

WEST BENGAL UNIVERSITY OF ANIMAL AND FISHERY SCIENCES

WEST BENGAL UNIVERSITY OF ANIMAL AND FISHERY SCIENCES

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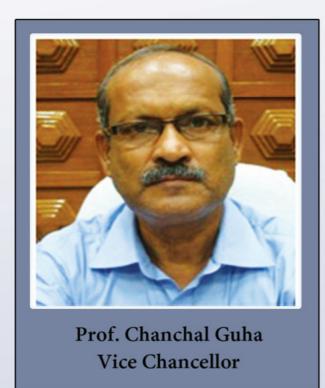
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FOREWORD



It gives me immense pleasure to present the Annual Report of the West Bengal University of Animal & Fishery Sciences which highlights the important activities of the varsity and salient achievements made during the period from April, 2019 to March, 2020.

In the present day scenario, the livestock and fishery sectors play an important role in sustainable agricultural development system for the small & marginal farmers and landless labourers of the country. The poultry and dairy sectors are paving the way for empowerment of the farming community and is playing an important role in poverty alleviation and rural upliftment. The West Bengal University of Animal & Fishery Sciences has established itself as one of the leading institutions in the eastern region of the country, shouldering responsibilities to impart education and to undertake research and extension activities in veterinary, dairy and fishery sciences. The University made significant studies in the area of preservation of unique and indigenous breed of small animals and backyard poultry. The faculty members of the University have also taken keen interest in research activities related to nutrition, disease prevention in the cattle and poultry and enhancement of production of indigenous milk and meat products. Research activities are going on for conservation of threatened species of indigenous freshwater fishes and marine fishes and integrated management of livestock and fish. The Faculty of Dairy Technology has made a significant development in the form production of milk and milk based products under RAWE Programme and selling of products through the stalls set up at Mohanpur and Kolkata Campus. The Faculty of Veterinary & Animal Sciences has been enriched with the

sanction of a patent No. 346724 dt. 14.09.2020 registered in the name of Prof. Sarbani Hazra on "Process for preparing Pirfenidone Nanoemulsion for eye diseases". It is a pride of the University to note that Dr. Amlan Patra has ranked 131 as per the list prepared by Stanford University experts on the basis of standardized citation indicators in recognition of his contributions in the field of Dairy and Animal Science.

During the 2nd week of March, 2020, the normal functioning of the University was hampered due to spread of the COVID 19 Pandemic and a significant amount of fund sanctioned by ICAR could not be expensed with due to obvious reasons. In spite of different odds, every effort was made to continue with the academic activities on digital mode for which I am thankful to the teachers, students and staff members. During this period, we did not buckle to the impediments rather continued with the ongoing research and extension activities. **Farmers** training programmes were organized at regular intervals involving the beneficiaries and mostly on digital mode maintaining COVID 19 guidelines promulgated by the Govt. of West Bengal. It depicts that quality teaching and research activities have received paramount importance during this period and I am happy to know that the University has achieved academic excellence and made valued contribution to human resource development.

The process of dissemination of knowledge and techniques has been significantly undertaken by the three Krishi Vigyan Kendras under the aegis of the University for which the contribution of the scientific and administrative staff members of the KVKs are really appreciable.

During the year, our University continued to receive active support and patronage of the Government of West Bengal, I.C.A.R. V.C.I. and other agencies.

I sincerely appreciate the efforts made by the editorial and publication board in bringing out the Annual Report (2019-2020) in precise and attractive form. I would like to thank all my colleagues in West Bengal University of Animal & Fishery Sciences for their incredible work and cooperation. I shall look forward for any suggestion and comment on the information contained in this publication, which would prove to be very much valuable for future endeavors.

(Prof. Chanchal Guha) Vice Chancellor

Cantal Carta



WEST BENGAL UNIVERSITY OF ANIMAL AND FISHERY SCIENCES

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Dr. Sourav Chandra Registrar



=== *PROLOGUE* ===

The Annual Report of the West Bengal University of Animal & Fishery Sciences (WBUAFS) presented for the year 2019-20 recorded the overall progress of the varsity for which all the faculty members, officers and staff deserves the extolment.

The university has gained significant achievements in all the diverse aspects of veterinary, dairying and fishery sciences focusing on nutritional safety, food security and socio-economic upliftment of masses in the state and nation as well.

During the reporting span of 2019-20, the WBUAFS has made original contributions to knowledge in the entire field of animal husbandry, especially the diagnostics, vaccines and therapeutics for animal diseases. The futuristic facilities are provided to animals at the teaching Veterinary Hospital. The Livestock Farm Complex has covetable elite animals of various livestock species and fodder grassland. The headway in marine fishery in coastal zone and the state of art competence developed for fish health management in the university is laudable. The diffusion of education through dairy product processing with burgeoning human resources and infrastructure in this arena is commendable in the university. Four new academic departments have been established in the three faculties of the university with manning the created posts during the period. The students continue to excel in curricular and extracurricular activities for which the endeavours of the faculties and students welfare pursuit are praiseworthy. The WBUAFS is being revamped with digitalization of teaching and administration activities through development of online academic and university management system. Such new initiatives and administrative reforms have been implemented in the university during the reporting time. The university has expanded its collaborative research and academic initiatives through signing of Memorandum of Understandings (MoUs) both at national and international level and has undertaken 43 MoUs with various institutes and organizations. Furtherance of research activities would pave the route for such initiative and up growth of the varsity.

The WBUAFS has been striving to achieve its goals through regular and developmental activities by the grants received from the State Govt., ICAR, other agencies, self-finance and generated resources.

The broad guidance obtained from the Hon'ble Vice-Chancellor is respectfully acknowledged. I must congratulate the Directorate of Research, Extension & Farms and the Editorial Board of the Annual Report 2019-20 of WBUAFS for compilation of this valued document.

(Dr. Sourav Chandra) Registrar (Actg.)

PREFACE



Greeting From Team WBUAFS!

The curriculum of agricultural education has been shifted towards developing professionals with the ability to understand and integrate the traditional knowledge and emerging technologies. The implementation of new National Education Policy 2020 will accelerate to impart quality education in agriculture and allied disciplines for producing better-skilled graduates and technicians. The innovative research and market-based extension activities to the end users are prime thrust of the new National Education Policy 2020. Several burning and critical issues such as declining agricultural lands and its productivity, climate change, food deficiency, scarcity of clean water, population explosion etc. are hindering the developmental processes of the country. With this background, the agricultural universities have to find out solutions of those issues and to publish annual reports regularly for percolating the information to the stakeholders. The Annual Report is an essential document of the University in which yearly activities and achievements of the University are recorded. In other words, it is the voice of the University. It is a great honour and privilege that the University entrusted to the Directorate of Research, Extension and Farms of the University to prepare and publish the Annual Report at the end of each financial year. I express our inability to publish the Annual Report for the year 2019-20 in due time due to nation-wide lock-down since March 22, 2020 for COVID 19 Pandemic. However, ultimately, the team of the Directorate of Research Extension and Farms made it possible to publish the Annual Report of the University for the year 2019-20. All important activities and achievements of the University from April 2019 to March 2020 are incorporated chronologically in a structured manner.

I would like to place on record our deep sense of gratitude to Prof. Chanchal Guha, Hon'ble Vice-Chancellor, West Bengal University of Animal and Fishery Sciences, Kolkata, Dr. T. Mohapatra, Secretary, DARE and DG, ICAR, New Delhi, the Additional Chief Secretary, Department Animal Resources Development (ARD), Govt. of West Bengal, Dr. R.C. Agrawal, Deputy Director General (Education), Division of Agricultural Education, ICAR, Dr. Bhupendra Nath Tripathi, Deputy Director General (Animal Science), Division of Animal Science, ICAR and Dr. J. K. Jena, DDG (Fisheries), Division of Fisheries, ICAR for financial support and their continuous encouragement to impart quality education, research and extension activities of the University for sustainable agricultural development in the country.

