to isolate and characterize *Salmonella* and *Escherichia coli* followed by phenotypic and genotypic characterization of AMR in different samples collected from Broiler breeder, Hatcheries, Commercial broiler farms, and Chicken Retail shops from in and around the Bengaluru.

Study Design:

Samples were collected from three broiler breeder in the laying stage (n=50), three each hatcheries (n=29), commercial broiler farms (n=99) and chicken retail shops (n=54) located in and around Bengaluru.

Results:

A. Isolation of *E.coli* and *Salmonella*

Out of 50 samples collected from broiler breeder farms, 36 (72 %) were positive for *E. coli* among which 12 (24 %) were ESBL. None of the samples in broiler breeder farms found positive for *Salmonella*. Out of 29 samples collected from commercial broiler hatcheries, 23 (79.31 %) was positive for *E. coli* of which 17 (58.62 %) were ESBL. Three samples (10.34 %, Air Fans Swabs, Chicken tray swabs and Yolk Sack swab of dead chicks) were found positive for *Salmonella*. Out of 99 samples collected from commercial broiler farms, 49 (62.02 %) were positive for *E. coli* of which 42 (53.16 %) were ESBL. Five samples (6.32 %, Feeder Swabs on day 36, Boot Socks inside the farm all three intervals and boot socks outside the farm only day one) were found positive for *Salmonella*. Out of 54 samples collected from chicken retail shops, 31 (86.11 %) were positive for *E. coli*, of which 30 (83.33 %) were

ESBL. Ten samples (27.77 %, Cutter knives swabs, meat rinsing water, chicken carcasses and Ileum and cecum contents) were found positive for Salmonella.

B. Antibiotic susceptibility pattern of the *E. coli* isolates:

Antibiotic susceptibility pattern of all the isolates was documented and 42 samples have been randomly selected and screened so far, using disc diffusion method.

Conclusion and future perspectives:

1. The higher prevalence of *E. coli* in chicken retail shops followed by broiler hatcheries, broiler breeder farm and commercial broiler farms was recorded. It indicated that the organism is widely distributed in entire chain and more load is in the beginning and end of the poultry supply chain.
2. Prevalence of ESBL *E. coli* was the highest at the end of the cycle, but was high in all the four categories of supply chain. Indicating that ESBL increases with flow of the chain and but entire chain contains very high level of ESBL and necessary measures need to be employed in prevention of its occurrence at each supply chain.
3. Antimicrobial susceptibility testing clearly indicated that majority of the isolates are multidrug resistance and hence might pose serious public health threat to the consumers.

Title: Program for Strengthening Intersectoral Co-ordination for Prevention and Control of Zoonotic Diseases

Objective:

Establish an inter-sectoral coordinating mechanism at National, State and District Level by utilizing the existing surveillance system (IDSP) and Animal Disease Surveillance (ADS) wing of Department of Animal Husbandry and Veterinary Services (DAHVS) of State governments for timely and effective public health actions.

To identify the high-risk areas/hot spots.

To achieve Zero Rabies by 2030.

Research highlights:

Periodic monthly, quarterly and annual reports on processing of animal brain samples for rabies being furnished.

Samples (especially brain and serum) received are documented, computer catalogued and are stored in the repository.

Following tests are being performed and will be carried out based on the type of samples received.

1. **Lateral Flow assay (LFA) test**, a preliminary test is performed for the diagnosis of rabies using brain sample of animals. This test is employed for both brain and saliva samples for post mortem and ante mortem diagnosis of rabies respectively.
2. **Direct fluorescent antibody test (DFA)** for the diagnosis of rabies using brain sample of animals. Since this is a WHO-OIE approved test for diagnosis of rabies, all the brain samples submitted to this laboratory are by employing DFA.
3. **Rapid Fluorescent focus inhibition test (RFFIT) for monitoring of anti-rabies antibodies in vaccinated dogs & cats.** The test is carried out not only for international movement of pets but also for estimating the vaccinal antibodies in rabies control programmes through mass immunization.
4. **Polymerase Chain Reaction (PCR)**, sequencing for the detection and molecular characterization of rabies virus using brain sample of animals.
5. Hemi nested PCR for members of the Lyssa virus
6. LN 34 PCR for Panlyssavirus.

Capacity Building:

“Tripartite Regional Workshop on Diagnosis, Surveillance and Control of Rabies” – 12th January 2021

KVAFSU- CVA Rabies Diagnostic Laboratory, OIE Reference Laboratory for Rabies, Department of Veterinary Microbiology, Veterinary College, KVAFSU, Hebbal, Bengaluru -560024 and National Centre for Disease Control (NCDC), Directorate General of Health Service, Ministry of Health and Family Welfare, Govt. of India, New Delhi- 110054 had jointly organized a “**Tripartite Regional Workshop on Diagnosis, Surveillance and Control of Rabies**” involving Animal Husbandry, Health (Medical), and the Municipal Corporations / Civic bodies under the Inter-Sectoral Coordination Programme (ISCP) for Prevention and Control of Zoonotic Diseases, on 12th January 2021 by virtual mode. Further, 11 states from different parts of India had participated in the workshop. In all, 78 participants attended the workshop including the dignitaries and organizers.

As a part of this, the Inter Sectoral coordination (ISC) among the concerned Veterinary, Medical professionals, and authorities from Municipal corporations was strengthened.

Title: Effect of different sulfate polysaccharides (Sea weeds-Powdered & liquid form) on growth performance, carcass characteristics and gut health in broiler chicken

Parameters studied:

- Weekly body weight @ average daily and weekly body weight gain.
- Weekly feed intake and FCR.
- Carcass characteristics and weights of organs at 6th week.
- Serum antioxidant and hormone status (like Glutathione-reductase, Glutathioneperoxidase, SOD, catalase, lipid peroxidation, growth hormone) at 6th week.
- Immune status (HI titre against NDV and PHA-P response) at 6th week.
- Weekly mortality, and the total mortality at 6th week.

Parameters to be study:

- Nutrient digestibility trial (energy, fat & protein retention) at 3rd and 6th week.
- Gut histomorphology at 6th week.
- Gut gene expression (can be carried out at Sea6 Energy, if samples are provided).
- Serum protein, creatinine and lipid profile (Cholesterol, triglycerides) in liver and meat.
- Statistical analysis of the data.
- Cost economics.

Title: Determination of the mitigation effects of yeast cell wall extract in broilers fed diet naturally contaminated with Fusarium toxins

Toxin production and biological trial is completed. Lab Analysis of samples and compilation of data is pending.

Title: Evaluation of the Effect of Fibrolytic enzymes on rumen *Invitro* gas production and *In vitro* dry matter digestibility of various fodders

Invitro gas production and *In vitro* dry matter digestibility of various fodders completed. compilation of data is in progress.

VETERINARY COLLEGE, BIDAR

Title: Improving Livelihood of Scheduled Caste (SC) Community through Integrated Livestock Development and Capacity Building Activities in Bidar District of Karnataka

Important findings with good photographs: Selection and purchase of native chicken birds of Bidar district is done, separation of birds based upon their plumage colour is done and egg collection process is in progress

Title: Effect of serum gonadotrophin, estrus goat serum and estradiol 17 β on in vitro maturation of goat oocytes

Materials related to research are procured
Trial among the treatment groups are under process

Title: Comparative study of endometrial cytobrush technique as a diagnostic aid and comparative efficacy of various intrauterine infusions to resolve subclinical endometritis in buffaloes

Procurement of drugs and chemicals are under process

Title: Isolation and molecular characterization of Extended Spectrum Betalactamase producing *E.coli* from foods of animal origin

Samples (n=180) from foods of animal origin (Chicken meat=30, Chevon=30, beef=30, Kara beef=30, Pork=30, Milk=30) were collected from Bidar.

Samples were subjected to isolation by inoculation on McConkey's agar followed by EMB agar. *E.coli* was tentatively identified by conducting biochemical tests i.e. IMViC tests followed by confirmation by PCR.

The ESBL producing *E.coli* were identified by Phenotypic Confirmatory Test (PCT) as recommended by CLSI guidelines (Aggeliki *et.al.*, 2014) by conducting ABST on Muller Hinton agar using ceftazidime(30mcg) and ceftazidime(30mcg) + clavulaniv acid(10mcg) antibiotics discs.

The ESBL *E.coli* samples detected by PCT from Chicken meat, Chevon, beef, Kara beef, Pork and Milk were 15 (50%), 14 (46.66%), 10 (33.33%), 12 (40%), 9 (30%) and 14(46.66%) respectively.

The materials required for molecular characterization have been procured. The molecular characterization is under progress.

Title: Pathomorphological and p53 immunohistochemical evaluation studies in squamous cell carcinoma of eye

Collected the nine samples of squamous cell carcinoma of eye in cattle from the Department of TVCC/Surgery and processed for histopathological analysis and evaluation. The monoclonal antibody p53 was purchased and immunohistochemical evaluation was pending and after purchase of secondary antibody further evaluation will be carried out to study p53 mutations in squamous cell carcinoma.

VETERINARY COLLEGE, SHIVAMOGGA

Title: Studies on antimicrobial resistance, genetic diversity and pathogenesis of some zoonotic bacterial intracellular pathogens of public health significance

Studies on antimicrobial resistance, genetic diversity and pathogenesis of some zoonotic bacterial intracellular pathogens of public health significance

Progress made:

A total of 80 cattle and 10 buffaloes from organized dairy farms have been screened for brucellosis by rose bengal plate test (RBPT), milk ring test (MRT) and indirect enzyme linked immune sorbent assay (iELISA);

20 cattle and 5 buffaloes were screened for mycobacteriosis by single intradermal tuberculin (SIT) test and Ziehl-Neelsen's (ZN) acid fast staining.

Out of 80 cattle and 10 buffaloes screened for brucellosis, 8 cattle were found positive for the brucellosis by RBPT and iELISA. All the buffaloes tested were found negative for brucellosis.

Out of 20 cattle and 5 buffaloes screened for mycobacteriosis, no animal was found positive by SIT. However, 5 cattle were found positive for acid fast organisms in fecal sample by ZN staining which had chronic diarrhea. All the buffaloes tested were found negative for mycobacteriosis.

Molecular identification of genus and species of *Brucella* by polymerase chain reaction (PCR) revealed that, out of eight positive cattle, three cattle were infected by *B. abortus* and three cattle with *B. melitensis*. In remaining two animals, only *Brucella* genus was identified by PCR.

The molecular identification of genus and species of *Mycobacterium* in all the six fecal samples positive for AFS by PCR revealed only genus *Mycobacterium* in five samples and none of them belonged to either *M. tuberculosis* or *M. bovis*. The confirmation of species requires advanced molecular approaches like sequencing.

Screening of other species of animals for brucellosis and work on other parameters viz. histopathology, AMR and genotyping studies are under progress.

Title: Determination of Bacteriocin genes in *Lactobacillus* Isolates from Malnad Gidda Cattle

Screened for *Lactobacillus spp.*

A total of 08 isolates showed characteristic typical biochemical reactions for *Lactobacillus spp.*

Standardization of PCR and confirmation of these isolates by PCR and identification of bacteriocin genes in these isolates is in progress.

Title: Detection of extended spectrum beta lactamase (ESBL) producing *E.coli* isolates from diverse origin

Progress made:

A total of 32 *E. coli* cultures maintained in the Department of Veterinary Public Health and Epidemiology, Veterinary College Shivamogga were revived and confirmed by duplex PCR tagging *uidA* and *uspA* genes of *E. coli* with an expected amplicon size of 162bp and 884bp respectively.

E.coli isolates were from different sources viz. cattle feces (06 isolates), Poultry cloacal swabs (06), Chicken Meat (10) and milk (10).

A total of 10 *E. coli* isolates showed positive reaction for characteristic ESBL production by following the protocol of double disk diffusion method by CLSI 2020.

Out of 10 ESBL producing *E. coli* isolates 2 were from cattle feces, 1 from Poultry cloacal swabs, 3 from Chicken Meat and 4 from milk.

Title: Clinical and laboratory diagnostic studies on Pasteurellosis in ruminants Important findings with good photographs

Progress of the work: Blood samples from Clinical cases suspected for the Pasteurellosis based on clinical signs were collected and screened for the presence of Pasteurella organism based on staining and identification and culturing and isolation.

Title: Malnad Gidda Research and Information Centre

During this year 6 calves were born (1 male and 5 females). 14 animals of different age groups were auctioned to farmers (6 Males and 8 females) for their use as breeding and agricultural purposes. One training programme to farmers was organized on the topic of scientific rearing of Malnad Gidda animals and value addition to various products from cow dung and urine on 11/02/2021. In these 25 farmers from different parts of the state participated. A demonstration on making of Doop stick and Cow dung Deepa was done for the benefit of farmers. A book carrying the information on Malnad Gidda along with the compilation of activities of MGR & IC was released during the occasion.

The breed performance recording of Malnad Gidda breed was analysed and represented below.

Total revenue of One lakh, twenty one thousand, two hundred and thirty nine was generated in this financial year 2020-21.

Production performance details of Malnad Gidda breed as recorded in 2020-21			Receipts from MGRIC during the year 2020-21	
			Receipts	Rupees
Age at first Calving	1025.6 days		Sale of Milk	50139.00
Intercalving intervals	358.58 days		By animal auction	54300.00
Birth Weight of Calf	Female	Male	By Sale of Urine and Manure	16800.00
	7.33 Kgs	8.03 Kgs		
Average Milk yield per lactation	261.78 Kg			
Lactation length	164.44 Days		Total Receipts	121239.00
Peak yield	2.43 kg			
Days to Reach peak yield	26.68 days			
Ave M /Y per day	1.65 kg			
Dry Period (days)	166.93 Days			
Number of calves born	6 (1 M+5 F)			

Title: Obscure Diseases Research Project

Research is being carried out on large ruminants regarding cattle mortalities in Southern Transition zone and Hilly zones of Karnataka with special emphasis on deaths due to consumption of *Mimosa invisa* plant.

Similarly, mortalities in sheep due to *Clostridium perfringens* and other causes is also being carried out in the same agro-climatic zones.

Title: Pathomorphological studies on mortalities in non human primates with special reference to Kyasanur Forest Disease

Till date, a total of 56 cases of monkey necropsy samples have been collected from various remote locations in Sagara, Soraba, Hosanagara, Tirthalli taluks of Shivamogga district, as and when the cases of monkey deaths were spotted by forest officials.

All cases, macroscopic pathology have been documented, and histopathological studies are to be carried out. Tissues like brain, spleen, liver, lungs, heart and kidneys are being collected, and wherever possible, intestinal contents are also being collected.

Of them, a total of 14 cases have been screened for histopathology.

Till date, the necropsy tissue specimen sent to NIV, Pune have tested negative for KFD, by RT-PCR method.

The budget of 2.5 lakhs, have been utilized to procure special chemicals, test kits, glassware, labware and other essential items required to carry out field necropsy and analysis pertaining to monkey mortalities.

Network between Veterinary College and the stake holders such as the Department of Animal Husbandry & veterinary services, Department of Health and Family Welfare, Karnataka Forest Department and Zilla Panchayat of Shivamogga district have been created, so that monkey deaths would be reported, so that samples would be available for research activity.

An awareness training programme was conducted by ICAR-KVK, Shivamogga for the officers of the DAH&VS, in which Dr Kavitha Rani B delivered an informative lecture on 'KFD and its control measures on Feb 19, 2020.

Most of the cases have shown pathological changes in liver and kidneys, followed by lungs and brain. Multi-nucleated hepatocytes and focal portal inflammations were evident in liver. Kidneys showed interstitial type of nephritis and in one case oxalosis was noticed which gave birefringence under polarized light. Several cases of lungs showed heart failure cells indicating pulmonary congestion and heart lesions.

Two research abstracts have been presented in international wildlife conference WILDCON 2020 held at Nagpur, Maharashtra during November, 2020.

COLLEGE OF FISHERIES, MANGALURU

Title: Scientific validation of herbal products on fish, shrimp and prawn

Indian Herbs Specialties Pvt. Ltd. herbal products showed better results in terms of growth performance, immune response, disease resistance and hematology of Nile tilapia compared to controls.

Title: Modernization of Research and Instructional Fish Farm for New Aquaculture Technologies

This project will be implemented by NITK, Surathkal. The MoU processes are going on.

Title: National Surveillance Programme for Aquatic Animal Diseases: Surveillance of shrimp diseases in coastal Karnataka (Brackish water)

Shrimp samples and pond water were collected regularly every month along the coastal Karnataka (Dakshina Kannada, Udupi and Uttara Kannada) from shrimp culture farms and collected samples were transported to the laboratory.

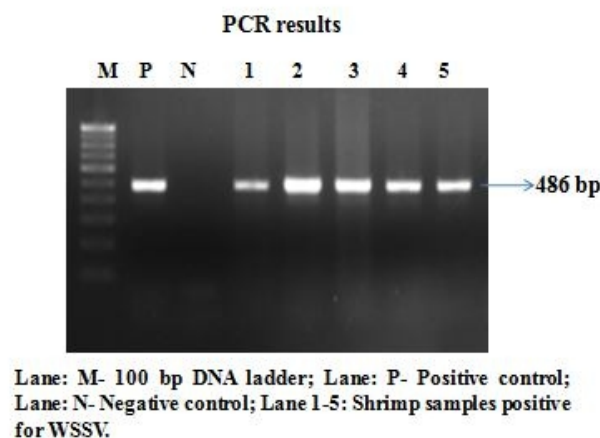
Total of 35 shrimp samples were collected from shrimp farms cultured in Mangaluru, Udupi, Kudapura, Bhatkala, Shirali, Honnavara, Kumta, Ankola and Karwara.

The samples were analysed for the presence of DNA viruses such as White spot syndrome virus (WSSV), Monodonbaculovirus (MBV), Hepatopancreatic parvovirus (HPV), infectious hypodermal and hematopoietic necrosis virus (IHHNV) and RNA viruses such as Taura syndrome virus (TSV), Yellow head virus (YHV), Infectious myonecrosis virus (IMNV) and other emerging pathogens causing Acute hepatopancreatic necrosis disease (AHPND) and Enterocytozoonhepatopenaei (EHP).

The results were documented and reports were sent to the NBFGR Lucknow.

Shrimp analysis results and technical suggestions are communicated to the shrimp farmers.

A total of 35 shrimp samples were analysed for above listed viruses, among, 5 samples were WSSV positive and 8 were EHP positive.



Title: National Surveillance Programme for Aquatic Animal Diseases

Regular samplings were made from the selected farms of each of the active surveillance districts. All the samples collected were transported to laboratory and pooled. Pooled samples were screened for KHV and SVCV by Polymerase chain reaction using specific primers. None of the samples were found to be positive for KHV and SVCV.

Regular queries were attended over telephone from fish farmer. Health management measures were suggested to them.

Title: Identification, cloning, characterization and assessment of the potentiality of an *Aeromonas* phage endolysin as an antimicrobial agent against multi drug resistant *Aeromonashydrophila*

The endolysin gene was cloned into the *E. coli* dh5 alpha cells.

Further it was expressed in a *E. coli* BL21(DE3) cells using a pet 32(a)+ vector.

pH studies indicated the enzyme to be active at pH 3-10 (>50%). The enzyme displayed maximum muralytic activity pH 4.

Temperature stability studies indicated that the enzyme displayed greater than 50% relative activity at temperatures from 4-100°C.

The endolysin showed synergistic activity with colistin and killed the colistin resistant cells of *A. hydrophila*.

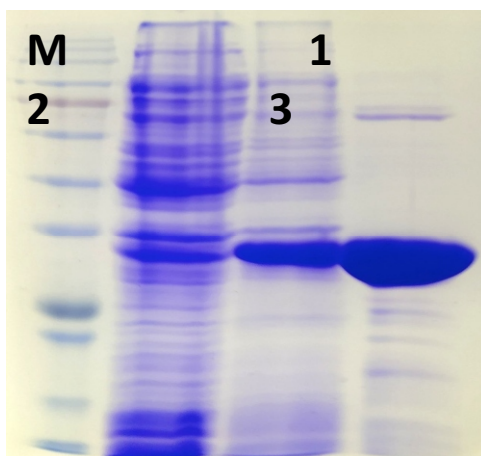


Fig: SDS gel showing the expression of endolysin. Lane M- Protein marker; 1- uninduced *E. coli* BL21 cells; 2- induced *E. coli* BL21 cells; 3- Purified Endolysin

Title: Mentoring of pollution impact by discharge of treated effluents from BASF, Mangalore

Water, sediment, phytoplankton, zooplankton and benthos were collected by using standard methods from the vicinity of discharge point, off Arabian sea, Mangaluru.

Water quality - within the ambient levels of coastal environment.

Phytoplankton: 33 genera.

Diatoms- Coscinodiscus, Biddulphia, Chaetoceros, Ditylum (Dominant).

Dinoflagellates – Ceratium, Peridinium (Dominant).

Blue green algae- Tricodesmium(Dominant).

Zooplankton – 21 genera Copepods, Copepod Nauplius, Oikopleura, Tintinids, Cladocerans (Dominant).

Benthos – 17 genera.

Molluscs – Bivalve spats, Donax, Dentalium, Meritrix and Umbonium (Dominant).

Polychaetes – Neries, Nephtys, Polydora (Dominant).

Heavy metals- Cd, Cr, Mn, Fe, Pb, Zn, Ni – Not Detected.

The bioassay studies - no mortality of mussels exposed to seawater collected from the vicinity of effluent fallout. No mortality of fingerling of Cyprinus carpio exposed to the water collected from the cooling pond of the industry (before discharging into the sea).

Title: Analysis of sea water monitoring at Marine outfall discharge point

Monitored the coastal water quality in the vicinity of discharge of point of MSEZL in the Arabian Sea assessing water, sediment, plankton and benthos.

Water quality - within the ambient levels of coastal environment

Phytoplankton: 20 genera

Diatoms- Chaetoceros, Biddulphia, Coscinodiscus,

Dinoflagellates – Ceratium, Peridinium (Dominant)

Blue green algae- Tricodesmium(Dominant)

Zooplankton – 20 genera - Copepods, copepodites, tintinids, Oikopleura, Cladocerans (Dominant)

Benthos – 15 genera – Molluscs – Bivalve spats, Meritrix, Donax, Dentalium and Umbonium (Dominant) Polychaetes – Neries, Nephtys, Polydora (Dominant)

Population density Polycathates showed direct relationship with organic matter.

Heavy metals- fish, phyto and zooplankton samples - Cd, Cr, Mn, Fe, Pb, Zn and Ni – within permissible limit.

Title: Coastal water quality monitoring near M/s. UPCL seawater intake and effluent discharge point off Padubidri

Water quality - within the ambient levels of coastal environment

Phytoplankton: 33 genera Diatoms dominant, followed by dinoflagellates and blue green algae

Zooplankton –21 genera Copepods, tintinids, Oikopleura, polychaetes and decapod larvae (dominant)

Benthos – 16 genera molluscs & polychaetes (dominant)

Heavy metals were analysed (Cd, Cr, Mn, Fe, Pb, Zn, Ni) in sediment samples during Post monsoon and pre monsoon season found to be within the prescribed range.

Bioassay studies - no mortality of mussels exposed to seawater collected from the vicinity of effluent fallout.

Title: Bio-monitoring studies of treated effluent and soil analysis SOLARA Active Pharma Sciences Limited, Baikampady, Mangalore

Bioassay experiments were conducted on monthly basis on treated effluent samples supplied by Sequent Scientific Limited, Baikampady, and Mangalore using common carp. (*Cyprinus carpio* L.) And monthly reports have been submitted to the sponsoring agency regularly.

Title: Ecological monitoring of Arabian Sea receiving effluents from MCF Ltd.

Water quality in the study area is well within the ambient levels of coastal environment.

Phytoplankton - 36 species

Biddulphia-Biddulphiaregia, *B. sinensis*, *Biddulphiambiliensis*. Chaetoceros- *C. lorenzianus*, *C. decipiens*, *C. compressus*, Chaetoceros- *C. lorenzianus*, *C. decipiens*, *C. compressus*, *Coscinodiscus*- *C. oculus iridis*, *C. lineatus*, *C. excentricus*, *Nitzschia*- *N. closterium*, *N. striata*. BGA- *Trichodesmium* sp.

Zooplankton - 23 species :

Tintinids- *Tintinopsis* sp. *Rabdonellasp.* Medusae- *Obeliasp.*, *Octocostatum* sp. Ctenophores- *Plurobranchiasp.* Chaetognaths- *Sagittaenflata*, *Pterosagittadraco*, *Lucifer lucifer*. Benthic diversity was observed 19 groups were dominated by molluscs followed by Echinodermata, Echiuroids, miscellaneous- crabs, shrimps and fishes.

The biological diversity varied with time and space in the region both vertically and horizontally.

The bioassay studies - no mortality of mussels exposed to seawater collected from the vicinity of effluent fallout.

Title: Skill development programme in fisheries under area based development (ABD) mission of Mangaluru Smart City limited

Skill Development Programme could be undertaken as a means of self employment and subsidiary income generation activities to the participants. Thus, following are top 15 skill development programmes are proposed to be initiated in the field of 'Fisheries' for the benefit of fishermen of Mangaluru region (To be implemented after the completion of building works).

Title: Development of optical character recognition system for fish freshness identification using Artificial Intelligence

Discussion with NITK, Surathkal, Karnataka to provide technical assistance for Data annotation and storage, Artificial Intelligence modelling and integration, training and learning AI models, the image processing and Android App for fish freshness grade prediction.

The estimated budget for development of above said product is Rs. 27.18 Lakhs (INR) and need permission from ICAR AICRP PHET, CIPHET , Ludhiana for additional budget sanction to proceed further.

Identified Freshness Indicators

Part		Fresh fish	Moderately fresh fish	Spoiled fish
Eye	Shape	Convex (Bulge)	Convex and Slightly Sunken	Dull Pigmentation
	Cornea	Transparent Cornea	Slightly Opalescent Cornea	Milky and Opaque mucus
	Pupil	Black and Bright Pupil	Black and Dull Pupil	Light black and Dull
Gills	Colour	Bright	Less coloured	Discolored and Yellowish
	Mucus	No mucus	Traces of mucus	Milky and opaque mucus
Skin	Appearance	Bright, iridescent pigmentation	Less bright and Dull pigmentation	Dull
	Mucus	Aqueous and transparent	Cloudy	Opaque

Based on the above selective fingerprints the data on different thermal images were collected and tabulated to create a database on body temperature variation with respect to different storage techniques in different fish species.

Sardines

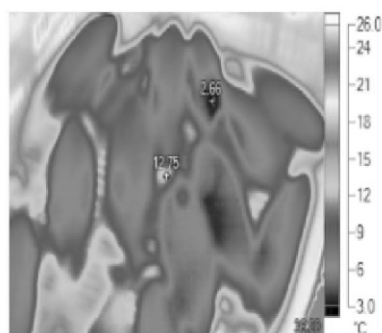


Spectral Image



Optical Vision

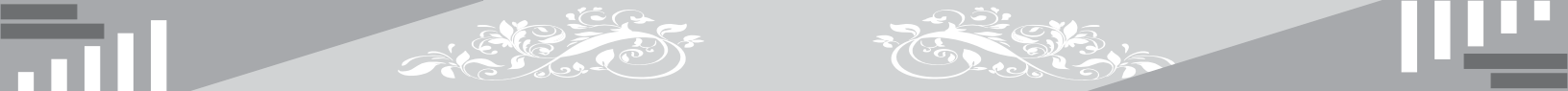
Mackerel



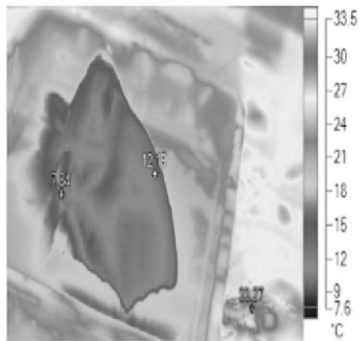
Spectral Image



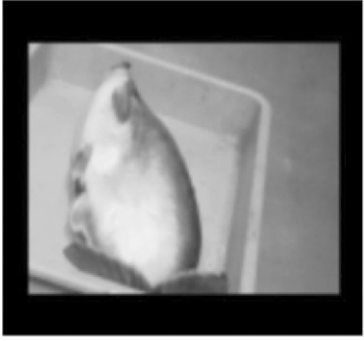
Optical Vision



Pangasius Fish (Basa)

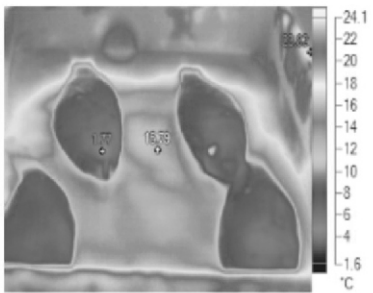


Spectral Image



Optical Vision

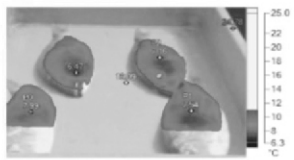
Pink Perch



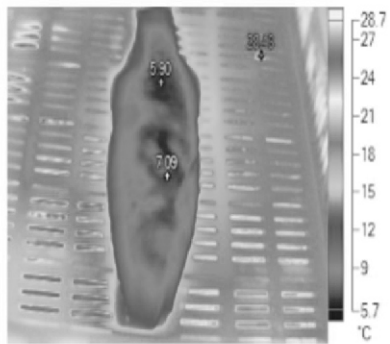
Spectral Image



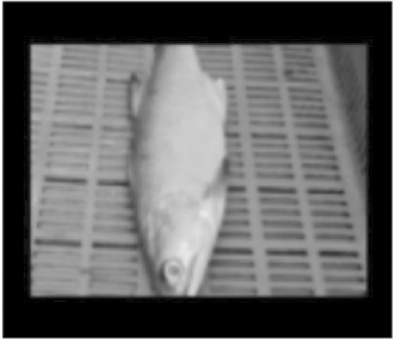
Optical Vision



Lady fish



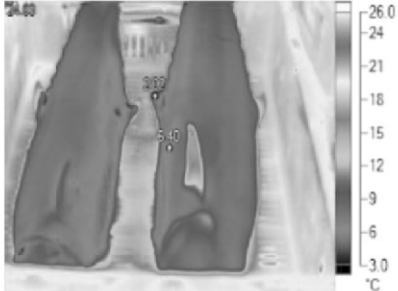
Spectral Image



Optical Vision



Seer fish

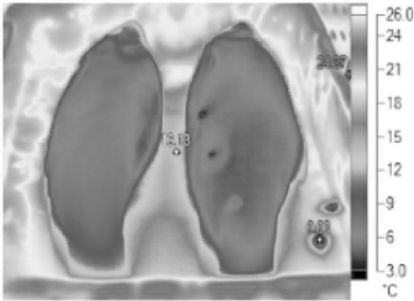


Spectral Image



Optical Vision

Catla

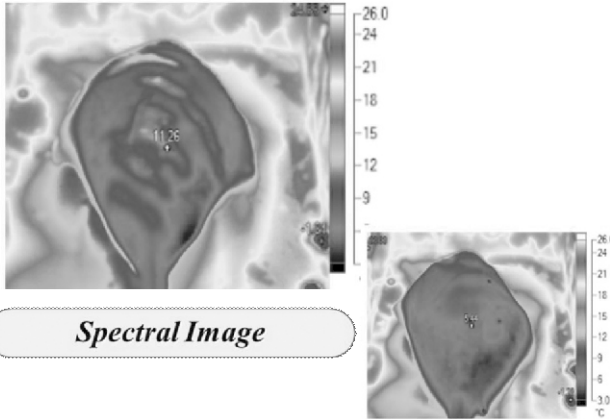


Spectral Image



Optical Vision

Black pomfret

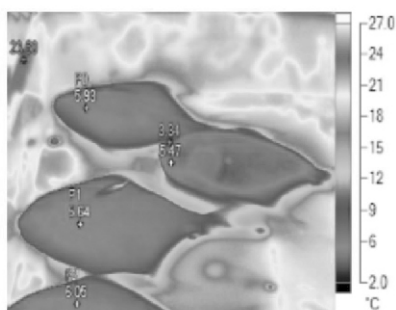


Spectral Image



Optical Vision

White pomfret



Spectral Image



Optical Vision

Title : Development of commercial and ornamental fish feed by incorporating fishery waste and debittered and deoiled mustard cake

1. Proximate Composition of fish waste collected from seafood industry

Compositions	Quantity (%)
Moisture	73.17±1.3
Crude Protein	19.18±0.01
Crude Fat	8.41.54±0.53
Ash	2.17±0.35



2. Proximate Composition of fish meal and debittered mustard cake

Parameters	Fish Meal	Mustard Cake
Moisture	8.8 %	7.95%
Crude Protein	54.68 %	24.06 %
Crude Fat	8.41 %	6.45 %
Ash	3.34 %	2.34 %

The crude protein content in Fishery waste, Fish meal and Debittered mustard cake was observed to be 19.18, 54.68 and 24.06% respectively. As protein content is the important component for the preparation of fish feed, the result showed that both fishery waste and Debittered mustard cake contains a good amount of protein content. Selecting right combination of all the above could result in good feed composition for both commercial and ornamental fish.

Objective:1

- Fish feed from preparation fishery waste



DEVELOPMENT OF EXTRUDED & DRIED FISH FEED



Fish meal sieving and mixing with water



Fish meal dough



Fish meal dough balls



Fish meal dough balls steam Cooking



Extrusion of cooked fish meal dough



Drying of extruded fish feed



Packing of dried of extruded cooked fish feed



FEEDING TRIAL OF FISH FEED PREPARED USING FISH MEAL (COMMERCIAL FISH)



Tilapia



Typical protein levels of pellet feeds for Nile tilapia are between 25 and 35 percent, but can be as high as 50 percent for fry and as low as 20 percent for finisher diets. A good general guideline could be as follows.

Protein requirement of fish as per the different Life stages

Life stage	Weight (g)	Requirement (%)
First feeding larvae		45–50
Fry	0.02–1.0	40
Fingerlings	1.0–10.0	35–40
Juveniles	10.0–25.0	30–35
Adults	25–200	30–32
	>200	28–30
Broodstock		40–45

FEEDING TRIAL OF FISH FEED PREPARED USING FISH MEAL (ORNAMENTAL FISHES)



Koi Carp



Telescope



Gold Fish

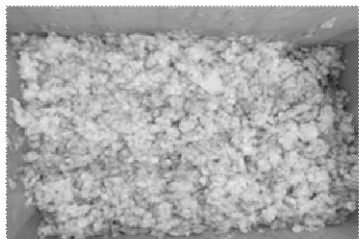
STORAGE STABILITY OF FISH FEED FROM FISH MEAL

Parameter (1 st Month)	Quantity	Parameter (2 nd Month)	Quantity
pH	5.68	Moisture	5.54 %
Moisture	4.64 %	Crude Fat	5.26 %
Ash	21.5 %	Protein	56.14 %
Protein	54.62 %	PV	0
PV	0	FFA	79.31 %
FFA	51.338 %	TBARS	2.098 % (MDA)
TVBN	14.01 mg %	TVBN	19.6 mg %
TMA	0 mg %	TMA	5.6 mg %
TPC	0 x 10 ⁻⁴ cfu/g	TPC	0 x 10 ⁻⁴ cfu/g
		Spore Former	0 x 10 ⁻⁴ cfu/g
		PDA	0 x 10 ⁻⁴ cfu/g
		Spore Former	0 x 10 ⁻⁴ cfu/g

Title: Technology

for development of novel biopolymer micro-needle patches from seafood processing waste to use as a tool

The Indian goat fish (*Parupenaesus indicus*) scales were procured from fish processing plant, Mangalore. The scales were washed, air dried and proximate composition was analysed. The scales showed 78.26% of crude protein, 5.05 % of moisture, 2.54 % of total fat and 15.89% of ash. The fish scale biopolymer was prepared following the method of Jongiareonraket *al.* (2006) with slight modifications. The yield of biopolymer obtained was 5.5%.