I place on record my sincere thanks to the members of the annual report committee for their untiring efforts for bringing out this annual report. The assistance and help extended by all staff of every faculty/section of this University are also duly acknowledged. We look forward to join hands with public and private organizations for co-operations and taking our education and research achievements to the end users.I wish our meagre efforts to prepare the Annual Report 2019-20 to be informative and useful for all the stakeholders including the farming communities.

(BIPUL KUMAR DAS)

Director of Research, Extension & Farms (Acting)

&

Editor

EXECUTIVE SUMMARY

With over 91 million inhabitants, West Bengal is the fourth-most populous state and has the highest population density in the country. Though the state possesses only 2.7% of India's geographical area, it supports nearly 8% of its population and therefore exerting huge pressure on its natural resources for food production. However, the State is bestowed with diverse natural resources and varied agro-climatic conditions which support cultivation of a wide range of crops including livestock and fisheries. Over the years, the academic and research institutes working in these sectors have played pivotal role in transforming the state to one of the leading states of the country in food production through technology development and innovation. In animal husbandry and fishery, the state has witnessed increasing adoption of different scientific technologies being developed by West Bengal University of Animal and Fishery Sciences. The University is contributing to development of location-specific and farmer-centric technologies and is working hand in hand with the line Departments of the state. As a result, the state has been benefitted by the application of new technologies such as use of improved cattle germplasm for higher milk yield, black Bengal goat for quality meat, crystoscope assisted artificial insemination for increase in conception rate, field based diagnostic kits and vaccine for area specific mineral supplementation for higher major diseases, productivity, hormonal modulation for more egg production in poultry, control of major animal diseases in endemic areas, intensive production technology in aquaculture, etc.

The University of Animal and fishery Sciences possesses an unmatched legacy. In the year 1893, the education on veterinary and animal sciences first began in its campus as Bengal Veterinary College by the then British rulers. The Bengal Veterinary College was the third veterinary college of its kind in undivided India. The first one was in Lahore, established in 1882 and the second one in Bombay in 1886. However, the institution got the status of a full-fledged University in 1995. Since then, it has completed the 25 years of its journey as a newly established University. Over these years, the University has grown in size and stature. The University has carved a niche in Eastern India by imparting quality education, undertaking need-based research and

executing farmer-centric outreach programmes in the field of Animal Husbandry and Fisheries.

The Annual Report serves as a reference manual on the activities of the University. It is very much pleasing to inform that there has been significant development of infrastructural facilities in all faculties as well as KVKs of this University with the financial assistance of the State and ICAR. The University successfully organized Government International Conference on Animal Nutrition 2019 (INCAN 2019) in grand scale. Our students excelled in All India examinations and some took the benefit of scholarship and fellowship schemes of the Government to progress their career in respective research areas. Through the extensive network of KVKs, University was successful in solving the area-specific problems of the farmers through training, onfarm trials and front line demonstration programmes. The University paid special attention towards livelihood development of the tribal people through livestock based enterprises under Tribal sub-plan component of ICAR. Distribution of livestock along with feed and medicine amongst the tribal population created enormous enthusiasm towards scientific farming. Biotech-KISAN Hub, assisted by DBT was extended with additional mandate and fund. Currently the project is working in five more districts, namely Nadia, Murshidabad, Birbhum, Malda and Dakshin Dinajpur which are being identified as aspirational districts of West Bengal and fall under lower Gangetic Plains Region. Through this project, superior genetic germplasm of sheep and goat are being distributed among the farmers for improving the productive and reproductive efficiency of the livestock. The University is relentlessly disseminating research outputs amongst the farming communities for increased production and productivity in Animal Husbandry and Fisheries. In the year 2019-2020, the University undertook various activities which are highlighted below.

Institutional:

The University has conducted several Conferences / Seminars / Symposiums during the reporting period. The Central Library with Information Network services is working in full fledged in all the three campuses to fulfill the objectives of the University.

Academic:

University has tailored its academic system dynamically keeping relevancy to changing needs and aspirations in the field of animal sciences, fishery and dairy sciences. The educational activities in the University are regularly put under evaluation and accordingly course curricula and teaching methodologies are being modified.

The University offers undergraduate courses of study in Veterinary and Animal Sciences, Dairy Technology and Fishery Sciences in its three respective Faculties. All these faculties have a provision of studying Masters degree courses as well as performing doctoral studies.

During 2019-20 session 96 Under-graduate, 56 Post-graduate and 15 Ph.D. students completed their courses under the three Faculties of the University.

Research:

University always play an active role in taking up newer research programmes for the interest of the farming community keeping in pace with the ever-changing scenario in the agricultural, animal husbandry and fishery sectors of the nation. During 2019-20, WBUAFS has bagged a prestigious 'Expansion of Activities of Biotech-KISAN Hub in Five Aspirational Districts' project funded by the DBT, Ministry of Science & Technology, Government of India worth Rs. 2.39 crores approximately. University has also come up with several new technologies, which will help in enhancement of the income and livelihood security of the farming community of the state. Currently 32 numbers of research projects are being carried out by the Faculty members, Scientists and Researchers of the University with a total fund allocation of about Rs. 20.18 crores. Process is on to take up a few collaborative research projects in the near future.

Extension:

Besides academic and research activities, another vital aspect of the University is to render services to farmers and rural community for establishment and proper functioning of their own farming units. The University is continuously engaged in organization of different sorts of activities throughout the State to stretch out its area of action. It has been associated in organizing various types of need based training programmes, mass contact camps in the form of animal and fish health camps, farm and household visits, workshops, seminars, Kisan Mela, farm produce exhibitions, consultancy and advisory services, on-farm

benefiting a good number of farmers of the state. The University also offers training for Master trainers' of State level Extension Officers, Resource Persons of SHGs, Fisher folk of Sundarban and also organizes periodic National level training programmes for Extension Officers of different States. As per the MOU signed between the University and Agriculture Skill Council of India (ASCI) under the aegis of National Skill Development Corporation (NSDC), Ministry of Skill Development & Entrepreneurship, Govt. of India, various short term skill development training programmes, train the trainer programmes and to create skill development centres for training and capacity building across various segments of Animal Husbandry, Fishery and Dairy Sciences are being organized at the University at frequent intervals.

Leaflets, Booklets, Books published and documentary films produced by the University are rich source of disseminating knowledge on latest technologies evolved by the University in livestock and fishery sectors. During the period, nearly 86 research papers were published in different national and international journals. Apart from this, University has published about 48 number of publications of leaflets, booklets, books, newsletter, manuals, compendiums annual reports and activity highlights.

Krishi Vigyan Kendras:

The Krishi Vigyan Kendras act as an ingress to the University for the farming community. The University has three Krishi Vigyan Kendras (KVKs) set up at Jalpaiguri, North 24 Parganas and Murshidabad districts of West Bengal. All the KVKs are actively performing based on the mandates formulated by the Indian Council of Agricultural Research (ICAR) and the University through mutual understanding. Besides undertaking routine jobs like FLDs, OFTs, On & Off Campus Farmer's trainings, publishing agri-meterological bulletins etc., the KVKs are also associated with special collaborative programmes of NABARD, ATMA etc. These units are also handling several impressive schemes like RKVY funded by the nodal departments of Agriculture and allied sectors of the state of West Bengal such as, Agriculture, Horticulture, Animal Resource Development, Fisheries, Forest, Home Science etc. Other sponsored programmes such as PPV & FR, DAESI, FOCT, Kisan Sammelan, Pradhan Mantri Fasal Bima Yojana, Swachh Bharat Aviyaan, Mela etc. and participating in Tribal Sub Plan Programs and monitoring jobs of Research Projects of the University. Inter-institutional collaborative programmes are also being undertaken by the KVKs from time-to-time.