Indian goat fish (*Parupenaesus indicus*)

Weight of fish - 250±50 g

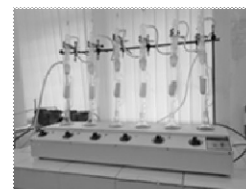
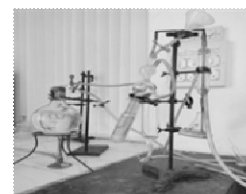
Length of fish - 18±5 cm

Indian goat fish scale

Weight of scale -500 g

Weight of scale after air dry- 150 g

Parameter	Quantity (%)
Moisture	5.05±0.09
Crude Protein	78.26±0.30
Crude Fat	2.54±0.02
Ash	15.89±0.76



Title: Development of Gelatin based edible films from fish processing wastes coupled with natural antioxidants for seafood packing applications

Extraction of natural antioxidants and characterization

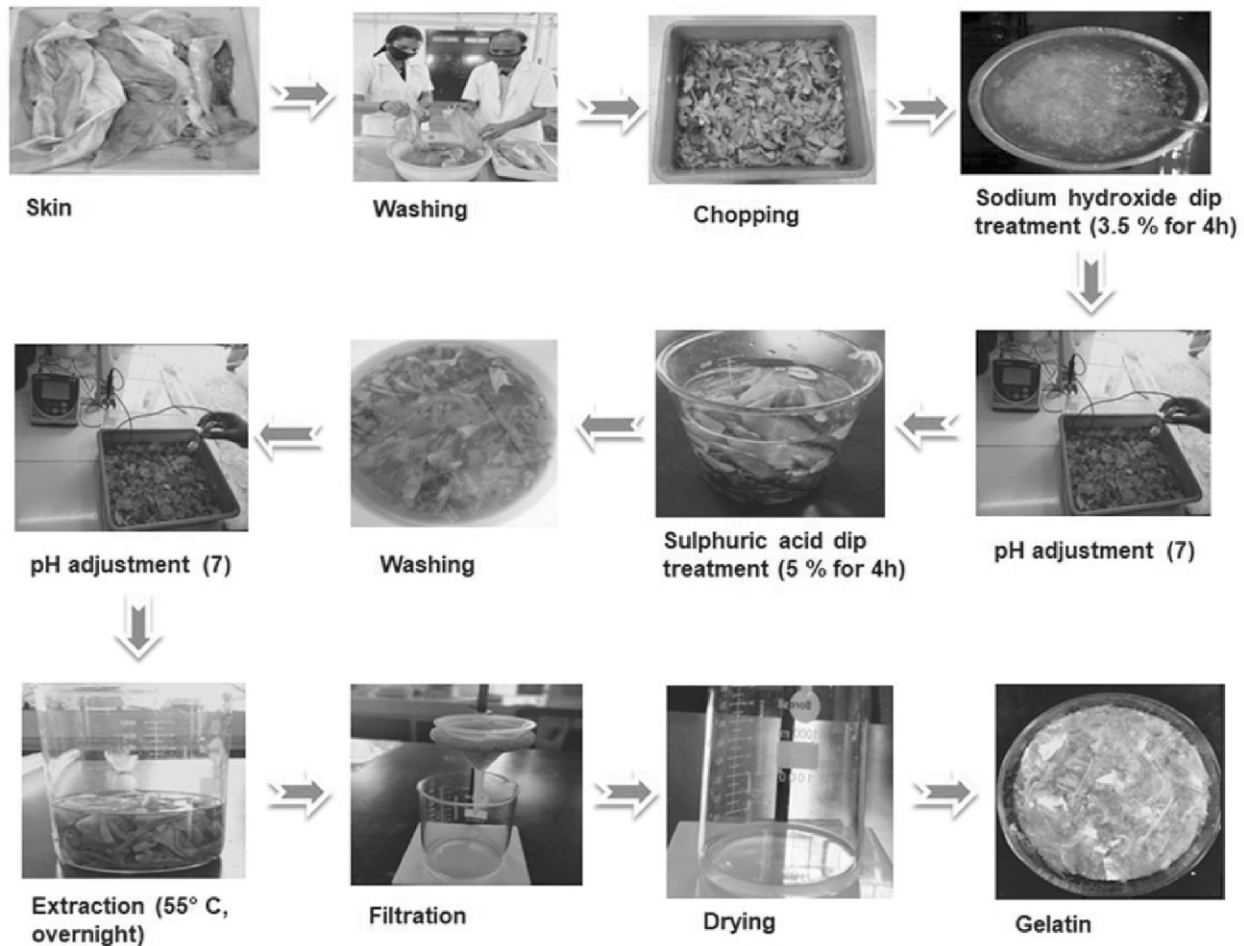
The Pomegranate peel was procured from the local juice center Mangalore. The peel was washed and made into small pieces. After that, the peel was dried at 60°C and ground to make a fine powder. Antioxidant was extracted by using a solvent extraction method (Ethanol) at the ratio of 1:4 peels to Ethanol. After extraction, the extracts were filtered and concentrated by using a rotary evaporator under vacuum at 40°C.

The Pomegranate peel extract (PPE) showed 10.07 ± 0.21% of crude protein, 64.15± 0.39% of moisture, 0.36± 0.85% of crude fat and 0.98 ±0.13% of ash.

The antioxidant properties like Metal chelating activity, Ferric reducing power, ABTS, (2-azinobis 3-ethylbenzothiazoline-6-sulfonic acid) radical scavenging activity and Diphenyl-1-picrylhydrazyl (DPPH) radical scavenging activity of PPE were measured by the following methods developed by Diniset *al.* (1994), Oyaizu (2011), Re *et al.* (1999), Abdulwahabet *al.* (2011), respectively. The results showed the optimum antioxidant activity of PPE.

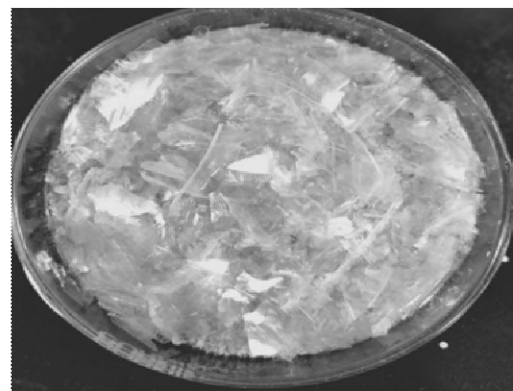
Extraction gelatin from fish processing waste

The fish skin waste was procured from the local fish processing plant, Mangalore. The species used for the study was Leather jacket (*Aluterus monoceros*). The skins were washed and cut into 2-3 cm². The proximate compositions of the raw material were 22.52 ± 1.24% of crude protein, 70.34 ± 0.68% of moisture, 1.18 ± 0.76% of crude fat and 1.65 ± 0.29% of ash. The gelatin was extracted using the methodology developed by Jongiareonrak et al. (2006) with some modifications. The yield of Gelatin obtained was 11.55%.

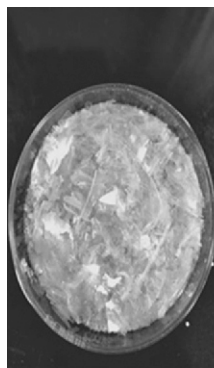


The yields of the gelatins obtained were calculated as:

$$\% \text{ Yield (wet wt. basis)} = \frac{\text{Dry wt. of gelatin}}{\text{Wet wt. of skins}} \times 100$$



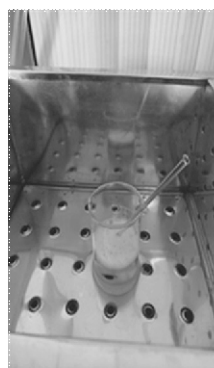
11.55%



Gelatin powder



Dissolving Gelatin in glycerol + distilled water



Solidifying in Water bath at 45 °C for 20 min



Pouring into petri plates



Gelatin Film



- Gelatin has been extracted from Leather jacket fish and samples were sent to ICAR- Central Institute of Fisheries Technology, Cochin for Gel strength and amino acid profile analysis

LIVESTOCK RESEARCH AND INFORMATION CENTER (SHEEP), NAGAMANGALA

Title: Mega Sheep Seed Project (Mandya Sheep)

The current report summarizes the activities of MSSP (Mandya Unit) for the period of 2020-21 (1st April, 2020 to 31st March, 2021). The total financial budget estimate of the project during the current financial reporting period 2020-21 was Rs. 46.60/- lakhs. In view of the pandemic COVID-19, there was more than 21 percent reduction in general head in the RE 2020-21. As a result we could able to receive Rs. 37.20 Lakhs at the end of 31.03.2021. Whereas the actual expenditure was 47,34,504/- during the year 2020-21. Out of the received amount a sum of Rs. 37,19,155/- expenditure has been adjusted at the end of 31st March, 2021. However, we are awaiting for the release of pending balance expenditure of Rs. 10, 15,349/- from the council for the year 2020-21. The overall goal of MSSP-MS is genetic improvement of Mandya/Bandur Sheep through selective breeding and supply of elite breeding rams to the beneficiary farmers to cover their breedable ewes for enhancing quality and quantity of meat production. This project is also strengthened the conservation of Mandya sheep in the form of In-situ conservation through establishment of Mega Sheep Seed flock at Livestock Research and Information Centre (Sheep) Nagamangala. Since the inception of the project, 879 farmers have been registered and grouped under one of the six working centers (grouped 1,330 to 6,866 sheep per center) that are under operation in the home tract of Mandya sheep. During the Academic year ending 31st December 2020, 52 elite breeding Rams have been distributed to the 52 beneficiary farmers in the field to cover their 2219 breedable ewes. Since from the inception of the project a total of 472 elite breeding rams that were born and raised at the farm were distributed to the identified 487 farmers in the home tract to cover their 18,254 breedable ewes. A total of 319 breeding ewes and 18 elite breeding rams are being maintained for the purpose of breeding and production of elite germplasm at

the farm. Oestrus Synchronization and Artificial insemination is being done at field level. Topping and lambing percentage based on ewe available basis was found to be 98.11% and 96.24%, respectively, whereas the lambing percentage on tugged basis was 98.08% per cent. Live body weight obtained during 2020 at birth, 3 - month, 6 - month, 9 - month and 12 - month were 2.21 ± 0.02 , 11.32 ± 0.07 , 16.19 ± 0.10 , 18.93 ± 0.14 and 22.39 ± 0.17 kg, respectively. Male group dominated the female counter parts in all the stages of growth period. The fleece yield was documented as 286.24 ± 3.0 and 317.24 ± 1.73 g for first six month and adult six month fleece yield, respectively. Performance of the distributed breeding rams and their progenies in the beneficiary farmers field level are being monitored on regular basis. Data on 7,884 progenies born to the distributed elite rams in the beneficiary farmers field flock were considered for statistical analysis. Live body weight of the progenies of distributed rams during the period 2020 at birth, three, six, nine and twelve months of age were recorded to be 2.15 ± 0.009 , 10.93 ± 0.02 , 15.75 ± 0.04 , 17.88 ± 0.04 and 21.49 ± 0.05 kg, respectively. The growth performance of the progenies of the distributed rams have been showing improvement from year to year in all the age groups over the average of the base population.

LIVESTOCK RESEARCH AND INFORMATION CENTER (A), DORANALLI

Title : Establishment of Model Buffalo farm in Yadgir District

Introduced 07 buffaloes first time since inception of research center. Fodder land development and extension activities are under way.

FISHERIES RESEARCH AND INFORMATION CENTER, HEBBAL

Title: Testing of *Aeromonas hydrophila* biofilm oral vaccine in Indian major carps

M/s. Virbac Animal Health India Pvt. Ltd. Mumbai has funded project entitled “**Testing of *Aeromonas hydrophila* biofilm oral vaccine in Indian major carps**”. The total budget of the project is Rs. 35,62,478/-. Till date the funding agency has released Rs. 30,51,010/- to the University. *Aeromonas hydrophila* biofilm vaccine has been produced in the laboratory. Artificial fish feed was also prepared in this centre. The developed vaccine was mixed with the feed and fed to the experimental fishes at different doses. This vaccine has been tested against two commercially important fishes like Catla and Rohu in this research centre. The dosage of the vaccine is calculated in terms of cfu/ml. The dosage of vaccine to be given to the fish has been standardized. The progress report has been submitted to the funding agency. Field evaluation studies are under progress by following the protocol given by the funding agency. Fishes of 5g body weight fingerlings of Catla and Rohu were used for the field experiment.

The experiment was set up with 3 treatment groups and 1 control group for each species was arranged in triplicates. Number of fish in each of triplicate tank 100 nos of fishes was stocked. At the initial days of experiment the fishes was feed with vaccinated (10^{10} cfu/ml) feed to all the groups for about 15 days. Later, from 16th day control feed was given upto 240 days for treatment 1 (T-1), where as for T-2 & 3 control feed was given upto 60th day, from 61th to 75th day vaccinated feed was given for both T-2 & T-3 and from 76th day to 240 days control feed will be given to T-2. Whereas in T-3 from 76th to 120th day control feed was given later. We will be followed with vaccinated feed from 121th to 136th and from 137th to 240th day control feed will be given. Along with this treatment challenge study will be carried out for all the treatment in every 30 days interval, In Treatment T-1 challenge study was done from 60th day for about 7 days, Treatment T-2 from 90th days, Treatment T-3 from 120th day. Regular water quality, fish growth and health will be recorded monthly.

Title: Evaluation of Insectifii protein feed on growth and survival of carps

Karnataka Veterinary Animal and fisheries Sciences University, Bidar sanctioned the budget under TSP grants, Director of Research, KVAFSU, Bidar demonstration project entitled “Evaluation of Insectifii protein feed on growth and survival of carps” The experiment was conducted at FRIC (I), Hebbal, Bengaluru. The insect meal (BSF- Black soldier fly) was procured from M/S Insectifii, Bengaluru. The experiment was carried out in 1000L FRP tanks.

The formulated feed was prepared according to Pearson square method, the insectifii meal was incorporated to feed in two different percentages (24% & 28%). The fish feed was prepared with fishmeal, rice bran, corn flour, groundnut oil cake and mineral mix for control feed. Whereas for formulated feed was prepared by using insect meal @ 24 and 28% protein replacing the fish meal to conduct the experiment

The Rohu fingerlings were used in this study, three treatments tanks (24 & 28%) along with control with two replicates experiment was conducted. In each tank 100 Nos. of Rohu fishes were stocked (Avg 10cm in length and 20g weight), the fishes were fed with formulated feed for treatment fish and control feed for control tanks. The total days of culture was 120 days regular monthly sampling was carried out to know the growth of fishes. At the end of the 90 days the growth of fishes was recorded length 21.20cm length & weight 40.68gm (28% insect Protein), 20.7cm length and 39.03g weight (24% insect protein), and in control 16.2 cm and weight 25.35g (Fish meal protein 24%). Still the experiment is under progress at the end of harvest the proximate composition of fish meat will be anal.

FISHERIES RESEARCH AND INFORMATION CENTER, HESARGHATTA

Title: Evaluation of heterotrophic food chain in different agro climatic regions and strategies for enhancement of fish production

The budget for the year 2020-21 has not been released by the funding agency. Hence, the demonstration and research experiments will be carried out in the coming year after the releasing of budget. The fishes were bred and the seeds were stocked in the centre for next year demonstration.

Title: Evaluation of different strategy for enhancement of survival rate of Amur common carp

Ingredients were given for proximate composition analysis.

Brood stocks of Amur common carp started feeding with brood stock diet.

After breeding of Amur carp experiment will be conducted.

Title : Production of hormone free mono sex population of Nile Tilapia *Oreochromis niloticus* (Linnaeus,1758) for the farming community

Broodstocks (40 Males and 40 Females) have been brought from Manchanabele Dam, Magadi Taluk, Ramnagar District and acclimatized in broodstock pond.

The studies on traditional taxonomy and molecular taxonomy to distinguish Nile tilapia from Mozambique tilapia have been conducted successfully.

Currently preparation is been done for carrying out hormone induced sex reversal studies.

Title: Development of captive broodstock of giant murrel, *Channa marulius* and induced spawning using different synthetic hormones

The giant murrel, *Channa marulius* is collected from the wild and transported to FRIC, Hesaraghatta, Bengaluru. The fishes were conditioned in the centre started to feed with broodstock diet.

FISHERIES RESEARCH AND INFORMATION CENTER, ANKOLA

Title: Development of backyard hatchery system for pearl spot (*Etroplus suratensis*) as alternative livelihood

Pearl spot seeds collected from the wild were stocked in the earthen ponds for rearing and fed with commercial feed. Pearl spot (*Etroplus suratensis*) brood stock has been developed by feeding dietary feed prepared for brood stock developed and breeding of pearl spot in earthen ponds is under progress in the SRP project.

ANIMAL HUSBANDRY POLYTECHNIC, KORAVANGAL A

Title: Establishment of Small Ruminant Semen Bank (Bangalore)

Nucleus flock of Hassan Sheep established.
Exclusive pasture land, conventional and Slatted sheds for sheep established.
Local farmers maintaining Hassan Sheep flock identified.
Carcass traits and estrous synchronization patterns studied.
Model fodder demonstration unit established

3. Research Collaborations / MoUs:

(i) List of MOU's signed by the University at International Level

#	<i>Institutions involved in MOU</i>	<i>Date of MOU</i>	<i>Details Regarding MOU</i>	<i>Remarks</i>
- Nil -				

(ii) List of MOU's signed by the University at National Level

#	<i>Institutions involved in MOU</i>	<i>Date of MOU</i>	<i>Details Regarding MOU</i>	<i>Remarks</i>
DIRECTORATE OF RESEARCH, KVAFSU, BIDAR				
1	KVAFSU, Bidar & ICAR, New Delhi	08.05.2020	Collaborative Research & developmental activities of KVAFSU, Bidar	-
2	KVAFSU, Bidar &UAHS Shivamogga	21.07.2020	Collaborative Research & developmental activities of KVAFSU, Bidar	-
3	KVAFSU, Bidar & Karnataka Science & Technology Academy, Government of Karnataka	30.07.2020	Collaborative Research & developmental activities of KVAFSU, Bidar	-
4	KVAFSU, Bidar &Infrastructure development corporation limited, Bengaluru	31.07.2020	Collaborative Research & developmental activities of IAH&VB, Bengaluru.	-
5	KVAFSU, Bidar & Commonwealth Veterinary Association, Bengaluru	26.08.2020	Collaborative Research & developmental activities of KVAFSU, Bidar	-
6	KVAFSU, Bidar & DSM india private limited, Mumbai	09.10.2020	Collaborative Research & developmental activities of KVAFSU, Bidar	-
7	KVAFSU, Bidar & Ramaiah Institute of technology Bengaluru	18.12.2020	Collaborative Research & developmental activities of KVAFSU, Bidar	-
8	KVAFSU, Bidar &National Institute of Technology (NITK), Surathkal	19.02.2021	Collaborative Research & developmental activities of College of Fisheries, Mangalore	-
9	KVAFSU, Bidar & Indian Immunologicals ltd, Hyderabad	01.02.2021	Collaborative Research & developing immunodiagnostic assay for Rabies in Animals.	-
10	KVAFSU, Bidar & Mangalore Institute of Technology & Engineering, Moodabidri	27.03.2021	Collaborative Research & developmental activities of College of Fisheries Mangalore	-

11	KVAFSU, Bidar & Shramajeevi Television Private Limited, Bengaluru	27.03.2021	Shramajeevi TV will provide extension education platform to KVAFSU, Bidar	-
12	KVAFSU, Bidar & Infrastructure development corporation limited, Bengaluru (IDECK)	29.06.2021	Collaborative Research & developmental activities of College of Fisheries Mangalore.	-
VETERINARY COLLEGE, BENGALURU				
1	KVAFSU, Karnataka and IIL, Hyderabad	21.01.2021	Ph.D. research work in 'Developing immunodiagnostic assay for rabies in animals'	-
FISHERIES RESEARCH AND INFORMATION CENTER, HEBBAL				
1	KVAFSU, Bidar and MS Ramaiah College of Engineering, Bengaluru	18.12.2020	To design and develop Software/hardware/equipment/machines for fisheries, veterinary, animal husbandry and dairy applications.	The MOU will be for a period of five years

4. Patents : - Nil -

5. Technology Developed: - Nil -

6. (a) Awards/Recognitions

#	Name of the Scientist	Award	Year	Agency
VETERINARY COLLEGE, BENGALURU				
1	Dr. Dhanalakshmi, H.	Oral presentation award secured second place	2020	XVI th National Online Conference of IAWV, organized by College of Veterinary and Animal Sciences, Parbhani, India, from 9 th to 10 th December, 2020
2	Dr. M. Narayana Swamy	Best Teacher of the Year Award 2020	2020	Global Management Council, Ahmedabad
3	Dr. M. Narayana Swamy	Adarsh Vidya Saraswati Rashtriya Puraskar	2020	Global Management Council, Ahmedabad
4	Dr. M. Narayana Swamy	Reviewer Excellence Award from the Editors of ARCC Journals on 17.08.2020	2020	ARCC Journals
5	Dr. M. Narayana Swamy	Reviewer Excellence Award from the Editors of ARCC Journals on 28.12.2020	2020	ARCC Journals
6	Dr. M. Narayana Swamy	Reviewer Excellence Award from the Editors of ARCC Journals on 17.03.2021	2021	ARCC Journals

7	Dr. Veena, M.P.	Indo Asian-IDA HYDE Distinguished Women Physiologist Award	2020	Red TALKS International, RPMRES Institute of Higher Education and Research, Govt of A.P, India
8	Dr. Veena, M.P.	Indo Asian-Knutnelsen Distinguished Women Scientist Award	2020	IMRF Institute of Higher Education and Research, Govt of A.P, India
9	Dr. Veena, M.P.	International Education Excellence Award	2021	Center for Professional Advancement, Vijayawada, Govt of A.P, India
10	Dr. Rashmi Rajashekaraiyah	Summer Research Fellowship	2020	Indian Academy of Sciences (IASc) - Indian National Science Academy (INSA) - National Academy of Sciences (NASI)
11	Dr. Rashmi Rajashekaraiyah	3 rd Best e-Poster Award	2020	Indian Society of Veterinary Pharmacology & Toxicology (ISVPT)
12	Dr. Pavithra B.H.	First place in TOXGURUQUIZ-2020 and honoured with cash prize of ten thousand rupees for the same	2020	Tox Gurukul Foundation

VETERINARY COLLEGE, BIDAR

1	Dr. Prakashkumar Rathod	Editorial Board Member	2020-21	International Journal of Livestock Research
2	Dr. Prakashkumar Rathod	Editorial Board Member	2020-21	Indian Journal of Veterinary Science and Biotechnology
3	Dr. Prakashkumar Rathod	Editorial Board Member	2020-21	Pashudhan Praharee
4	Dr. Shrikant Dodamani	Scientific Advisory Board Member	2020-21	International Journal of Livestock Research
5	Dr. Kiran M	Editorial Board Member	2020-21	International Journal of Livestock Research
6	Dr. Vivek R. Kasaralikal, Dr. Ravindra B.G. and Dr. Halmandge S.C	Best All-India monthly article (Pashudhan Prahari)	2020-21	Epashupalan.com
7	Dr. Annarao, Dr. Vivek R. Kasaralikal, Dr. Ravindra B.G. and Dr. Halmandge S.C.	Best all India monthly article	2020-21	Epashupalan.com
8	Dr. Vinay P. Tikare	Advisory Board Member Editorial Member Reviewer	2020-21	International Journal of Livestock Research Indian Journal of Veterinary Public Health International Research Journal of Pharmacy International Journal of Food and Additives and Dietics Livestock Line Gene

9	Dr. Vijay Kumar, M.	Advisory Board Member Editorial Member Reviewer	2020-21	
10	Dr. Shrikant Kulkarni	Certificate of Appreciation	2020-21	International journal of Livestock Research
VETERINARY COLLEGE, SHIVAMOGGA				
1	Yuvaraj Chavan, Dhoolappa M., Lakshmishree K.T., Sundareshan S, Ravirai Durg and R.V. Prasad	3 rd place for e-poster	2020	International e-conference Dept. of Vety. Phy. & Biochemicstry, Vety. College and Research Institute, Orathanadu, TN
2	Dhoolappa M. Sundareshan, S. Lakshmishree K.T., Sunilchandra, U. and Dhanalakshmi, H.	All India Recognition for outstanding innovation for the BioLarvicide Technology	2021	Agri India Hackathon-2021, PUSA Krisha, Indian Council of Agricultural Research, Govt of India
3	Dr. Thirumalesh, T.	Certificate of Excellence in Reviewing for the year 2020	2020	Editorial Board of Asian Food Science Journal
4	Dr. Thirumalesh, T.	Certificate of Appreciation as Member of Scientific Advisory Board for International Journal of Livestock research for the year 2020-21 for contribution to the quality of the journal.	2020-21	Journal of International Journal of Livestock research
VETERINARY COLLEGE, HASSAN				
1	Dr. M.G. Sindhu	Best research article award to article entitled “ Marketing constraints encountered by progressive rabbit farmers of Tamil Nadu”	2020	International e- conference “Market Led Extension Management: Focus on COVID-19”. NIAM, Jaipur. 17 th -18 th October
2	Dr. Nagappa Karabasanavar	Best research article award to article entitled ‘Simultaneous detection of food safety hazards (<i>Salmonella enterica</i> and <i>Listeria monocytogenes</i>) in table eggs using multiplex PCR’	2020	Indian Veterinary Association, CVAS, Mannuthy, Kerala and Association of Food Scientists & Technologists (India), Thrissur, India

3	Dr. Manjunatha, D.R.	1 st prize for best clinical case paper presentation	2020	Postgraduate institute of Veterinary & animal science, Akola, MAFSU
VETERINARY COLLEGE, GADAG				
1	Dr. Prem Kumar, R., Dr. Prasanna Kumar V, Dr. Pradeep Kumar, V. and Dr. Sunitha, R.	Best Paper award	2020	Blue cross society, GBPUAT, Pantnagar.
COLLEGE OF FISHERIES, MANGALURU				
1	Dr Pallavi Baliga College of Fisheries, Mangaluru	Augmenting Writing Skills for Articulating Research (AWSAR) award	2020-21	DST

b) Research Incentives: - Nil -

7) Important decisions taken during 15th Research Council Meeting held on 30.12.2020 at Regional Campus, Hebbal, Bengaluru

It was decided to instruct scientists to write extra mural projects rather than depending on KVAFSU funding which is of smaller magnitude.

It was instructed to concentrate on commercialization or definite outcome.

It was instructed to prepare projects for corporate / industry collaboration based on their need.

III. EXTENSION

The University is striving hard to improve the socio-economic conditions of the farming community through its extension education activities. In order to achieve this, the university is organizing training programmes, demonstrations, farmer-scientist interaction sessions, field visits, farm melas etc, through its constituent colleges and research stations spread across the state.

1. Conferences/Trainings/Workshops/Seminars organized

i) International Level

a) Conferences:

#	Date	Place	Title	Organized by
VETERINARY COLLEGE, BENGALURU (VCH)				
1	24 th , 25 th & 30 th November, 2020	VCH	Livestock Products & Food Safety: Realities & Imperatives for Global Health	LPT-VCRI, Orathanadu (TANUVAS) & LPT-VCH (KVAFSU)

b) Workshops:

#	Date	Place	Title	Organized by
-Nil-				

c) Seminars:

#	Date	Place	Title	Organized by
VETERINARY COLLEGE, BENGALURU (VCH)				
1	06.07.2020 to 08.07.2020	Mannuthy, Kerala	Human-Animal-Environment Interface: Recent Approaches for Containing the Global Zoonotic Burden	Meat Technology Unit, Mannuthy, KVASU & IVA, CVAS, Mannuthy & AMST
2	16.09.2020 to 18.09.2020	VCH	International Webinar on “Novel Approaches and Emerging issues in Parasitic Diseases of Veterinary and Medical Importance”	Veterinary Parasitology, VCH
FISHERIES RESEARCH AND INFORMATION CENTER, HEBBAL, BENGALURU				
1	16.10.2020	FRIC, Hebbal	“Fish farming with Biofloc Technology” on the occasion of world food day 2020	FRIC, Hebbal

d) Symposia:

#	Date	Place	Title	Organized by
-Nil-				

e) Trainings:

#	Date	Place	Title	Organized by
VETERINARY COLLEGE, BENGALURU (VCH)				
1	05.11.2020 to 06.11.2020	VCH	Virtual Training Series on Rabies Diagnosis for SAARC Region	World Organization for Animal Health (OIE) and VMC-VCH

ii) National Level

a) Conferences:

#	Date	Place	Title	Organized by
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b) Workshops:

#	Date	Place	Title	Organized by
VETERINARY COLLEGE, BENGALURU (VCH)				
1	12.01.2021	Virtual workshop involving Medical, Veterinary & Civic bodies	Tripartite regional workshop on diagnosis, surveillance and control of Rabies	KVAFSU-CVA Rabies Diagnostic Laboratory, OIE Reference Laboratory for Rabies, Department of Microbiology, Veterinary College, KVAFSU, Hebbal, Bengaluru
VETERINARY COLLEGE, SHIVAMOGGA (VCS)				
1	25.02.2021 to 26.02.2021	Veterinary College, Shivamogga	Recent developments in livestock disease diagnosis	Obscure Diseases Research Centre, VCS (Dr. Kavitha Rani B.- co-organizer)
2	17.03.2021 to 18.03.2021	Veterinary College, Shivamogga	Recent developments in livestock disease diagnosis and therapeutics: a cohort approach	Obscure Diseases Research Centre, VCS (Dr. Kavitha Rani B.- co-organizer)
LIVESTOCK RESEARCH AND INFORMATION CENTER, KONEHALLI				
1	10.03.2021	LRIC (A), Konehalli	Workshop on Entrepreneurship in Dairy farming: A Modern Perspective. For Students of MBA	Kalpataru Institute of Management, Tiptur and LRIC (A), Konehalli

FISHERIES RESEARCH AND INFORMATION CENTER, HEBBAL				
1	22.02.2021	FRIC, Hebbal	Stakeholders meeting on Development of Cost-Effective Weed Harvester-Invitees from Different Engineering colleges and stakeholders, Bengaluru	FRIC, Hebbal & Dept. of Fisheries, GoK
FISHERIES RESEARCH AND INFORMATION CENTER, BHUTNAL				
1	21.12.2020	FRIC, Bhutnal, Vijayapura	Present Scenario of Aquaculture and Its Scope	FRIC, Bhutnal, Vijayapura
2	18.03.2021	FRIC, Bhutnal, Vijayapura	Present Scenario of Aquaculture and Its Scope	FRIC, Bhutnal, Vijayapura
ANIMAL HUSBANDRY POLYTECHNIC, BARGI-CHAMARAJANAGARA				
1	21.07.2021	AHP, Bargi	Yoga for Health and Education	Dr. Ravikumar, C. Principal, AHP, Bargi

c) Seminars:

#	Date	Place	Title	Organized by
VETERINARY COLLEGE, BENGALURU (VCH)				
1	28.07.2020	On line Webinar	Dynamics of Teaching, Research and Extension at Veterinary College : Past, Present and Future	Dr. M. Narayana Swamy Professor & Head Dept. of Veterinary Physiology, VCH
2	19.08.2020	On line Webinar	Veterinarians as Entrepreneurs	Dr. M. Narayana Swamy Professor & Head Dept. of Veterinary Physiology, VCH
3	27.08.2020	On line Webinar	Career Opportunities for Veterinarians in Private Sector	Dr. M. Narayana Swamy Professor & Head VPB, VCH
4	06.07.2020	VCH	'Role of Hygiene in prevention and control of zoonotic diseases' as a part of world zoonoses day -2020	VPH&E VCH
5	15.10.2020	VCH	Global Handwashing Day 2020 Awareness was created regarding importance of hand washing in prevention and control of zoonotic diseases	VPH&E VCH
VETERINARY COLLEGE, BIDAR				
1	29.09.2020 to 30.09.2020	Veterinary College, Bidar	RAPID- Rabies Awareness Provention and its Diagnosis	Veterinary College, Bidar in Association with IVSA, Bidar
2	13.11.2020	Veterinary College, Bidar	National webinar on "Awareness to mitigate outbreaks of Lumpy Skin Disease"	Veterinary College, Bidar in Association with Alumni Association, Bidar & IVSA, Bidar

3	14.11.2020	Veterinary College, Bidar	Technical webinar on “Large animal fracture treatment techniques for field veterinarians”	Veterinary College, Bidar in Association with Alumni Association, Bidar & IVSA, Bidar
VETERINARY COLLEGE, HASSAN				
1	01.07.2020 to 07.07.2020	Veterinary College, Hassan	National webinar on “Zoonoses on the eve of world zoonoses day 2020	Dept of VPE, Veterinary College, Hassan
2	16.08.2020	Online	Webinar on the occasion of Foundation Day of HVC	Veterinary College, Hassan
3	16.10.2020	Online	Webinar on the occasion of World Food Day	Veterinary College, Hassan
4	26.11.2020	Online	National Milk Day	Veterinary College, Hassan
VETERINARY COLLEGE, GADAG				
1	25.09.2020	Veterinary College, Gadag online Mode	Online technical seminar for field veterinarians on “Standard veterinary surgical procedures for field level surgeries”	Veterinary College, Gadag
DAIRY SCIENCE COLLEGE, BENGALURU				
1	25.09.2020	DSCH	National Webinar programme organized Dairy Foods: A treasure of immune boosters for current scenario	Dept of Dairy Chemistry
KRISHI VIGYAN KENDRA, MANGALURU				
1	30.09.2020	Online Webinar at KVK, DK	Webinar on Importance of Soil testing and method of soil sampling	ICAR-KVK, DK, Mangaluru
2	01.10.2020	Online Webinar at KVK	Women empowerment and sustainability	ICAR-KVK, DK, Mangaluru
3	07.11.2020	Online Webinar at KVK, DK	Awareness on farm bills	ICAR-KVK, DK, Mangaluru

d) Symposia:

#	Date	Place	Title	Organized by
- Nil -				

e) Trainings:

#	Date	Place	Title	Organized by
VETERINARY COLLEGE, BENGALURU (VCH)				
1	03.07.2020	VCH	Animal Birth Control- Anti Rabies Vaccination (ABC-ARV) programme and Mission Rabies on “Collection of brain samples and Diagnosis of Rabies”	Dept. of Microbiology, VCH
2	12.10.2020 to 17.10.2020	Dept of Poultry Science-VCH (Online)	One week National Poultry Entrepreneur Webinar Training	Dept. of Poultry Science, VCH in collaboration with CPDOTI, Hesaraghatta

3	23.11.2020 to 28.11.2020	Dept. of Poultry Science-VCH (Online)	One week Poultry Entrepreneur Webinar Training	Dept. of Poultry Science-VCH
VETERINARY COLLEGE, BIDAR (VCB)				
1	23.12.2020	VCB	Farmers-Scientists Interaction and Training Programme	ICAR-SCSP Project, VCB
2	05.01.2021	Rajageera Village Bidar	Scientific Dairy Farming	Extension Education Center (EEC), Bidar
3	11.01.2021	Chitta Village, Bidar	Backyard Poultry Farming	EEC, Bidar and Dept. of LPM, VCB
4	18.01.2021	Aurad Taluku, Bidar	Scientific Goat and Sheep Farming	EEC, Bidar and Dept. of VGO, VCB
5	18.01.2021 to 20.01.2021	Koutha (B) and VC, Bidar	Scientific Dairy Farming	ICAR-SCSP Project, VCB
6	04.02.2021 to 06.02.2021	VCB	Scientific Goat and Sheep Farming	ICAR-SCSP Project, VCB
7	08.02.2021 to 14.02.2021	VCB	An update on Clinical pharmacology and Forensic Toxicology From	Dept of VPT VCB
8	18.02.2021 to 20.02.2021	VCB	Scientific Poultry Farming	EEC, Bidar and Dept. of LPM, VCB
9	25.02.2021 to 26.02.2021	VCB	Clean milk production and value addition of milk and milk products	Dept of LPT VCB
10	26.02.2021 to 27.02.2021	VCB	Scientific Poultry Farming	Dept. of Poultry Sc., VCB
11	18.03.2021 to 20.03.2021	VCB	Scientific Poultry Farming	Dept. of Poultry Sc., VCB
VETERINARY COLLEGE, SHIVAMOGGA (VCS)				
1	11.11.2020	VCS	Common diseases in sheep and goats and their control	Dept. of Veterinary Medicine
2	25.01.2021	VCS	Health management practices for cattle	Dept. of Veterinary Medicine
3	11.02.2021	VCS	Scientific rearing of Malnad Gidda animals and Value addition to the products made from Dung and urine, Total mixed ration and feed block making	Dept. of AGB, MGR & IC
4	17.06.2020	VCS	“Academic Training” programme for SC/ST faculties of VCS	Veterinary College, Shivamogga
5	11.11.2020	VCS	Training programme on “Common Diseases in Sheep & Goats and their Control” for farmers	Veterinary College, Shivamogga
6	18.03.2021	VCS	Training programme on “Personality Development” for SC/ST students of VCS	Veterinary College, Shivamogga