I. ABOUT UNIVERSITY

An organization is developed in the true sense when it lays pavement for discovery of technology and opens a new arena in the different fields of scientific activities. As the limitation of land resources in comparison to the worldwide human population had aided a search for alternative means of living using livestock resources viz., animals and fishes. People handling such living resources, faced challenges to maintain the flock under their control and hence, attention was given towards proper rearing of these livestock resources. Study of appropriate techniques, development of technology following the experiences, and high desire to improve the skills for rearing the animals and fish varieties lead to gathering of information in the related fields. This may be marked as the beginning of study of Veterinary and Animal Sciences as well as allied studies in the Dairy and Fishery sectors. In undivided India after establishment of Lahore Veterinary College in 1882, second such institution came up during British rule with the name Bengal Veterinary College on 10th of January, 1893. The West Bengal University of Animal and Fishery Sciences (WBUAFS)was established in 1995, thus fulfilling the dreams of the nation builders to promote education, research and extension activities in one of the important bread-earning sector of the rural people i.e., the Livestock Sector.

The University came into existence on 2nd January, 1995 vide West Bengal.University of Animal & Fishery Sciences Act of 1995 with the three Faculties- namely Veterinary and Animal Sciences, Fishery Sciences and Dairy Technology. Process for extending the facilities of education in the existing faculties is continuous. Diploma course onVeterinary Pharmacy(DVP) has been introduced by the Universitywith the financial assistance of Animal Resource Development Department, Govt. of West Bengal. It is first of its kind under any University in India. In another approach to meet up the demand of the livestock, poultry and fishery industries as well as to fulfill the recommendations of the ICAR& Executive Council of the University, the Govt. of West Bengal has approved the creation of four new Departments alongwith teaching and non-teaching manpower requirements. These are Department of Animal Biotechnology & Department of Avian Science under the Faculty of Veterinary & Animal Sciences, Department of Fish Nutrition under the faculty of Fishery Sciences and the Department of Dairy Business Management under the Faculty of Dairy Technology. These departments are now functional.

I.1 MANDATES OF THE UNIVERSITY

The mandates of West Bengal University of Animal and Fishery Sciences are as follows:

- A. To impart education in the branches of Veterinary and Animal Sciences, Fishery Sciences, Dairy Technology and allied sciences.
- B. To conduct basic and applied research in the field of Veterinary and Animal Sciences, Fishery Sciences, Dairy Technology for advancement of knowledge and enhancement of productivity to alleviate poverty and economic upliftment of the society.
- C. To undertake the development of such sciences or technologies and the extension thereof to the rural people in co-operation with the concerned Departments of Government of West Bengal.

I.2 CAMPUSES OF THE UNIVERSITY

Headquarter of West Bengal University of Animal & Fishery Sciences is situated at Belgachia, Kolkata which is one of the oldest campuses in the country for imparting education in the fields of Veterinary and Animal Sciences.

The undergraduate courses of the Faculty of Veterinary and Animal Sciences and undergraduate and postgraduate courses of the Faculty of Dairy Technology are taught in the Mohanpur Campus of the University situated in the adjoining Nadia district. Post-graduation studies for the Faculty of Veterinary and Animal Sciences take place in the University Headquarters. The courses under the Faculty of Fishery Sciences are undertaken in the Chakgaria Campus, in Kolkata, which itself is a self sufficient unit of the University.

Three Krishi Vigyan Kendras in the districts of Jalpaiguri, North 24 Parganas and Murshidabad are functioning under the supervision of the Directorate of Research, Extension & Farms, besides these three Faculties of the University. These extension centres play the role of communicators on behalf of the University with the rural farmers and general public.

II. SET UP OF WBUAFS

Education, Research and Extension activities of West Bengal University of Animal & Fishery Sciences (WBUAFS) are being managed utilizing the governing body set-up followed in the general State Agricultural Universities (SAUs). These are as follows:

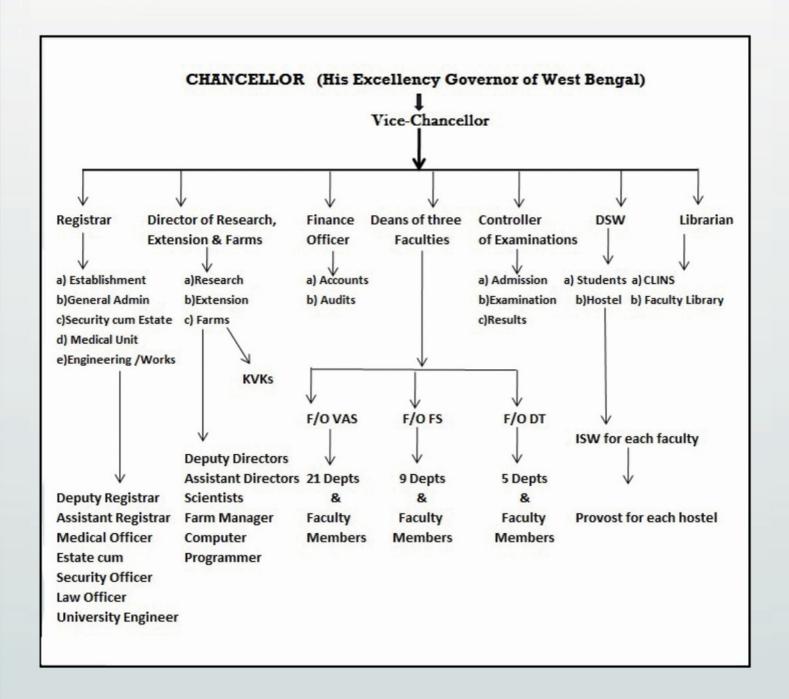
- Executive Council (EC)
- Faculty Council (FC)
- Academic Council
- Research and Extension Education Council (REEC)
- Finance Committee
- Board of Examinations
- Board of Studies

These bodies are reconstituted from time-to-time depending upon their tenure.

- The Executive Council (EC) is the highest policy making body in the University. All sorts of administrative decisions are approved in its meetings and implemented thereafter.
- The Faculty Council (FC) looks upon the academic affairs of the University and is the
 authority for control and maintenance of the standards of education, and examination
 along-with the conferment of the degrees and diplomatowards the courses enrolled by
 the students of the three faculties.
- The Academic Council controls general regulations on teaching and examination system standards set-up in the University.
- The Finance Committee governs the policy for financial and accounting information of the University.
- The Research and Extension Education Council (REEC)makes and controls the policies
 of the University on the areas of Research and Extension Education in the Faculties as
 well as Research Stations of the University.

The overall activities of the University taken up for Education, Research and Extension oriented development are monitored by the Vice Chancellor with the assistance of the statutory officers, viz., Registrar, Director of Research, Extension & Farms, Finance Officer, Controller of Examinations, Deans of the Faculties, Librarian alongwith other various authorities, Committees and Sub-Committees constituted by the University from time to time.

II.1. ADMINISTRATIVE ORGANOGRAM OF WBUAFS



II.2. STATUTORY BODIES:

II.2.1. EXECUTIVE COUNCIL

Sl.No.	Name & Designation	Position in EC
1	Prof. C. Guha (from 02/03/2020 onwards)	Chairman
	Vice Chancellor	
	Prof. P. Biswas (upto 12/02/2020)	
	Vice Chancellor	
2	Director of Animal Husbandry &	Member
	Vety. Services, Dept. of ARD,	
	Govt. of West Bengal	
3	Director of Fisheries,	Member
	Govt. of West Bengal	
4	The Milk Commissioner,	Member
	Govt. of West Bengal	
5	Prof. A.Goswami	Member
	Director of Research, Extension & Farms	
	(Actg.), WBUAFS	
6	Prof.A.K. Sahoo	Member
	Dean, F/O Veterinary and Animal Sciences,	
	WBUAFS	
7	Prof. B.K. Das	Member
	Dean, F/O Fishery Sciences, WBUAFS	
8	Prof. T. K. Maity	Member
	Dean, F/O Dairy Technology, WBUAFS	
9	Prof. S. Batabyal	Elected member
	Teacher's Representative, F/O Veterinary and	
10	Animal Sciences, WBUAFS	Elected member
10	Dr. SupratimChowdhury	Elected member
	Teacher's Representative, F/O Fishery Sciences, WBUAFS	
11	Dr. P.K. Roy	Elected member
11	Teacher's Representative,	Elected member
	F/O Dairy Technology, WBUAFS	
12	Sri Arup Sardar	Elected member
12	Non-Teaching Staff Representative, WBUAFS	Diceted memoer
13	Students' Representative, WBUAFS	Elected member
14	Smt. Mala Saha	Nominated Member
	(MLA representative nominated by West Bengal	3
	Legislative Assembly)	
15	Dr. P. Pravin	Nominated Member
	ADG (Marine Fisheries), ICAR	
16	Three members from farmers or producers of the	Nominated Member
17	state nominated by the State Govt.	
18		
	Prof. S.S. Dana,	Registrar & ex-officio Non-member
19	Registrar (Actg.)	Secretary

II.2.2. FACULTY COUNCILS

Sl.No.	Post	Position
1	Vice Chancellor	Chairman
2	Registrar	Member
3	Director of Research, Extension & Farms	Member
4	Librarian	Member
5	Controller of Examinations	Invitee Member
6	Dean of the respective Faculty	Member
7	All Heads of the Dept. of respective Faculty	Member
8	Professor from the respective Faculty	Elected Member
9	Reader from the respective Faculty	Elected Member
10	Lecturer from the respective Faculty	Elected Member
11	UG student from the respective Faculty	Elected Member
12	PG student from the respective Faculty	Elected Member
13	Secretary, Faculty Council	Member Secretary

II.2.3. BOARD OF STUDIES

Sl.No.	Composition of Board	Position
1	Head of the Department	Chairman & Convener
2	All the full time teachers of the Department	Members

II.2.4. BOARD OF EXAMINATIONS

Sl.No.	Composition of Board	Position
1	One of the Deans from the three Faculties	Chairman (By rotation)
2	Registrar	Member
3	Deans of Faculties	Member
4	Controller of Examinations	Member Secretary

II.2.5. ACADEMIC COUNCIL

Sl.No.	Composition of Council	Position
1	Vice Chancellor	Ex-officio Chairman
2	Director of Research, Extension & Farms	Member
3	Deans of Faculties	Member
4	Registrar	Non Member Secretary
5	Controller of Examinations	Member
6	Librarian	Member
7	All Heads of the Departments from all the Faculties	Member
8	One Lecturer, one Reader and one Professor from each	Member
	Faculty	
9	One UG student from each Faculty and one PG student	Member
	from the University elected by the regular students in a	
	manner as shall be prescribed	
10	Two eminent academicians from the field of Member	
	Veterinary/Dairy/Fishery Sciences nominated by the	
	Vice Chancellor	

II.2.6. RESEARCH AND EXTENSION EDUCATION COUNCIL

Sl.No.	Composition of Council	Position
1	Vice Chancellor	Chairman
2	Director of Research, Extension & Farms	Member Secretary
3	Director of Animal Husbandry &	Member
	Vety. Services, Govt. of West Bengal	
4	Director of Fisheries,	Member
	Govt. of West Bengal	
5	Deans of Faculties	Member
6	Head of all Research Stations and Project	Member
	Coordinators of State/ICAR/other agencies,	
	Research schemes	
7	Three scientists of eminence to be nominated by the	Member
7.79	Vice-Chancellor for their specialized knowledge,	
	one for each faculty for a period of two years	
8	Three progressive farmers associated with	Member
	Veterinary, Animal Husbandry, Fisheries, Dairy	
	Technology Practices to be nominated by the Vice-	
	Chancellor	

II.2.7. FINANCE COMMITTEE

Sl.No.	Composition of Committee	Position	
1	Vice Chancellor	Ex-officio Chairman	
2	MLA Representative	Nominated Member of	
	-	EC	
3	Secretary, Finance Dept., Govt. of West Bengal or	Member	
	his/her representative		
4	Secretary, Animal Resources Development Dept.,	Member	
	Govt. of West Bengal or his/her representative		
5	Secretary, Fisheries Dept., Govt. of West Bengal or	Member	
	his/her representative		
6	Director of Research, Extension & Farms Member		
7	Finance Officer	Member Secretary	

II.3. ORGANIZATION OF MEETINGS OF DIFFERENT STATUTORY BODIES

Executive Council Meeting		
Sl.No.	Meeting No.	Date
1.	100	29/05/2019
2.	101	09/08/2019
3.	102	26/09/2019
4.	103	13/11/2019

Faculty Councils			
Sl.No.	Meeting No.	Date	
Veterir	nary and Animal Sci	ences	
1.	79	29/04/2019	
2.	80	11/09/2019	
Fishery	Fishery Sciences		
1.	58	29/04/2019	
2.	59	11/09/2019	
3.	60	11/03/2020	
Dairy Technology			
1.	54	29/04/2019	
2.	55	11/09/2019	

II.4. TEACHING DEPARTMENTS OF THREE FACULTIES OF WBUAFS

F/O.Vety. & Animal. Sciences		
Sl No	Name of Department	
1	Animal Biotechnology	
2	Animal Genetics and Breeding	
3	Animal Nutrition	
4	Avian Science	
5	Livestock Farm Complex	
6	Livestock Production Management	
7	Livestock Products Technology	
8	Veterinary Anatomy & Histology	
9	Veterinary Biochemistry	
10	Veterinary Clinical Complex	
11	Veterinary Epidemiology & Preventive Medicine	
12	Veterinary Gynaecology& Obstetrics	
13	Veterinary Medicine, Ethics & Jurisprudence	
14	Veterinary Microbiology	
15	Veterinary Parasitology	
16	Veterinary Pathology	
17	Veterinary Pharmacology & Toxicology	
18	Veterinary Physiology	
19	Veterinary Public Health	
20	Veterinary Surgery & Radiology	
21	Veterinary & Animal Husbandry Extension Education	

F/O. Fishery Sciences		
Sl No	Name of Department	
1	Aquaculture	
2	Aquatic Animal Health	
3	Aquatic Environment Management	
4	Fishery Economics & Statistics	
5	Fishery Engineering	
6	Fishery Extension	
7	Fish Nutrition	
8	Fish Processing Technology	
9	Fishery Resources Management	

F/O DairyTechnology			
Sl No	Name of Department		
1	Dairy Business Management		
2	Dairy Chemistry		
3	Dairy Engineering		
4	Dairy Microbiology		
5	Dairy Technology		

II.5. STATUTORY OFFICERS IN THE UNIVERSITY

Sl. No.	Designation	Name
1	Vice-Chancellor	Prof. C. Guha (2/3/20 onwards)
		Prof. P. Biswas (upto12/2/20)
2	Director of Research, Extension & Farms	Prof. B.K. Das
3	Registrar	Dr. S. Chandra
4	Finance Officer	Sri H.S. Mallick
5	Controller of Examinations	Prof. M.K. Mondal
6	Dean, F/O Veterinary & Animal Sciences	Prof. N. Ghosh
7	Dean, F/O Fishery Sciences	Prof. B.K. Das
8	Dean, F/O Dairy Technology	Prof. T. K. Maity
9	Librarian	Vacant

II.6. OTHER OFFICERS IN THE UNIVERSITY

Sl. No.	Designation	No. of Posts
1	DSW	1
2	Secretary, Faculty Council	1
3	Deputy Registrar	2
4	Deputy Librarian	1
5	Deputy Director (Research)	2
6	Assistant Director (Research)	1
7	Assistant Director (Extension)	1
8	Assistant Director (Farms)	1
9	Scientist	2
10	Farm Manager	1
11	Computer Programmer	1
12	Medical Officer	1
13	Assistant Registrar	1
14	Assistant Finance Officer	2
15	Assistant Librarian	1
16	Estate cum Security Officer	1
17	Sports Officer	1
18	Law Officer	1