7	19.03.2021	VCS	Training programme on “Personality Development” for SC/ST students of VCS	Veterinary College, Shivamogga
8	25.11.2020	VCS	Scientific Sheep and Goat Farming	EEC and Dept. of VAE
9	10.02.2021 To 11.02.2021	VCS	Scientific Sheep and Goat Farming	EEC and Dept. of VAE
10	02.03.2021 to 03.03.2021	VCS	Energy conservation & energy efficiency	Veterinary College, Shivamogga
11	06.11.2020	VCS	Scientific poultry farming	Dept. of LFC-VCS and Dept of Social Welfare , GoK
12	12.11.2020	VCS	Scientific piggery farming	Dept. of LFC-VCS and Dept of Social Welfare , GoK
13	02.09.2020 to 04.09.2020	VCS	Surgery for birth control in monkeys	Dept. of AH&VS, Shivamogga and Vety. College, Shivamogga & Karnataka Forest Depy., Shivamogga

VETERINARY COLLEGE, HASSAN (HVC)

1	22.02.2021	ABF, Ajjampura	Conservation of indigenous Cattle breeds	Dept. of AGB - HVC
2	18.12.2020	HVC	Gokulavani (Radio program) Valedictory function and training on Sheep and Goat farming	HVC, Akashavani and SCPTSP, HVC
3	3.12.2020 to 26.03.2021	HVC	Kukkutavani (Weekly radio programs on poultry farming)	HVC and AIR-Hassan
4	18.02.2021 to 19.02.2021	HVC	Improved Sheep production	EEC, HVC & Dept. of VAHE, HVC
5	20.08.2020 to 09.09.2020	NADCL, J&K Online	Advances in fodder production utilization & conservation for improving livestock health productivity & environmental sustainability	ICAR-IGFRI, Shrinagar & NADCL, Baramulla
6	26.05.2020 to 15.06.2020	NADCL, J&K Online	Preparing & management of result oriented research project in agriculture, horticulture, animal husbandry & allied sectors	NADCL, Baramulla & AEDS Rmpur, UP
7	08.10.2020 to 28.10.2020	NADCL, J&K Online	Recent technologies of agribusiness management & agri-entrepreneurship	NADCL, Baramulla & RVSKE, Gwalior, MP
8	01.12.2020 to 21.12.2020	NADCL, J&K Online	Recent scientific interventions & practices of sugarcane breeding, production, protection & utilization for doubling of farmer income	NADCL, Baramulla & ICAR Sugarcane Breeding Institute, Coimbatore

9	02.02.2021 to 22.02.2021	NADCL, J&K Online	Modern practices of plant & animal nutrition for sustainable agriculture production & intensive livestock development	ICAR-IGFRI, Dharwad, UAS, Raichur & NADCL, Baramulla
VETERINARY COLLEGE, GADAG (VCG)				
1	24.07.2020	VCG (Online)	Management of livestock during rainy season and COVID pandemic	Veterinary College, Gadag
2	29.01.2021	Lakkundi village of Gadag Taluk	Scientific Dairy Farming Practices	Dept. of AH&VS, Gadag and Veterinary College, Gadag
3	09.02.2021 to 22.02.2021	VCG (Online)	Entrepreneurship in Livestock and Veterinary Sciences	ICAR-NRCM, Hyderabad
4	26.02.2021	VCG	Personality development	Veterinary College, Gadag
5	01.03.2021 to 03.03.2021	Sambhapura village, Gadag	Hittala Honnu	Veterinary College, Gadag
6	13.03.2021	VCG	Opportunities for veterinary graduates in various administrative services	Veterinary College, Gadag
DAIRY SCIENCE COLLEGE, KALABURAGI (DSCK)				
1	28.11.2020	DSCK	Clean Milk Production & Milk Products Demonstration	Dept. of Dairy Microbiology & Dairy Technology
2	11.02.2021 to 13.02.2021	DSCK	Value added Dairy Products	Dept. of Dairy Technology
COLLEGE OF FISHERIES, MANGALURU (FCM)				
1	04.01.2021 to 09.04.2021	Mangaluru	Routine microbiological and molecular techniques	Dept of AAHM, CoF, Mangaluru
2	18.01.2021 to 13.02.2021	Mangaluru	Routine microbiological and molecular techniques	Dept of AAHM, CoF, Mangaluru
3	01.03.2021 to 06.03.2021	Mangaluru	Routine microbiological and molecular techniques	Dept of AAHM, CoF, Mangaluru
4	15.01.2021 to 18.01.2021	Mangaluru	Improved methods of dry fish processing	Dept. of FPT, CoF, Mangaluru
5	08.02.2021 to 09.02.2021	Mangaluru	Improved methods of dry fish processing	Dept. of FPT, CoF, Mangaluru
INSTITUTE OF WILDLIFE VETERINARY RESEARCH, KODAGU (IWVR)				
1	12.02.2020	IWVR, Kudige	Human-Wildlife conflict and Possible Solutions	IWVR, Kudige

LIVESTOCK RESEARCH AND INFORMATION CENTER (SHEEP), NAGAMANGALA				
1	14.10.2020	LRIC(S), Nagamangala	Profitable Sheep and Goat Production	LRIC(S) Nagamangala
2	16.12.2020	LRIC(S), Nagamangala	Training on Modern Animal husbandry practices adopted for livestock health and improvement of production	LRIC(S) Nagamangala
3	17.12.2020	LRIC(S), Nagamangala	Improvement of Sheep and Goat production through Scientific management	LRIC(S) Nagamangala
4	21.12.2020	LRIC(S), Nagamangala	Cultivation of different fodder crops and effective utilization of fodder for livestock production	LRIC(S) Nagamangala
5	31.12.2020	LRIC(S), Nagamangala	Importance of Bandur Sheep and its conservation.	LRIC(S) Nagamangala
6	16.01.2021	LRIC(S), Nagamangala	Profitable Sheep Rearing	LRIC(S) Nagamangala
7	30.01.2021	LRIC(S), Nagamangala	Modern Livestock Production	LRIC(S) Nagamangala
8	06.02.2021	LRIC(S), Nagamangala	Scientific Sheep and Goat Rearing	LRIC(S) Nagamangala
9	09.02.2021	LRIC(S), Nagamangala	Profitable Sheep Rearing	LRIC(S) Nagamangala
10	11.02.2021	LRIC(S), Nagamangala	Fodder Production	LRIC(S) Nagamangala
11	18.02.2021	LRIC(S), Nagamangala	Scientific Sheep and Goat production.	LRIC(S) Nagamangala
12	06.03.2021	LRIC(S), Nagamangala	Scientific methods of Livestock Production	LRIC(S) Nagamangala
LIVESTOCK RESEARCH AND INFORMATION CENTER, DORNAHALLI				
1	08.09.2020	AHP Dornahalli	One day technical seminar for Yadgir district veterinarians	Dept of AH & VS, Yadgir & AHP Dornahalli
2	15.09.2020	BRIC Dornahalli	One day training on improved fodder varieties	BRIC-Dornahalli
3	28.12.2020 to 27.01.2021	BRIC Dornahalli	Training to MYTRI workers	KLDA, Bengaluru; Veterinary Inspectors Training Center Kalaburagi; Dept of AH&VS, Yadagir & BRIC Dornahalli jointly collaborated the programme

LIVESTOCK RESEARCH AND INFORMATION CENTER, KONEHALLI				
1	01.02.2021	LRIC(A), Konehalli	Training on Cross bred cows and improved fodder production technologies for progressive farmers of Tiptur taluk	LRIC(A), Konehalli
2	02.03.2021	LRIC(A), Konehalli	Training on Cross bred cows and improved fodder production technologies for progressive farmers of Gubbi taluk	LRIC(A), Konehalli
3	04.03.2021	LRIC(A), Konehalli	Training for Final B.Sc. (Agri) students, COA, UAS GKVK Bengaluru on Production Technologies in Fodder crops and Activities of LRIC(A), Konehalli, under RAWE Programme	LRIC(A), Konehalli
4	10.03.2021	LRIC(A), Konehalli	Training for Final B.Sc. (Agri) students, COA, UAS GKVK Bengaluru on Production Technologies in Fodder crops and Activities of LRIC (A), Konehalli, under RAWE Programme	LRIC(A), Konehalli
FISHERIES RESEARCH AND INFORMATION CENTER, HEBBAL, BENGALURU				
1	29.08.2020	FRIC, Hebbal (Online)	Advanced Technologies in Aquaculture - Opportunities and Challenges	FRIC, Hebbal
2	22.02.2021	FRIC, Hebbal	Awareness programme on weed management and control in Bengaluru lakes	FRIC, Hebbal and Dept. of Fisheries, GoK
FISHERIES RESEARCH AND INFORMATION CENTER, HESARAGHATTA				
1	05.02.2021	FRIC(I), Hesaraghatta,	Integrated fish culture	FRIC(I), Hesaraghatta,
FISHERIES RESEARCH AND INFORMATION CENTER, ANKOLA				
1	10.07.2020	FRIC(M), Ankola	“Shrimp/Fish farming and Ornamental fish culture” on the occasion of National Fish Farmers Day.	Dr. Chandrakant Lingadhhal Co-ordinator Dr. Padmanabha A. Co- Co-ordinator
2	29.08.2020	On line mode	Advanced Technologies in Aquaculture - Opportunities and Challenges	FRIC(I), Hebbal and Dr. Chandrkant Lingadhhal Coordinator, FRIC(M), Ankola
3	21.01.2021 to 22.01.2021	On line mode	Fish culture in Agriculture tanks and ponds	FRIC(I), Bhtnal and Dr. Chandrkant Lingadhhal Coordinator, FRIC(M), Ankola

4	03.02.2021	On line mode	Fish culture in agriculture tank and ponds and Availability of fish seeds information	District Agriculture Training Center (DATC), Kumta and Dr. Chandrakant Lingadhhal FRIC(M), Ankola
FISHERIES RESEARCH AND INFORMATION CENTER, BHUTNAL, VIJAYAPURA				
1	10.07.2020	FRIC, Bhutnal	“Sustainable fish farming” on the occasion of “National fish farmers day”	FRIC, Bhutnal, Vijayapur
2	24.07.2020	FRIC, Bhutnal	Scientific Fish Farming	FRIC, Bhutnal, Vijayapur
3	14.08.2020	FRIC, Bhutnal	Integrated Fish Farming	FRIC, Bhutnal, Vijayapur
4	31.08.2021	FRIC, Bhutnal	Scientific Fish Farming	FRIC, Bhutnal, Vijayapur
5	02.10.2020	FRIC, Bhutnal	Fish farming for sustainable development of rural farmers” on the occasion of 150 th “Rastrapita Mahatma Gandhi Jayanthi”	FRIC, Bhutnal, Vijayapur
6	29.01.2021	FRIC, Bhutnal, Vijayapura.	Scientific Fish Farming	FRIC, Bhutnal, Vijayapur
7	19.02.2021	FRIC, Bhutnal, Vijayapura.	Integrated Fish Farming	FRIC, Bhutnal, Vijayapur
8	21.02.2021 to 22.02.2021	FRIC, Bhutnal, Vijayapura (Online)	Fish Rearing in farm ponds	FRIC, Bhutnal, Vijayapur under ATMA through SAMETI (N), UAS, Dharwad
KRISHI VIGYAN KENDRA-DAKSHINA KANNADA, MANGALURU				
1	07.07.2020	KVK-DK (Online)	Integrated crop management in paddy	ICAR-KVK, DK, Mangaluru
2	31.07.2020	KVK-DK (Online)	Integrated crop management in paddy	ICAR-KVK, DK, Mangaluru
3	04.08.2020	KVK-DK (Online)	Integrated crop management in paddy	ICAR-KVK, DK, Mangaluru
4	19.09.2020	KVK-DK (Online)	Production of vermi compost and liquid manures and their uses	ICAR-KVK, DK, Mangaluru
5	01.12.2020	KVK-DK, Mangaluru	Production technology of organic manures and their effective utilization	ICAR-KVK, DK, Mangaluru
6	09.03.2021	KVK-DK, Mangaluru	Advanced technologies in paddy cultivation (Extension Functionaries)	ICAR-KVK, DK, Mangaluru
7	01.12.2020	KVK-DK, Mangaluru	Production technologies of organic fertilizers and their effective use	ICAR-KVK, DK, Mangaluru
8	04.02.2021	KVK-DK, Mangaluru	Orientation on KVK activities for BSc students of College, Hampanakatte	ICAR-KVK,DK, Mangaluru

9	13.02.2021	KVK-DK, Mangaluru	Orientation on KVK activities for Food Science and Technology Students of Rural Development and Panchayatraj University, Gadag	ICAR-KVK,DK, Mangaluru
10	26.02.2021	KVK-DK, Mangaluru	Importance of Green manure crops and Management of pest and disease through organic solutions and their preparation (for Extension Functionaries)	ICAR-KVK,DK, Mangaluru
11	02.03.2021	KVK-DK, Mangaluru	Orientation on KVK activities for students of KMHS School, Gorigudde, Mangaluru (for School Children)	ICAR-KVK,DK, Mangaluru
12	03.03.2021	KVK-DK, Mangaluru	Orientation on KVK activities for farmers visited during exposure visit from DCR, Puttur	ICAR-KVK,DK, Mangaluru
13	22.03.2021	KVK-DK, Mangaluru	World water day	ICAR-KVK,DK, Mangaluru
14	08.08.2020	KVK-DK, Mangaluru	Scientific mushroom cultivation	ICAR-KVK,DK, Mangaluru
15	05.09.2020	KVK-DK, Mangaluru	Awareness on nutrition	ICAR-KVK,DK, Mangaluru
16	10.09.2020	KVK-DK, Mangaluru	Awareness on nutrition	ICAR-KVK,DK, Mangaluru
17	17.09.2020	KVK-DK, Mangaluru	Nutri garden, Importance of fish consumption & Bio fortified varieties training for Extension Personnel	ICAR-KVK,DK, Mangaluru
18	22.09.2020	KVK-DK, Mangaluru	Weed management in horticultural crops	ICAR-KVK,DK, Mangaluru
19	24.09.2020	KVK-DK, Mangaluru	Mushroom cultivation for nutrition & sustainable income	ICAR-KVK,DK, Mangaluru
20	26.09.2020	KVK-DK, Mangaluru	Nutri garden	ICAR-KVK,DK, Mangaluru
21	16.10.2020	KVK-DK, Mangaluru	Importance of nutritional diet for enhancing immunity	ICAR-KVK,DK, Mangaluru
22	23.10.2020	KVK-DK, Mangaluru	ICM in coconut and demonstration of coconut palm climbing	ICAR-KVK,DK, Mangaluru
23	23.12.2020	KVK-DK, Mangaluru	Celebration of Farmer's Day & felicitation of progressive farmers	ICAR-KVK,DK, Mangaluru
24	18.01.2021	KVK-DK, Mangaluru	Nutri garden training programme to supervisors of Child & Women Development Department	ICAR-KVK,DK, Mangaluru
25	08.06.2020	KVK-DK, Mangaluru	Desert locust management	ICAR-KVK,DK, Mangaluru
26	17.06.2020	KVK-DK, Mangaluru	Management of pest and diseases in paddy(Nursery and Main field)	ICAR-KVK,DK, Mangaluru
27	17.06.2020	KVK-DK, Mangaluru	Management of pest and diseases in horticulture (Nursery and main field) crops	ICAR-KVK,DK, Mangaluru

28	10.09.2020	KVK-DK (Online)	Management of pest and diseases in paddy	KVK DK and DATC Belthangadi
29	12.09.2020	KVK-DK, Mangaluru	Integrated pest and disease management in vegetables	ICAR-KVK,DK, Mangaluru
30	07.11.2020	KVK-DK, Mangaluru	Awareness programme on Farm Bills -2020	ICAR-KVK,DK, Mangaluru
31	23.12.2020	KVK-DK, Mangaluru	Farm Bills-2020	ICAR-KVK,DK, Mangaluru
32	25.12.2020	KVK-DK, Mangaluru	Farm Bills- 2020	ICAR-KVK,DK, Mangaluru
33	09.01.2021	KVK-DK, Mangaluru	Awareness programme on Farm Bills- 2020	ICAR-KVK,DK, Mangaluru
34	26.01.2021	KVK-DK, Mangaluru	Recent advances in diagnosis and management of pest and disease and effective utilization of farm ponds for aquaculture (Extension Personnel)	ICAR-KVK,DK, Mangaluru
35	25.02.2021	KVK-DK, Mangaluru	Protection of crops from wild animals: effective utilization of solar energy based equipments	ICAR-KVK,DK, Mangaluru
36	03.03.2021	KVK-DK, Mangaluru	Training programme on activities of KVK (Extension Personnel)	ICAR-KVK,DK, Mangaluru
37	09.03.2021	KVK-DK, Mangaluru	Advanced technologies in paddy cultivation (Extension Personnel)	ICAR-KVK,DK, Mangaluru
38	25.03.2021	KVK-DK, Mangaluru	Production technologies in Rambutan and Mangosteen (Extension Personnel)	ICAR-KVK,DK, Mangaluru
39	22.03.2021 to 27.03.2021	KVK-DK, Mangaluru	Friends of coconut tree (FOCT)palm climbing training programme	ICAR, KVK,DK, Mangaluru & CDB Bengaluru
40	10.06.2020	KVK-DK, Mangaluru	Fish culture in farm ponds, storage and natural tanks	ICAR-KVK,DK, Mangaluru
41	10.07.2020	KVK-DK, Mangaluru	Fish pond preparation and scientific fish seed stocking	ICAR-KVK,DK, Mangaluru
42	05.08.2020	KVK-DK, Mangaluru	Fish seed management	ICAR-KVK,DK, Mangaluru
43	26.09.2020	KVK-DK, Mangaluru	Inland fish culture, Nutri garden and Financial assistance from Banks	ICAR-KVK,DK, Mangaluru
44	07.10.2020	KVK-DK, Mangaluru	Inland fish culture	ICAR-KVK,DK, Mangaluru
45	19.10.2020	KVK-DK, Mangaluru	Inland fish seed rearing	ICAR-KVK,DK, Mangaluru
46	06.01.2021	KVK-DK, Mangaluru	Inland fish culture	ICAR-KVK,DK, Mangaluru
47	13.02.2021	KVK-DK, Mangaluru	Integrated farming system	ICAR-KVK,DK, Mangaluru
48	25.02.2021	KVK-DK, Mangaluru	Solar power driven instruments to combat wild animals menace to crops and fish drying using solar dryer	ICAR-KVK,DK, Mangaluru

49	26.02.2021	KVK-DK, Mangaluru	Recent advances in diagnosis and management of pest and diseases and effective utilization of farm ponds for aquaculture	KVK,DK, Mangaluru & BVT Manipal
50	09.03.2021	KVK-DK, Mangaluru	Advanced technologies in paddy cultivation (Extension Functionaries)	ICAR-KVK,DK, Mangaluru
51	15.03.2021	KVK-DK, Mangaluru	Inland fish culture	ICAR-KVK,DK, Mangaluru
52	16.03.2021	KVK-DK, Mangaluru	Water quality management in aquaculture	ICAR-KVK,DK, Mangaluru
B	OFF CAMPUS TRAINING PROGRAMME			
1	24.06.2020	Kavala Madooru, Bantwal Taluk	Vegetable production and vermicompost production	ICAR-KVK, DK, Mangaluru
2	03.08.2020	Punchappay, Puttur Taluk	Nutrient management in paddy	ICAR, KVK, DK & KSDA
3	06.08.2020	Mulki, Mangaluru	Mechanization in paddy and integrated crop management	ICAR, KVK, DK & KSDA
4	15.08.2020 to 24.08.2020	Mangaluru Hobli	Crop survey programme	KSDA
5	07.09.2020	Karpe, Bantwal Taluk	Weed and nutrient management in paddy	ICAR, KVK, DK, Mangaluru
6	09.09.2020	BadagaYedapad avu, Mangaluru Taluk	Integrated crop management in paddy	ICAR, KVK, DK, Mangaluru
7	11.09.2020	Pane Managluru, Bantwal Taluk	Integrated crop management in paddy	ICAR, KVK, DK, Mangaluru
8	18.09.2020	CittadigeAnanth ady	Integrated crop management in paddy	ICAR, KVK, DK, Mangaluru
9	20.10.2020	Ajjavara, Sullia Tq.	Paramparagat Krishi Vikas Yojana and its importance	ICAR, KVK, DK, Mangaluru
10	04.12.2020	Kuppepadavu	Cowpea variety Sahyadri Yukthi for Paddy fallows	ICAR, KVK, DK, Mangaluru
11	23.02.2020	Mulki Kilpady	Demonstration of shade loving Guinea grass in coconut plantation	ICAR, KVK, DK, Mangaluru
12	12.06.2020	Daregudde	Soil health management through integrated approach	ICAR, KVK, DK, Mangaluru
13	08.08.2020	Punchappay, Puttur Taluk	Integrated nutrient management in paddy	ICAR, KVK, DK, Mangaluru
14	10.08.2020	Nyayatarpu, Belthangady Tq.	Integrated crop management in black pepper	ICAR, KVK, DK, Mangaluru
15	18.08.2020 to 25.08.2020	Villages of Bantwal Hobli	Crop survey programme	KSDA

16	20.10.2020	Ajjavara, Sullia Tq.	PKVY basic Information given to farmers	ICAR, KVK, DK, Mangaluru
17	04.11.2020	Balnadu, Puttur	Integrated crop management in Brinjal	ICAR, KVK, DK, Mangaluru
18	13.11.2020	Ajjavara, Sullia Tq.	Yard Long Bean Variety Arka Mangala	ICAR, KVK, DK, Mangaluru
19	05.12.2020	Keddalike of Bantwal Taluk	World soil health day	ICAR, KVK, DK, Mangaluru
20	05.12.2020	Keddalike of Bantwal Taluk	Women in agriculture day	ICAR, KVK, DK, Mangaluru
21	02.02.2021	Tenkabelluru Bantwal	Method of soil sampling and soil testing	ICAR, KVK, DK, Mangaluru
22	05.02.2021	Idkidu, Bantwala Taluk	Importance of soil health card and method of soil sampling	KSDA
23	09.02.2021	Macchina, Bantwala Taluk	Soil and water conservation	BVT (NGO)
24	18.02.2021	Amblamogru, Mangaluru Tq.	Importance of soil health card and method of soil sampling	KSDA
25	10.08.2020	Nyayatarpu, Belthangady Tq.	Integrated crop management in black pepper	ICAR, KVK, DK, Mangaluru
26	14.08.2020	Uruvalu, Belthangady Tq.	African Snail management	ICAR, KVK, DK, Mangaluru
27	19.08.2020	Uruvalu, Belthangady Tq.	African Snail management	ICAR, KVK, DK, Mangaluru
28	25.08.2020	Ajjavara, Sullia Tq.	Integrated crop management in arecanut	ICAR, KVK, DK, Mangaluru
29	10.06.2020	Daregudde, Moodabidre Tq.	Advanced farming practices in horticulture crops	ICAR, KVK, DK, Mangaluru
30	12.06.2020	Daregudde, Moodabidre Tq.	Advanced farming practices in horticulture crops	ICAR, KVK, DK, Mangaluru
31	18.06.2020	Daregudde, Moodabidre Tq.	Advanced farming practices in horticulture crops	ICAR, KVK, DK, Mangaluru
32	22.06.2020	Daregudde, Moodabidre Tq.	Advanced farming practices in horticulture crops	ICAR, KVK, DK, Mangaluru
33	13.07.2020	Belalu, Belthangady	Ecofriendly pest management in paddy	ICAR, KVK, DK, Mangaluru
34	13.07.2020	Kokkradi	Red palm weevil management arecanut	ICAR, KVK, DK, Mangaluru
35	10.08.2020	Nyayatarpu, Belthangady Taluk	Integrated crop management in black pepper	ICAR, KVK, DK, Mangaluru
36	14.08.2020	Urvalu, Belthangady	African Snail management	ICAR, KVK, DK, Mangaluru
37	15.08.2020 to 25.08.2020	Villages of Bantwal Hobli, Bantwal Taluk Taluka	Crop survey programme	ICAR, KVK, DK, Mangaluru
38	19.08.2020	Urvalu, Belthangady	African Snail management	ICAR, KVK, DK, Mangaluru

39	25.08.2020	Ajjavara, Sullia	Integrated crop management in arecanut	ICAR, KVK, DK, Mangaluru
40	28.08.2020	Kavalamudooru, Bantwala	Composite fish culture	ICAR, KVK, DK, Mangaluru
41	15.08.2020 to 25.08.2020	Villages of Bantwal Hobli	Crop survey programme	ICAR, KVK, DK, Mangaluru
42	01.09.2020	Kalanje	Scientific method of Bordeaux Mixture preparation and their uses	ICAR, KVK, DK and Agril. Dept.
43	09.09.2020	Badag Yedapada vu, Mangaluru	Inteegrated pest and disease management in paddy and preparation of Bordeaux Mixture and their uses	Badag Yedapada vu, Mangaluru
44	11.09.2020	Pane Mangaluru	Integrated pest and disease management in paddy and preparation of Bordeaux Mixture and their uses	Pane Mangaluru
45	24.09.2020	Alanthaya, Uppnagadi	Scientific method of Bordeaux preparation	Alanthaya, Uppnagadi
46	25.09.2020	Beluavai	Integrated pest and disease management	Beluavai
47	15.10.2020	Yalanjru	Training programme on integrated crop management in arecanut	ICAR, KVK, DK, & KSDH
48	19.10.2020	Kokradi, Belthangady Tq.	Palm weevil management in arecanut	ICAR, KVK, DK, Mangaluru
49	03.11.2020	Peruvayi, Bantwal	Training programme on wilt management in betel vine	ICAR, KVK, DK, Mangaluru
50	03.11.2020	Punacha Bantwal	Training programme on assessment of pruning techniques in udupi jasmine	ICAR, KVK, DK, Mangaluru
51	04.11.2020	Balnadu, Puttur	Training programme on integrated crop management in brinjal	ICAR, KVK, DK, Mangaluru
52	17.12.2020	Nandila	Integrated root grub management in arecanut	ICAR, KVK, DK, Mangaluru
53	18.12.2020	Naravi and Vaishali	Integrated crop management in rice and arecanut	ICAR, KVK, DK, Mangaluru
54	29.01.2021	Murali, Sullia	Training programme on integrated pest and disease management in horticulture crops	ICAR, KVK, DK, Mangaluru
55	01.02.2021	Niddle Belthangady	Management of pest and diseases in paddy, arecanut and coconut and scientific method of Bordeaux mixture preparation and their uses	Dept. of Agriculture DK and KVK, DK
56	01.02.2021	Nadagram, Belthangady	Assessment of leaf folder management in paddy	ICAR, KVK, DK, Mangaluru
57	02.03.2021	Nadagrama	OFT training programme on assessment of leaf folder management in paddy	ICAR, KVK, DK, Mangaluru

58	04.03.2021	Madanthyar	Training programme on improved cultivation practices in horticulture crops	ICAR, KVK, DK and Dept. of Agril. Belthangadi
59	04.03.2021	Madanthyar	Capacity building programme under soil health card programme (Schedule Caste)	ICAR, KVK, DK and Dept. of Agril. Belthangadi
60	10.03.2021	Nyayatharpu	Training programme on dairy farming	ICAR, KVK, DK, Mangaluru
61	18.06.2020	Daregudde village	Integrated farming in horticulture crops	ICAR, KVK, DK, Mangaluru, KAPC
62	28.08.2020	Kavalamudooru Bantwal	Composite fish culture	ICAR, KVK, DK, Mangaluru
63	01.09.2020	Kalanje	Scientific fish farming	ICAR, KVK, DK and KSDA
64	25.09.2020	Beluavai	Composite fish culture	ICAR, KVK, DK and Agril. Dept
65	02.01.2021	Kelinjar	Composite fish culture	ICAR, KVK, DK, Mangaluru
ANIMAL HUSBANDRY POLYTECHNIC, KONEHALLI				
1	30.07.2020	KVK-Bidregudi	Scientific Dairy and Sheep and Goat rearing	KVK Bidregudi & AHP Konehalli
2	27.11.2020	KVK-Bidregudi	Revised Animal Husbandry Practices – Daring, Sheep & Goats rearing	KVK Bidregudi & AHP Konehalli
3	30.12.2020	KVK-Bidregudi	Revised Animal Husbandry Practices – Poultry rearing Rabbit rearing & Fodder production	KVK Bidregudi & AHP Konehalli

**ABSTRACT OF CONFERENCES/TRAININGS/WORKSHOPS/SEMINARS/SYMPOSIA
ORGANIZED DURING 2020-21**

#	Institutes	International Level					National Level					Total
		Conference	Workshops	Seminars	Symposia	Trainings	Conference	Workshops	Seminars	Symposia	Trainings	
1	Veterinary College, Bengaluru	1	-	2	-	1	-	1	5	-	3	13
2	Veterinary College, Bidar	-	-	-	-	-	-	-	3	-	11	14
3	Veterinary College, Shivamogga	-	-	-	-	-	-	2	-	-	13	15
4	Veterinary College, Hassan	-	-	-	-	-	-	-	4	-	9	13
5	Veterinary College, Gadag	-	-	-	-	-	-	-	1	-	6	7
6	Dairy Science College, Bengaluru	-	-	-	-	-	-	-	1	-	-	1
7	Dairy Science College, Kalaburagi	-	-	-	-	-	-	-	-	-	2	2
8	College of Fisheries, Mangaluru	-	-	-	-	-	-	-	-	-	5	5
9	IAH and VB, Bengaluru	-	-	-	-	-	-	-	-	-	-	
10	IWVR, Doddaluvara-Kodagu	-	-	-	-	-	-	-	-	-	1	1
11	LRIC, Hallikhed-Bidar	-	-	-	-	-	-	-	-	-	-	
12	LRIC, Nagamangala-Mandya	-	-	-	-	-	-	-	-	-	12	12
13	LRIC, Konehalli-Tumakuru	-	-	-	-	-	-	1	-	-	4	5
14	BRIC, Dornahalli-Yadgir	-	-	-	-	-	-	-	-	-	3	3
15	CRIC, Timmapur-Bagalkot	-	-	-	-	-	-	-	-	-	-	
16	FRIC, Hebbal-Bengaluru	-	-	1	-	-	-	1	-	-	2	4
17	FRIC, Hesaraghatta-Bengaluru	-	-	-	-	-	-	-	-	-	1	1
18	FRIC, Bhutnal-Vijayapura	-	-	-	-	-	-	2	-	-	8	10
19	FRIC, Ankola-Uttar Kannada	-	-	-	-	-	-	-	-	-	4	4
20	KVK-DK, Mangaluru	-	-	-	-	-	-	-	3	-	117	120
21	AHP, Konehalli-Tumakuru	-	-	-	-	-	-	-	-	-	3	3
22	AHP, Kunnur-Haveri	-	-	-	-	-	-	-	-	-	-	
23	AHP, Koravangala-Hassan	-	-	-	-	-	-	-	-	-	-	
24	AHP, Bargi-Chamarajnagar	-	-	-	-	-	-	1	-	-	-	1
25	AHP, Dornahalli-Yadgir	-	-	-	-	-	-	-	-	-	-	
	TOTAL	1	-	3	-	1	-	8	17	-	204	234

2. Participation as Resource Scientist in Conference / Training Programmes / Workshops/ Seminars / Symposia / Winter School, etc.

#	Institution	Conferences	Training Programmes	Workshops	Seminars	Symposia	Winter/ Summer Schools	Total
1	Veterinary College, Bengaluru	2	18	4	5	-	-	29
2	Veterinary College, Bidar	-	70	-	5	2	3	80
3	Veterinary College, Shivamogga	2	9	21	20	-	-	52
4	Veterinary College, Hassan	-	32	1	2	-	3	38
5	Veterinary College, Gadag	1	26	-	3	-	-	30
6	Dairy Science College, Bengaluru	-	1	-	-	-	-	1
7	Dairy Science College, Kalaburagi	-	1	-	1	-	-	2
8	College of Fisheries, Mangaluru	-	4	3	-	-	-	7
9	IAH&VB, Bengaluru	-	21	4	4	-	3	32
10	IWVR, Doddaluvara-Kodagu	-	-	-	-	-	-	-
11	LRIC, Hallikhed-Bidar	-	4	-	-	-	-	4
12	LRIC, Nagamangala-Mandya	-	-	-	-	-	-	-
13	LRIC, Konehalli-Tumakuru	-	1	-	-	-	-	1
14	BRIC, Dornahalli-Yadgir	-	15	1	3	-	-	19
15	CRIC, Timmapur-Bagalkot	-	1	-	-	-	-	1
16	FRIC, Hebbal-Bengaluru	-	26	-	-	-	-	26
17	FRIC, Hesaraghatta-Bengaluru	-	8	-	-	-	-	8
18	FRIC, Bhutnal-Vijayapura	-	7	-	-	-	-	7
19	FRIC, Ankola-Uttar Kannada	-	5	-	-	-	-	5
20	Krishi Vigyan Kendra-Dakshina Kannada, Mangaluru	-	109	-	-	-	-	109
21	AHP, Konehalli-Tumakuru	2	5	-	-	-	-	7
22	AHP, Kunnur-Haveri	-	-	-	-	-	-	-
23	AHP, Koravangala-Hassan	-	-	-	-	-	-	-
24	AHP, Bargi-Chamarajnagar	-	4	-	-	-	-	4
25	AHP, Dornahalli-Yadgir	-	-	-	-	-	-	-
Total		7	367	34	43	2	9	462

3. Participation as Trainee Scientists in Conference / Training Programmes / Workshops / Seminars / Symposia / Winter School, etc.