II.7. TEACHERS OF THE UNIVERSITY

Faculty of Veterinary & Animal Sciences

Department	Name of Teacher	Designation	Qualification
Animal	Dr.AdityaPratapAcharya	Assistant Professor	M.F.Sc., Ph.D.
Biotechnology	Dr. Ayan Mukherjee	Assistant Professor	M.V.Sc., Ph.D.
	Prof. A.K. Sahoo	Professor	M.V.Sc., Ph.D.
Animal	Dr. S. Taraphder	Associate Professor	M.Sc. Dairying, Ph.D.
Genetics and	Dr. M. Roy	Associate Professor	M.V.Sc., Ph.D.
Breeding	Dr. U. Sarkar	Assistant Professor	M.Sc. Dairying, Ph.D.
	Prof. B. Roy	Professor	M.V.Sc., Ph.D.
Animal	Dr. G. P. Mandal	Associate Professor	M.Sc.(Ani. Nutrition), Ph.D.
Nutrition	Dr. A. K. Patra	Assistant Professor	M.V.Sc., Ph.D.
	Dr. S. Soren	Assistant Professor	M.V.Sc.
Avian Science	Dr. Manik Chandra Pakhira	Associate Professor	Ph.D.(Animal Nutrition)
	Dr.Hemanta Kumar Maity	Assistant Professor	Ph.D. (Animal Biotechnology)
	Dr. Indrajit Kar	Assistant Professor	Ph.D.(VeterinaryPathology)
	Dr.Probhakar Biswas	Assistant Professor	Ph.D.(Livestock Production Management)
	Dr.Suman Biswas	Assistant Professor	Ph.D.(Veterinary Medicine)
	Dr. Binoy Kr. Sil	Professor	Ph.D.
Livestock Farm Complex	Dr.(Mrs.) A. Pal	Assistant Professor (Animal Genetics and Breeding)	M.V.Sc., Ph.D.
	Sri D.C.Roy	Assistant Professor (Agronomy)& Head	M.Sc. (Agronomy)
	Dr.C.P.Ghosh	Assistant Professor (Livestock Production Management)	M.V.Sc., Ph.D
	Dr. A.K. Das	Assistant Professor(Animal Genetics and Breeding)	M.V.Sc., Ph.D
	Dr.S. Datta	Assistant Professor(Animal Genetics and Breeding)	M.V.Sc.
	Dr. Amitava Roy	Assistant Professor	Ph.D.
Livestock	Prof. R. Samanta	Professor& Head	M.V.Sc., Ph.D.
Production	Prof. N. Ghosh	Professor	M.V.Sc., Ph.D.
Management	Dr. S. Bera	Assistant Professor	M.V.Sc., Ph.D.

Department	Name of Teacher	Designation	Qualification
Livestock	Prof. S. Biswas	Professor& Head	M.V.Sc, Ph.D.
Products	Dr. D. Bhattacharyya	Assistant Professor	M.V.Sc, Ph.D.
Technology	Dr. G. Patra	Assistant Professor	M.V.Sc, Ph.D.
Veterinary	Prof. S. Ray	Professor	M.V.Sc,Ph.D.
Anatomy &	Prof. P. Das	Professor	M.V.Sc,Ph.D.,PDF(Japan
Histology)
	Dr. A.K. Mandal	Associate Professor	M.V.Sc, Ph.D.
	Dr. N.K. Tudu	Assistant Professor	M.V.Sc, Ph.D., D.Sc.
Veterinary	Dr. S. Batabyal	Professor & Head	M.V.Sc., Ph.D.
Biochemistry	Dr. A. Maity	Associate Professor	M.V.Sc., Ph.D.
	Dr. ShamikPolley	Assistant Professor	M.V.Sc, Ph.D.
	Dr. SwarajBiswas	Assistant Professor	M.V.Sc.
Veterinary	Prof. S.K. Guha	Professor	M.V.Sc, Ph.D.
Clinical	Dr. M. Mondal	Associate Professor	M.V.Sc, Ph.D.
Complex	Dr. S. S. Kesh	Assistant Professor	M.V.Sc, Ph.D.
	Dr. S. Chaudhuri	Assistant Professor	M.V.Sc, Ph.D.
	Dr. P. Mukherjee	Assistant Professor	M.V.Sc, Ph.D.
	Dr. Subhasis Roy	Assistant Professor	M.V.Sc, Ph.D.
	Dr. Chottan Kumar Ghosh	Assistant Professor	M.V.Sc, Ph.D.
	Dr. FalguniMridha	Assistant Professor	M.V.Sc.
	Dr. TanmoyRana	Assistant Professor	M.V.Sc, Ph.D.
Veterinary	Prof. C. Guha	Professor	M.V.Sc., Ph.D.
Epidemiology &	Prof. U. Biswas	Professor	M.V.Sc., Ph.D.
Preventive Medicine	Dr. P. S. Jana	Assistant Professor	M.V.Sc., Ph.D.
	Prof. S. Basu	Professor	M.V.Sc., Ph.D.
Veterinary	Prof. (Mrs.) K. Ray	Professor	M.V.Sc., Ph.D.
Gynaecology&	Dr. P. R. Nandi	Assistant Professor	M.V.Sc.
Obstetrics	Dr. P. Sarkar	Assistant Professor	M.V.Sc.
	Dr. D. Mandal	Assistant Professor	M.V.Sc.
	Dr. A. K. Saren	Assistant Professor	M.V.Sc.
Veterinary	Prof. S. Sarkar	Professor	M.V.Sc., Ph.D.
Medicine, Ethics	Prof. C. Lodh	Professor	M.V.Sc., Ph.D
& Jurisprudence	Dr. A.R. Gupta	Associate Professor	M.V.Sc., Ph.D
	Prof. S. N. Joardar	Professor	M.V.Sc., Ph.D.
	Dr. D.P.Isore	Assistant Professor	M.V.Sc., Ph.D.
Veterinary	Dr. I. Samanta	Assistant Professor	M.V.Sc., Ph.D.
Microbiology	Dr. K. Batabyal	Assistant Professor	M.V.Sc., Ph.D.
		& Head	
	Dr. S.Dey	Assistant Professor	M.V.Sc., Ph.D.
	Prof. S.C. Mandal	Professor	M.V.Sc., Ph.D.
Veterinary Parasitology	Dr. S.Baidya	Associate Professor & Head	M.V.Sc., Ph.D.
	Dr. (Mrs.) R. Jas	Assistant Professor	M.V.Sc., Ph.D.
	Dr. S. Pandit	Assistant Professor	M.V.Sc., Ph.D.
	Dr. A. Nandi	Assistant Professor	M.V.Sc.