#	Institution	Conferences	Training Programmes	Workshops	Seminars	Symposia	Winter/ Summer Schools	Total
1	Veterinary College, Bengaluru	7	18	22	42	2	1	92
2	Veterinary College, Bidar	14	68	17	45	5	7	156
3	Veterinary College, Shivamogga	2	38	12	144	2	5	203
4	Veterinary College, Hassan	1	36	2	44	6	4	93
5	Veterinary College, Gadag	1	20	-	4	-	-	25
6	Dairy Science College, Bengaluru	-	-	-	-	-	-	-
7	Dairy Science College, Kalaburagi	-	-	-	-	-	-	-
8	College of Fisheries, Mangaluru	5	4	-	2	-	-	11
9	IAH and VB, Bengaluru	-	2	-	1	-	-	3
10	IWVR, Doddaluvara-Kodagu	-	-	-	-	-	-	-
11	LRIC, Hallikhed-Bidar	-	-	-	14	-	-	14
12	LRIC, Nagamangala-Mandya	-	-	-	-	-	-	-
13	LRIC, Konehalli-Tumakuru	3	-	1	6	-	1	11
14	BRIC, Dornahalli-Yadgir	-	1	-	-	-	1	2
15	CRIC, Timmapur-Bagalkot	-	-	-	-	-	-	-
16	FRIC, Hebbal-Bengaluru	1	1	-	-	-	-	2
17	FRIC, Hesaraghatta-Bengaluru	-	-	-	-	-	-	-
18	FRIC, Bhutnal-Vijayapura	-	-	-	-	-	-	-
19	FRIC, Ankola-Uttar Kannada	2	2	-	16	-	-	20
20	Krishi Vigyan Kendra-Dakshina Kannada, Mangaluru	-	79	15	-	-	-	94
21	AHP, Konehalli-Tumakuru	1	-	-	-	-	-	1
22	AHP, Kunnur-Haveri	-	3	-	-	-	-	3
23	AHP, Koravangala-Hassan	-	-	-	-	-	-	-
24	AHP, Bargi-Chamarajnagar	-	1	-	-	-	1	2
25	AHP, Dornahalli-Yadgir	-	-	-	-	-	-	-
Total		37	273	69	318	15	20	732

4. Radio Talk/TV Programmes

a) Radio Talks

#	Date	Scientist	Topic	AIR Station
VETERINARY COLLEGE, BENGALURU				
1	21.02.2021	Suma, N.	Feeding management of cattle	AIR, Bengaluru
2	28.09.2020	Leena, G.	On AIR on the Occasion of World Rabies Day 2020 “Reasons and remedies for Rabies”	AIR, Bengaluru
3	23.02.2021	Leena, G.	Importance of Hygiene and Public Health life in preventing Zoonotic Disease’	AIR, Bengaluru
4	31.08.2020	B.M. Veeregowda	Lumpy Skin Disease	AIR, Bengaluru
VETERINARY COLLEGE, SHIVAMOGGA				
1	25.06.2020	Suresh Patel Revanna	Measures to control common diseases of livestock in rainy season	AIR, Bhardravati
2	25.06.2020	Thirumalesh, T.	Scientific sheep and goat farming	AIR, Bhardravathi
3	31.07.2020	Venkatesh, M.M.	Scientific Fodder production	AIR, Bhardravathi
4	26.07.2020	Umesh, B.U.	Scientific Swarnadhara production	AIR, Bhardravathi
5	28.07.2020	Bharat Bhushan, M.	Scientific feed formulation	AIR, Bhardravathi
VETERINARY COLLEGE, HASSAN				
1	24.06.2020	Manjunatha, L.	Live phone–in programme on Dairy Farming	AIR, Hassan
2	26.01.2021	Manjunatha, L.	Economics of backyard rearing and banking facilities for the farmers	AIR, Hassan
3	19.02.2021	Manjunatha, L.	Live – quiz programme on Kukutta Vani programme	AIR, Hassan
4	20.05.2020	Nagappa, S. Karabasanavar	Zoonotic disease management. Control of zoonotic diseases during COVOD.19 situation (Kannada)	AIR, Hassan
5	05.02.2021	Nagappa, S. Karabasanavar	Kolisaakanike mattu kukkuta utpannagala shuchitva nirvahane mattu samudaya aarogya (Kannada)	AIR, Hassan
6	06 .06.2020	Vinuthan, M.K. and Ramesh, D.	Use of Biotechnology in Animal Husbandry /Pashupalaneyelli Jaivika thantragynanadha ballake	AIR, Hassan
7	29.04.2020	Pavankumar, K.N.	Home remedies in animal treatment	AIR, Hassan
8	06.06.2020 to 05.09.2020 (13 episodes)	Ravikumar, P.	Janapada Pashuvaidya: Importance of indigenous home remedies for Livestock diseases	AIR, Hassan
9	19.09.2020	Girish, B.C.	Pashuvaidya vaani – Experience as Veterinary Doctor and gynaecological problems in cows	AIR, Hassan

10	15.11.2020	Girish, B.C.	Pashuvaidya vaani – Experience as Veterinary Doctor and gynaecological problems in cows	AIR, Hassan
11	03.12.2020	Girish, B.C.	Kukkutavani Phone in program, Quiz (2), Diseases of poultry	AIR, Hassan
12	8.01.2021	Girish, B.C.	Kukkutavani Phone in program, Quiz (2), Diseases of poultry	AIR, Hassan
13	19.02.2021	Girish, B.C.	Kukkutavani Phone in program, Quiz (2), Diseases of poultry	AIR, Hassan
14	20.03.2021	Girish, B.C.	Kukkutavani Phone in program, Quiz (2), Diseases of poultry	AIR, Hassan
15	22.04.2020	Shilpa, V.T. and Ashwathnarayana	Importance of laboratory tests in disease diagnosis	AIR, Hassan
16	12.02.2021	Shilpa, V.T.	Mycotoxicosis and its importance in Poultry rearing	AIR, Hassan
17	10.6.2020	Naveen Kumar, G.S.	Effect of Climate Change on Livestock Rearing	AIR, Hassan
18	06.01.2021	Naveen Kumar, G.S.	Bullock rearing	AIR, Hassan
19	06.05.2020	Jaishankar, N.	Feeding management of livestock during COVID.19 situation	AIR, Hassan
20	13.05.2020	Manjunatha, D.R.	Health management of livestock during covid.19 situation	AIR, Hassan
21	27.05.2020	Raveendra Hegde	Sustainable piggery during outbreaks of African swine fever	AIR, Hassan
22	07.01.2021	B.N . Nagaraju	Homeopathy in veterinary Practice	AIR, Hassan
23	26.08.2020	A.J. Shankaregowda	Approach and remedies for infertility problems in bovines at field level	AIR, Hassan
VETERINARY COLLEGE, GADAG (VCG)				
1	28.09.2020	Siddalingswamy Hiremath	World Rabies Day	AIR, Raichur
COLLEGE OF FISHERIES, MANGALURU (FCM)				
1	10.10.2020	Mridula Rajesh	COVID-19, its effect on fisheries and livelihood of fisher-folk	Mangaluru
INSTITUTE OF ANIMAL HEALTH AND VETERINARY BIOLOGICALS, BENGALURU				
1	21.01.2021	Shrikant Kowalli	Buird Flu	KLE Venudhvni, 94.4 FM” AIR Station, Belagavi
FISHERIES RESEARCH AND INFORMATION CENTER, HESARGHATTA				
1	03.03.2021	Ravindragouda Patil	Benefits of multi-purpose fish farming ponds to farmers	AIR, Raichur
2	31.03.2021	Ravindragouda Patil	Integrated fish farming and its benefits	AIR, Raichur
KRISHI VIGYAN KENDRA, DAKSHINA KANNADA, MANGALURU (KVK-DK)				
1	29.06.2020	Naveen Kumar, B.T.	Integrated weed and nutrient management in paddy	AIR, Mangaluru
2	23.09.2020	Mallikarjuna, L.	INM in arecanut	AIR, Mangaluru

3	08.10.2020	Mallikarjuna, L.	Nutrient management in arecanut crop	AIR, Mangaluru
4	31.12.2020	Rashmi, R.	Kitchen & Terrace gardening	Manipal Community Radio Station
5	20.01.2021	Kedarnath	Shuddhajala, SwacchhaNela, ArogyavagiraliJivaSankula	AIR, Mangaluru
6	25.01.2021	Chethan, N.	Inland fish culture	AIR, Mangaluru
ANIMAL HUSBANDRY POLYTECHNIC, KONEHALLI				
1	06.06.2020	Ravikumar, P.	Importance of veterinary Home Medicine	AIR, Hassan
2	05.09.2020	Ravikumar, P.	Importance of veterinary Home Medicine	AIR, Hassan
ANIMAL HUSBANDRY POLYTECHNIC, BARGI				
1	11.03.2020	Ravikumar, C.	Animal Welfare and its importance	AIR, Hassan
2	20.09.2020	Ravikumar, C.	Toxicity in animals	AIR, Hassan

b) TV Programmes

#	Date	Scientist	Topic	Station
VETERINARY COLLEGE, BENGALURU				
1	23.11.2020	B.N. Nagaraja	Chaligaladalli Nayeegalalli Jvara	E-TV Kannada
2	24.10.2020	Shrikrishna Isloor	Rabies Control and Management	Doordarshan Kendra, Bengaluru
3	03.09.2020	B.M. Veeregowda	Lumpy Skin Disease	Doordarshan Kendra, Bengaluru
4	17.11.2020	B.M. Veeregowda	Importance of Vaccination	Doordarshan Kendra, Bengaluru
5	02.11.2020	S.B. Prasanna	Improved milk production through feeding improved fodder crops	DD Chandana, Bengaluru
6	27.10.2020	Jayanaik	Summer Management of Poultry	DD Chandana, Bengaluru
VETERINARY COLLEGE, SHIVAMOGGA				
1	11.02.2021	N.B. Shridhar	Mimosa invisa poisoning in cattle	DD Chandana, Bengaluru
CANINE RESEARCH AND INFORMATION CENTER (MH), TIMMAPUR, BAGALKOT				
1	15.02.2021	Mahesh, S. Akashi	Handing over Mudhol Hound puppies to Air Force, Agra by Hon'ble DCM Shri. Govind M Karjol	Ranna TV Local Channel and other state level news channel
FISHERIES RESEARCH AND INFORMATION CENTER, HEBBAL, BENGALURU				
1	28.08.2020	Shivakumar, M. and K.B. Rajanna	Aquaculture an alternative livelihood	Digvijaya TV
2	28.08.2020	K.B. Rajanna	Tilapia fish farming and their potential for Aquaculture	Digvijaya TV
3	21.11.2021	Shivakumar, M.	World Fisheries Day 2021	Chandana Live
FISHERIES RESEARCH AND INFORMATION CENTER, BHUTNAL, VIJAYAPURA				
1	10.04.2020	Vijayakumar, S.	Minu Mari Utapadane	Digvijay, Negilyogi Vijayapura
2	21.04.2020	Vijayakumar, S.	Amur Minu Sakanike	Digvijay, Negilyogi Vijayapura
KRISHI VIGYAN KENDRA-DAKSHINA KANNADA, MANGALURU (KVK-DK)				
1	30.11.2020	Naveen Kumar, B.T.	Red Rice Variety Sahaydri Panchamukhi	DD Chandana
2	30.08.2020	Rashmi, R.	Success story of Mr. Anush	Digvijaya News
3	02.09.2020	Rashmi, R.	Second PUC student earns Rs.60000 per month	Namma Kudla,
4	04.09.2020	Rashmi, R.	Second PUC student earns Rs.60000 per month	Udayavani News
5	07.09.2020	Rashmi, R.	Second PUC student earns Rs.60000 per month	Public Next
6	14.09.2020	Rashmi, R.	Success story on coconut palm climbing of Mr. Vittala Gowda	V4 News channel

7	12.09.2020	Rashmi, R.	Earns Rs.60000 from coconut plucking business	ETV Bharat Kannada
8	13.09.2020	Rashmi, R.	India's youth turns to coconut picking, earn Rs.60,000 to Rs.80,000 a month	ETV Bharat English
9	14.09.2020	Rashmi, R.	India's youth turns to coconut picking, earn Rs.60,000 to Rs.80,000 a month	ETV Bharat Telugu
10	24.08.2020	Kedarnath	African snail wreak havoc destroying crops in Mangaluru	TV9 Kannada
11	25.08.2020	Kedarnath	African Snail (Rakkasahulu)	Suddi News Belthandagi
12	25.08.2020	Kedarnath	Damage of crops by African giant snails in Dakshina Kannada	Digvijaya News
13	30.08.2020	Kedarnath	KVK, Mangaluru changed the fortune of rural youth	Digvijaya News

ABSTRACT OF RADIO TALKS AND TV PROGRAMMES DURING 2020-21

#	College/Institute	Radio Talks	TV Programmes	Total
1	Veterinary College, Bengaluru	4	6	10
2	Veterinary College, Bidar	-	-	-
3	Veterinary College, Shivamogga	5	1	6
4	Veterinary College, Hassan	23	-	23
5	Veterinary College, Gadag	1	-	1
6	Dairy Science College, Bengaluru	-	-	-
7	Dairy Science College, Kalaburagi	-	-	-
8	College of Fisheries, Mangaluru	1	-	1
9	IAH&VB, Bengaluru	1	-	1
10	IWVR, Doddaluvara-Kodagu	-	-	-
11	LRIC, Hallikhed-Bidar	-	-	-
12	LRIC, Nagamangala-Mandya	-	-	-
13	LRIC, Konehalli-Tumakuru	-	-	-
14	BRIC, Dornahalli-Yadgir	-	-	-
15	CRIC, Timmapur-Bagalkot	-	1	1
16	FRIC, Hebbal-Bengaluru	-	3	3
17	FRIC, Hesaraghatta-Bengaluru	2	-	2
18	FRIC, Bhutnal-Vijayapura	-	2	2
19	FRIC, Ankola-Uttar Kannada	-	-	-
20	Krishi Vigyan Kendra-Dakshina Kannada, Mangaluru	6	13	19
21	AHP, Konehalli-Tumakuru	2	-	2
22	AHP, Kunnur-Haveri	-	-	-
23	AHP, Koravangala-Hassan	-	-	-
24	AHP, Bargi-Chamarajnar	2	-	2
25	AHP, Dornahalli-Yadgir	-	-	-
Total		47	26	73

5. Animal Health Camps

#	Name of the College/Institute	No. of Animal Health Camps	No. of cases treated/advised
1	Veterinary College, Bengaluru	10	385
2	Veterinary College, Bidar	2	214
3	Veterinary College, Shivamogga	4	205
4	Veterinary College, Hassan	5	274
5	Veterinary College, Gadag	-	-
6	Dairy Science College, Bengaluru	-	-
7	Dairy Science College, Kalaburagi	-	-
8	College of Fisheries, Mangaluru	-	-
9	IAH&VB, Bengaluru	1	20
10	IWVR, Doddaluvara-Kodagu	-	-
11	LRIC, Hallikhed-Bidar	-	-
12	LRIC, Nagamangala-Mandya	8	12071
13	LRIC, Konehalli-Tumakuru	-	-
14	BRIC, Dornalli-Yadgir	-	-
15	CRIC, Timmapur-Bagalkot	-	-
16	FRIC, Hebbal-Bengaluru	-	-
17	FRIC, Hesaraghatta-Bengaluru	-	-
18	FRIC, Bhutnal-Vijayapura	-	-
19	FRIC, Ankola-Uttar Kannada	-	-
20	Krishi Vigyan Kendra-Dakshina Kannada, Mangaluru	-	-
21	AHP, Konehalli-Tumakuru	-	-
22	AHP, Kunnur-Haveri	-	-
23	AHP, Koravangala-Hassan	-	-
24	AHP, Bargi-Chamarajnagar	5	25
25	AHP, Dornalli-Yadgir	-	-
Total		35	13194

6. Demonstrations / Exhibitions / Field Days / Pashu / Matsya Mela

#	Name of the College/Institute	No. of Demonstrations	Pashu/Matsya Mela
1	Veterinary College, Bengaluru	-	-
2	Veterinary College, Bidar	6	44
3	Veterinary College, Shivamogga	7	3
4	Veterinary College, Hassan	11	1
5	Veterinary College, Gadag	3	-
6	Dairy Science College, Bengaluru	-	-
7	Dairy Science College, Kalaburagi	-	-
8	College of Fisheries, Mangaluru	-	-
9	IAHandVB, Bengaluru	-	-
10	IWVR, Doddaluvara-Kodagu	1	-
11	LRIC, Hallikhed-Bidar	-	-
12	LRIC, Nagamangala-Mandya	39	-
13	LRIC, Konehalli-Tumakuru	-	-
14	BRIC, Dornalli-Yadgir	4	1
15	CRIC, Timmapur-Bagalkot	3	1
16	FRIC, Hebbal-Bengaluru	2	-
17	FRIC, Hesaraghatta-Bengaluru	-	-
18	FRIC, Bhutnal-Vijayapura	1	-
19	FRIC, Ankola-Uttar Kannada	1	-
20	Krishi Vigyan Kendra-Dakshina Kannada, Mangaluru	136	.-
21	AHP, Konehalli-Tumakuru	-	-
22	AHP, Kunnur-Haveri	1	-
23	AHP, Koravangala-Hassan	-	-
24	AHP, Bargi-Chamarajnagar	1	1
25	AHP, Dornalli-Yadgir	-	-
Total		216	51

7. Animal Health Care Services to Farmers

<i>College / Institute</i>	<i>Service Provided</i>	<i>Total Nos.</i>
Veterinary College, Bengaluru	Total number of cases(Small and Large) treated	10727
	Major operations performed	410
	Minor operations performed	227
	OPD cases(Small and Large)	7190
	Radiographs taken	936
	Equines treated	17
	Cow/Buffaloes treated	453
	Goats treated	231
	Sheep treated	202
	Dogs treated	6646
	Cats treated	1274
	Others treated	168
	Check up of cows at Rajbhavan	8
	Total	28489
Veterinary College, Bidar	Total	19072
Veterinary College, Shivamogga	Animals treated at Medicine unit, Veterinary Clinical Complex (VCC) of Veterinary College, Shivamogga from 01 st April 20 to 31 st March 2021	4963
	Animals treated at Teaching Veterinary Clinical Complex (TVCC) of Veterinary College, Shivamogga from 01 April 2020 to 31 March 2021	Medicine.4963 Gynec. 978 Surgery. 1723
	Health advisory services to Animal owners	62
	Surgical treatment/interventions/ operations in OPD/OT for the year 2020.21 (01.04.2020 to 31.03.2021)	1723
	Total	14412
Veterinary College, Hassan	Clinical services (April 20 to March 21)	8393
	Dr. Raveendra hegde, visited Beekannahalli village, Saligrame hobli,Hassan taluk for disease investigation (sudden deaths in poultry) on12.01.2021	1
	Clinical services (April 20 to March 21) Blood Transfusion – 8	4047
	Total	12441
Veterinary College, Gadag	Diagnosis, treatment of animals, Feecal Blood sample and skin scraping examination, Disease diagnosis, Preventive measures, Large animal and small animal health care management, prophylaxis, vaccination, breeding and reproduction, surgical intervention, sample collection and disease investigation, Large animal and small animal surgical intervention through	2259

IAH&VB, Bengaluru	Disease Investigation, Post mortem, Vaccine supply, Haematology & Serum analysis, Faecal examination etc.	1850
LRIC, Nagamangala-Mandya	Health care during Field Visit	251
CRIC, Timmapur-Bagalkot	Consultancy Service to local Mudhol hound dog owners	20
AHP, Bargi-Chamarajnaragar	-	15
	Total	78809

8. Diagnostic Services Provided

#	Institution	Diagnostic Services provided	Total Numbers	
1	Veterinary College, Bengaluru	Blood Samples	216	
		Faecal Samples	28	
		Gross worms	2	
		Skin Scrapings	2	
		ABST & Culture	5 milk (Bovine)	
		ABST & Culture	5 (ear swab, urine, Synofluid, blood)	
		Microscopic examination	3 Blood (Cow, Sheep, Goat each)	
		RBPT for Brucellosis	26 serum	
		RBPT for Brucellosis	20 serum	
		ELISA for Brucellosis	20 serum	
		Coliform count in water	1 (Water sample)	
		Rabies Diagnosis (Revolving Fund Operated)		
		RFFIT for Antirabies vaccinal antibody titre (on charge basis Rs. 3000/ per sample)	167 serum samples of dogs and cats (Rs. 5,01,000/. generated)	
		DFA & LFA for Rabies diagnosis (dog,cat,cattle, buffalo, sheep, goat, horse, bats)	464 brain samples. 330 dog samples charged @ Rs.330/ per sample (Rs.99,000/.)	
		Canine necropsy	93	
		Bovine necropsy	51	
		Equine necropsy	-	
		Felines necropsy	13	
		Ovine & Caprines necropsy	27	
		Piglets necropsy	14	
Laboratory Animals necropsy/ other	03			
Poultry necropsy	694			
Rabies diagnosis	166			
Exfoliative cytology	48			
Histopathology	1,100			

		Physical and chemical composition evaluation of feed/fodder samples of Dept. of AH&VS and KMF, GOK	10
		Livestock	19
		1. Surgery	42
		2. Dystocia	214
		3. AI	113
		4. PD	126
		5. Other services	162
		Pet Animals	
		1. Surgery	633
		2. Dystocia	94
		3. Ultrasonography	1,559
		4. Vaginal Cytology	1,117
		5. PD	280
		6. AI	24
		7. Other services	2,216
		Radiography and C.Arm imaging X.ray	Around 936 small and large animals
		Total	11,043
2	Veterinary College, Bidar	Animal Blood sample analysis	299
		Serum sample analysis	102
		Animal Faecal sample	1062
		skin scrapings	82
		Microbial & Anti microbial assays	-
		Blood Zoonotic diseases	85
		ABST	08
		Histopathology/ Cytology	-
		Urine analysis	33
		Ruminal fluid	266
		Water Samples	-
		Milk / meat samples	58
		Pus Samples	1
		worms for identification	7
		filter paper quality testing	96
		Pregnancy Diagnosis	00
		Any Other services Please mention	44
		Ultrasonography	15
		Histopathology/ Cytology	60
		Pregnancy Diagnosis	60
		Any other	33
		Ruminal fluid/ Aspiratory Fluid	1
		Water Sample	3

		Radiography	520
		Ultrasonography	280
		C.arm	10
		Endoscopy	3
		Post mortem exam of livestock animal & poultry	144
		Total	3,272
3	Veterinary College, Shivamogga	Blood samples for haemoparasites	25
		Faecal sample for parasitic egg/ova	80
		Skin scrapings	9
		Arthropod parasites	4
		Wildlife Blood & Faecal samples	79
		i) Laboratory tests: Number of clinical samples examined in the central clinical laboratory of TVCC during the period from 01.04.2020 to 31.03.2021	2260
		ii) Diagnostic tools:	
		a) Ultrasonography scanning:	208
		b) Electrocardiogram (ECG): 41	62
		i) Laboratory tests: Number of clinical samples examined in the central clinical laboratory of TVCC during the period from 01.04.2020 to 31.03.2021	2260
		ii) Diagnostic tools:	
		a) Ultrasonography scanning:	208
		b) Electrocardiogram (ECG):	62
		Avian Necropsy	157
		Ovine necropsy	10
		Caprine necropsy	3
		Bovine necropsy	7
		Canine necropsy	3
		Rabbit necropsy	4
		Swine necropsy	2
		Rodent necropsy (Rats)	2
		Wild animal necropsy (Elephant – 04, Black buck -02, Emu -02, Turtle -01, Sloth bear -01, Flying squirrel -01, Horn Bill -01, Macaca radiata – 32)	51
		Cytopathology	56
		Research cytopathology	Approx- 150
		Histopathology	48
		PG histopathology	Approx- 350
		ABST /Isolation studies	90
		Total	6,190

4	Veterinary College, Hassan	Disease/ outbreak investigation in Poultry flock at Bikanahalli village, Hassan Taluk on 12.01.2021	5000
		Pesticide Plant poisoning Poisoning, Heavy metal poisoning Rodenticide poisoning, Plant poisoning Nitrate and Cyanide poisoning	3
		Post mortem examinations: Cow – 28, Sheep – 48, Goat – 17, Pea hen .1, Ostrich – 2, Tortoise – 3, Pig – 8, Rabbit – 11, Rat – 1, Dog – 3, Leopard – 1 and poultry – 2001	2124
		Analysis of clinical samples: Histopathology – 28, Cytology – 70, Urine – 3 and Blood - 5	106
		Field visits on disease investigation	3
		Faecal samples - 53 Blood - 518 Skin scrapings - 2 External parasites - 3 Internal parasites - 2	578
		Faecal sample- 52 Blood sample- 192 Serum sample- 388 Rumen fluid- 14 Skin scraping- 10 Others - 26	682
		Screening of samples for detection and isolation of various pathogens, antimicrobial sensitivity (Samples for ABST – 68) (Samples for HS - 03) (Samples for Mastitis - 07) (Samples for Anthrax - 5) (Samples for Actinomycosis - 1) (Samples for Brucellosis – 08) (Samples for Rabies - 6) (Samples for leptospirosis - 1) (Samples for fungal infections - 04) (Samples for pyogenic infections - 10) (Samples for TRP - 5)	118
		Faecal sample - 310 Blood sample - 1496 Serum sample - 859 Urine Analysis - 72 Rumen fluid - 75	3263

		Skin scraping - 231 Blood smear Examination - 212 Lymph node biopsy - 8	
		Pregnancy diagnosis- 246 VEC- 165	411
		Total	12,288
5	Veterinary College, Gadag	Heamotological and Biochemical analysis of samples received from clinics and farmers, Microbiology tests, Post mortem examination, Clinical Samples, Qualitative Diagnostic tests done for presence of heavy metals, nitrate, cyanide in suspected samples received from Clinics	238
6	Veterinary College, Shivamogga	-	6190
7	College of Fisheries, Mangaluru	Shrimp health status/pathogens, control/management measures; on water quality parameters and steps to be taken to prevent waterborne infections/ETP water analysis /portability testing	1021 water samples + 35 shrimp samples
		Water quality, algal blooms	6
		Total	1,062
8	IAH&VB, Bengaluru	Total	1,27,101
9	CRIC, Timmapur- Bagalkot	Ultrasonography for scanning	10
10	FRIC, Hebbal- Bengaluru	Algal blooms in the sea	Brought the soil samples and identified the dominant species and awareness was created among public
		Fish death	Collected the samples and analyzed the water and soil
		Weed infestation	Team FRIC visited the site and collected the soil and water samples and given the report and suggested the

			strategies for rejuvenating the lake
		Low productivity	Team FRIC, Hebbal visited and suggested ecosystem based strategies to augment fish production
		Fish stocking issue	On request of DDF, Mysore and DC, Mysore
		Dying lake	On request of Swacha trust on behalf of DC, Chikkamagalur
11	FRIC, Hesaraghatta-Bengaluru	-	-
12	FRIC, Bhutnal-Vijayapura	Diagnosis of moribund fish and soil + Water analysis in and around Vijayapur District	11
13	FRIC, Ankola-Uttar Kannada	Water Temperature, pH, Salinity, Alkalinity, Soil temperature and pH.	54
14	Krishi Vigyan Kendra-Dakshina Kannada, Mangaluru	Diagnostic/Problematic plots Visits	158
		Soil Sample	311
		Water Sample	148
		Lime Application	4
		Total	621
15	AHP, Konehalli-Tumkur	Screening Fecal Samples of Amrithmahal Cattle, Sheep, Goat, Pig and Cross breed Animals of LRIC (A), Konehalli.	25
		Blood examination for hemoglobin estimation in Amrithmahal cattle and cross breed cows	20
		Examination of Skin Scrapings	12
		Milk Adulteration Test	22
		Total	79
16	AHP, Kunnur-Haveri	Blood, urine, faeces and milk samples examination	70
17	AHP, Bargi-Chamarajnagar	-	8
Grand Total			1,68,237

9. Supply of chicks/animals/fish/fodder seeds/root slips/other farm produce to farmers

#	Department/Farm	Supplied item and Quantity		Remarks (Amount Collected in Rs.)
1	Veterinary College, Bengaluru	Day old Giriraja chicks	54433+938	11,51,925.00
		Day old Swarnadhara chicks	20041+346	5,26,849.00
		Day old parent chicks	7200+136	10,80,000.00
		Day old local chicks	58416+998	15,06,591.00
		Hatching eggs	38956	6,08,895.00
		Incubated eggs	2791	51,777.00
		Table eggs	9565	55,530.00
		Broken eggs	2845	10,500.00
		Feed	102143 (kgs)	32,33,334.00
		Yellow maize	130 kgs	4,120.00
		Soyabean meal	40 kgs	1,800.00
		Salt	4 kgs	80.00
		Manure	23 tons	3,450.00
		Birds	2869 Nos. (7441.1 kgs)	11,58,128.00
		Local Birds	400 Nos. (671.1 kgs)	1,61,375.00
		Paddy husk	15040 kgs	1,02,777.00
		Gunny bags	.	12,485.00
		4 th week day old chicks	1550 Nos.	1,23,750.00
Total			97,93,366.00	
2	Veterinary College, Bidar	1. Chicks/ Eggs/ Adult Birds - 150/541/19		12,698.00
		Particular	Qty/Nos	-
		Rs. In lakhs		
		1. Milk (ltr) 0.51741	31357.00	
2. Horticulture produce 0.29 (Mango & Cashew)	Tree auction			
Total			12,698.00	
3	Veterinary College, Shivamogga	Sesbania Tree fodder seeds to Malnad Gidda rearers		Seeds were given for seedling production to Malnad Gidda rearers
		Giriraja chicks (day old chick)		56,780.00
		Sale of birds		1,03,565.00
		Sale of eggs		3,81,661.00
		Sheep and Goat.		34,250.00
		By sale of Piglets and Pigs		99,500.00
		Sale of milk		7,23,253.00
		Sale of poultry and cattle feed		600.00
		Maize grain production		1,63,200.00 (102 Quintals @Rs.16/kg)

		Fodder production	1,20,000.00 (120 tons @Rs.1/kg)
		Hybrid Napier silage	4 ton
		Sale of root slips	73,155.00
		Total	17,55,964.00
4	Veterinary College, Hassan	50	Over phone and at Dept.
		Pigs - 130 Nos.	4,27,630.00
		Sheep – 03 Nos.	12,400.00
		Goat – 06 Nos.	26,550.00
		Milk – 8440.5 lts.	2,36,334.00
		Rabbit - 04 Nos.	1,200.00
		Poultry/eggs	1,77,301.60
		Fish - 126.5 kg	15,216.00
		Fodder/Feed/seeds	28,000.00
		Total	9,24,631.60
5	Veterinary College, Gadag	15 piglets and 5 pigs	-
		Milk – 2994 liters	-
		Chicken birds – 232	-
		Eggs - 340	-
6	College of Fisheries, Mangaluru	1.Nile tilapia:1832 2.Common carp fingerlings:2010 3.Koi carp:238 4.Gambusia:580 5.Guppy:46 6.Angel:40	Supplied good quality fish seed so as to enable the fish farmers to achieve better fish production.
7	IAH&VB, Bengaluru	Haemorrhagic Septicaemia vaccine	45,54,100
		Black quarter vaccine	3,32,000
		Enterotoxaemia vaccine	2,02,88,000
		Anthrax vaccine	19,20,300
		Ranikhet ‘F’ vaccine	-
		Ranikhet ‘ R ₂ B’	-
		Sheep Pox Vaccine	64,12,000
		Tissue Culture Rabies Vaccine	1,33,569
		PPR	1,47,84,000
		Mycoplasma vaccine	11,5000
		CSF	3,40,380
		BT vaccine	7,50,000
		KFD	3,27,636
		Duck Pasturella vaccine	1,23,700
		Total (Vaccine)	4,99,77,185
		<i>B. abortus</i> Rose Bengal Antigen	6,30,625
		<i>Salmonella</i> Pullorum Coloured Antigen	1,000
		Milk Ring Antigen	-
		<i>B. abortus</i> Plain Antigen	3,400
		<i>Mycoplasma</i> antigen	2,500
		Total (Antigen)	6,37,525

8	LRIC, Hallikhed, Bidar	Fodder stem cuttings/root slips : 1,40,100	7,08,000.00
		Fodder seeds : 82 kg Deoni Bull calves (to semen stations) : 04	
		Total	7,08,000.00
9	LRIC, Nagamangala, Mandya	52 Elite Breeding Mandya Rams	Under ICAR funded Mega Sheep Seed Project (Mandya Sheep), 52 beneficiary farmers were benefited
		Feeding tray, water Truph, Compound Feed, Mineral mixture and Feed Supplements.	Under ICAR funded Mega Sheep Seed Project (Mandya Sheep), 25 Schedule Caste farmers benefited
		259 Fodder Root slips	To the needy farmers
10	LRIC, Konehalli, Tumakuru	1. Heifers 2. Sow and boar 3. Sale of seeds	-
11	BRIC, Doranahalli	Sale of Red Gram 119.6 Kg	5,740.00
		Sale of COFS- 29, 163 Kg	65,200.00
		Sale of COFS- 31, 175 Kg	70,000.00
		Sale of Napier Cuttings, 20100 Cuttings	10,050.00
		Sale of Milk	36700.00
		Sale of Hedge Lucern 26 Kg	15,600.00
		Sale of Other	12,460.00
12	CRIC, Timmapur, Bagalkot	Mudhol hound pups 72 (M.38 F. 34)	-
13	FRIC, Hebbal, Bengaluru	Cultivable Fish seed –1,30,203 Nos. Ornamental fish – 29552 Nos. Aquarium Plants – 45 Nos.	Supplied to stakeholders in Bengaluru rural & urban, Kolar, Hassan, Madikeri, Chamarajanagara, Mandya, Ramanagar, Chickaballapur, Tumkur districts
14	FRIC, Hesaraghatta, Bengaluru	Cultivable Fish seed –4,27,826 Nos. Ornamental fish – 37,313 Nos. Aquarium Plants – 10 Nos.	Supplied to stakeholders in Bengaluru rural

			& urban, Kolar, Hassan, Madikeri, Chamarajanagara, Mandya, Ramanagar, Chickaballapur, Tumkur districts	
15	FRIC, Bhutnal, Vijayapura	Catla Fish seed	1,14,360.00	
		Common Carp	2,64,350.00	
		Amur Fish Seed	8,000.00	
		Packing Charges	21,690.00	
		Other Misc. Receipts	9,870.00	
		Total	4,18,270.00	
16	FRIC, Ankola, Uttar Kannada	Ornamental fishes: 871 nos. Singapore guppy- 385 nos. Black Molly - 190 nos. White Molly - 120 nos. Cichlids - 101 nos. Red Swordtail - 75 nos.	-	
17	Krishi Vigyan Kendra, Dakshina Kannada, Mangaluru	MO4 paddy seeds	1200 kg	37,200.00
		Sahyadri Panchamukhi paddy seeds	700 kg	21,700.00
		Bhendi seeds	325 gms	325.00
		Greengram -DGGV.2	17 kg	700.00
		Cowpea -Sahyadri Yukthi	30 kg	2,700.00
		Fodder cuttings-CO-3	3000 Nos.	3,000.00
		Earthworms- <i>Eudrilus eugeniae</i>	10 kg	6,500.00
		Vermicompost	500 kg	7,500.00
		Green manure seeds-Sunhemp	80 kg	6,400.00
		Green manure seeds-Dhaincha	55 kg	4,400.00
		Fish Fingerlings	52260 Nos.	97,895.00
		Total	1,88,320.00	
18	AHP,LRIC(A), Konehalli	Lucerne seed, hybrid Napier root slips, Susbenia and Moringa saplings	20 beneficiaries were benefited	
19	AHP, Kunnur, Haveri	CoFS seeds (5kg) and Root slips (50 Nos.)	Given free of cost to encourage growing of fodder at farmers land	
20	AHP, Koravangala, Hassan	Cockerel birds	600 birds supplied	
21	AHP, Dornahalli, Yadgir	Sale of Ram lambs: 08 (Rs. 45950/-)	45,950.00	
		Sale of Tur Dal : 465 Kg (Rs. 31155/-)	31,155.00	
		Total	77,105.00	
Grand Total			1,40,94,104.60	

10. Consultancy / Advisory Services

#	College / Institute	Total Number	Remarks
1	Veterinary College, Bengaluru	1323	Advisory services on Vetero legal investigations / Technical information regarding drug formulations and toxicological field cases / pet animals / Dairy and Poultry disease diagnosis and suggested over phone and field visits
2	Veterinary College, Bidar	573	Over phone call advice was given to farmers and doctors / Farm and phone call consultancy and advisory to dairy farmers regarding breeding and infertility management
3	Veterinary College, Shivamogga	694	Advisory services on Vetero legal investigations / Technical information regarding drug formulations and toxicological field cases / pet animals / Dairy and Poultry disease diagnosis and suggested over phone and field visits
4	Veterinary College, Hassan	948	Advisory services on Vetero legal investigations / Technical information regarding drug formulations and toxicological field cases / pet animals / Dairy and Poultry disease diagnosis and suggested over phone and field visits
5	Veterinary College, Gadag	163	Consultancy provided to farmers on various aspects of animal husbandry, planning for new animal husbandry ventures etc.
6	Dairy Science College, Bengaluru	9	Analysis over and results sent
7	College of Fisheries, Mangaluru	157	Consultancy has been given to the fish farmers/entrepreneurs/general public about fish/shrimp/prawn/crab culture, ornamental fish breeding, aquatic ornamental plants propagation, preparation of fish feed, common fish diseases and their treatments etc.
8	IAH&VB, Bengaluru	135	Animal health care, project reports, technical advise
9	IWVR, Doddaluvara, Kodagu	8	As a Health advisory member to all the ZOO s and Animal camps of Karnataka Health related advice was provided.
10	LRIC, Hallikhed, Bidar	500	Scientific livestock management practices
11	LRIC, Nagamangala, Mandya	109	For 109 visitors advisory services on sheep and goat rearing
12	LRIC, Konehalli, Tumakuru	30	Consultancy was provided to the farmers regarding the fodder cultivation and animal health management etc.
13	BRIC, Dornalli, Yadgir	100	On fodder production and dairy
14	CRIC, Timmapur, Bagalkot	100	Telephonic advice to 100 people regarding Mudhol Hound Dog Rearing
15	FRIC, Hebbal, Bengaluru	340	Total of 340 farmers visited the centre and Given DPR for 180 entrepreneurs and farmers
16	FRIC, Hesaraghatta, Bengaluru	450	Total of 450 farmers and entrepreneurs visited the centre

17	FRIC, Bhutnal, Vijayapura	1863	Information about fish farming, pond construction, water quality aspects, availability of traditional feed, and preparation of value added products by fish information given through trainings, demonstrations, field days, meals, over phone
18	FRIC, Ankola, Uttar Kannada	39	Fish/shrimp/crab/Ornamental fish farming, Fish/shrimp seed availability, Tidal chart reading, Fresh water prawn culture etc.
19	Krishi Vigyan Kendra, Dakshina Kannada, Mangaluru	26463	Consultancy provided to farmers through telephone calls / Consultancy provided to farmers through advisory services / Consultancy provided to farmers through farmers field visit / News paper coverage / SMS messages / Film show / You tube video views
20	AHP, Konehalli, Tumkur	80	Advisory Service was given to the farmers on Dairy Farming, Poultry Farming, Sheep and Goat Farming, Piggery Farming and Integrated Farming System
21	AHP, Kunnur, Haveri	8	Guided farmers regarding dairy farming and sheep & goat farming
22	AHP, Koravangala, Hassan	50	Personal visits and telephonic
23	AHP, Bargi, Chamarajnar	5	Treatment for the poisoning cases
24	AHP, Doranahalli, Yadgir	50	Regarding admission, fodder production & Sheep & goat rearing
Total		34197	

11. Activities on Village/Farm Adoption

VETERINARY COLLEGE, BIDAR

Kangankot, Budhera, Kadwad, Andur and Kolar (B) are adapted for ambulatory clinical services.

Ambulatory vehicle goes to one village each day for 5 day a week.

Clinical and extension services are rendered to the farmers.

Animal health camp conducted in association with NSS in Budera village.

VETERINARY COLLEGE, GADAG

Various activities were undertaken in Sambhapur village of Gadag district by Veterinary College, Gadag to bring development of livestock. Farmers were benefited in the form of different types of trainings and demonstrations related to livestock rearing activities. Animal Health camps were conducted for the benefit of farmers.

CANINE RESEARCH AND INFORMATION CENTRE, TIMMAPUR, MUDHOL

Timmapur village was adopted to encourage the farmers to rear the Mudhol hounds.

Went for collection of puppies under revolving fund and educating the farmers regarding rearing of Mudhol Hounds (on farm training).

Mudhol Hound to Indian Army, RVC, SSB, CRPF, CISF, BSF, Air Force, etc:

06 dogs (03Male & 03 Female) were handed over by CRIC(MH), Timmapur through Veterinary College, Bengaluru (Karnataka Veterinary, Animal and Fisheries Sciences University, Bidar) to Remount Veterinary Centre and College, Meerut for feasibility trial for induction into India Military by Dr. Yathiraj, Dean, Veterinary College, Bengaluru

The dogs are successfully trained in various activities at RVC, Meerut and presently, all dogs have been posted at Shrinagar border area for feasibility trial.

4 dogs are handed over to Sashatra Seema Bhal (SSB) Rajasthan

4 dogs to the CRPF Bengaluru

1 dog to CISF, SDSC, Sriharikota, Andhra Pradesh.

4 dogs to Border Security Force, Tekanpur, Madhpradesh.

2 dogs to Forest Department, Bandipura, Karnataka.

1 dog to Police Department, Bagalkot for feasibility trial to introduce into Karnataka Police on the auspicious occasion of Republic Day from Hon'ble DCM of Karnataka Shri Govind M Karjol.

4 dogs to Air Force, Agra, UP through the hands of Hon'ble DCM of Karnataka Shri Govind M Karjol.

FISHERIES RESEARCH AND INFORMATION CENTER, HEBBAL, BENGALURU

#	Farmer and the Place	Date	Scientist involved	Remarks
1	Ms Rekha Arunachalam, Bidadi Biofloc Farm	15.10.2020	Dr Shivakumar M Dr K B Rajanna	Advised them on stocking and water quality management. 100 t production cap. project

2	Nelligudda Reservoir and Fish Seed Farm, Bidadi	15.10.2020	Dr Shivakumar M Dr K B Rajanna	Advised for late breeding of common carp
3	Tilapia Seed Production Centre, Krishnagiri, TN	17.10.2020	Dr Shivakumar M Dr Rajanna K B Mr K Adarsha	To initiate the breeding and rearing program on Tilapia
4	Taiju Joseph, Eco Factor, Sarjapur, Bengaluru	29.10.2020	IFS with vegetables and fish	Fish culture with vegetables demo unit
5	Mr Ayyappa Masagi, Water Harvesting Structures, Gowribidanur 94483 79497	31.10.2020	Dr Shivakumar M	Visited the site observed water harvesting methods in the dryland
6	Suresh, Channappana doddi, Mandya District 88849 70488	22.11.2020	Dr Shivakumar M	Fish seed farm: Suggested strategies for improving productivity of fish seed rearing
7	Sulochana Shekhar Alanalli, Mysore 98806 88666	23.11.2020	Dr Shivakumar M	Fish seed rearing: Explained about PMMSY schemes and suggested to avail the services
8	Santhosh/Srihari Gaddige, Mysore 96862 42486	23.11.2020	Dr Shivakumar M	Integrated Agri Farm: suggested for water harvesting structures and to take up aquaculture
9	Vivek Dobaspet, Tumkur 90080 08063	02.12.2020	Dr Shivakumar M	RAS Farm: There were no effective water treatment measures. Suitably suggested
10	Nagaraj Shetty Konanakunte, Bengaluru 91647 78797	03.12.2020	Dr Shivakumar M	Fish Processing Plant: Suggested to avail the benefit from PMMSY and provide service for farmers for storing their excess produce
11	Mourya Ashish Bidadi, Ramanagar	11.12.2020	Dr Shivakumar M	Visited the live fish sales outlet (Proposed) and endorsed the site for LFSO
12	Sudhakar Bharani Kanakapura, Ramanagara	11.12.2020	Dr Shivakumar M	Site proposed for BFT
13	Zenpod Fishtaurant, Bengaluru	02.01.2021	Dr Shivakumar M Mr Thippeswamy	Technically guided to for aquaponics and Koi ponds
14	Koi junction and RAS, Devanally, Bengaluru	09.01.2021	Dr Shivakumar M Dr Rajanna K B Dr Manjappa Dr Harsha Nayak	Visited the site and suitably suggested
15	Kolar, KGF	10.02.2021	Dr Shivakumar M Dr C S Anantha	Visited RAS, BFT and Tilapia farm in Kolar district

16	Sri Bhagyalakshmi Farms	16.03.2021	Dr Shivakumar M Dr Rajanna K B Dr Manjappa Dr Harsha Nayak	Visited hi.tech agri farms in an area of 150 acres where they produce 150+ aquatic plants in greenhouse and 60+ on TCL
17	BFT Farm, Bidadi	29.03.2021	Dr Shivakumar M	Visited the farm to educate them on stocking and floc maintenance

FISHERIES RESEARCH AND INFORMATION CENTER, HEBBAL, HESSARGHATTA

#	<i>Farmer and the Place</i>	<i>Date</i>	<i>Scientist involved</i>	<i>Remarks</i>
1	Koi Junction and RAS, Devanally, Bengaluru	09.01.2021	Dr Shivakumar M Dr Rajanna K B Dr Manjappa Dr Harsha Nayak	Visited the site and suitably suggested
2	Sri Bhagyalakshmi Farms	16.03.2021	Dr Shivakumar M Dr Rajanna K B Dr Manjappa Dr Harsha Nayak	Visited hi.tech agri farms in an area of 150 acres where they produce 150+ aquatic plants in greenhouse and 60+ on TCL

KRISHI VIGYAN KENDRA, DAKSHINA KANNADA, MANGALURU

#	<i>Title of the OFT</i>	<i>No. of Trials</i>	<i>Area (ha.)</i>	<i>Villages</i>	<i>Taluk</i>
1	Assessment of decomposing culture for compost preparation	05	.	Thenkakaranduru	Blethangady
2	Assessment of pruning time in Udupi Jasmine (10 plants per technology)	03	1.0	Punacha	Bantwal Taluk
3	Assessment of spindle.bug in Arecanut (50 plants per technology)	03	,	Balnadu	Puttur
4	Assessment of leaf folder management in paddy during rabi	03	1.0	Nada gram	Bantwal Taluk
5	Assessment of growth performance of genetically improved jayanti rohu and Labeo fimbriatus with major carps	05	0.6	Belvayi, Odduru, Yekkar, Sarpadi, Ajjavra, Hosabettu, Badagavara	Mangaluru & Sullya

Front Line Demonstration (FLDs) Implemented:

#	<i>Title of the FLDs</i>	<i>No. of Demonstrations</i>	<i>Area (ha.)</i>	<i>Villages</i>	<i>Taluk</i>
1	Nutrient management in paddy	5	2.00	Kirenje, Punachapady	Puttur Taluk
2	Sahydri Panchamukhi paddy variety for low lands in Dakshina Kannada	5	2.00	Kutthethuru, Delenthabettu	Mangaluru Taluk
3	Cowpea var. Sahydri Yukthi in paddy fallows	5	2.00	Kuppepadavu	Bantwal Taluk
4	Shade tolerant guinea grass in coconut plantation	10	0.40	Mulki, Kilpady	Mangaluru Taluk
5	Integrated crop management in arecanut	5	1.00	Ajjavara	Sullia Taluk
6	Integrated crop management in brinjal	10	1.00	Balnadu	Puttur
7	Yard long bean variety Arka Mangala	10	1.00	Ajjavara	Sullia Taluk
8	Wilt management in betel vine	5	1.00	Peruvai	Bantwal
9	Eco.friendly pest management in paddy	5	2.00	Belalu	Belthangady
10	Integrated crop management in pepper	10	1.00	Nyayatharpu,	Belthangady
11	Management of red palm weevil in arecanut	10	2.00	Kukkedi,	Belthangady
12	Composite fish culture of carps with Pangasius sutchi	5	0.50	Chelur, Permanki, Manila, Ajjavara, Kondana, Hosabettu	Mangaluru, Sullya
13	Monoculture of Amur common carp in farm ponds	5	0.25	Belvayi, Panapila, Mundoor, Arambooru	Mangaluru, Moodabidre

ANIMAL HUSBANDRY POLYTECHNIC, KONEHALLI, TUMKUR

A Socio-economic survey was conducted at different villages of Tiptur Taluk by the Diploma students of Animal Husbandry Polytechnic as a part of their curriculum and Extension work of AHP Konehalli.

Treated ailing animals of the surrounding villages of the Institution.

Advisory services were given on clean milk production to the farmers of the surrounding villages.

12. Distinguished Visitors to the Institutes

#	Name, Designation and Institute	Date	Purpose
VETERINARY COLLEGE, BIDAR			
1	Sri. Bandeppa Khashempur MLA (Bidar South)	19.07.2020	COVID-19 Quarantine facility at VCB
2	Shree Dodddayya, Hon'ble Board Member, KVAFSU, Bidar	04.09.2020	Departmental visit
3	Dr. Rudresh Ghali, Dy. Commissioner (Addl), Bidar	13.11.2020	37 th Foundation Day of Veterinary College, Bidar
4	Dr. Gopal M Bhyakod, Addl. Superintendent of Police (SP) (Addl.) Bidar	13.11.2020	37 th Foundation Day of Veterinary College Bidar
5	Dr. Rudresh Ghali, Dy. Commissioner (Addl), Bidar	27.02.2021	Technical Workshop – 2020 to the Veterinary Officers at Veterinary College, Bidar
6	Sri. Anant Hegade Asiras Chairman, Karnataka Biodiveristy Boad, Bengaluru	08.03.2021	Conversation with the teachers and office of the University
VETERINARY COLLEGE,GADAG			
1	Sri Prabhu Chavan, Hon,ble minister, Dept. Of Animal Husbandry, GOK	20.11.2020	To review progress of college activities and development
LIVESTOCK RESEARCH AND INFORMATION CENTER, KONEHALLI			
1	Dr. Shankar, Scientist,KVK Tiptur	09.02.2021	To discuss about DAESI programme and classes for input dealers
2	Dr. H.M. Mahesh Assistant Diretor, Veterinary Hospital, Gubbi	02.03.2021	Accompanied farmers for exposure visit LRIC(A) and Know its activities
3	Dr. Sudhakar M.L. Assistant Diretor Veterinary Hospital, Nittur	02.03.2021	Accompanied farmers for exposure visit LRIC(A) and Know its activities
4	Kurthika S Kumar Assistant Professor, KIT, Tiptur	10.03.2021	To arrange workshop on entrepreneurship
CANINE RESEARCH and INFORMATION CENTER, TIMMAPUR			
1	Superintendent of Police, Police Department, Bagalkot	18.01.2021	Casual visit and to purchase MH puppies for induction into police force, Karnataka
2	Hon'ble Shri Govind M Karjol, DCM, Government of Karnataka	18.02.2021	Handing over MH pups programme to Air Force, Agra, UP
3	Police Department, Maharashtra	March, 2021	Casual visit to look after the puppies for purchase purpose.
FISHERIES RESEARCH AND INFORMATION CENTER, HEBBAL, BENGALURU			
1	Sri Deepak Doddaiiah Member, BoM, KVAFSU	02.09.2020	To see the activities of FRIC, Hebbal
2	Dr Ramesh, Director, EMIRI Bengaluru	10.10.2020	To discuss about collaboration with FRIC, Hebbal
3	Sri Bhojya Naik Member, BoM, KVAFSU	09.04.2021	To see the activities of FRIC, Hebbal

FISHERIES RESEARCH AND INFORMATION CENTER, HESARAGHATTA			
1	Shree Deepak Doddayya Honorable board member, Board of management, KVAFSU, Bidar	01.09.2020	Official Visit
2	Shree Shreedhar BC Principal VVHS	20.02.2021	To see the activities FRIC, Hesaraghatta
3	Dr. H.S. Shivanandmurthy Former Registrar, Director of Extension and Dean, KVAFSU, Bidar	01.03.2021	To see the activities FRIC, Hesaraghatta
FISHERIES RESEARCH AND INFORMATION CENTER, BHUTNAL, VIJAYAPURA			
1	Dr. S. I Hanumashetty, Rtd. Dean, College of Horticulture, Arabhavi Shri. Shrishail Gangnalli , Senior Assistant Director, Department of Fisheries, Vijayapur Shri. Sharngouda Biradar Assistant Director of Fisheries Narayanpur. Dr. Santhosh Sinde, Sr. Scientist KVK Indi Dr. Sangitha Jadhav, Sr. Scientist KVK Hittnahalli, Vijayapur	10.07.2020	Participated as a Chief Guest and Guests Conducted one day training programme on “Sustainable fish farming” on the occasion of “National fish farmers day”
2	Dr. Dinesh Kaller, Joint Director, office of Directorate Fisheries, Bengaluru. Shri. Shrishail Gangnalli , Senior Assistant Director, Department of Fisheries, Vijayapur . Shri. Sharngouda Biradar Assistant Director of Fisheries Narayanpur	20.02.2021	Visited and seen the various activities taken by the Scientist especially maintenance of Amur Carp breeding and plan for this unit as centre for Amur carp seed production
FISHERIES RESEARCH AND INFORMATION CENTER, ANKOLA			
1	Miss. Renita D’souza Asst. Director of Fisheries (G.II), Dept. of Fisheries, Ankola	10.07.2020 05.02.2021	1. Visited the center as Chief guest for Fish Farmer’s day celebration. 2. Trainees exposure visit
2	Mr. Ganapathi Bhat Director Manuvikasa, Sirsi	12.11.2020 01.12.2020	Farm Visit in connection with training programmes. Visited the center to discuss about fish farming in paddy field.
3	Mr. Sanjeev V. Kulakarni Chief Operating Officer Manuvikasa, Sirsi	12.11.2020	Farm Visit in connection with training programmes.
4	Mr. Rejis Emmanuel KS DDM, NABARD	12.11.2020 05.12.2020	Visited the center to discuss about training programmes. Farm Visit in connection with NABARD project.

5	Mr. Doddabasappa G. Hadimani Fisheries Supervisor Dept. of Fisheries, Yellapura	01.12.2020	Fish farmers (28 nos.) tour and farm visit for training programme
6	Dr. Krishnamurthy Hegde Veterinary Assistant Director, Veterinary Hospital, Ankola	07.12.2020	Visit in connection with training programme organizing
7	Mr. Lingesh Manager, KFDC Gokarna, Tadri	11.12.2020	Farm visit
8	Fish Farmers (28 nos.) Haliyal Taluk Uttara Kannada District	01.12.2020	Farm visit for training programme under "ATMA" project, Dept. of Fisheries, Haliyal
9	Mr. Harish Kumar Senior Deputy Director of Fisheries Mangaluru	17.12.2020	Farm visit
10	Mr. Manjunath D.K Block Technology Manager ATMA, Karwar	29.01.2021	Farmers exposure visit to Shrimp/Fish farm (Farmers: 50 Nos.)
11	Dr. Shivakumar Haragi Dept. of Marine Biology Karnataka University P.G. Center, Karwar	12.02.2021	PG students (30 nos.) exposure visit

KRISHI VIGYAN KENDRA, MANAGALURU

1	Dr. Selvamani R, IAS CEO, Zilla Panchayath, D.K.	01.06.2020	Discussion about spotted coffee grass hopper identification and management
2	Dr. Selvamani R, IAS CEO, Zilla Panchayath, D.K.	03.06.2020	Diagnostic visit to coffee grass hopper infested area
3	Shri. Nincent D'Souza, Designate Director, Canara Organization for Development and Peace (R), CODP,(NGO) Kadri Hills, Padna, Nanthore, Mangaluru	30.06.2020	Organizing collaborative programmes
4	Shri. Raghuveer S. Univ, Director Youth Coordinator, NYKS, UNDP	10.07.2020	Organising collaborative programmes
5	Mr. Deepak, Honourable Member of Board of Management KVAFSU, Bidar	28.09.2020	Review of ongoing activities of KVK, Dakshina Kannada
6	Dr. Lakshman, ADR, ZAHRS, Brahmavar	27.10.2020	To visit farm trials plots at KVK farm
7	Sri. Rajesh Daddangadi, Press Reporter, Mangaluru Division, DD Chandana, Bengaluru	06.11.2020	To collect the information on new variety of paddy . Sahyadri Panchamukhi
8	Dr. Lakshman, ADR, ZAHRS, Brahmavar	09.11.2020	Paddy field day (Sayhadri Panchamukhi) celebration
9	Dr. Rajanna, Principal Investigator, AINP on Soil Arthropod Pest, GKV, Bengaluru	17.12.2020	Conducted training cum demonstration on management of areca white grub at Nandila village in collaboration with AINP Soil Arthropods UAS GKV,

			Bengaluru
10	Dr. V. Venkatasubramanian, Director, ICAR.ATARI, Bengaluru	23.01.2021	Participation in XI th SAC meeting
11	Dr. Venkataraman Bhat P., Professor and Head, CS & Engg. Department, MITE, Moodbire	05.02.2021	To have MOU with KVK, DK, Mangaluru
12	Smt. Veena Mangala W/o. Praveen Kumar Corporator, Bhuvani Nilaya, Bajal Post, Jappina Moger, Mangaluru	05.02.2021	To collect the information on mushroom cultivation for motivating SHGs
13	E. Aravazhi Director, Coconut Development Board, RO. Bengaluru	27.03.2021	Valedictory function of sponsored FoCT Programme
ANIMAL HUSBANDRY POLYTECHNIC, SHIGGAON			
1	Mr. Shivanand. Pujar RFO Dundsi	05.06.2020	To celebrate world environmental day in association with AHP Kunnur
ANIMAL HUSBANDRY POLYTECHNIC, BARGI			
1	District Commissioner, Chamarajanagar District,	15.12.2020	To see the Bargi campus and discussed the regarding the handover of the land for establishment of the Animal Husbandry Polytechnic at Bargi, Gundulpet
2	Sri. B.C Patil., Minister of the Agriculture, Government of Karnataka	23.01.2021	To see the Bargi campus and discussed regarding the importance of the Animal Husbandry Polytechnic.
3	Sri. Niranjan Kumar, MLA and Director for Forest and Geology, Government of Karnataka	23.01.2021	To see the Bargi campus and discussed regarding the importance of the Animal Husbandry Polytechnic
4	Commissioner, Department of Animal Husbandry, Government of Karnataka	08.04.2021	To discuss the land required for the establishment of the Animal Husbandry Polytechnic, Bargi
5	Respected Vice-Chancellor, Karnataka Veterinary Animal and Fisheries Sciences University, Bidar	13.03.2021 and 01.07.2021	To discuss the land required for the establishment of the Animal Husbandry Polytechnic, Bargi, Gundulpet

13. Important decisions taken during 15th Extension Education Council Meeting held on 30.12.2020 at Bengaluru

Proceedings:

1. Mr. C.V. Lokesh Gowda, Progressive Farmer opined that COVID-19 pandemic has attracted small farmers and youth towards animal husbandry enterprises for their livelihood security. In this regard, the University shall make prompt efforts to provide technical information and services to farmers.
2. Mr. Sunny D'Souza, Progressive Shrimp Farmer suggested to give more emphasis on shrimp farming. In this regard he suggested to use low fertile lands with suitable soil treatment based on mineral profile of soil.
3. Dr. G.S. Nagaraja, Professor, UAS, Bengaluru emphasized to establish seed production along with FLDs at KVK-Dakshina Kannada. He also suggested to educate farmers regarding farm bill, agri-portal, mobile applications and to publish success stories of farmers in local language.
4. Prof. H.D. Narayanaswamy, Hon'ble Vice-Chancellor suggested to conduct awareness programmes on zoonotic diseases.
5. Prof. H.D. Narayanaswamy, Hon'ble Vice-Chancellor indicated to conduct online training programmes on 'Value added dairy products'.
6. Prof. H.D. Narayanaswamy, Hon'ble Vice-Chancellor directed the scientists and staff of all the constituent institutes of the University to enclose the documentary proofs of radio, TV programmes, awards and achievements while communicating extension activities to the Directorate of Extension.
7. Prof. H.D. Narayanaswamy, Hon'ble Vice-Chancellor suggested to conduct the next EEC meeting in Kannada.

1. Research Papers

IV. PUBLICATIONS

i) International Publications

a) In Journals

#	<i>Authors, Year of publication, Title of the paper and Journal</i>
VETERINARY COLLEGE, HEBBAL, BENGALURU	
1	Praveen, V., Narayana Swamy, M., Kalmath, G.P., Vinuthan, M.K., Narasimhamurthy, Bellur, S.R. and Sathisha, K.B., 2020. Biochemical Components of Milk during early lactation in Amruth Mahal, Holstein Friesian crossbred and Jersey crossbred Cows. <i>Journal of Entomology and Zoology Studies</i> , 8(3):123-125.
2	Sathisha, K.B., Narayana Swamy, M., Kalmath, G.P., Shrikant Kulkarni, Ramesh, P.T., Satyanarayana, M.L. and Sudha, G., 2020. Metabolic hormonal and serum electrolyte profile of mandya sheep during summer stress upon dietary supplementation of antioxidants. <i>Journal of Entomology and Zoology Studies</i> , 8(5):408-411.
3	Savitha, S.T., Girish Kumar, V., Rashamol, V.P., Sejian, V., Bagath, M., Krishnan, G., Devaraj, C. and Bhatta, R., 2020. Quantitative analysis of expression patterns of different cell surface Toll-like receptor genes imparting heat stress resilience to indigenous Osmanabadi and Salem Black goat breeds. <i>J Anim Behav Biometeorol.</i> , 8:25-31. Published by Brazilian Society of Biometeorology., Brazil.
4	B. Deepthi, D. Rathnamma, R.N. Ramani Pushpa, Shrikrishna Isloor, B.M. Veeregowda and M.L. Satyanarayana, 2020. Molecular and biological characterization of a vaccine – derived Avian Avulavirus Type 1 isolated from an unvaccinated Goose. <i>Int. J. Cur. Microbiol. App. Sci.</i> , 9(9):277-285.
5	S.P. Veera, D. Rathnamma, Buddhe Ekambaram, S.B. Prasanna, Y. Kankarne, K. Srinivas and Suprita Sinha, 2020. Immunogenicity and safety of a Classical Swine Fever Vaccine in Pigs. <i>International Journal of Livestock Research</i> , 10(6):127-131.
6	Chetana, D., Praveen, P., Nagesh, B.V., Shruthi, S. Iyengar, Sarbari Bhattacharya, B.M. Veeregowda and Sharath Ananthamurthy, 2020. Reorientation dynamics and micromanipulation of natural microscopic soft matter in an optical trap with varying polarization of the laaser. <i>American Institute of Physics</i> , 2265(1):300-301.
7	Andrew, D. Gibson, Ryan, M. Wallace, Abdul Rahman, Omesh, K. Bharti, Shrikrishna Isloor, Frederic Lohr, Luke Gamble, Richard, J. Mellanby, Alasdair King and Michael, J. Day, 2020. Reviewing Solutions of Scale for Canine Rabies Elimination in India. <i>Tropical Medicine and Infectious Disease</i> , 5(47):1-21.
8	Sheela, P., Shekar, M., Isloor, S., Rathnamma, D., Veeregowda, B.M., Satyanarayana, M.L., Sundareshan, S., Shambulingappa, B.E. and Hegde, N.R., 2021. Randomly amplified polymorphic DNA analysis of <i>Staphylococcus chromogenes</i> isolated from bovine and bubaline mastitis in Karnataka. <i>Veterinary World</i> , 14(1):285-291.
9	B.R. Sumathi, B.M. Veeregowda, S.M. Byregowda, D. Rathnamma, S. Rajeswari, S. Isloor, M. Sobharani, M.D. Venkatesha and H.D. Narayanaswamy, 2021. Construction of <i>Brucella melitensis</i> ghost as a putative vaccine candidate against re-emerging disease – Brucellosis. <i>International Journal of Infectious Diseases</i> , 101(S1):464–486.
10	Anjan Kumar, K.R., Satyanarayana, M.L., Naryanaswamy, H.D., Suguna Rao, Prakash Nadoor and Ramesh, P.T., 2020. Anticholesterolemic, Antiriglyceridemic and Antioxidant activity effect of Umbelliferone (Coumarin) in Streptozotocin treated diabetic rats. <i>International Journal of Current Microbiology and Applied Sciences</i> , 9(9):1-13.
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INSTITUTE OF ANIMAL HEALTH AND VETERINARY BIOLOGICALS, BENGALURU

1	Ganesh Hegde, S. Subapriya and S. Vairamuthu, 2021. Update on microbial profile and drug sensitivity of canine otitis, <i>The Pharma Innovation Journal</i> , 10(3):549-551.
2	K. Nagaraja, Jagadeesh, S. Sanganal, S.M. Byregowda, N.B. Shridhar, U. Sunilchandra, B.M. Chandranaik, A. Murugeppa, M.L. Satyanarayana and Chandrashekarmurthy, 2020. Efficacy of dexamethazone with reserpine and dexamethazone with metoclopramide combination on rate of conception and number of artificial insemination required for pregnancy in artificially induced crossbred repeat breeder animals. <i>The Pharma Innovation Journal</i> , 9(7):32-35.
3	K. Nagaraja, Jagadeesh, S. Sanganal, S.M. Byregowda, N.B. Shridhar, U. Sunilchandra, A. Murugeppa, M.L. Satyanarayana and V. Chandrashekaramurthy, 2020. Assessment of conception rate and number of artificial insemination required for pregnancy in artificially induced crossbred repeat breeder animals by using reserpine and dexamethasone. <i>The Pharma Innovation Journal</i> , 9(7):132-135.

LIVESTOCK RESEARCH AND INFORMATION CENTER, NAGAMANGALA

1	Chandrashekar, Kukarni, S., Sathisha, K.B., Reddy, I.J., Vinay, P.T., Bllur, S., Birader, S. and Kartikesh, S.M., 2020. Seasonal Variation in Serum Biochemical, Electrolyte and Hormonal Profile of Deoni Cattle. <i>International Journal of Livestock Research</i> , 10(7):35.
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LIVESTOCK RESEARCH AND INFORMATION CENTER, KONNEHALLI

1	Shenoy, H., 2020. Effect of neem cake urea mixed application on growth and yield of rice under submerged condition. <i>International Journal of Current Microbiology and Applied Sciences</i> , 9(04):2224-2229.
2	Shenoy, H., 2020. Soil fertility status and productivity of rice as influenced by neem cake urea mixed application. <i>Journal of Pharmacognosy and Phytochemistry</i> , SP6:102-106.
3	Shenoy, H. and Siddaraju, M.N., 2020. Integrated Nitrogen Management in Rice crop through organic and inorganic sources. <i>International Journal of Current Microbiology and Applied Sciences</i> , 9(9):2297-2304.
4	Shenoy, H. and Siddaraju, M.N., 2020. Effect of integrated nitrogen management through organic and inorganic sources on yield of rice (<i>Oryza sativa</i> L) and status of soil fertility at harvest. <i>Journal of Applied and Natural Science</i> , 12(4):721-727.

FISHERIES RESEARCH AND INFORMATION CENTER, HEBBAL

1	Adarsha, H.S., Chethan, N., D.C. Chougala, Prabhudeva, K.N. and Rajanna, K.B., 2020. Amur Common Carp - A Good Alternative to Local Common Carp in Farm Ponds of Belagavi, Karnataka. <i>Journal of Krishi Vigyan</i> , 9:1-5, ISSN-2319-6432.
2	Chethan, N., Prabhudeva, K.N., Rajanna, K.B. and Adarsha, H.S., 2020. Impact of Water Quality on Production and Productivity in Bellandur Lake, Karnataka. <i>Journal of Krishi Vigyan</i> , 9:179-188, ISSN-2319-6432.

FISHERIES RESEARCH AND INFORMAITON CENTER, HESARGHATTA	
1	V. Manivasagan, Ravindragouda Patil, S. Prabahar Jerik, V. Praveen Kumar, M. Yesl in Pushan and N.G. Ramesh Babu, 2021. Studies on the molecular taxonomy of three cichlid species of fin fish - <i>Oreochromis mossambicus</i> (Peters, 1852), <i>Oreochromis niloticus niloticus</i> (Linnaeus, 1758) and <i>Labidochromis caeruleus</i> (Fryer, 1956). <i>Global Journal of Bioscience and Biotechnology</i> , 10(1):7-13.
2	K. Saranya, Ravindragouda Patil, K. Gopi, C. Libin Raj, S. Mani Sreethaar and N.G. Ramesh Babu, 2021. Molecular Systematic Investigations of Three Fin Fish Cichlid Species of <i>Oreochromis niloticus</i> (Nile Tilapia), <i>Oreochromis niloticus niloticus</i> (GIFT strain) and <i>Astronotus ocellatus</i> (Oscar Cichlid). <i>Int. J. of Advanced Biological Research</i> , 11(1):6-12.
FISHERIES RESEARCH AND INFORMAITON CENTER, BHUTHNAL	
1	Vijay Atnur, Vijayakumar, S. and Muttappa Khavi, 2021. Assessment of white spot syndrome virus (WSSV) prevalence along the west coast of India. <i>Journal of Entomology and Zoology Studies</i> , 9(1):524-527.
KRISHI VIGYAN KENDRA, DAKSHINA KANNADA, MANGALURU	
1	Aishwarya, P., Rangaswamy, K.T., Basavaraju, S., Raghavendra Achari, Kedarnath Govin, Rudraswamy, K.P. and Prameela, H.A., 2020. Evaluation of the Seed-borne Nature of Bean Common Mosaic Virus (BCMV) in Cowpea. <i>Int.J.Curr.Microbiol.App.Sci.</i> , 9(11):239-245.
ANIMAL HUSBANDRY POLYTECHNIC, KORAVANGALA -HASSAN	
1	Suhas Suresh, Sahadev Annayappa, Narasimhamurthy, Narayana Swamy Muniyappa, Guruprasad Rachaiah, Santhosh Chikkaankadahalli Ramachandra, Suchitra Bidare Raju and Rashmi Srinivas, 2021, Reproductive parameters of Hassan breed of ewes under controlled reproduction. <i>The Pharma Innovation Journal</i> , 10(3S):222-224.
2	Suhas Suresh, Sahadev Annayappa, Narasimhamurthy, Narayana Swamy Muniyappa, Guruprasad Rachaiah, Santhosh Chikkaankadahalli Ramachandra, Suchitra Bidare Raju and Rashmi Srinivas, 2021. Relative efficacy of short term progestagen and PGF2 α with PMSG or GnRH or both on estrus synchronization in Hassan breed of ewes. <i>The Pharma Innovation Journal</i> , 10(5S):790-793.

b) In Conferences / Seminars / Symposia / Workshops etc.,

#	Year / Authors / Title of Paper/ Conference
VETERINARY COLLEGE, BENGALURU	
1	Sheela, P., Shrikrishna Isloor, Sundareshan, S., Rathnamma, D. and Nagendra, R. Hegde, 2020. Determination of the genetic diversity of mastitic <i>Staphylococcus aureus</i> isolates using multi-locus sequence typing as a molecular epidemiological tool' (Sheela P., Ph.D. scholar awarded Best E- Poster award). <i>International Webinar on 'One-Health Perspectives of Antimicrobial Resistance & E-Poster competition' organized by KVAFSU, Bidar and Indian Association of Veterinary Public Health Specialists on 4th September, 2020.</i>
2	B. Deepthi, D. Ratnamma, R.N. Ramani Pushpa, Shrikrishna Isloor, B.M. Veeregowda, M.L. Satyanarayana, 2020. Molecular characterization of Avian Avulavirus Type 1 isolated from an Apparently healthy rock pigeon. (Deepthi B Ph.D. scholar awarded <i>First prize for Poster presentation. Virtual International Conference on New generation vaccines and animal disease control strategies : roadmap for enhancement of Animal and Human Health</i> “ organized by Dept. of Veterinary Microbiology, Veterinary College and Research Institute, Orathanadu, Tamilnadu and Dept. of Veterinary Microbiology, College of veterinary and Animal Sciences, Pookode, Kerala during 02.12.2020 to 04.12.2020.
3	Sateesha, G.M., Nagaraja, R., Yathish, H.M., Sahadev, A., Jayashree, R., Kotresh, A.M. and Naveenkumar, S., 2021. Molecular Characterization and Expression Profile of Partial TLR2 Gene in Malnad Gidda Cattle. Poster presentation in <i>Virtual International Conference on Promising Genetic and Genomic Technologies - Frontier in Selection and Animal Improvement jointly organized by Dept. of AGB, VCRI, Orathanadu and Dept. of AGB, COVAS, Pookode, held during January 27-28, 2021.</i>
4	Chetan, K.P., Gowda, N.K.S., Prabhu, T. M. and Bharati, K., 2021. Effect of feeding maize grain (<i>Zea mays</i>) sprouts grown in hydroponic technology on intake, nutrient utilization and growth in sheep. <i>100 years of Animal Nutrition Research in India, Izatnagar -243 122 (UP), March 11-12, 2021.</i>
5	Sateesha, G.M., Nagaraja, R., Yathish, H.M., Sahadev, A., Jayashree, R., Kotresh, A.M. and Naveenkumar, S., 2021. Molecular Characterization and Expression Profile of Partial TLR2 Gene in Malnad Gidda Cattle. <i>In: Virtual International Conference on Promising Genetic and Genomic Technologies - Frontier in Selection and Animal Improvement jointly organized by Dept. of AGB, VCRI, Orathanadu and Dept. of AGB, COVAS, Pookode from January 27-28, 2021.</i>
6	M.G. Prasad, S. Wilfred Ruban, M. Kiran and R. Prabha, 2020. Unraveling Antioxidant and Antimicrobial Properties of Pomelo Fruit Extract (<i>Citrus Maxima</i>) on Goat Meat. <i>In the Virtual International Conference on Livestock Products & Food Safety: Realities & Imperatives for Global Health organized by Department of Livestock Products Technology, Veterinary College and Research Institute, Orathanadu (TANUVAS) & Department of Livestock Products Technology, Veterinary College, Hebbal, Bangalore (KVAFSU) from 24th, 25th & 30th November, 2020, Pp14.</i>
7	S. Wilfred Ruban, R. Narendra Babu, K. Porteen, P. Kumaraswamy, T.M.A. Senthil Kumar and V. Appa Rao, 2020. PCR Based Detection of Community Associated and Livestock Associated Methicillin Resistant <i>S. Aureus</i> (MRSA) Isolated From Retail Meat in Chennai. <i>In the Virtual International Conference on Livestock Products & Food Safety: Realities & Imperatives for Global Health organized by Department of Livestock Products Technology, Veterinary College and Research Institute, Orathanadu (TANUVAS) & Department of Livestock Products Technology, Veterinary College, Hebbal, Bangalore (KVAFSU) from 24th, 25th & 30th November, 2020, Pp20.</i>