	Dr .S. K. Mukhopadhayay	Professor	M.V.Sc., Ph.D.
Veterinary	Dr. S. Pradhan	Assistant Professor	M.V.Sc., Ph.D.
Pathology	Dr. N. C. Patra	Assistant Professor	M.V.Sc., Ph.D.
	Dr. R. N. Hansda	Assistant	M.V.Sc., Ph.D.
		Professor& Head	
	Dr. S.Mondal	Assistant Professor	M.V.Sc., Ph.D
Veterinary	Prof. T. K. Mandal	Professor & Head	M.V.Sc., Ph.D.
Pharmacology &	Dr. T. K.Sar	Assistant Professor	M.V.Sc., Ph.D.
Toxicology	Dr. Raja L.	Assistant Professor	M.V.Sc., Ph.D.
	Prof. P.K. Das	Professor & Head	M.V.Sc., Ph.D.
Veterinary	Dr. P. R. Ghosh	Associate Professor	M.V.Sc., Ph.D.
Physiology	Dr. K. Das	Assistant Professor	M.V.Sc., Ph.D.
	Dr. D. Banerjee	Assistant Professor	M.V.Sc., Ph.D.
	Dr. J. Mukherjee	Assistant professor	M.V.Sc., Ph.D.
Veterinary	Dr. Chanchal Debnath	Associate	M.V.Sc., Ph.D.
Public Health		Professor& Head	
	Dr. Rahul Barua	Assistant Professor	M.V.Sc., Ph.D.
	Dr. Ripan Biswas	Assistant Professor	M.V.Sc.
Veterinary	Prof. D. Ghosh	Professor	M.V.Sc., Ph.D.
Surgery &	Prof. S.K. Nandi	Professor& Head	M.V.Sc., Ph.D.
Radiology	Prof. S. Hazra	Professor	M.V.Sc., Ph.D.
	Prof.S. Halder	Professor	M.V.Sc., Ph.D.
Veterinary &	Prof. A. Goswami	Professor & Head	M.V.Sc., Ph. D., D.
Animal			Litt.,FNAVSc.
Husbandry	Dr. Sukanta Biswas	Associate Professor	M.V.Sc., Ph.D., FVASc.
Extension	Dr.Debasish Ganguly	Assistant	M.V.Sc., Ph.D.
Education		Professor(Sr. Scale)	
	Dr. Debasish Saha	Assistant professor	M.V.Sc., Ph.D.

Faculty of Fishery Sciences

Department	Name of Teacher	Designation	Qualification
Aquaculture	Prof. S. K. Das	Professor	M. Sc, Ph. D
	Prof. T.K.Ghosh	Professor	M. Sc, Ph. D
	Dr. S. K. Sau	Assistant Professor	M.F.Sc., Ph.D.
Aquatic Animal	Prof. G. Dash	Professor& Head	M.F.SC., Ph.D., FZSI
Health	Prof. T. J. Abraham	Professor	M.F.SC., Ph.D.
	Sri Prasenjit Mali	Assistant Professor	M.F.Sc.
Aquatic	Prof. S. K. Rout	Professor	M.F.Sc., Ph.D.
Environment	Prof. B.K.Das & Dean, F/O	Professor (on lien)	M.Sc., Ph.D.
Management	Fishery Sciences		
	Prof. R.K.Trivedi	Professor (on lien)	M.F.Sc., Ph.D.
	Sri Sutanu Karmakar	Assistant Professor	M.F.Sc., PGDAEM
Fishery Economics	Prof. S. Sahu	Professor& Head	M.Sc, Ph.D., M.B.A.
& Statistics	Sri Soumyadip Purkait	Assistant Professor	M.F.Sc., PGDAEM
Fishery	Prof. N.A.Talwar	Professor	M.F.Sc.,Ph.D.
Engineering	Ms. Olipriya Biswas	Asstt. Professor	M.F.Sc.
	Prof. S. S. Dana	Professor	Ph.D.
Fishery Extension	Dr.B. Saha	Associate Professor	Ph.D.
	Mrs. M. Ray Sarkar	Assistant Professor	M.F.Sc.
Fish Nutrition	Dr. P.N. Chatterjee	Assistant Professor	M.V.Sc., Ph.D.
	Dr. Srinibas Das	Assistant Professor	M.V.Sc., Ph.D.
Fish Processing	Prof. K.C Dora	Professor	M.F. Sc, Ph.D.
Technology	Dr. S. Chowdhury	Associate Professor	M.F. Sc, Ph.D.
	Sri Prasanta Murmu	Assistant Professor	M.F.Sc.
	Dr. Swarnadyuti Nath	Assistant Professor	M.F.Sc., Ph.D.
Fishery Resources	Prof. S. K. Das	Professor	M.F.Sc.,Ph.D.
Management	Prof. S. Behera	Professor	M.F.Sc., Ph.D.
	Prof.T.S.Nagesh	Professor	M.F.Sc., Ph.D
	Dr. Gulam Ziauddin	Assistant Professor	M.F.Sc., Ph.D.

Faculty of Dairy Technology

Department	Name of Teacher	Designation	Qualification
Dairy Business	Prof. M.K.Mandal	Professor & Head	Ph.D.
Management	Sri AvijitSarkar	Associate Professor	M.Tech
	Dr.RashmaSinha Roy	Assistant Professor	Ph.D.
Dairy Chemistry	Dr. PinakiRanjan Ray	Professor	PhD
11	Dr. ChaitaliChakraborty	Associate	PhD
		Professor& Head	
Dairy	Prof. S.K.Bag	Professor and Head	M.Tech,Ph D
Engineering	Prof. P. Maiti	Professor	M.Sc,Ph D
253 823	Dr. P. K. Roy	Associate Professor	M.Tech,Ph D
	Sri K. Halder	Assistant Professor	M. Tech
Dairy	Prof. T.K.Maity	Professor (On Lien)	Ph.D (DM)
Microbiology	Prof. SurajitMandal	Professor	Ph.D (DM)
	Dr. LopamudraHaldar	Associate Professor	Ph.D (DM)
	SriAmit Kumar Barman	Assistant Professor	M.Tech (DM)
Dairy	Dr. AninditaDebnath	Assistant Professor	Ph.D. (Dairy Technology)
Technology	SriParthaPratimDebnath	Assistant Professor	M. Tech
55.45	SilvarinarianinDebilani		(DairyTechnology)
	SriKuntal Roy	Assistant Professor	M. Tech (Dairy
	STIKUITIAI KOY		Technology)
	SriGoutam Kumar Das	Assistant Professor	M.Sc. (Dairy Technology)
	Diffoundin Runnar Das	(fulltime contractual)	

II.8. STATE PUBLIC INFORMATION OFFICER

The mandate of Right to Information Act 2005 is timely response to citizen requests for government information. It is an initiative taken by Department of Personnel and Training, Ministry of Personnel, Public Grievances and Pensions to provide a—RTI Portal Gateway to the citizens for quick search of information on the details of first Appellate Authorities, PIOs etc.

Information can be sought by any citizen of India as per the Act. The University has appointed Dr. S Das, Scientist, DREF, WBUAFS as the State Public Information Officer of the University. Sri A.K.Chakraborty, Secretary, Faculty Council is acting as the Appellate Authority under this system of providing information. The unit is functional since 2005.

II.9. COMPLAINTS COMMITTEE FOR PREVENTION OF SEXUAL HARASSMENT AT WORKPLACE

Sexual harassment at workplace violates the rights and opportunities of women to seek, obtain and hold employment without discrimination. West Bengal University of Animal & Fishery Sciences is always alert to provide a safe work environment to their women employees and include both preventive and remedial measures to make the work environment safe for women employees.

There exists a committee for this purpose in the University since 2004, which is reconstituted from time-to-time. The latest committee was reconstituted vide Notification No. WBUAFS/Admn/NC-2/768 dt. 27/03/2019 with 10 members as follows:

Name & Designation			
Smt.Aparajita Biswas, Computer Programmer,	Presiding Officer		
DREF, WBUAFS			
Programme Officer, Sanhita (NGO)	Member		
Dr.Satabdi Das, Scientist, DREF, WBUAFS	Member		
Prof.Kalyani Roy, Professor,	Member		
Dept. of Gynaecology & Obstetrics, F/VAS,WBUAFS			
Mrs.Papri Pal, Lab Attdnt.(Gr-III),Dept.of Aquaculture,	Member		
F/FSc.,WBUAFS			
Mrs.Koumari Chowdhuri,Tech.Asstt.,F/DT,WBUAFS	Member		
Mr.Anuj Chakraborty, Secretary Faculty Council, WBUAFS	Member		
Prof.S.Batabyal, Dean of Students Welfare, WBUAFS	Member		
I.S.W.,Faculty of VAS,WBUAFS	Member		
I.S.W., Faculty of DT,WBUAFS	Member		
I.S.W., Faculty of F Sc., WBUAFS	Member		