8	Rajesh, S, Md. Nadeem Fairoze, S. Wilfred Ruban and Mohan, H.V., 2020. “Phylogenetic Study of Anti-Microbial Resistant (ESBL) <i>E. coli</i> in Retail Chicken Meat Samples of Bengaluru” in the Virtual International Conference on Livestock Products & Food Safety: Realities & Imperatives for Global Health organized by Department of Livestock Products Technology, Veterinary College and Research Institute, Orathanadu (TANUVAS) & Department of Livestock Products Technology, Veterinary College, Hebbal, Bangalore (KVAFSU) from 24 th , 25 th & 30 th November, 2020, Pp23.
9	Chinta Siva Swetha, Porteen Kannan, Elango A., Ronald, B.S.M., Senthil Kumar, T.M.A., Wilfred Ruban, S., Arun Prince Milton and Suresh Kannan Sundaram, 2020. “Genetic Diversity, Virulence and Distribution of Antimicrobial Resistance among <i>L. monocytogenes</i> Isolated from Bovine Farm Settings” in the Virtual International Conference on Livestock Products & Food Safety: Realities & Imperatives for Global Health organized by Department of Livestock Products Technology, Veterinary College and Research Institute, Orathanadu (TANUVAS) & Department of Livestock Products Technology, Veterinary College, Hebbal, Bangalore (KVAFSU) from 24 th , 25 th & 30 th November, 2020, Pp32.
10	Deepak, S.J., Porteen, K., Wilfred Ruban, Elango A., Senthil Kumar, T.M.A., Narendra Babu, R., and S. Suresh Kannan, 2020. “Bacteriophage as the Novel Biocontrol Agent to Combat Antimicrobial Resistant <i>Staphylococcus Aureus</i> in Food System” in the Virtual International Conference on Livestock Products & Food Safety: Realities & Imperatives for Global Health organized by Department of Livestock Products Technology, Veterinary College and Research Institute, Orathanadu (TANUVAS) & Department of Livestock Products Technology, Veterinary College, Hebbal, Bangalore (KVAFSU) from 24 th , 25 th & 30 th November, 2020, Pp33.
11	S.N. Niveditha, S. Wilfred Ruban, Srikrishna Isloor, Namratha, Naseem, Chandra Priya, 2020. “Occurrence and Antimicrobial Resistance in <i>E. coli</i> in Broiler Production Chain: A Farm to Fork Initiative” in the Virtual International Conference on Livestock Products & Food Safety: Realities & Imperatives for Global Health organized by Department of Livestock Products Technology, Veterinary College and Research Institute, Orathanadu (TANUVAS) & Department of Livestock Products Technology, Veterinary College, Hebbal, Bangalore (KVAFSU) from 24 th , 25 th & 30 th November, 2020, Pp38.
12	K. Namratha, S. Wilfred Ruban, Srikrishna Isloor, S.N. Niveditha, Naseem and Chandra Priya, 2020. “Occurrence and Antimicrobial Resistance in <i>Salmonella</i> in Broiler Production Chain: A Farm to Fork Initiative” in the Virtual International Conference on Livestock Products & Food Safety: Realities & Imperatives for Global Health organized by Department of Livestock Products Technology, Veterinary College and Research Institute, Orathanadu (TANUVAS) & Department of Livestock Products Technology, Veterinary College, Hebbal, Bangalore (KVAFSU) from 24 th , 25 th & 30 th November, 2020, Pp41.
13	P.V. Spandan, S. Wilfred Ruban, V. Sejian, S. Naveen Kumar, C. Devaraj, M. Bagath, G. Krishnan, M.R. Reshma Nair, M.V. Shilpa and R. Bhatta, 2020. “Impact of Heat Stress on Meat Quality Characteristics in Kanni Aadu Goat” in the Virtual International Conference on Livestock Products & Food Safety: Realities & Imperatives for Global Health organized by Department of Livestock Products Technology, Veterinary College and Research Institute, Orathanadu (TANUVAS) & Department of Livestock Products Technology, Veterinary College, Hebbal, Bangalore (KVAFSU) from 24 th , 25 th & 30 th November, 2020, Pp67.
14	Vishwas, K.M., Krishnamurthy T.N., H.C. Indresh, Jayanaik and Wilfred Ruban, 2020. “Effect of Feeding Neem, Ginger and Garlic Powder on Cholesterol Content of Egg” in the Virtual International Conference on Livestock Products & Food Safety: Realities & Imperatives for Global Health organized by Department of Livestock Products Technology, Veterinary College and Research Institute, Orathanadu (TANUVAS) & Department of Livestock Products Technology, Veterinary College, Hebbal, Bangalore (KVAFSU) from 24 th , 25 th & 30 th November, 2020, Pp76.

VETERINARY COLLEGE, BIDAR

1	Kasarialikar, V.R., 2020. Metabolic disorders with special reference to Bovine Ketosis and Sub-acute Lactic Acidosis. International On-line Training cum workshop on Advances in diagnosis and medical management of farm animal diseases held at PGI, Akola (MAFSU), during Nov 25 th – Dec 1, 2020. Pp103-108.
2	Kasarialikar, V.R., 2021. Metabolic disorders with special reference to Bovine Ketosis and Sub-acute Lactic Acidosis. International On-line Training cum workshop on Advances in small ruminant disease diagnostics, therapeutics and control measures. PGI, Akola (MAFSU), Feb 23 rd –27 th , 2021.
3	Rajendra Kumar, T. and Naik, D.T., 2020. Traumatic injury with dog bite in a black buck. Wildcon souvenir and abstracts, Pp70-71.
4	Naik, D.T. and Rajendra Kumar, T., 2020. Post mortem incidence of various pathological entities in rabbits in and around Bidar district. Online 37 th Annual conference of Veterinary Pathology, 26-29 th Dec-2020. Pp40.
5	Annarao Patil, Rajendra Kumar, T., Naik, D.T. and Sandeep Halmandge, 2020. Moneziasis in osamanbadi goat and their management in flock. Online 37 th Annual conference of Veterinary Pathology, 26-29 th Dec-2020, Pp103-104.
6	Rajendra Kumar, T., Naik, D.T., Sandeep Halamandagi and Vidyasagar, 2020. Outbreak of coccidiosis in giriraj poultry farm and their management. Online 37 th Annual conference of Veterinary Pathology, 26-29 th Dec-2020, Pp116.
7	Rajendra Kumar, T, Suguna Rao, Satyanarayana, M.L., Narayanaswamy, H.D., Byregowda S.M. and Shridhar, N.B., 2020. Hepatoprotective effect of Andrographis paniculata against oxidative damage caused by cisplatin in rats. Online 37 th Annual conference of Veterinary Pathology, 26-29 th Dec-2020. Pp42.

VETERINARY COLLEGE, SHIVAMOGGA

1	Sujay Suresh, Nikita Salian, Suresh Patel, Ravi Raidurg and Tista Joseph, 2020. Acute Respiratory Distress Syndrome (ARDS) in captive tiger with treatment and management. Online International Conference Wildcon 2020, Pp62.
2	R. Jayashree, 2020, “Importance of community participation in breed conservation” in International e-conference “Present and future trends in conservation and Breeding technologies to enhance production in indigenous animals” organized by Dept. of AGB, VCRI, Tirunelveli, TANUVAS, on 2 nd Dec 2020, Pp75-96.
3	Manjunatha, S.S., Kavitha Rani, B., Jayaramu, G.M. and Vinay, S., 2020. Bullet shot injury and death in a Leopard (<i>Panthera pardus</i>). Souvenir of Online International Conference: Wildcon-2020 organized by Wildlife Research & Training Centre, Gorewada, Nagpur, MAFSU from 18-20 December 2020. Pp97.
4	Manjunatha, S.S., Jayaramu, G.M., Kavitha Rani, B. and Vinay, S., 2020. Forensic investigation of an elephant died due to electrocution. Souvenir of Online International Conference: Wildcon-2020 organized by Wildlife Research and Training Centre, Gorewada, Nagpur, MAFSU from 18-20 December 2020. Pp220.
5	Manjunatha, S.S., Kavitha Rani, B., Jayaramu, G.M., Kiran H. J. and Vinay, S., 2020. Post mortem investigation of deaths in wild boars at Bhadra wildlife range, Karnataka. Souvenir of Online International Conference: Widcon-2020 organized by Wildlife Research & Training Centre, Gorewada, Nagpur, MAFSU from 18-20 December 2020. Pp226.
6	Kavitha Rani, B., Manjunatha, S.S., Sundareshan, S., Madhavaprasad, C.B., Jayaramu, G.M., Pradeep, B.S., Kiran, H.J., Satish, E.S., Sunil Kumar, B.S. and Amit, H., 2020. Pathology of Non-Human Primate (Nhp) mortalities in KFD endemic areas of Western Ghats in Shimoga, Karnataka. Souvenir of Online International Conference: Widcon-2020 organized by Wildlife Research & Training Centre, Gorewada, Nagpur, MAFSU from 18-20 December 2020. Pp80.

7	Kavitha Rani, B., Manjunatha, S.S., Jayaramu, G.M., Kiran, H.J., Satish, E.S., Amit, H. and Sunil Kumar, B.S., 2020. Pathology of oxalosis in a Bonnet monkey – a case report. Souvenir of Online International Conference: Widcon-2020 organized by Wildlife Research & Training Centre, Gorewada, Nagpur, MAFSU from 18-20 December 2020. Pp81.
8	Manjunatha, S.S., Kavitha Rani, B., Sundareshan, S., Jayaramu, G.M., Kiran, H.J. and Vinay, S., 2020. Post mortem investigation of deaths of wild boars at Bhadra wildliferange, Karnataka. Compendium of Online International Veterinary Pathology Congress – 2020 organized by Department of Veterinary Pathology, Nagpur Veterinary College, MAFSU from 26-29, December 2020. Pp48.
9	Manjunatha, S.S., Kavitha Rani, B., Jayaramu, G.M., Kiran, H.J. and Vinay, S., 2020. Electrocutation death of Civet Cat. Compendium of Online International Veterinary Pathology Congress – 2020 organized by Department of Veterinary Pathology, Nagpur Veterinary College, MAFSU from 26-29, December 2020. Pp49.
10	G.M. Jayaramu, H.J. Kiran, S.S. Manjunatha, B. Kavitha Rani, E.S. Satish, H. Amith and Sunil Kumar, 2020. Hemorrhagic nephritis in an Asian elephant. Compendium of Online International Veterinary Pathology Congress – 2020 organized by Department of Veterinary Pathology, Nagpur Veterinary College, MAFSU from 26-29, December 2020. Pp48.
11	Manjunatha, S.S., Kavitha Rani, B., Sundareshan, S., Jayaramu, G.M., Kiran H.J. and Vinay, S., 2020. Pathological investigation on death of Indian Bison (gaur) at Bhadra wildlife range, Karnataka. Compendium of Online International Veterinary Pathology Congress – 2020 organized by Department of Veterinary Pathology, Nagpur Veterinary College, MAFSU from 26-29, December 2020. Pp49.
12	Manjunatha, S.S., Kavitha Rani, B., Jayaramu, G.M., Kiran, H.J. and Sridhar, N.B., 2020. Post mortem investigation of deaths of cow due to traumatic reticulopericaditis. Compendium of Online International Veterinary Pathology Congress – 2020 organized by Department of Veterinary Pathology, Nagpur Veterinary College, MAFSU from 26-29, December 2020. Pp94.
13	H.J. Kiran, G.M. Jayaramu, S.S. Manjunatha, B. Kavitha Rani, E.S. Satish, H. Amith and Sunil Kumar, 2020. A comparison of simultaneous occurrence of liver and hepatic lymph node lesions in sheep mortalities. Compendium of Online International Veterinary Pathology Congress – 2020 organized by Department of Veterinary Pathology, Nagpur Veterinary College, MAFSU from 26-29, December 2020. Pp92.
14	H.J. Kiran, G.M. Jayaramu, S.S. Manjunatha, B. Kavitha Rani, E.S. Satish, H. Amith and Sunil Kumar, 2020. Incidence of polycystic kidney in sheep. Compendium of Online International Veterinary Pathology Congress – 2020 organized by Department of Veterinary Pathology, Nagpur Veterinary College, MAFSU from 26-29, December 2020. Pp92.
15	B. Kavitha Rani, H.J. Kiran, S.S. Manjunatha, G.M. Jayaramu, B.S. Pradeep, H. Amith and Sunil Kumar, 2020. Impaction of crop and esophagus due to round worm infection of Pigeon: A case report. Compendium of Online International Veterinary Pathology Congress – 2020 organized by Department of Veterinary Pathology, Nagpur Veterinary College, MAFSU from 26-29, December 2020. Pp117.
16	Revanasiddappa Yadawad, N.R. Shridhar, H.J. Kiran, S.S. Manjunatha, G.M. Jayaramu, U. Sunil Chandra and B. Kavitha Rani, 2020. Clinicopathological studies of sub-acute methanol extract of Phyllanthus reticulates toxicity in Wister rats (<i>Rattus norvegicus</i>). Compendium of Online International Veterinary Pathology Congress-2020 organized by Department of Veterinary Pathology, Nagpur Veterinary College, MAFSU from 26 -29 Dec., 2020. Pp37.
17	S.S. Manjunatha, H.J. Kiran, G.M. Jayaramu, B. Kavitha Rani, E.S. Satish, H. Amith and Sunil Kumar, 2020. Pathomorphological changes in coccidiosis of domestic rabbit. Compendium of Online International Veterinary Pathology Congress – 2020 organized by Department of Veterinary Pathology, Nagpur Veterinary College, MAFSU from 26-29, December 2020. Pp37.

18	S.S. Manjunatha, M.L. Satyanarayana, H.D. Narayanaswamy, Suguna Rao, D. Rathnamma, N.B. Shridhar and B. Kavitha Rani, 2020. Histopathological and immunohistochemical studies on evaluation of antidiabetic efficacy of aqueous extract of aloe vera in streptozotocin induced diabetic rats. Compendium of Online International Veterinary Pathology Congress – 2020 organized by Department of Veterinary Pathology, Nagpur Veterinary College, MAFSU from 26-29, December 2020. Pp38.
VETERINARY COLLEGE, HASSAN	
1	B.C. Girish, K. Sujatha, H.D. Narayanaswamy, K. Nagappa, C. Bindu, G.S. Naveen Kumar, K. Nalini kumari and N. Vinod Kumar, 2020. Electron microscopic and molecular studies of major immunosuppressive viral diseases in chickens. Online international Veterinary Pathology Congress-2020, organized by Nagpur Veterinary College, MAFSU, 26-29, December, 2020.
VETERINARY COLLEGE, GADAG	
1	Dhanalakshmi, S., Vanishree, Malathi Naik and Rashmi, L., 2021. Forelimb amputatin in golden jackal, Online International Conference, WILDCON. Pp107.
2	Dhanalakshmi, S., Vanishree, Malati Naik and Rashmi, L., 2020. Forelimb amputation in a golden jackal (<i>Cuon aurius</i>). Online International Conference: WILDCON-2020. MAFSU, Nagpur, Online. 18-20 th December, 2020.
LIVESTOCK RESEARCH AND INFROMATION CENTER, KONEHALLI	
1	Shenoy, H., 2020. Soil fertility status and productivity of rice as influenced by neem cake urea mixed application. <u>Abstract</u> - International Web- Conference on “ <i>New Trends in Agriculture Environmental and Biological Sciences for inclusive Development (NTAEBSID-2020)held on 21-22 JUNE 2020</i> ”. Souvenir:Pp139.
2	Shenoy, H. and Siddaraju, M.N., 2020. Effect of integration of organic and inorganic sources of nitrogen in rice crop on soil fertility status at harvest. <u>Abstract</u> <i>International Web conference - Resource Management and Bio Diversity Conservation to Achieve Sustainable Development Goals</i> . 11-12 Sept., 2020 (Academy of Natural Resource Conservation and Management, Lucknow, UP, India), <i>Souvenir cum Abstract E-Book Pp294</i> .
3	Anjaneya, S.N., Rudraswamy, M.S. and Shenoy, H., 2020. A study of Banana leaves for treatment of burn injuries in cows. <u>Abstract</u> <i>International Web conference - Resource Management and Bio Diversity Conservation to Achieve Sustainable Development Goals</i> . 11-12 Sept., 2020 (Academy of Natural Resource Conservation and Management, Lucknow, UP, India), <i>Souvenir cum Abstract E-Book Pp144</i> .
4	Shenoy, H. and Siddaraju, M.N., 2020. Effect of integration of organic and inorganic sources of nitrogen on rice yield. Abstract International Web Conference “ <i>Perspective on Agricultural and allied Sciences in COVID-19 Scenario (PAAS-2020)</i> Oct 4-6, 2020 (AETDS, Uttarakhand. India). Pp203.
5	Shenoy, H. and Siddaraju, M.N., 2020. Rice yield and soil fertility status at harvest as influenced by integrated nitrogen management. Abstract in Souvenir <i>International Conference on Environmental, Agriculture and Rural Development (EARD-2020)</i> , Oct 17-18, 2020. Pp20-22.

ii) National Publications

a) Publications in Journals

#	Year/ Authors / Title of Paper / Journal
VETERINARY COLLEGE, BENGALURU	
1	B.H. Pavithra, N. Prakash, G. Leena and C. R. Santhosh. 2020. Current Minimum Inhibitory Concentration (MIC) of Halquinol against Local Pathogenic Bacterial Isolates of Poultry. <i>International Journal of Current Microbiology and Applied Sciences</i> , 9(8):799-802.
2	Chaithra, K. Gowda, G.C. Puttalakshamma, Placid, E. D'Souza, G.S. Mamatha and B.M. Chandranaik, 2020. Comparitive studies on the prevalence of gastrointestinal parasites of pigs from Bengaluru urban and rural districts. <i>Journal of Veterinary Parasitology</i> , 34(1):43-48.
3	R.B. Metri, G.C. Puttalakshamma, H. Dhanalakshmi, K.J. David, T. Venkatesan, K.J. Ananda, N.L. Jaya, B.M. Veeregowda and M.L. Satyanarayana, 2020. Seasonal abundance of horseflies (Diptera: Tabanidae) in the Eastern Ghats of Karnataka. <i>Journal of Entomology and Zoology Studies</i> , 8(3):983-990.
4	Puttalakshamma, G.C., Veena, M., Mamatha, G.S., Girish, B.C. and Nagaraju, N., 2020. A report of endo and ecto parasites of wild life from Hassan district. <i>Frontier Journal Veterinary and Animal Sciences</i> , 9(1):21-25.
5	Malatesh, D.S., Ansar Kamran, C. and Ananda, K.J., 2020. Canine microfilariosis in and around Shivamogga, Karnataka: An Epidemiological study. <i>Journal of Entomology and Zoology Studies</i> , 8(4):2097-2099.
6	R.B. Metri, G.C. Puttalakshamma, K.J. David, N.L. Jaya and H. Dhanalakshmi, 2020. Taxonomic notes on Tabanidae from south India with special reference to Western Ghats. <i>Journal of Entomology and Zoology Studies</i> , 8(5):2013-2030.
7	Nikita Salian, Leena Gowda and Mamatha, G.S., 2020. Management of maxillary fracture in mugger crocodile (<i>Crocodylus palustris</i>). <i>Pashubandha</i> , 10(2):3-4.
8	Mohammad Dawood Bawer, Mamatha, G.S., G.C. Puttalakshamma, K.J. Ananda, Jaya Nagappa Lakkundi and Sharada, R., 2021. Comparison of different DNA extraction procedures for <i>Eimeria</i> oocysts. <i>Journal of Ent. and Zoological Studies</i> , 9(2):1010-1014.
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27	Ganga Naik, R.V. Prasad and K.V. Jamuna, 2020. Gross Morphological studies on the Mammary Gland of Malnad Gidda Cows of Karnataka. <i>Indian Journal of Veterinary Anatomy</i> , 32(2):9-11.
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VETERINARY COLLEGE, GADAG

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3	H.T. Manjunatha, T. Thirumalesh, V. Nagabhushana and V.B. Shettar, 2020. Effects of Different Levels of Energy and Protein on Performance of Lactating Malnad Gidda Cows. <i>Indian Journal of Animal Nutrition</i> , 37(3):227-234.
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COLLEGE OF FISHERIES, MANGALURU	
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INSTITUTE OF ANIMAL HEALTH AND VETERINARY BIOLOGICALS, BENGALURU	
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LIVESTOCK RESEARCH AND INFORMATION CENTER, KONEHALLI	
1	Shenoy, H., 2020. Crop residue management for soil health and sustained yields. <i>Biotica Research Today</i> , 2(4):98-99.
2	Shenoy, H., 2020. Reaping Higher Yields in Rice through Integrated Crop Management Practices. <i>Biotica Research Today</i> , 2(5):149-150.
3	Shenoy, H., 2020. Rice Production in Coastal Karnataka: Soil Constraints and Agronomical Strategies <i>Biotica Research Today</i> , 2(6):451-453.
LIVESTOCK RESEARCH AND INFORMATION CENTER, NAGAMANGALA	
1	Sathisha, K.B., Narayana Swamy, M., Kalmath, G.P., Shrikant Kukarni, Ramesh, P.T., Sathyanarayana, M.L. and Sudha, G., 2020. Metabolic hormonal and serum electrolytes profile of mandya sheep during summer stress upon dietary supplementation of antioxidants. <i>Journal of Entomology and Zoology Studies</i> , 8(5):408.
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3	Sathisha, K.B., Narayana Swamy, M., Kalmath, G.P., Shrikant Kukarni, Srinivas Reddy Bellur and Siddalinga Muthy, H.K., 2021. Influence of different seasons on serum hormonal and electrolytes profiles of Mandya sheep. <i>The Pharma Innovation Journal</i> , SP-10:30-34.
FISHERIES RESEARCH AND INFORMATION CENTER, ANKOLA	
1	Chandrakant Lingadhal, C. Sruthishree and A. Padmanabha, 2020. Physico-chemical characteristics of mangrove region in Keni creek, Ankola, Uttara Kannada district, Southwest coast of India. <i>Journal of Experimental Zoology, India</i> , 23(2):1227-1239.
2	Chandrakant Lingadhal and S. Vijay Kumar, 2020. Shrimp farming in brackish water, <i>Krishi Munnade</i> , 33(12):29-31.
KRISHI VIGYAN KENDRA, DAKSHINA KANNADA, MANGALURU	
1	Adarsha, H.S., Chethan, N., D.C. Choudala, Prabhudeva, K.N. and Rajanna, K.B., 2020. Amur Common Carp- A Good Alternative to Local. <i>J KrishiVigyan</i> , 2020:1-5.
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ANIMAL HUSBANDRY POLYTECHNIC, BARGI-CHAMARAJANAGARA	
1	Sahithya, C.P., Prakash Nadoor, Ravikumar, C., Ravikumar, P., Sharadha, R., Suresh, B.N. and Pavankumar, K.N., 2020. Exogenous administration of Melatonin Ameliorate Lead induced perturbation in redox homeostasis in mouse brain. <i>Frontier Journal of Vet. Anim. Sci.</i> , 9(1):38-40.
2	Sahithya, C.P., Prakash Nadoor, Ravikumar, C., Ravikumar, P., Sharadha, R., Suresh, B.N. and Pavankumar, K.N., 2020. Melatonin Extend Neuroprotection against Lead (acetate) Induced Alteration in Neuropharmacological activity following sub chronic exposure in mouse. <i>Frontier J Vet.Anim.Sci.</i> , 9(1):47-50.

b) In Conferences / Seminars / Symposia / Workshops etc.

#	Year / Authors / Title of Paper / Conference
VETERINARY COLLEGE, BENGALURU	
1	Nandi, S., Sampath Kumar, B., Gupta, P.S.P. and Mondal, S., 2020. Efficacy of plant molecules Myricetin and Carbazole on functional parameters of ovine granulosa cells. In Indian Science Congress Association Conference on "Science and Technology: Rural Development" at GKVK, Bengaluru under Animal, Veterinary and Fisheries Sciences category, Molecular Biology and Biotechnology Sub category from 3 rd to 7 th Jan 2020: Abstract No :03, Pp237.
2	Sampath Kumar, B., Nandi, S., Rudrappa, S.M., Sunil Kumar, K.K., Srikanth, N.R. and Girish Kumar, V., 2020. Fertility Augmentation in animals with the leaf extracts of Aegle Marmelos. In Indian Science Congress Association Conference on "Science and Technology: Rural Development" at GKVK, Bengaluru under Animal and Veterinary Sciences category at GKVK, Bengaluru from 3 rd to 7 th Jan 2020 Abstract No:04, Pp444.
3	Rashmi Rajashekaraiyah, P. Ravi Kumar, N. Prakash, G. Srinivasa Rao, V. Rama Devi, M. Metta, H.D. Narayanaswamy, M. Narayana Swamy, D. Rathnamma, P.T. Ramesh, U. Sunilchandra, G.S. Naveen Kumar, C.R. Santhosh, S. Naveen Kumar and K.R. Anjan Kumar, 2020. Enhanced pharmacokinetics of 6-thioguanine by chitosan nanoparticles and pretreatment with curcumin, XX Annual Conference of Indian Society of Veterinary Pharmacology & Toxicology and International Webinar on "Receptor Dynamics in Cell Signalling" and National Webinar on "Translational Approaches in Herbal Drug Development" Organized by Dept. of Veterinary Pharmacology & Toxicology, College of Veterinary Sciences and Animal Husbandry, Mathura, DUVASU, 04 -10-2020 to 05-10-2020.
4	Dhanalakshmi, H. 2020. Application of Spinner Centrifuge in the diagnosis of Parasitic diseases, XVI National online conference on "Sustainable contributions of ATMANIRBHAR women veterinarians in enrichment of production potential in Livestock through application of modern technologies" 9 th to 10 th December 2020. Organized by College of Veterinary and Animal Science, Parbhani in association with Indian Association of Women Veterinarians (IAWV), Pp169.
5	Dhanalakshmi, H. 2020. Backyard Rabbit farming for rural women empowerment, XVI National online conference on "Sustainable contributions of ATMANIRBHAR women veterinarians in enrichment of production potential in Livestock through application of modern technologies" 9 th to 10 th December 2020. Organized by College of Veterinary and Animal Science, Parbhani in association with Indian Association of Women Veterinarians (IAWV), Pp328.
6	G.S. Mamatha, S. Suhas and K.J.Ananda, 2020. Haematological studies and molecular identification of <i>Theileria</i> spp. in Gir cows. XVI National Online conference on "Sustainable contribution of ATMANIRBHAR women Veterinarians in enrichment of production potential in livestock through applications of modern technologies" held on 09-10 th December, 2020 organized by College of Veterinary and Animal Sciences, Parbhani and Indian Association of Women Veterinarians, Pp159.
7	Sindhoora Divakar, G.S.Mamatha, Jagadish, Nagaraj Jaller and K.J. Ananda, 2020. A study on morphological identification and diagnosis of Taenid spp. infection in dogs. XVI National Online conference on "Sustainable contribution of ATMANIRBHAR women Veterinarians in enrichment of production potential in livestock through applications of modern technologies" held on 09-10 th December, 2020 organized by College of Veterinary and Animal Sciences, Parbhani and Indian Association of Women Veterinarians, Pp192.

8	Bharathkumar, K., Suguna Rao, Ranganath, L., Ravikumar, P., Shilpa, V.T. and Ganga Naik, 2020. Studies on induced diabetes in rats with special emphasis on combined efficacy of <i>GymnemaSylvestre</i> and <i>Swertiachirayita</i> extracts, Online International Veterinary Pathology Congress – 2020, XXXVII Annual Conference of Indian Association of Veterinary Pathologists XI Annual Meeting of Indian College of Veterinary Pathologists and International Symposium on “Role of Veterinary pathology in controlling emerging and re-emerging diseases of livestock and poultry: An one health approach” organized jointly by Department of Veterinary Pathology, Nagpur Veterinary College, Maharashtra Animal & Fishery Sciences University, Seminary Hills, Nagpur – 440006, Indian Association of Veterinary Pathologists and Indian College of Veterinary Pathologists .
9	Akshata, S.A., Suguna Rao, Narayanaswamy, H.D., Satynarayana, M.L., Byregowda, S.M. and Manjunath Reddy, 2020. Pathomorphological and molecular evaluation of methotrexate (MTX) induced toxicity and its amelioration by Zinc oxide (ZnO) nanoparticles, Online International Veterinary Pathology Congress – 2020, XXXVII Annual Conference of Indian Association of Veterinary Pathologists XI Annual Meeting of Indian College of Veterinary Pathologists and International Symposium on “Role of Veterinary pathology in controlling emerging and re-emerging diseases of livestock and poultry: An one health approach” organized jointly by Department of Veterinary Pathology, Nagpur Veterinary College, Maharashtra Animal & Fishery Sciences University, Seminary Hills, Nagpur – 440006, Indian Association of Veterinary Pathologists and Indian College of Veterinary Pathologists .
10	Rajendra Kumar, T., Suguna Rao, M.L. Satyanarayana, H.D. Narayanaswamy, S.M. Byregowda and N.B. Shridhar, 2020. Hepatoprotective effect of <i>Andrographics paniculata</i> against oxidativedamage caused by cisplatin in rats, Online International Veterinary Pathology Congress – 2020, XXXVII Annual Conference of Indian Association of Veterinary Pathologists XI Annual Meeting of Indian College of Veterinary Pathologists and International Symposium on “Role of Veterinary pathology in controlling emerging and re-emerging diseases of livestock and poultry: An one health approach” organized jointly by Department of Veterinary Pathology, Nagpur Veterinary College, Maharashtra Animal & Fishery Sciences University, Seminary Hills, Nagpur – 440006, Indian Association of Veterinary Pathologists and Indian College of Veterinary Pathologists.
11	S.S. Manjunatha, M.L. Satyanarayana, H.D. Narayanaswamy, Suguna Rao, D. Rathamma, N.B. Shridhar and B. Kavitha Rani, 2020. Histopathological and Immunohistochemical studies on evaluation of antidiabetic efficacy of aqueous extract of aloe vera in streptozotocin induced diabetics in ratsOnline International Veterinary Pathology Congress – 2020, XXXVII Annual Conference of Indian Association of Veterinary Pathologists XI Annual Meeting of Indian College of Veterinary Pathologists and International Symposium on “Role of Veterinary pathology in controlling emerging and re-emerging diseases of livestock and poultry: An one health approach” organized jointly by Department of Veterinary Pathology, Nagpur Veterinary College, Maharashtra Animal & Fishery Sciences University, Seminary Hills, Nagpur – 440006, Indian Association of Veterinary Pathologists and Indian College of Veterinary Pathologists.
12	T. Rajendra Kumar, 2020. “Hematological alteratuions in cisplatin induced toxicity in rats and its Amelioration by <i>Andrographis paniculate</i> ” in the National level online research paper presentation comprtetion held on 19 th to 24 th August 2020 at Lakhimpur College of veterinary science, AAU, Joyhing, North Lakhimpur, Assam in collaboration with College of Veterinary science, AAU, Khanapara, Guwahati, Assam.
13	T. Rajendra Kumar, 2020. “Effect of <i>Andrographics paniculata</i> on serum biochemical profile during cispatin induced toxicity in wistar albino rats” in the National level online research paper presentation comprtetion held on 19 th to 24 th August 2020 at Lakhimpur College of veterinary science, AAU, Joyhing, North Lakhimpur, Assam in collaboration with College of Veterinary science, AAU, Khanapara, Guwahati, Assam.

14	Satheesha, G.M., Nagaraja, R., Yathish, H.M., Sahadev, A., Jayashree, R., Kotresh, A.M. and Naveen Kumar, S., 2021. Genetic polymorphism in exon 1 of Toll like receptor 4 gene of Malnad Gidda Cattle Using PCR-RFLP analysis. <i>In Compendium of XVIII Annual Convention and National Webinar on Harnessing Potential of Indigenous Animal Genetic Resources for Enhancement of Productivity and Profitability held at ICAR-NBAGR, Karnal during February 11-12, 2021. Pp135.</i>
15	Swetha, C., Nagaraja Ramakrishanappa, Naveen Kumar, S. and Naveen Kumar, G.S., 2021. Identification of DAZL gene SNPs in Mandya and NARI suwarna sheep. <i>In Compendium of XVIII Annual Convention and National Webinar on Harnessing Potential of Indigenous Animal Genetic Resources for Enhancement of Productivity and Profitability held at ICAR-NBAGR, Karnal during February 11-12, 2021. Pp207-208.</i>
16	Shreyansh, S.H., K. Satyanarayan and V. Jagadeeswary, 2020. Impact of lockdown on animals. <i>Pashubandha e – bulletin, KVAFSU, 9(4):9-11.</i>

VETERINARY COLLEGE, SHIVAMOGGA

1	R. Jayashree, 2020. “Empowering Farm Women by Innovative Entrepreneurship- Pathway to Atmanirbhar Bharath” in the e-compendium of XVI th National Online Conference of IAWV Women Empowerment Through Entrepreneurship:Success Stories(WES) during the 9 th - 10 th December 2020, organized by College of Veterinary and Animal Sciences, Parbhani (MS) India, Pp296-303.
2	R. Jayashree, 2021. “Community Participation In Breed Conservation - Past, Present And Future Strategies”, In the e- compendium of National webinar organized by SOCDAB “Harnessing potential of Indigenous Animal Genetic resources for enhancement of productivity and profitability” on 11 th and 12 Feb 2021, Pp11-20.
3	Kavitha Rani, B., Manjunatha, S.S. and Jayaramu, G.M., 2021. Cytopathology as a rapid disease diagnostic tool. <i>Compendium of Workshop on Recent Developments In Livestock Disease Diagnosis and Therapeutics: A Cohort Approach for the officers of Department of A.H. &V.S, GoK Organized by: ODRC, Veterinary College Campus Shivamogga from 17 - 18 March 2021. Pp14-19.</i>
4	Manjunatha, S.S., Kavitha Rani, B. and Jayaramu, G.M., Diagnosis of diseases in domestic animals based on post mortem findings. <i>Compendium of Workshop on Recent Developments In Livestock Disease Diagnosis and Therapeutics: A Cohort Approach for the officers of Department of A.H. &V.S, GoK Organized by: ODRC, Veterinary College Campus Shivamogga from 17- 18 March 2021, Pp76-80.</i>
5	Manjunatha, S.S., Kavitha Rani, B. and Jayaramu, G.M., 2021. Collection, preservation and despatch of morbid materials for pathological Diagnosis. <i>Compendium of Workshop on Recent Developments In Livestock Disease Diagnosis and Therapeutics: A Cohort Approach for the officers of Department of A.H. &V.S, GoK Organized by: ODRC, Veterinary College Campus Shivamogga from 17- 18 March 2021, Pp81-84.</i>
6	Manjunatha, S.S., Kavitha Rani, B. and Jayaramu, G.M., 2021. Post mortem changes and its relevance in disease diagnosis. <i>Compendium of Workshop on Recent Developments In Livestock Disease Diagnosis and Therapeutics: A Cohort Approach for the officers of Department of A.H. &V.S, GoK Organized by: ODRC, Veterinary College Campus Shivamogga from 17- 18 March 2021, Pp85-90.</i>
7	Kavitha Rani, B., Manjunatha, S.S. and Jayaramu, G.M., 2021. Systematic Necropsy for Disease Diagnosis in Livestock. <i>Compendium of Workshop on Recent Trends in Livestock Disease Diagnosis: A Multidisciplinary approach for the officers of Department of A.H. &V.S, GoK Organized by: ODRC, Veterinary College Campus Shivamogga from 25 -26 Feb 2021. Pp44-53.</i>
8	Manjunatha, S.S., Kavitha Rani, B. and Jayaramu, G.M., 2021. Postmortem examination in Common Diseases of Livestock. <i>Compendium of Workshop on Recent Trends in Livestock Disease Diagnosis: A Multidisciplinary approach for the officers of Department of A.H. &V.S, GoK Organized by: ODRC, Veterinary College Campus Shivamogga from 25-26 Feb 2021.Pp97-102.</i>

9	Kavitha Rani, B., Manjunatha, S.S. and Sunil Kumar, K.M., 2021. Collection, transportation and processing of brain sample for diagnosis of Rabies in Animals. Compendium of Workshop on Recent Trends in Livestock Disease Diagnosis: A Multidisciplinary approach for the officers of Department of A.H. &V.S, GoK Organized by: ODRC, Veterinary College Campus Shivamogga from 25-26 Feb 2021, Pp103-117.
10	Manjunatha, S.S., Kavitha Rani, B. and Jayaramu, G.M., 2021. Veterolegal necropsy and its importance. Compendium of Workshop on Recent Trends in Livestock Disease Diagnosis: A Multidisciplinary approach for the officers of Department of A.H. &V.S, GoK Organized by: ODRC, Veterinary College Campus Shivamogga from 25-26 Feb 2021. Pp118-124.
11	Sujay Suresh, Nikita Salian, Suresh Patel, Ravi Raidurg and Tista Joseph, 2020. Acute respiratory distress syndrome (ARDS) in captive tiger with treatment and management. Wildcon 2020 - Online International Conference. Wildlife Research and Training Centre, Gorewada, Nagpur.
12	Sujay Suresh, Ravi Raidurg, Nikita Salian, Chanadrashekhar, Naveen and Sameena Iza, 2020. Fracture management and repair with fiberglass cast in deer species. Wildcon 2020 - Online International Conference, Wildlife Research and Training Centre., Gorewada, Nagpur.
13	G. Ananda Manegar, Ashok Madapurada, B.U. Umesha and O.R. Nataraju, 2020. Influence of l-Tryptophan in lowered Dietary Crude Protein levels of Commercial Broilers on Metabolizability of Nutrients and Serum Biochemical Parameters, International Web Conference on Perspective on Agricultural and Applied Sciences in COVID-19 Scenario, Pp21.
14	Umesh, B.U., Ananda Manegar, G., Bharath Bhushan, M. and Ashok, M., 2020. Effect of Supplementation of Phytase Enzyme on Performance of Commercial Broilers. International Web Conference on Perspective on Agricultural and Applied Sciences in COVID-19 Scenario, Pp25.
15	Umesh, B.U., Ananda Manegar, G., Bharath Bhushan, M. and Ashok, M., 2020. Effect of Supplementation of Moringa Olifera Leaf Meal (Molm) as a Protein Replacement to Soyabean Meal on Performance of Commercial Broilers. International Web Conference on Perspective on Agricultural and Applied Sciences in COVID-19 Scenario, Pp35.

VETERINARY COLLEGE, HASSAN

1	Girish, P.S., Aparna Kumari, Nagappa, S. Karabasanavar and C. Ramachandra, 2020. A rapid method for species authentication of pork using alkaline lysis-loop mediated isothermal amplification (AL-LAMP) technique. <i>In</i> : Virtual international conference on “Livestock products & food safety: Realities & imperatives for global health” organized jointly by Tamil Nadu Veterinary & Animal Sciences University, Chennai and Karnataka Veterinary, Animal & Fisheries Sciences, Bidar. November 24-26, 2020. Paper No. FSFA-009. Pp 26.
2	Prashant, S. Bagalkote, Madhavaprasad, C.B., Nagappa Karabasanavar, Santhosh Sajjan, Arshad, M., Mamatha, K., Shilpa, M.E., Shamanth, R. and Mamatha, S.P., 2020. Isolation, identification and serotyping of <i>Escherichia coli</i> & <i>Salmonella</i> spp. from animals and foods of animal origin. <i>In</i> : Virtual international conference on “Livestock products & food safety: Realities & imperatives for global health” organized jointly by Tamil Nadu Veterinary & Animal Sciences University, Chennai and Karnataka Veterinary, Animal & Fisheries Sciences, Bidar. November 24-26, 2020. Paper No. FSFA-012. Pp29.

VETERINARY COLLEGE, GADAG

1	Akshatha, S.A., Suguna Rao., Narayanaswamy, H.D., Satyanarayana, M.L., Byregowda, S.M., and Manjunatha Reddy, G.B., 2020. Pathomorphological and molecular evaluation of methotrexate (MTX) induced toxicity and its amelioration by Zinc oxide (ZnO) nanoparticles. Online International Pathology Congress, 26 th -29 th December, 2020 Organised by Department of Pathology, Veterinary College, Nagpur, MAFSU.
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2	Malati Naik, Hiron M. Harshan, Promod, K., Unnikrishan, M.P. and Sunanda, C., 2020. Improved preservability of F1 fraction of boar semen and its implications. XVI national online conference of IAWV 2020. MAFSU, Parabani, 9-10 th December 2020.
3	N.N. Patil, S.P. Sarangmath, Panchasheel and Malati Naik, 2020. A case report on clinical management of lumpy skin disease in cattles. XVI national online conference of IAWV 2020. MAFSU, Parabani, Online. 9-10 th December 2020.
4	B. Jagannatha Rao and B.A. Desai, 2020. Critical Control points in Hygienic Broiler Dressing, International Virtual Conference on “Livestock Products and Food Safety: Realities and Imperatives of food safety”, 24 th , 25 th and 30 th November 2020, FSFA013, organized by Dept of LPT, VCRI, TANUVAS, Orthanadu, Thanjavur and Dept of LPT, Veterinary College, KVAFSU, Bengaluru.
COLLEGE OF FISHERIES, MANGALURU	
1	Puneeth, T.G., Pallavi Baliga, Malathi Shekar, S.K. Girisha, Ramesh, K.S., Vilasini Udyavara and Venugopal, M.N., 2020. Assessment of the bacterial communities associated with <i>Litopenaeus vannamei</i> shrimp surface and its rearing water in a biofloculture system. Virtual conference on Aquaculture Techniques and Disease Management –ATDM 2020, Organized by Centre for Ocean Research at Col. Dr. Jeppiaar Research Park, Sathyabama Institute of Science and Technology, Chennai, Tamilnadu-600 119, from 14th to 17th September 2020.
2	Pallavi, 2020. “Microbiome changes in <i>Litopenaeus vannamei</i> shrimp surface and rearing water in relation to <i>Enterocytozoon hepatopenaei</i> infection” at Virtual conference on Aquaculture techniques and Disease Management-ATDM, 2020, organized by Sathyabhama institute of science and technology.
FISHERIES RESEARCH AND INFORMATION CENTER, ANKOLA	
1	Chandrakant Lingadhal, C. Sruthishree and A. Padmanabha, 2020. Physico-chemical characteristics of mangrove region in Keni creek, Ankola, Uttara Kannada district, Southwest coast of India. In abstracts: Golden Jubilee year of College of Fisheries, Mangaluru (1969 to 2019) symposium on “Addressing fishing community concerns in Integrated Coastal Zone Management: an emerging challenge” from 14-16 March, 2020, Pp56.
2	Rutuja More, M.T. Lakshmipathi, A.T. Ramachandra Naik, Daggula Narshivudu, Gangadhara Gowda and Chandrakant Lingadhal, 2020. Impact of shrimp farm effluents on coastal water quality along the coastal district of Uttara Kannada. In abstracts: Golden Jubilee year of College of Fisheries, Mangaluru (1969 to 2019) symposium on “Addressing fishing community concerns in Integrated Coastal Zone Management: an emerging challenge” from 14-16 March, 2020, Pp48.
ANIMAL HUSBANDRY POLYTECHNIC, BARGI-CHAMARAJANAGARA	
1	Sahithya, C.P., Prakash Nadoor, Ravikumar, C., Ravikumar, P., Sharadha, R., Suresh, B.N. and Pavankumar, K., 2020. Nexogenous Melatonin overcome lead acetate induced in redox homeostasis and certain neuropharmacological activities in laboratory mouse. XIV Annual Conference of Indian Society of Veterinary Pharmacology and Toxicology. National symposium on Pharmacogenomics in the development and Validation of Indigenous drugs. Pp208.

ABSTRACT OF RESEARCH PUBLICATIONS

<i>Division</i>	<i>Journal</i>		<i>Conference/ Symposium/ Seminar/ Workshops</i>		<i>Total</i>
	<i>Int.</i>	<i>National</i>	<i>Int.</i>	<i>National</i>	
Veterinary College, Bengaluru	82	31	14	16	143
Veterinary College, Bidar	13	20	7		40
Veterinary College, Shivamogga	34	33	18	15	100
Veterinary College, Hassan	18	29	1	2	50
Veterinary College, Gadag	5	5	2	4	16
Dairy Science College, Bengaluru	17	1			18
Dairy Science College, Kalaburagi					
College of Fisheries, Mangaluru	13	12		2	27
IAH&VB, Bengaluru	3	1			4
IWVR-Kudige					
LRIC, Hallikhed-Bidar					
LRIC, Konehalli-Tumkur	4	3	5		12
LRIC, Nagamangala-Mandya	1	3			4
LRIC, Dornalli-Yadgir					
CRIC, Thimmapur-Bagalkot					
FRIC, Hebbal-Bengaluru	2				2
FRIC, Hesarghatta-Bengaluru	2				2
FRIC, Ankola-Uttara Kannada		2		2	4
FRIC, Bhutnal-Vijayapura	1				1
KVK, Dakshina Kannada-Mangaluru	1	2			3
AHP, Konehalli-Tumkur					
AHP, Kunnur-Haveri					
AHP, Koravangala-Hassan	2				2
AHP, Bargi-Chamarajanagara		2		1	3
AHP, Dornahalli-Yadgir					
Total	198	144	47	42	431

2. Extension Publications (Books, training manuals, popular articles, leaflets etc)

VETERINARY COLLEGE, BENGALURU

Department of Veterinary Physiology

Book:

1. Dr. M. Narayana Swamy, 2020. ನಾಡು ಮರೆಯದ ಮಹಾರಾಜ : ನಾಲ್ವಡಿ ಕೃಷ್ಣರಾಜ ಒಡೆಯರ್, ಜೈತ್ರ ಪ್ರಕಾಶನ, ಮೈಸೂರು - 570 022.

Popular Article:

1. Dr. M. Narayana Swamy, 2020. ಕೊರೋನ ಸಂಕಷ್ಟದಲ್ಲಿ ರಾಗಿ ಉತ್ಪಾದನೆ. Varthabharathi, May 17, 2020. Page 7.
2. Dr. M. Narayana Swamy, 2020. ರಾಜರ್ಷಿ ಒಡೆಯರ್ : ಸವಿ ನೆನಪು. Varthabharathi, June 16, 2020. Page 7.
3. Dr. M. Narayana Swamy, 2020. ಕೊರೋನ, ಇಮ್ಮುನಿಟಿ ಮತ್ತು ಹಾರ್ಮೋನುಗಳು, Varthabharathi, July 18, 2020. Page 7.
4. Dr. M. Narayana Swamy, 2020. ಜೀವಸತ್ವ ಸಿ, ಕೊರೋನ ಮತ್ತು ಲೈನಸ್ ಪಾಲಿಂಗ್, Maardhani, August 26, 2020. Page 4.
5. Dr. M. Narayana Swamy, 2020. ಹೆಪಟೈಟಿಸ್ ಸಿ ವೈರಸ್ ಪತ್ತೆಹಚ್ಚಿದವರಿಗೆ ವೈದ್ಯಕೀಯ ನೊಬೆಲ್ ಪ್ರಶಸ್ತಿ. Varthabharathi, October 11, 2020. Page 7.

Department of Biochemistry:

1. Ramesh, H.S., Sampath, B., Tripathi, S.K., Nandi, S., Gupta, P.S.P., Girish Kumar, V., Ovarian Follicle Transition: Underlying Molecular Mechanisms: Agriculture Development and Economic Transformation in Global Scenario., Mahima publications. 2020. Part-II. Pp. 352-362.
2. Role of Different Factors and Additives in developing a culture System for Preantral Follicles. Ramesh, H.S., Sampath, B., Manasa, V., Basavarajiah, D.M., Tripathi, S.K., Nandi, S. and Girish Kumar, V: Recent Approaches in Sustainable Agriculture Development and Food Security, Crop Management, Forestry, Food Technology and Environmentally Balanced Production Enhancement. Mahima Research Foundation and social welfare. 2021: Part-II. Pp306-317.

Department of Veterinary Public Health and Epidomology:

Broucher/ Booklet prepared

1. Leena, G., Mohan, H.V. and Nishanth, C. 2020. A booklet on 'Importance of handwashing for healthy life'. Published by Department of Veterinary Public Health and Epidemiology, Veterinary College, Hebbal, Bengaluru on the occasion of "Global Handwashing Day 2020"

Popular Articles:

1. Nikita Saliyan, Leena Gowda and Mamatha, G.S. 2021. Management of maxillary fracture in mugger crocodile. Pashubandha monthly e-Bulletin, Veterinary College, Bengaluru, Vol. 10, Issue, 02. Feb 2021.
2. Chiranjeevi, R., Manohar, M.K., Satish Patil, Suguna Rao, Varun Kumar, Leena, G. and Mamatha, G.S., 2021. Study on impression smear of hepatic coccidiosis in rabbit. Pashubandha monthly e-Bulletin, Veterinary College, Bengaluru, Vol. 10, Issue, 03. Mar 2021.

3. Viveka Prabhu, B., Manasa Varra, Roopa Devi, Y.S., Sanjeevakumar Lalasangi, Leena Gowda and Mamatha, G.S. 2021. Lumpy skin disease: An emerging threat. Pashubandha monthly e-Bulletin, Veterinary College, Bengaluru, Vol. 10, Issue, 03. Mar 2021.

Department of Veterinary & Animal Husbandry Extension Education

1. 12 issues of e-journal- Pashubandhu were published and circulated among the field veterinarians and university staff.
2. Co-ordination of Watershed activities through Sujala Programme

Department of Animal Nutrition

1. Satyanarayana, K., Jagadeeswary, V., Sudha, G., Prabhu, T.M. and Jeevan. Technology Interventions and Extension Activities for Livestock Development in Chikkaballapur District, Karnataka. Good Practices 40: September 2020. Agricultural Extension in South Asia - CRISP, Hyderabad, India, Pp1-9.
2. Madhusudhan, H.S., 2021. Vygnanika Kuri sakanike - Thaliya Ayke Mattu Poshane.Nagadeepike, Kannada Sahitya Sammelana, Nagamangala.
3. Madhsudhan, H.S. 2021. Pashusangopaneyalli Todagiruva Nagamangala Talukina Raitharige hagu pashuvydyakeeya vijnanadalli aasakti hondiruva vidyarthigalige ondu kivimathu, Nagadeepike, Kannada Sahitya Sammelana, Nagamangala.
4. Suma, N. Feeding management of pigs Sukheebhava Annadata, December - January 2020 - 2021. 12 (1): 52 – 54.
5. Umashankar, B.C., 2020. Feeding of poultry, Poultry Entrepreneurship farming for rural youth farmers manual KVAFSU, CPDO & TI, Hesaraghatta, Bengaluru 25.08.2020.
6. Umashankar, B.C., 2021. Sheep and Goat Nutrition, Training compendium on Sheep and Goat Production, Skill development center, GKVK, Bengaluru 06.01.2021 Page:67-74.
7. Umashankar, B.C., 2021. Pig Nutrition, Training compendium on Pig Production, Skill development centre, GKVK, Bengaluru 07.01.2021 Page:34-46

Department of Surgery and Radiology:

1. V. Mahesh and S. Preetham Kumar, 2020. Rasugalalli annanalada thade. Pashubandha, Veterinary College, Bengaluru.

VETERINARY COLLEGE, BIDAR

Good Practices	
1	Prakashkumar Rathod, Sreenath Dixit, Kaushal Garg and Raviraj Jadhav (2020). Consortium Approach for Improving Dairy Productivity and Resource Use Efficiency. Agricultural Extension in South Asia (AESAs) Good Practices No-32, June 2020. pp: 1-12.
2	Vidyasagar, Prakashkumar Rathod, Dilipkumar D and Prashant Waghmare (2020) Institutional Efforts to Address Challenges of Backyard Poultry Farmers in Bidar District During Covid- 19 Pandemic. Agricultural Extension in South Asia (AESAs) COVID- 19 Field Notes No-12, July, 2020. pp: 1-7.
News Items	
1	Hainugarikege Illa Aatank - News item published in Kannada daily Newspaper- Prajavani on 30-04-2020 during initial stages of COVID-19 Pandemic
2	Kukkutodyamakke Teevra Hodeta- News item published in Kannada daily Newspaper- Prajavani on 09-05-2020 during initial stages of COVID-19 Pandemic. Prakashkumar Rathod
3	Antarjaladalle Pashupalakarige Abhay - News item published in Kannada daily Newspaper- Prajavani on 01-06-2020 on the occasion of World Milk Day-2020. Prakashkumar Rathod

4	Quail Production and Management Agriculture and Food - Vidyasagar , Prashant Waghmare , Saste Ashwini Shivaji.(2020).; E-News letter. 2(6). 2581-8317. Prakashkumar Rathod
5	Importance of Vaccination in Poultry. Agriculture and Food - Khaja Hussain K, Amit H , Amith N G , Vidyasagar (2020).; E-News letter. 2(10). 2581-8317
Book chapters	
1	Kokate, K.D., Mahesh Chander, Prakashkumar Rathod and Sujit Sarkar (2020). Agricultural Extension approaches in India. In: Handbook of Agricultural Extension. Published bu ICAR, New Delhi in September, 2020. <i>pp</i> : 32-71.
2	Utilization of Sugarcane Trash for Livestock feeding: An alternate to On-farm burning: In: Recent Scientific Advances in Sugarcane Cultration for Doubling farmers Income - Prakashkumar Rathod (2021). Dilpreet Publishing House, New Delhi. <i>pp</i> : 332-341.
3	Huchhu nayi roga (kannada), Ravindra, B.G., Mallinath, K.C., Sandeep, H. and Vivek A. Kasaralikal 2020
4	Jaanuvaargalalli Oushadhigalannu Upayogisuva Kramagalu (2021) Prashantkumar Waghe, Vijay Kumar, M., Vinay P. Tikare., Krishnamurthy,C.M., Ravindra Dombar, Arun Kharate, Adeppa, J.
5	Praanigalige Apaayakaariyagaballa Visha Vastugalu(2021), Prashantkumar Waghe, Vijay Kumar, M., Vinay P. Tikare., Krishnamurthy, C.M., Ravindra Dombar, Arun Kharate, Adeppa, J.
6	Pashupalane Mathu Pashuaryogya Sumrakshane Padhathigallu, Ravindra ,B.G., Mallinath, K.C., Sandeep Halmandge, Rejendra Talavar, Vivek R. Kasaralikal
7	Pashupalne mattu pashu arogya sumrakshne paddatigalu (2021), Main – Editer Dilipkumar D, Co-editor Bijurkar, Bhagavantappa and Rejendra, T.
8	Scientific Feeding and Management of Dairy Aniamls(2020): By Ravindra B.D & Ramachandra B
9	Karugalalli janthugal nirvahane Krishnamurthy, C.M., Adeppa, J, Anantharao Desai, Ravindra Dombar, Channappagowda biradar February, 2021 <i>Pp</i> :44-48
10	Mekegalalli janthubade matthu niyantrana Krishnamurthy, C.M., Adeppa, J., Ravindra Dombar, Prashantkumar Waghe, Arun Kharate, R.G. Bijurkar February, 2021 <i>Pp</i> :49-52
11	Hainu rasugalalli unnegalahathoti kramagalu Krishnamurthy, C.M., Adeppa, J., Prashantkumar Waghe, Ravindra Dombar, Arun Kharate, R.G. Bijurkar February, 2021 <i>Pp</i> :53-57
12	Jaanuvaargalalli Oushadhigalannu Upayogisuva Kramagalu Prashantkumar Waghe, Vijay Kumar, M., Vinay P. Tikare, Krishnamurthy, C.M., Ravindra Dombar, Arun Kharate, Adeppa, J. February, 2021 <i>Pp</i> :69-70
13	Praanigalige Apaayakaariyagaballa Visha Vastugalu, Prashantkumar Waghe, Vijay Kumar, M., Vinay P. Tikare., Krishnamurthy, C.M., Ravindra Dombar, Arun Kharate, Adeppa, J., February 2021 <i>Pp</i> :71-72
Booklets	
1	Scientific Goat Farming (Kannada) - Anant Rao Desai, Prakashkumar Rathod and Channappagouda Biradar (2021).. Published under ICAR-SCSP Project of Veterinary College, Bidar.
2	Kurigalalli karalu bene (2021), Rajendrakumar, T., D.T., Naik, Sandeep, H. and R.G. Bijurkar
3	Animal Husbandry and Health Protective Methods Black quater in Domestic Animals-Dr. Rajendra, T.
Popular articles	
1	Surra rogadi soragi savannapputtive kattedgalu. Dr. Ravindra, B.G. November 2020
2	Importance of vaccination in veterinary practice, Annarao, Vivek R. Karalikal, Ravindra, B.G. and Halmandge, S.C. September 2020

3	Importance of anaemia in veterinary practice, Annarao, Vivek R. Kasaralikal, Ravindra, B.G. and Halmandge, S.C.
Folders	
1	Jaanuvaargalalli Oushadhigalannu Upayogisuva Kramagalu (November 2020) Prashantkumar Waghe, Vijay Kumar, M., Vinay P. Tikare., Krishnamurthy, C.M., Ravindra Dombar, Arun Kharate, Adeppa, J.
2	Praanigalige Apaayakaariyagaballa Visha Vastugalu, (November 2020) Prashantkumar Waghe, Vijay Kumar, M., Vinay P. Tikare., Krishnamurthy, C.M., Ravindra Dombar, Arun Kharate, Adeppa, J.
3	'Giriraja' gramina janateya bhagyadata (2020). Dr. Prahlad, Dr. Arun Kharate.
4	Kuri mattu mekegala mukhya rogakalu (2020). Dr. Prahlad, Dr. Arun Kharate.
5	Bhrusselosis – kandu roga (2020). Dr. Prahlad, Dr. Arun Kharate.
6	Hybrid nepier hullu (2020). Dr. Prahlad, Dr. Jagajevanram, Dr. Arun Kharate.
7	Karugalalli janthugal nirvahane Krishnamurthy, C.M., Adeppa, J., Anantharao Desai, Ravindra Dombar Channappagowda Biradar, November, 2020.
8	Jaanuvaargalalli Oushadhigalannu Upayogisuva Kramagalu, Prashantkumar Waghe, Vijay Kumar, M., Vinay P. Tikare, Krishnamurthy, C.M., Ravindra Dombar, Arun Kharate, Adeppa, J. November, 2020.
9	Praanigalige Apaayakaariyagaballa Visha Vastugalu Prashantkumar Waghe, Vijay Kumar, M., Vinay P. Tikare, Krishnamurthy, C.M., Ravindra Dombar, Arun Kharate, Adeppa, J., November, 2020.
Microbial sequeance submission to Gen Bank NCBI	
1	Choudapur, M.K., Awati, B., Hiremath, J.B., Patil, N.A. and Byagwat, J.(2020) Peste des petits ruminants virus isolate IND/KAR/RCR/KVAFSU/Ovine/2017/1 nucleocapsid N3/N4 gene, partial cds. <i>GenBank: MT108434.1</i>
2	Choudapur, M.K., Awati, B., Hiremath, J.B., Patil, N.A. and Byagwat, J.(2020).Peste des petits ruminants virus isolate IND/KAR/KBG/KVAFSU/Caprine/2017/2 nucleocapsid N3/N4 gene, partial cds. <i>GenBank: MT108435.1</i>
3	Choudapur, M.K., Awati, B., Hiremath, J.B., Patil, N.A. and Byagwat, J.(2020). Peste des petits ruminants virus isolate IND/KAR/KBG/KVAFSU/Caprine/2017/3 nucleocapsid N3/N4 gene, partial cds. <i>GenBank: MT108436.1</i>
4	Choudapur, M.K., Awati, B., Hiremath, J.B., Patil, N.A. and Byagwat, J.(2020). Peste des petits ruminants virus isolate IND/KAR/BDR/KVAFSU/Caprine/2017/5 nucleocapsid N3/N4 gene, partial cds. <i>GenBank: MT108437.1</i>
5	Choudapur, M.K., Awati, B., Hiremath, J.B., Patil, N.A. and Byagwat, J.(2020). Peste des petits ruminants virus isolate IND/KAR/BDR/KVAFSU/Caprine/2017/6 nucleocapsid N3/N4 gene, partial cds. <i>GenBank: MT108438.1</i>
6	Choudapur, M.K., Awati, B., Hiremath, J.B., Patil, N.A. and Byagwat, J.(2020). Peste des petits ruminants virus isolate IND/KAR/YDG/KVAFSU/Caprine/2017/7 nucleocapsid N3/N4 gene, partial cds. <i>GenBank: MT108439.1</i>
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13	Choudapur, M.K., Awati, B., Hiremath, J.B., Patil, N.A. and Byagwat, J.(2020).Peste des petits ruminants virus isolate IND/KAR/YDG/KVAFSU/Caprine/2017/7 nucleocapsid protein N1/N2 gene,partial cds. <i>GenBank: MT108446.1</i>
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VETERINARY COLLEGE, SHIVAMOGGA

#	<i>Authors, Year of Publication, Title of Paper and Conference / Seminar / Symposia / Workshops etc., with Venue, Date and page number</i>
1	Pradeep, B.S. and Prashanth, V., “Advanced Diagnostic, Therapeutic and Control methods for Haemoprotozoan infections in Livestock”, Manual of ODRC Workshop on “Recent Developments in Livestock Disease Diagnosis and Therapeutics: A Cohort Approach”, held during 17 th and 18 th March, 2021 at ODRC, Veterinary College, Shivamogga Page No. 65 -75.
2	Pradeep, B.S. and Prashanth, V., “Laboratory Diagnosis of Haemoprotozoan Infections of Livestock”, Manual of ODRC Workshop on “Recent Developments in Livestock Disease Diagnosis and Therapeutics: A Cohort Approach”, held during 17 th and 18 th March, 2021 at ODRC, Veterinary College, Shivamogga Page No. 91 -95.
3	Pradeep, B.S., “Integrated management of parasitic diseases in livestock and poultry”, Manual of ODRC Workshop on “Recent trends in Livestock Disease Diagnosis A multidisciplinary Approach”, held during 25 th and 26 th February, 2021 at ODRC, Veterinary College, Shivamogga Page No. 83-96.
4	Pradeep, B.S. and Prashanth, V., “Common Laboratory methods used in the Diagnosis of Parasitic diseases in Livestock”, Manual of ODRC Workshop on “Recent trends in Livestock Disease Diagnosis A multidisciplinary Approach”, held during 25 th and 26 th February, 2021 at ODRC, Veterinary College, Shivamogga Page No. 125 -133.
5	Sureh Patel, R. and Malatesh, D. S. and Ganesh Udupa, K. Common diseases of sheep and their control. In hand book on “ Scientific sheep and goat husbandry” Published by Extension Unit, Veterinary College, shivamogga Page No. 48 -52
6	Malatesh, D.S., Ganesh Udupa, K. and Patel Suresh, R. 2021 Blood transfusion- An adjuvant therapy in large animal practice. In Comendium of workshop on “Recent developments in livestock disease diagnosis and therapeutics: A cohort approach”17-03-2021 and 18-03-2021, ODRC VCS, page No 20-23
7	Sureh Patel, R, Chaitra, G.R., Supriya, G.S., Malatesh, D.S. and Ganesh Udupa, K. Physical examination of Non- human primates In training manual on “ Surgery for Birth control in monkeys”organized by Govt of Karnataka, KVAFSU, Bidar, Veterinary College, Shivamogga , Karnataka Forest Department and Dept. of AH&VS ,2 nd to 4 th Sept 2020 Page No. 34-37
8	Sureh Patel, R.,Tajunnisa, M., Chaitra, G.R., Supriya, G.S., Malatesh, D.S. and Ganesh Udupa, K. 2020 Rabies in Non- human primates- An Overview In training manual on “ Surgery for Birth control in monkeys”organized by Govt of Karnataka, KVAFSU, Bidar, Veterinary College, Shivamogga , Karnataka Forest Department and Dept. of AH&VS, 2 nd to 4 th Sept 2020 Page No. 85-88

9	Malnad Gidda in Kannada-Authors- Dr. N. Prakash, Dr. R. Jayashree, Dr. Rudresh, B.H., Dr. Sateesha, G.M. and Dr. Sudarshan S. Gadad- A compilation of the Malnad Gidda breed, activities of MGR & IC and all publications related to Malnad Gidda
10	Contribution on the topic “Sheep and Goat breeds, Selection and breeding”, Dr. R. Jayashree, in the book published by EEC on the topic Scientific Sheep and Goat rearing, 2021
11	Sureh Patel, R., Chaitra, G.R., Supriya, G.S., Malatesh, D.S. and Ganesh Udupa, K. 2020. Physical examination of Non- human primates. In training manual on “ Surgery for Birth Control in Monkeys”organized by Govt. of Karnataka, KVAFSU, Bidar, Veterinary College, Shivamogga , Karnataka Forest Department and Dept. of AH & VS, 2 nd to 4 th Sept 2020. page no. 34-37.
12	Sureh Patel, R.,Tajunnisa, M., Chaitra, G.R., Supriya, G.S., Malatesh, D.S. and Ganesh Udupa, K. 2020. Rabies in Non- human primates- An Overview. In training manual on “Surgery for Birth Control in Monkeys”organized by Govt. of Karnataka, KVAFSU, Bidar, Veterinary College, Shivamogga, Karnataka Forest Department and Dept. of AH & VS, 2 nd to 4 th Sept 2020. page no. 85-88.
13	Sureh Patel, R., Malatesh, D. S. and Ganesh Udupa, K. 2020. Common diseases of sheep and their control. In hand book on “Scientific sheep and goat husbandry”. Published by Extension Unit, Veterinary College, Shivamogga. page no. 48 -52.
14	Malatesh, D.S., Ganesh Udupa, K. and Patel Suresh, R. 2021. Blood transfusion- An adjuvant therapy in large animal practice. In Comendium of workshop on “Recent developments in livestock disease diagnosis and therapeutics: A cohort approach”, 17-03-2021 and 18-03-2021, ODRC VCS, page no. 20-23.
15	<i>Folder</i> : ‘Foot and Mouth Disease ’ by G.M. Jayaramu, Patel Suresh Revanna, S.S. Manjunatha, B. Kavitha Rani and Kiran, H. J.– Under SCSP Budget, GoK of F.Y 2020-21 at Veterinary college, Shivamogga
16	<i>Folder</i> : ‘Haemorrhagic Septicaemia’ by G.M. Jayaramu, Patel Suresh Revanna, S.S. Manjunatha, B. Kavitha Rani and Kiran, H. J.– Under SCSP Budget, GoK of F.Y 2020-21 at Veterinary college, Shivamogga
17	<i>Folder</i> : ‘Black Quarter ’ by G.M. Jayaramu, Patel Suresh Revanna, S.S. Manjunatha, B. Kavitha Rani and Kiran H. J.– Under SCSP Budget, GoK of F.Y 2020-21 at Veterinary college, Shivamogga
18	Folder: Giridhar, K.S., Manju,. G.U., Nagabhushan, V. and Thirumalesh, T. (2020). Pashu aahara kharidisuvaga palisabekada kramagalalu. Publisher: Dean, VC, Shivamogga.
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20	Folder: Thirumalesh, T., Venkatesh, M.M., Umesh. B.U., BharatBhushan, M. and Satheesha, G.M., 2020, Bahuvارشika napier mevena bele: Publisher: Dean Shivamogga., VC,
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24	Shridhar, N.B., Sunilchandra, U., Manikanth, C.L. and Keerthana Aruru, 2020. Drugs for primate Restraint and Analgesia.in the Training Manual for the Officers of AHVS, GoK on: Surgery for Birth Control in Monkeys , Organized by Dept. of VSR, Veterinary College, Shivamogga, Karnataka Forest Department, Shivamogga, Dept. of Animal Husbandry and Veterinary Services, Shivamogga from 25-08-2020 to 27-08-2020 at Veterinary College,Shivamogga. Pp47-52.

25	Shridhar, N.B., Sunilchandra, U. and Manikanth, C.L., 2020. A note on antibacterials used in primates in the Training Manual for the Officers of AHVS, GoK on: Surgery for Birth Control in Monkeys, Organized by Dept. of VSR, Veterinary College, Shivamogga, Karnataka Forest Department, Shivamogga, Dept. of Animal Husbandry and Veterinary Services, Shivamogga from 25-08-2020 To 27-08-2020 at Veterinary College, Shivamogga. Pp71-75.
26	Shridhar, N.B. Sunilchandra, U. and Manikanth, C.L., 2021. An update on obscure diseases of cattle and buffaloes of Karnataka: An approach for diagnosis and treatment: Recent Trends in Livestock Disease Diagnosis: A Multidisciplinary Approach for the Officers of Department of Animal Husbandry and Veterinary Services, Government of Karnataka Obscure Disease Research Center, Veterinary College campus, Shivamogga from 25-26 February 2021. Pp114-120.
27	Shridhar, N.B. and Sunilchandra, U., 2021. Qualitative laboratory tests of toxicological importance in livestock Compendium of the workshop: Recent Trends in Livestock Disease Diagnosis: A Multidisciplinary Approach for the Officers of Department of Animal Husbandry and Veterinary Services, Government of Karnataka Obscure Disease Research Center, Veterinary College campus, Shivamogga from 25-26 Feb 2021 Pp121-123.
28	Shridhar, N.B. and Sunilchandra, U., 2021. Present scenario of mycotoxicosis in livestock of Karnataka State. Compendium of the workshop: Recent Trends in Livestock Disease Diagnosis: A Multidisciplinary Approach for the Officers of Department of Animal Husbandry and Veterinary Services, Government of Karnataka Obscure Disease Research Center, Veterinary College campus, Shivamogga from 25-26 Feb 2021 Pp124-133.
29	Shridhar, N.B., 2021. Pharmacotherapeutic management of dermatological disorders in large animals Compendium of the workshop: Recent Developments in Livestock Disease Diagnosis and Therapeutics: A Cohort Approach for the Officers of Department of Animal Husbandry and Veterinary Services, Government of Karnataka Obscure Disease Research Center, Veterinary College campus, Shivamogga from 17-18 March 2021 Pp96-113.
30	Shridhar, N.B. and Sunilchandra, U. 2021. Diagnostic aspects and sample collections in suspected toxicological conditions. Compendium of the workshop: Recent Developments in Livestock Disease Diagnosis and Therapeutics: A Cohort Approach for the Officers of Department of Animal Husbandry and Veterinary Services, Government of Karnataka Obscure Disease Research Center, Veterinary College campus, Shivamogga from 17-18 March 2021 Pp121-125.
31	Popular Articles: a) Project Report and Economics of Sheep Rearing b) Expenditure and Income analysis of a Sheep and Goat Unit. c) Importance & Methods of Sheep and Goat Rearing. d) Economics and Record keeping in Sheep and Goat Rearing.