II.10. SUPERANNUATION DURING 2019-20

Serial No.	Name of Retired Employees	Date of Retirement
1	Smt. Ranu Chakraborty, Record Keeper, Office of the Registrar, WBUAFS	30.06.2019
2	Smt. Dipali Santra, Senior Vistiman attached to the Department of T.V.C.C.,F/VAS,WBUAFS	30.06.2019
3	Shri Nemai Santra, Senior Superintendent, Office of the Registrar, WBUAFS	31.08.2019
4	Shri Sekhar Bhattacharjee, Junior Superintendent, Office of the Dean, F/VAS, WBUAFS	31.12.2019
5	Shri Atanu Kishore Dey, Field Assistant Gr.I (C.A.),Office of the DREF, WBUAFS	31.12.2019
6	Shri Shyamapada Dey Sarkar, Record Keeper, Department of Vety. Pathology, F/VAS, WBUAFS	31.01.2020
7	Smt. Tapati Das, Laboratory Attendant, Gr.I, Department of V.M.E.J.,F/VAS, WBUAFS	29.02.2020

III. FINANCIAL

Report of Finance & Accounts Section, WBUAFS for financial year 2019-20:

Financial transactions handled by WBUAFS are mainly based on input from State Govt. Funds (both plan & non-plan and capital), Development Grants from ICAR and finance from outside agencies including Govt. of India. The pictures regarding inflow and outflow are depicted as below:

Sl.	Heads	Receipt (Rs. in Lakhs)
No.		
1.	State Govt. Grant	4466.24
2.	ICAR and Central Govt. Grant	1019.59
3.	KVK	644.93
4.	Internal Resources	395.41
	Total →	6526.17

Sl. No.	Heads of Expenditure (Rs. in Lakhs)	
1.	Teaching	3910.32
2.	Research	421.75
3.	Extension	134.26
4.	Education	210.06
5.	Administration	253.49
6.	Infrastructural Developments	132.72
7.	KVK Management	559.48

IV. ACADEMIC

IV.1. ACADEMIC PROGRAMMES (FACULTY WISE)

The West Bengal University of Animal and Fishery Sciences follows the syllabus framed by Veterinary Council of India (VCI) for the Faculty of Veterinary and Animal Sciences. The courses of Faculty of Fishery Sciences follow the syllabus adopted from Indian Council of Agricultural Research (ICAR) and the courses under Faculty of Dairy Technology are carried out following AICTE, New Delhi guidelines.

Courses offered by the University in the three faculties are as follows:

Faculty of Veterinary and Animal Sciences:

	Name of Course	Duration	Student Intake Capacity 2019-20
i)	DVP	2 years Diploma in Vety Pharmacy	30
ii)	B.V.Sc. & A.H.	5 years Bachelor's degree	83
iii)	M.V.Sc.	2 years Master's degree	94
iv)	Ph. D./	3 years Doctoral degree	46
	Ph. D. (Life Scs)/		
	Ph. D. (Ext. Edn)		

Faculty of Fishery Sciences:

	Name of Course	Duration	Student Intake Capacity
			2019-20
i)	B.F.Sc.	4 years Bachelor's degree	44
ii)	M.F.Sc.	2 years Master's degree	34
iii)	Ph.D.	3 years Doctoral degree	14

Faculty of Dairy Technology:

	Name of Course	Duration	Student Intake Capacity
			2019-20
i)	B.Tech. (DT)	4 years Bachelor's degree	44
ii)	M. Tech.	2 years Master's degree	18
iii)	Ph. D.	3 years Doctoral degree	04

The course curricula undergo modification from time to time following the recommendations of ICAR, VCI and AICTE.

IV.2. ADMISSION

IV.2.1. ADMISSION SCHEDULE

Admission to Undergraduate courses starts generally immediately before or soon after the publication of results of Higher Secondary Examination results conducted by the West Bengal Council of Higher Secondary Education.

In case of postgraduate and Ph.D. courses, admission takes place after qualifying in the Entrance Examinations. 15% seats are filled up by the ICAR nominees.

Academic Session Begins During
Diploma Course (DVP)
UG Courses July

PG Courses

August – September

Ph.D Courses

November – December

IV.2.2. ADMISSION REQUIREMENTS/PROCEDURE FOR TWO YEAR DIPLOMA COURSE IN VETERINARY PHARMACY

Candidates seeking admission to the Diploma in Veterinary Pharmacy (DVP) course must secure minimum of 55% marks in Physics, Chemistry, Biology/Mathematics in the 10+2 examination. The admission of the students is on the basis of merit and the intake capacity for the course is 30 containing General and Reserved Category as per the Government rules. The course is running at Mohanpur campus under Faculty of Veterinary and Animal Sciences.

IV.2.3. ADMISSION REQUIREMENTS / PROCEDURE FOR UNDERGRADUATE STUDIES

Candidates seeking admission to the B.V.Sc. & A.H. course must qualify in the West Bengal Joint Entrance Examination conducted for entrance to B.V.Sc.&A.H. course. The candidates qualified in the West Bengal Joint Entrance examination conducted for entrance into the Engineering/Technology courses are considered for entry to the B. Tech. (D.T.) course. For B.F. Sc. course application forms are generally available from few branches of UCO Banks as notified

in the local daily newspapers. After 15 days of last date of receipt of application forms merit list is generally published on the basis of the marks obtained in the 10+2 Examinations.

The Undergraduate candidates must secure minimum 50% marks altogether in Physics, Chemistry, Biology, English and Vernacular in Higher Secondary or equivalent (10+2) examinations. The candidatures of other Board/Council (10+2) level passed from Institutions in West Bengal are considered provided that the candidate is a domicile of West Bengal. The Scheduled caste / scheduled tribe candidates must secure 40% marks instead of 50% marks altogether in Physics, Chemistry, Biology, English and Vernacular in Higher Secondary or equivalent (10+2) examinations.

22% of seats are reserved for SC and 6% for ST students out of the total number of seats. There is also a reservation of (10% + 7%) for the OBC candidates as per the State Govt. Norms. 15% seats are reserved for VCI nominees for the BVSc & AH course and 4 seats are reserved for BFSc and B.Tech (DT) courses each for ICAR nominees. 3% of seats are reserved for physically challenged candidates for each course.

IV.2.4. ADMISSION REQUIREMENTS FOR MASTER'S DEGREE STUDIES

The candidates for Master's degree courses must have passed B.V.Sc. & A.H. / B.Sc. (D.T.)/ B. Tech. (D.T.)/ B. F. Sc. from a recognized University with 55% marks in aggregate (50% marks for SC/ST candidates) in traditional system or with a minimum 6.2 OGPA (6.0 for SC/ST candidates) in 10 point scale. Selection of candidates are carried out by University constituted Selection Committees for the purpose and admitted on the basis of merit and performance in the interview. The merit is decided on the basis of percentage of marks obtained in aggregate or OGPA in Bachelor's Degree Examinations as well as OGPA in subject concerned in which admission is sought. The relative weightage on overall performance in Bachelor's Degree and in the subject concerned for Master's degree studies is given in the ratio of 2:1. Reservation is followed as per State Govt. rules. One seat is reserved for ICAR nominees.

IV.2.5. ADMISSION REQUIREMENTS FOR DOCTORAL (PhD) STUDIES

The candidates for Doctorate of Philosophy (Ph.D.) must have passed two years Master's Degree in Veterinary and Animal Sciences, Dairy Science/Dairy Technology, Fishery Science securing 55% marks in aggregate or 2.75 OGPA in 4.0 scale or 6.75 in 10 point scale following a first or high second class in B. V. Sc. & A. H./ B. Tech. (D.T.) / B. F. Sc. from any recognized University or National Institute. Candidates seeking admission to PhD course in a subject shall have passed Master's Degree in the same subject and also have done sufficient courses in the proposed major field of specialization within the subject.