RESEARCH ABSTRACTS OF PAPER PRESENTED IN CONFERENCE/ SEMINARS:

<i>Sl. No.</i>	<i>Year</i>	<i>Author/s</i>	<i>Title of the research abstract</i>	<i>Name of the convention with date/ venue/page or abstract No.</i>
1	2020	Rashmi Rajashekaraiyah, P. Ravi Kumar, N. Prakash, G. Srinivasa Rao, V. Rama Devi, M. Metta, H.D. Narayanaswamy, M. Narayana Swamy, D. Rathnamma, P.T. Ramesh, U. Sunilchandra, G.S. Naveen Kumar, C.R. Santhosh, S. Naveen Kumar, K.R. Anjan Kumar.	Enhanced pharmacokinetics of 6-thioguanine by chitosan nanoparticles and pretreatment with curcumin.	Compendium of XX Annual Conference of ISVPT and International webinar on "Receptor dynamics in cell signalling" and National webinar on "Translational approaches in herbal drug development through virtual mode..pp: 49

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1. Manjunatha, L. and Sindhu, M.G., February, 2021. Marketing of pig products. Training manual on Improvised pig farming. Training Compendium (Kannada).Published by Dean, Extension Education Centre, Veterinary College, Hassan. Pp. 68-72.
2. Manjunatha, L. and Sindhu, M.G., March, 2021. Various schemes for promotion of sheep and goat farming. Training Compendium (Kannada).Published by Dean, Extension Education Centre, Veterinary College, Hassan. Pp. 58-61.
3. Manjunatha, L., (Edited) 2021. Training manual on Improvised sheep and goat farming, Training Compendium (Kannada).Published by Dean, Extension Education Centre, Veterinary College, Hassan.
4. Manjunatha, L., (Edited) 2021. Training manual on Improvised pig farming, Training Compendium (Kannada).Published by Dean, Extension Education Centre, Veterinary College, Hassan.
5. Suresh, B.N., Shivkumar, M.C., Manjunatha, L. and Girish, B.C., 2020. Atlas on small scale backyard poultry production. Published by KVAFSU & under DST, New Delhi
6. Rashmi, L. and Girish, B.C. Shilindragalindalu barabahudu kechchala bahu (Kannada), Pashubandha, 9(12) December 2020
7. Shivakumar, M., Ravindra Hegde, Nagappa Karabasanavar, Girish, B.C, Satheesha, S.P., Chandrashekar, N. and Manjunatha, L. African handi Jwara (Kannada), folder published by Dean, HVC, August 2020, under SCSP funds.

#	Type	Authors	Title	Publisher	Year
1	Folder	Shivakumar V, Raveendra Hegde, Nagappa Karabasanavar, Girish B.C., Satheesha S.P., Chandrashekara N. an Manjunatha L.	African swine fever (Kannada) African handi jwara	Published by Dean, HVC under SCST 2019-20 scheme	2020
2	Folder	Ravikumar, C., Pavankumar, K.N., Prakash N., and Shivakumar, M.C.	Cyanide Toxicity	Published by Dean, HVC under SCST 2019-20 scheme	2020
3	Folder	Ravikumar, C., Pavankumar, K.N., Prakash N., Shivakumar, M.C. and Girish, B.C.	Nitrate toxicity	Published by Dean, HVC under SCST 2019-20 scheme	2020
4	Folder	Ravikumar, C., Pavankumar, K.N., Prakash N., Shivakumar, M.C. and Girish, B.C.	Pesticide toxicity	Published by Dean, HVC under SCST 2019-20 scheme	2020
5	Folder	Ravikumar, C. and Pavankumar, K.N.	Urea toxicity	Published by Dean, HVC under SCST 2019-20 scheme	2020
6	Book chapter	Girish P.S., and N. Karabasanavar	Molecular techniques for speciation of meat	Eds. Ashim Kumar Biswas and Prabhat Kumar Mandal, Academic Press, Elsevier Inc. Oxford, UK [ISBN: 978-0-12-819233-7]	2020

7	Book chapter	Ray, K., Shil, S., Saharia, S., Sarma, N. and Karabasanavar, N.S.	Detection and identification of parasite eggs from microscopic images of fecal samples	<i>In: Computational Intelligence in Pattern Recognition</i> (pp. 45-55). Springer, Singapore.	2020
8	Training Manual	N Jaishankar	Feeding of sheep and goat	Scientific Sheep and Goat Farming	2020
9	Training Manual	N Jaishankar	Feeding of sheep and goat	Scientific Sheep and Goat Farming	2020
10	Training Manual	Manjunath L and Jaishankar N	Silage making	Scientific Sheep and Goat Farming	2020
11	Training Manual	Jaishankar N and Manjunath L	Hay making	Scientific Sheep and Goat Farming	2020
12	Training Manual	Jaishankar N and Manjunath L	Haylage	Scientific Sheep and Goat Farming	2020
13	Training Manual	Manjunath L and Jaishankar N	Dry fodder enrichment	Scientific Sheep and Goat Farming	2020
14	Training Manual	Jaishankar N and Manjunath L	Fodder production	Improved fodder production	2020
15	Training Manual	Jaishankar N and Manjunath L	Feeding of livestock	Improved fodder production	2020

COLLEGE OF FISHERIES, MANGALURU

1. Published a booklet: Ganapathi Naik, M, Abhiman, ManjuleshPai, Mahadevi and Anitha Nagaraju (2020). New Aquaculture Technologies.
2. Pallavi Baliga, Malathi Shekar & Girisha Shivani Kallappa, 2020. Bacteriophage Endolysins- Alternative to Antibiotics. Scientific Reporter, 57(10): 41-44.
3. Dr. Jayanaik, 2020, "Impacts of Fishing gear and the role of By-catch reductions along West coast of India", Aquan Spectrum
4. Dr. Jayanaik, 2020, "General principles of trawl nets used along Mangaluru coast and the effect of climate change on fishery". Aqua International
5. Dr. Jayanaik, 2020, "Effective Behavioral changes in the modifications of fishing gear on the Seabed during operation". Aqua International
6. A.T. Ramachandraaik, Anjanayappa. M, Rajesh D.P, Ganesh Prasad. L., 2020 , "Tilapia fish culture", College of Fisheries, Mangaluru, KVAFSU, Bidar
7. A.T. Ramachandraaik, S.R. Somashekar, Rajesh, D.P., Ganesh Prasad, L., 2020 "Pangasius (suragi)Fish farming", College of Fisheries, Mangaluru, KVAFSU, Bidar
8. A.T. Ramachandraaik, M.T. Lakshmipathi, Ganesh Prasad, L, Rajesh D.P., 2020 "Inland fish culture", College of Fisheries, Mangaluru, KVAFSU, Bidar
9. S.R. Somashekar, Manjuleshpai, Ganesh Prasad, L, Vandana, Swathi., 2020, "Fish culture in vented dam" College of Fisheries, Mangaluru, KVAFSU, Bidar
10. S.R. Somashekar, Manjuleshpai, Ganesh Prasad, L, Vandana, Swathi., 2020, " Aquatic weed control through fish culture" College of Fisheries, Mangaluru, KVAFSU, Bidar
11. S.R. Somashekar, Manjuleshpai, Ganesh Prasad, L, Vandana, Swathi., 2020, "Fish diseases caused by parasites and treatment " College of Fisheries, Mangaluru, KVAFSU, Bidar
12. Rajesh, D.P., H.N. Anjanayappa, A.S. Kumar Naik , Harshath, D.C. and Harisha, 2020. Seaweed Importance in fisheries. Aqua International pp.60.

13. SuyaniNitin Kanji, Mridula Rajesh, K.M. Rajeshand Monty MeshramMadan (2021). Threatened, Endangered and Vulnerable Aquatic Organisms with Special Reference to Elasmobranchs. Aqua International, 28 (10): 58-63.
14. Mridula Rajesh (2021). Fisheries and Mogaveera culture. In: Vachana Chaluvaimattu Ambigara Chowdayya. Collection of Special Lecture Articles on Ambigara Chowdayya. A thinker and social reformer of 12th Century. Edited by Dr. Nagappa Gowda and Yathish Kudupu, pp 81-94.
15. Suyani Nitin Kanji, Mridula Rajesh, Malathi Shekar and K. M. Rajesh (2021). Mangrove floristics- current status in India. NESAs Newsletter, 24 (2): 10-13.
16. Government Fish Farms- 2020. A.T. Ramachandra Naik., H.N. Anjanayappa., Rajesh D.P. and Ganesh Prasad L.
17. Pangasius Fish Farming- 2020. A.T. Ramachandra Naik., S. R. Somashekara., Rajesh, D.P. and Ganesh Prasad L.
18. Ornamental Fish Culture - 2020. A.T. Ramachandra Naik., Shivakumara M., Ganesh Prasad L. and Rajesh, D.P.
19. Inland Fish Farming - 2020. A.T. Ramachandra Naik., Lakshmipathi M. T., Ganesh Prasad L. and Rajesh, D.P.

INSTITUTE OF WILDLIFE VETERINARY RESEARCH, KODAGU

Kannada and English Leaflets about information of IWVR.



LIVESTOCK RESEARCH AND INFORMATION CENTER, KONEHALLI

Chapter in the Book

1. Harish Shenoy (2020) Integrated crop management practices enhances rice productivity in Coastal Karnataka. Book Chapter: *New Perspectives in Agriculture and Crop Science. Vol. 3* Published by Book Publisher International Calcutta.pp.69-72. Print ISBN: 978-93-90206-57-5, DOI: 10.9734/bpi/npacs/v3

Popular article:

1. Harish Shenoy (2020). Tenginalli kandu baruva banjekayi samasse haagu pariharopayagalu, Krishibimba Maasapatrike (September), 19(2):8-10.

CANINE RESEARCH AND INFORMATION CENTER, THIMMAPUR, BAGALKOT

1.	Dr. Mahesh S Akashi	Leaflets regarding Mudhol Hound rearing
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FISHERIES RESEARCH AND INFORMATION CENTER, HEBBAL

#	Year	Authors	Title of the Book	Name of the Publishers
Books				
1	2021	Dr Shivakumar M Dr K B Rajanna Dr Sruthisree C	SoP for Aquaculture	Department of Fisheries
Laboratory Manual				
1	2020	Dr.Shivakumar M Dr.K.B.Rajanna Dr.Sruthisree.C Dr.Harsha Nayak Mr.Adarsh.K Ms.Poojitha.M	Laboratory manual on Nutrients analysis of feed and food products	Fisheries Research and Information center, Hebbal, Bengaluru
2	2020	Dr.Shivakumar M Dr.K.B.Rajanna Dr.Sruthisree.C Dr.Harsha Nayak Mr.Adarsh.K Ms.Poojitha.M	Laboratory manual on Water & Waste Water Analysis	Fisheries Research and Information center, Hebbal, Bengaluru
3	2020	Dr.Shivakumar M Dr.K.B.Rajanna Dr.Sruthisree.C Dr.Harsha Nayak Mr.Adarsh.K Ms.Poojitha.M	Laboratory manual on analysis of soil and sediment quality	Fisheries Research and Information center, Hebbal, Bengaluru
4	2020	Dr.Shivakumar M Dr.K.B.Rajanna Dr.Sruthisree.C Dr.Harsha Nayak Mr.Adarsh.K Ms.Poojitha. M	Laboratory manual on Analysis of heavy metal and biological components	Fisheries Research and Information center, Hebbal, Bengaluru
Leaflets/ Bulletins/Folders				
#	Type of publication	Month & Year	Authors	Title of the Publication
1	Leaf lets	2021	Dr.Shivakumar M Dr.K.B.Rajanna Dr.Sruthisree.C Mr. Adarsha K	Krushu hondadali menu sakanike
2	Leaf lets	2021	Dr.Shivakumar M Dr.K.B.Rajanna Dr.Sruthisree.C Dr.Harsha Nayak	Kola hagu keregalali menu sakanike
3	Leaf lets	2021	Dr.Shivakumar M Dr.K.B.Rajanna Dr.Sruthisree.C Mr. Adarsha K	Meenumarigala utpadane, palane hagu sakanike
4	Leaf lets	2021	Dr.Shivakumar M Dr.K.B.Rajanna Dr.Sruthisree.C Mr. Adarsha K	Samagra Meenu krushi

5	Leaf lets	2021	Dr.Shivakumar M Dr.K.B.Rajanna Dr.Sruthisree.C	Mannu hagu nirina rasayanika gunavisheshagalu mathu menu sakanikeyali avugala pramukyathe
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FISHERIES RESEARCH AND INFORMATION CENTER, BHUTHNAL

Extension Publications (Books, Training manuals, Popular articles, leaflets etc)

#	Type of Publication	Year of the Publication	Authors	Title of Paper
01	Popular Articles	Aug 2020-21	Dr. Chndrakhantha lingdal	“Uppu Mishrith hinniru sigadi krushi”.
02	Popular Articles	Dec 2020-21	Dr. Vijayakumar.S. Dr. Vijay S. Atnur	“ Pangesious (Surgi) Minu Sakanike”
03	Folders	2020-21	Dr. Vijayakumar.S. Dr. Vijay S. Atnur and Dr. Muttappa Khavi	“Kruski Munnudi Minu Sakanie vandu Labadayak Krushi”
04	Folders	2020-21	Dr. Vijayakumar.S. Dr. Vijay S. Atnur and Dr. Muttappa Khavi	“Minina Rogagalu avugal niyatrana ”

KRISHI VIGYAN KENDRA- DAKSHINA KANNADA, MANGALURU

	Title of the leaflets	Authors	No. of copies
Books	Krishi saadhakara yashogathegala pustaka (ICAR-KVK, Dakshina Kannada, Mangaluru neravininda nootana tantragnyanagalannu krishi kshetradalli alavadisi yashassu saadhisida krishikara yashogathegala	Smt. Madhura N. Hedge, Dr. Rashmi R., Dr. T.J. Ramesha, Dr. Chethan N., Dr. Kedarnath, Dr. Naveen Kumar B.T., Dr. Mallikarjuna L.,	50
	New technologies in fish culture	Dr. Chethan N., Dr. T.J. Ramesha	150
Training Manuals	Vermicompost production technologies Ere gobbarautpadanatantrikathe	Dr. Naveen Kumar B.T., Dr. T.J. Ramesha, Dr. Chethan N., Dr. Kedarnath, Dr. Rashmi R., Mallikarjun L.	500
	Azolla- Boon for organic farmers Azolla-SavayavaKrishikarigeVaradana	Dr. Naveen Kumar B.T., T.J. Ramesha, Dr. Chethan N., Dr. Kedarnath, Dr. Rashmi R., Mallikarjun L.	500
	Yaantrikruta Bhattada Krushi- mareyaguttiruvabhaadakrushigevaradana	Dr. Naveen Kumar B.T., Dr. T.J. Ramesha, Dr. Mallikarjun L., Dr. Chethan N., Dr. Kedarnath, Dr. Rashmi R.,	500

Erehulu gobbarada utpadanaa taantrikate	Dr. Naveen Kumar B.T., Dr. T.J. Ramesha, Dr. Mallikarjun L., Dr. Chethan N., Dr. Kedarnath, Dr. Rashmi R.,	500
Azolla-Saayava Krishikaraige Varadhana	Dr. Naveen Kumar B.T., Dr. T.J. Ramesha, Dr. Mallikarjun L, Dr. Chethan N., Dr. Kedarnath, Dr. Rashmi R.,	500
Improved production technology in paddy cultivation	Dr. Naveen Kumar B.T., T.J. Ramesha, Mallikarjuna L., Dr. Chethan N., Dr. Kedarnath, Dr. Rashmi R., and Dr. Shodhan	500
Sahyadri Panchamukhi paddy variety for flood affected areas of Dakshina Kannada	Dr. Naveen Kumar B.T., T.J. Ramesha, Mallikarjuna L., Dr. Chethan N., Dr. Kedarnath, Dr. Rashmi R.,	500
Production technology of organic manure	Dr. Naveen Kumar B.T., Dr. T.J. Ramesha, Dr. Chethan N., Dr. Mallikarjuna L., Dr. Kedarnath, Dr. Rashmi R.,	500
Fodder production and utilization	Dr. Naveen Kumar B.T., T.J. Ramesha,	500
Importanance of soil testing	Dr. Mallikarjuna L., Dr. Naveen Kumar B.T. Dr. T.J. Ramesha, Dr. Chethan N., Dr. Kedarnath, Dr. Rashmi R.,	500
Soil and water conservation and backyard poultry farming	Dr. Mallikarjuna L. Dr. Naveen Kumar B. T. Dr. T.J. Ramesha, Dr. Chethan N., Dr. Kedarnath and Dr. Rashmi R	500
Production technology of arecanut	Dr. Rashmi R., Dr. T.J. Ramesha, Dr. Chethan N., Dr. Kedarnath, Dr. Naveen Kumar B.T., Dr. Mallikarjuna L.,	500
Production technology of coconut	Dr. Rashmi R., Dr. T.J. Ramesha, Dr. Chethan N., Dr. Kedarnath, Dr. Naveen Kumar B.T., Dr. Mallikarjuna L.,	500
Production technology of pepper	Dr. Rashmi R., Dr. T.J. Ramesha, Dr. Chethan N., Dr. Kedarnath, Dr. Naveen Kumar B.T., Dr. Mallikarjuna L.,	500
Production technology of cashew	Dr. Rashmi R., Dr. T.J. Ramesha, Dr. Chethan N., Dr. Kedarnath, Dr. Naveen Kumar B.T., Dr. Mallikarjuna L.,	500

	Production technology of cocoa	Dr. Rashmi R., Dr. T.J. Ramesha, Dr. Chethan N., Dr. Kedarnath, Dr. Naveen Kumar B.T., Dr. Mallikarjuna L.,	500
	Production technology of banana	Dr. Rashmi R., Dr. T.J. Ramesha, Dr. Chethan N., Dr. Kedarnath, Dr. Naveen Kumar B.T., Dr. Mallikarjuna L.,	500
	Production technology of jack	Dr. Rashmi R., Dr. T.J. Ramesha, Dr. Chethan N., Dr. Kedarnath, Dr. Naveen Kumar B.T., Dr. Mallikarjuna L.,	500
	Production technology of udupi jasmine	Dr. Rashmi R., Dr. T.J. Ramesha, Dr. Chethan N., Dr. Kedarnath, Dr. Naveen Kumar B.T., Dr. Mallikarjuna L.,	500
	Nutri garden	Dr. Rashmi R., Dr. T.J. Ramesha, Dr. Chethan N., Dr. Kedarnath, Dr. Naveen Kumar B.T., Dr. Mallikarjuna L.,	90
	Nutri garden	Dr. Rashmi R., Dr. T.J. Ramesha, Dr. Chethan N., Dr. Kedarnath,	40
	Importance of nutritional diet for enhancing immunity of human	Dr. Rashmi R., Dr. T.J. Ramesha, Dr. Chethan N.,	40
	Importance of balanced diet	Dr. Rashmi R., Dr. Chethan N., Dr. T.J. Ramesha,	500
	Yellow leaf diseases of arecanut	Dr. Kedarnath, Dr. T.J. Ramesha, Dr. Chetan N, Dr. Naveen Kumar B.T., Dr. Mallikarjun L., Dr. Rashmi R.	100
	Giant African Snail management	Kedarnath, Rashmi, R. T. J. Ramesha, Chethan, N., Naveen Kumar, B. T.	100
	Krishi Vigyan Kendra-kisanonki pragatimeih sahayak (<i>In Hindi</i>)	Dr. T. J Ramesha., Dr. Naveen Kumar B. T. Dr. Chethan N., Dr. Kedarnath Dr. Mallikarjuna L., Dr. Rashmi R.	100
	Selection of cattle breeds	Dr. Shodhan K.V., Dr. T. J Ramesha., Dr. Chethan N., Dr. Kedarnath, Dr. Rashmi R., Dr. Mallikarjun L., Dr. Naveen Kumar B.T.,	500
	Clean Milk Production	Dr. Shodhan K.V., Dr. T. J Ramesha., Dr. Chethan N., Dr. Kedarnath, Dr. Rashmi R., Dr. Mallikarjun L., Dr. Naveen Kumar B.T.,	500

	Scientific Goat farming	Dr. Shodhan K.V., Dr. T. J Ramesha., Dr. Chethan N., Dr. Kedarnath, Dr. Rashmi R., Dr. Mallikarjun L., Dr. Naveen Kumar B.T.,	500
	Scientific Pig farming	Dr. Shodhan K.V., Dr. T. J Ramesha., Dr. Chethan N., Dr. Kedarnath, Dr. Rashmi R., Dr. Mallikarjun L., Dr. Naveen Kumar B.T.,	500
Popular Articles	“Laabhadayaka kasubagi vaignyanika koli sakaanike” “ಲಾಭದಾಯಕ ಕಸುಬಾಗಿ ವೈಜ್ಞಾನಿಕ ಕೋಳಿ ಸಾಕಾಣಿಕೆ” Krishi Bhimba, April 2020 Vol. No. 19(1), Page No. 27	Dr. Chethan N., Dr. T.J. Ramesha, Dr. Kedarnath, Dr. Naveen Kumar B.T., Dr. Mallikarjun L., Dr. Rashmi R.	-
	Nutrient management in arecanut Published in : Vijaya Karnataka Kannada News Paper	Dr. Rashmi R	-
	ಬಾಳೆ ಬೆಳೆಯಲ್ಲಿ ಗುಣಮಟ್ಟದ ಇಳುವರಿಗಾಗಿ ಬಾಳೆ ಸ್ಪೆಷಲ್ ಬಳಕೆ Published in : Vijaya Karnataka Kannada News Paper	Dr. Rashmi R., Dr. T.J. Ramesha, Dr. Chethan N., Dr. Kedarnath, Dr. Naveen Kumar B.T., Dr. Mallikarjuna L.,	-
	ಸುಸ್ಥಿರ ಇಳುವರಿಗಾಗಿ ಆರ್ಕಾ ಸೂಕ್ಷ್ಮಣು ಜೀವಿಗಳ ಸಮೂಹದ 'ಜೈವಿಕ ಗೊಬ್ಬರಗಳ ಬಳಕೆ Krishi Bhimba, Vol. No. 18(3), Page No. 19 -20	Dr. Rashmi R., Dr. T.J. Ramesha, Dr. Chethan N., Dr. Kedarnath, Dr. Naveen Kumar B.T., Dr. Mallikarjuna L.,-	-
	ಅನಾನಸ್ ಬೇಸಾಯ Krishi Bhimba, Vol. No. 19(5), Page No. 15 -17	Dr. Rashmi R., Dr. T.J. Ramesha, Dr. Chethan N., Dr. Kedarnath, Dr. Naveen Kumar B.T., Dr. Mallikarjuna L.,	-
	ಬಟಾಣಿ ಬೆಳೆಯ ಸುಧಾರಿತ ಬೇಸಾಯ ಕ್ರಮಗಳು Negela Meditha Vol. No. 6(4), Page No. 6-7	Dr. Rashmi R., Dr. T.J. Ramesha, Dr. Chethan N., Dr. Kedarnath, Dr. Naveen Kumar B.T., Dr. Mallikarjuna L.,	-
	ಬಾಳೆ ಬೆಳೆಯಲ್ಲಿ ಗುಣಮಟ್ಟದ ಇಳುವರಿಗಾಗಿ ಬಾಳೆ ಸ್ಪೆಷಲ್ ಬಳಕೆ Krishi Bimbaa Magazine Vol. No. 19, Page No. 26-27	Dr. Rashmi R., Dr. T.J. Ramesha, Dr. Chethan N., Dr. Kedarnath, Dr. Naveen Kumar B.T., Dr. Mallikarjuna L.,	-
	Amur common carp-boon to farmers Krishi Bimbaa Magazine Vol. No. 19(4), Page No. 22 -23	Dr. Chethan N., Dr. T.J. Ramesha, Dr. Naveen Kumar B.T., Dr. Kedarnath, Dr. Mallikarjuna L., Dr. Rashmi R.,	-
	Shuchi meeninge solar dryer Vijay Karnataka	Dr. Chethan N.	-
Leaflets	-	-	-

ANIMAL HUSBANDRY POLYTECHNIC, BARGI

1. FOLDERS:

1	Pesticide poisoning	Dr. Ravikumar.C, Pavankumar.K.N. Prakash Nadoor, Shivakumar.M.C.
2	Cyanide poisoning	Dr. Ravikumar.C, Pavankumar.K.N. Prakash Nadoor, Shivakumar.M.C.
3	Urea poisoning	Dr. Ravikumar.C, Pavankumar.K.N. Prakash Nadoor, Shivakumar.M.C.
4	Nitrate poisoning	Dr. Ravikumar.C, Pavankumar.K.N. Prakash Nadoor, Shivakumar.M.C.

V. FINANCE AND BUDGET

RECEIPTS			EXPENDITURE		
Sl. No	Particulars	Amount in lakhs	Sl. No	Particulars	Amount in lakhs
A	GENERAL FUNDS		A	GENERAL FUNDS	
1	Grants from Govt. of Karnataka		1	Grants from Government of Karnataka	
a	Daily Wages	139.00	a	Daily Wages	133.16
b	Grant-in-Aid-Salary (KVAFSU)	7173.25	b	Grant-in-Aid Salaries (KVAFSU)	7437.53
	Grant-in-Aid-Salary (IAH&VB)	1379.03		Grant-in-Aid Salaries (IAH&VB)	1325.84
c	Grant-in-Aid- General (KVAFSU)	160.00	c	Grant-in-Air General (KVAFSU)	1547.19
d	Grant in Aid Contract/Outsource (KVAFSU)	1512.00	d	Grant in Aid Contract/Outsource (KVAFSU)	1962.93
	Grant in Aid Contract/Outsource (IAH&VB)	80.00		Grant in Aid Contract/Outsource (IAH&VB)	131.35
e	Grant-in-Aid-Pensions (KVAFSU)	2803.98	e	Grant-in-Aid-Pensions (KVAFSU)	3094.61
	Grant-in-Aid-Pensions (IAH&VB)	407.00		Grant-in-Aid-Pensions (IAH&VB)	407.00
	Sub Total - 1	13654.26		Sub Total - 1	16039.61
2	Internal Resources		2	Internal Resources	
a	Income from Fees	1009.79		Excess expenditure over and above the Grants from Government of Karnataka are met out of Internal Resources of the University in accordance with University Act No. 40(1)(b)	
b	Income from University Property	217.02			
c	Income from Colleges	31.09			
d	Income from Research Stations	212.60			
e	Income from Extension	0.00			
f	Receipts from ICAR Projects (37.50%)	18.12			
g	Other Misc. Income	1715.83			
	Sub Total - 2	3204.45		Sub Total - 2	0.00
3	SCSP / TSP Grants		3	SCSP / TSP Grants (Plan)	
			aa	Refund from IWVR, Kudige	-248.50
a	Scheduled Caste Sub-Plan	200.00	a	Scheduled Caste Sub-Plan	173.03
b	Tribal Sub-Plan	100.00	b	Tribal Sub-Plan	73.01
	Sub Total - 3	300.00		Sub Total - 3	-2.46
4	Capital Grants		4	Capital Expenditure	
a	Education, Extension & Research	1000.00	a	Education, Extension & Research	1074.14
b	Grants for Equipments (IAH&VB)	993.64	b	Grants for Equipments (IAH&VB)	721.53
	Sub Total - 4	1993.64		Sub Total - 4	1795.67
5	State Adhoc Projects		5	State Adhoc Projects	
a	Adhoc Project	-1279.50	a	Adhoc Project	65.47
b	RKVY Projects	790.70	b	RKVY Projects	715.97
c	SUJALA-III Projects	16.69	c	SUJALA-III Projects	14.05
	Sub Total - 5	-472.11		Sub Total - 5	795.49
6	Government of India Schemes	267.47	6	Government of India Schemes	188.21
7	Grants from ICAR		7	Grants from ICAR	
a	ICAR Development Schemes	124.29	a	ICAR Development Schemes	144.32
b	ICAR Coordinated Projects (75%)	148.80	b	ICAR Coordinated Projects (75%)	75.99
c	ICAR Coordinated Projects (100%)	126.16	c	ICAR Coordinated Projects (100%)	99.74
d	Krishi Vignyana Kendra	118.80	d	Krishi Vignyana Kendra	98.63
	Sub Total - 7	518.05		Sub Total - 7	418.68
8	Other Agencies	125.85	8	Other Agencies	102.82
	TOTAL A (1 to 8)	19591.61		TOTAL A	19338.02
B	FOUNDATION FUNDS	0.00	B	FOUNDATION FUND	0.00
C	DEBT & SUSPENCE A/C.		C	DEBT & SUSPENCE A/C.	
a	Debt & Suspense A/c (General)	5389.50	a	Debt & Suspense A/c (General)	8715.08
b	Recovery / Deductions from Salary & Other bills	2473.90	b	Recovery / Deductions from Salary & Other bills	2473.88
	Total C	7863.40		Total C	11188.96
	TOTAL (A+B+C)	27455.01		TOTAL (A+B+C)	30526.98
	Add : Opening Balance	9080.72		Add : Closing Balance	6008.75
	GRAND TOTAL	36535.73		GRAND TOTAL	36535.73

VI. GENERAL ADMINISTRATION

1) Superannuation

List of Superannuated Employees of KVAFSU, Bidar between 01-04-2020 to 31-03-2021

#	<i>Employs Name Designation & Place</i>	<i>Empl. No.</i>	<i>Date of Birth</i>	<i>Date of Super-annuation</i>	<i>Retirement dated</i>
TEACHING STAFF					
1	Dr. R.V. Prasad Professor Veterinary College Hebbal, Bengaluru	1086	02.05.1958	02.05.2020	31.05.2020
2	Dr. K. N. Prabhudeva Professor & Head Fisheries Research & Information Centre, Hebbal, Bengaluru	1646	5.07.1958	5.07.2020	31.07.2020
3	Dr. E. G. Jayaraj Professor & Head College of Fisheries, Mangaluru	1059	03.07.1958	03.07.2020	31.07.2020
4	Dr. Gangadhar Gowda University Librarian K.V.A.F.S.U., Bidar	1045	06.08.1958	06.08.2020	31.08.2020
5	Dr. C.V. Raju Professor & Comptroller I/c K.V.A.F.S.U., Bidar	1147	24.8.1958	24.8.2020	31.8.2020
6	Dr. M.L. Satyanarayana Professor & Head Veterinary College Hebbal, Bengaluru	1097	4.11.1958	4.11.2020	30.11.2020
7	Mrs. Jayashri, P. Hiremath Associate Professor Dairy Science College Hebbal, Bengaluru	1128	4.12.1958	4.12.2020	31.12.2020
8	Dr. M. Narayana Bhat Dean Veterinary College Hebbal, Bengaluru	1082	31.1.1959	31.01.2021	31.01.2021
9	Dr. G.C. Puttalakshamma Professor Veterinary College, Hassan	1145	30.01.1959	30.01.2021	31.01.2021
10	Dr. K.V. Jamuna Professor & Head Veterinary College Hebbal, Bengaluru	1056	02.02.1959	2.02.2021	28.02.2021
11	Dr. H.A. Upendra Dean (I/c) Veterinary College Hebbal, Bengaluru	1110	11.02.1959	11.02.2021	28.02.2021

NON-TEACHING STAFF

1	Sri. Puttamadaiah Maistry Institute of Animal Health & Veterinary Biologicals Hebbal, Bengaluru	2155	11.04.1960	11.04.2020	30.04.2020
2	Sri. S. Ramakrishna Senior Field Assistant Veterinary College Hebbal, Bengaluru	1362	20.5.1960	20.5.2020	31.5.2020
3	Smt. Guamma Senior Farm Labour Veterinary College, Bidar	1522	06.05.1960	06.05.2020	31.05.2020
4	Sri. Vitha B Goragi Lab Assistant Veterinary College, Bidar	1422	01.06.1960	01.06.2020	31.05.2020
5	Sri. B. Jagadeesha Senior Life Guard College of Fisheries, Mangaluru	1317	01.06.1960	01.06.2020	31.05.2020
6	Sri. H.L. Ramachandraiah Animal Attender Veterinary College Hebbal, Bengaluru	1487	01.06.1960	01.06.2020	31.05.2020
7	Sri. Krishnamurthy Animal Attender Veterinary College Hebbal, Bengaluru	1530	01.06.1960	01.06.2020.	31.05.2020
8	Sri. H. C. Mahadeva Helper Institute of Animal Health & Veterinary Biologicals Hebbal, Bengaluru	2104	01.06.1960	01.06.2020	31.05.2020
9	Smt. Neelamma Daily Rated Employee (DRE) Veterinary College, Bidar	1205	01.06.1960	01.06.2020	31.05.2020
10	Smt. B. Indiradevi Librarian Institute of Animal Health & Veterinary Biologicals Hebbal, Bengaluru	2068	08.06.1960	08.06.2020	30.06.2020
11	Sri. Maruthi, Z. Senior Field Assistant Veterinary College, Bidar	1274	06.06.1960	06.06.2020	30.06.2020
12	Sri. T. Nagarajaiah Senior Poultry Attender Veterinary College Hebbal, Bengaluru	1471	29.06.1960	29.06.2020	30.6.2020
13	Josephine Immaculate Mary Senior Lab Technician Institute of Animal Health & Veterinary Biologicals Hebbal, Bengaluru	2078	14.07.1960	14.07.2020	31.07.2020

14	Sri. S. Mariswamy Messenger Veterinary College Hebbal, Bengaluru	1986	05.08.1960	05.08.2020	31.08.2020
15	Sri. Shankrappa Lab Assistant Institute of Animal Health & Veterinary Biologicals Hebbal, Bengaluru	2095	26.08.1960	26.08.2020	31.08.2020
16	Sri. Ramesh, D. Belchada Messenger College of Fisheries, Mangaluru	2009	07.09.1960	07.09.2020	30.09.2020
17	Sri. Rajashekar, G. Senior Laboratory Assistant Dairy Science College Hebbal, Bengaluru	1361	24.09.1960	24.09.2020	30.09.2020
18	Smt. Gajalakshmi Bai Senior Ward Girl Grade-1 Veterinary College Hebbal, Bengaluru	1392	30.10.1960	30.10.2020	31.10.2020
19	Sri. T. C. Manjunatha Senior Farm Labourer College of Fisheries, Mangaluru	1538	05.11.1960	05.11.2020	30.11.2020
20	Sri. J. Venkatappa Senior Animal Attender Grade-1 Dairy Science College Hebbal, Bengaluru	1454	21.12.1960	21.12.2020	31.12.2020
21	Sri. Lokanath Driver (HV) Veterinary College, Bidar	1455	21.02.1961	21.02.2021	28.02.2021
Voluntary Retirement from Service					
1	Smt. Srilatha Devi Senior Laboratory Technician Institute of Animal Health & Veterinary Biologicals Hebbal, Bengaluru	2079	16.06.1962	16.06.2022	02.11.2020
Retirement due to Death					
1	Late. D. Bylappa Senior Farm Labourer Veterinary College Hebbal, Bengaluru	1517	20.07.1969	09.06.2020	09.06.2020
2	Late Dr. Mahesh. S. Doddamani Assistant Professor Canine Research and Information Centre (MH), Timmapur, Mudhol	1584	15.06.1973	13.8.2020	13.8.2020

VII. INFRASTRUCTURE DEVELOPMENT

Details of progress of works under taken by KVAFSU during the year 2020-21

#	Name of Work	Bid Amount in Rupees
1	Construction of piggery shed at LRIC, Mulibagilu	9,99,993.00
2	Drilling of Borewell (02Nos) at LRIC, Nagamangala, Mandya	3,48,62 2.00
3	Miscellaneous civil works at CRIC, Mudhol, Timmapur	1,59,76 8.00
4	Laying if pipe line at FRIC, Bhutnal, Vijayapura	90,107. 00
5	Renovation of Fish Pond at FRIC, Bhutnal, Vijayapura	3,00,19 4.00
6	Renovation of Fish Pond at FRIC, Hesaraghatta, Bengaluru	3,59,98 6.00
7	Renovation of Fish Pond at FRIC, Hebbal, Bengaluru	5,38,76 6.00
8	Addition and improvement to office building at BRIC, Dornahalli, Yadgiri	9,96,83 3.00
9	Renovation of buffalo shed at BRIC, Dornahalli, Yadgiri	1,69,33 1.00
Total		39,63,600.00