In Ph.D. program of a department total no. of seats in an academic year is set on a ratio of 1:1 (Teacher eligible to guide a student: Number of students) and to a maximum of 3 seats in a department. Again, the reservation of seats is as per State Govt. rules.

IV.2.6. INTAKE OF STUDENTS

Student Status (Academic Year 2019-2020)

		Religion					Social Category												отн				тот	
FACULTY	DEGREE	HINDU		MUS LIM		ОТН		GEN		SC		ST		OBC-		OBC -B		Pw	/D	ERS		TOTAL		AL
		M	F	М	F	M	F	М	F	M	F	M	F	М	F	M	F	M	F	M	F	M	F	
	D.V.P.	21	4	3	1	0	0	9	3	6	1	2	0	3	1	3	0	1	0	0	0	24	5	29
	B.V.Sc. & A.H.	41	12	24	3	0	0	17	3	12	6	2	2	24	3	8	1	2	0	0	0	65	15	80
Veterinary	M.V.Sc.	27	19	2	0	0	0	17	15	5	3	2	0	2	0	3	1	0	0	0	0	29	19	48
& Animal Sciences	Ph.D.	12	2	1	0	0	0	7	2	2	0	2	0	1	0	1	0	0	0	0	0	13	2	15
Solemous	PhD(Life.Scs)	9	16	0	0	0	0	7	12	2	2	0	0	0	0	0	2	0	0	0	0	9	16	25
	PhD(Ext.Edn)	1	9	0	0	0	0	1	7	0	2	0	0	0	0	0	0	0	0	0	0	1	9	10
	B.F.Sc.	22	18	3	1	0	0	11	8	5	5	4	1	3	1	1	3	1	1	0	0	25	19	44
Fishery Sciences	M.F.Sc.	18	10	0	1	0	0	9	7	6	1	0	0	0	1	3	2	0	0	0	0	18	11	29
Sciences	Ph.D.	7	5	0	0	0	0	2	3	1	2	1	0	0	0	3	0	0	0	0	0	7	5	12
Dairy Technology	B.Tech(D.T.)	25	8	2	0	0	0	12	4	5	3	1	1	2	0	6	0	1	0	0	0	27	8	35
	M.Tech.	6	3	0	0	0	0	6	1	0	1	0	1	0	0	0	0	0	0	0	0	6	3	9
	Ph.D.	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1

IV.3. OUT-TURN OF STUDENTS

Programme	Course Name	Year	2019
	B.V.Sc. & A.H.	49	
U.G.	B.F.Sc.	30	96
	B.Tech. (D.T.)	17	
	M.V.Sc.	34	
P.G.	M.F.Sc.	19	56
	M.Tech.	03	
	Veterinary Sciences	11	
Ph.D.	Fishery Sciences	03	15
	Dairy Technology	Nil	
7	10	67	

IV.4. ACADEMIC AWARDS FOR THE STUDENTS

Following recognitions are being awarded to the passed-out students of the three faculties as Gold Medals by the University:

Faculty of Veterinary & Animal Sciences

- University's Gold Medal
 (For securing Highest marks in B.V.Sc. & A.H.)
- Smt. Mira Mallik Gold Medal
 (For securing Highest marks in B.V.Sc. & A.H.)
- Prof. D.B. Mukherjee Gold Medal
 (For securing Highest marks in Vety. Surgery & radiology in B.V.Sc. & A.H.)
- First Batch (1953) B.V.Sc. Student Gold Medal (For securing Highest marks in 5th & 6th Semester in B.V.Sc. & A.H.)

Dr. S.N. Roy Gold Medal

(For securing Highest marks in Livestock Farm Management in B.V.Sc. & A.H.)

Dr. B.N. Dey Memorial Endowment Gold Medal

(For securing Highest marks in Vety. Gynaecology & Obstetrics in B.V.Sc. & A.H.)

Dr. Subir Kr. Sinha Memorial Gold Medal

(For securing Highest marks in Vety. Medicine, Ethics & Jurisprudence in B.V.Sc. & A.H.)

Dr. D.K. Biswas Gold Medal

(For securing Highest marks in Poultry Production Management in B.V.Sc. & A.H.)

Dr. G.L. Sharma Endowment Gold Medal

(For securing Highest marks in Vety. Public Health in B.V.Sc. & A.H.)

Dr. B.N. Mukherjee Gold Medal

(For securing Highest marks in Vety. Epidemiology & Preventive Medicine in B.V.Sc. & A.H.)

Charu Chandra Koley Gold Medal

(For securing Highest marks in Animal Genetics & Breeding in B.V.Sc. & A.H.)

Dinesh Chandra De and Sova De Memorial Gold Medal

(For securing Highest marks in 5th Composite Annual Examination in B.V.Sc. & A.H.)

Dr. (Mrs.) Gita Biswas Gold Medal

(For securing Highest marks in Vety. Parasitology in B.V.Sc. & A.H.)

Dr. Animesh Kumar Chakraborty Gold Medal

(For securing Highest marks in Vety. Pharmacology & Toxicology in B.V.Sc. & A.H.)

* Prof. G.C. Banerjee Gold Medal

(For securing Highest marks in Animal Nutrition in B.V.Sc. & A.H.)

Dr. P. Bhattacharya Gold Medal

(For securing Highest OGPA in Animal Production & Management in M.V.Sc.)

Prof. Rathindra Nath Ghosh Gold Medal

(For securing Highest marks in Vety. Pharmacology & Toxicology in M.V.Sc.)

1972 Batch B.V.Sc. & A.H. Students Gold Medal

(For securing Highest Marks in B.V.Sc & A.H]

Prof. K. L. Bhowmick & Prof A.K. Majumdar Memorial Gold Medal

(For securing Highest Marks in Veterinary A.H. Extension Education in B. V. Sc. & A. H.)

Faculty of Dairy Technology

- University's Gold Medal
 (For securing Highest marks in B.Tech. (D.T.)
- Prof. Sukumar De Gold Medal (For securing Highest marks in B.Tech. (D.T.)
- Smt. Tirthamayee Ganguli Gold Medal (For securing First Position in M.Tech. (D.T.)
- Prof. N. C. Ganguli Memorial Gold Medal
 (For securing First Position in M.Tech. (D.C.)

Faculty of Fishery Sciences

- University's Gold Medal
 (For securing Highest marks in B.F.Sc.)
- Smt. Lakshmi Das & Sri Kasi Nath Das Gold Medal (For securing Highest marks in B.F.Sc.)
- Smt. Manju Biswas & Dr. K.P. Biswas Gold Medal (For securing Highest marks in Fishery Engineering in B.F.Sc.)

IV.5. HOSTEL

The University provides hostel facilities to the students admitted to different courses of the University. There are nine hostels, out of which six hostels are ear-marked for boys and three hostels are being used by the girl students.

IV.6. SCHOLARSHIPS/FELLOWSHIPS

Merit Scholarships are being granted every year to the meritorious students of the University for the Undergraduate courses as per approval and guidelines issued by the State Government. Besides, scholarships and Fellowships are being granted for Masters and Ph. D. courses too.

1	Merit Scholarship
2	Swami Vivekananda Merit Cum Means Scholarship
3	Ph.D. (Non Net) Swami Vivekananda Merit Cum Means Scholarship
4	Aikyashree Scholarship
5	ICAR-National Talent Scholarship

6	ICAR-JRF/SRF (PGS) Ph.D. Scholarship
7	UGC- Rajib Gandhi National Fellowship
8	UGC- Maulana Azad National Fellowship

IV.7. EMPLOYMENT OF THE STUDENTS

University Officials as well as the Faculty members always keep in touch with the passed out students for their counseling towards employment and placement in a job. The alumni also take care of the situation for those going in for employment. Students of this University are being absorbed in different developmental sectors in the State, Country and abroad as well.

The main industrial sectors /sectors absorbing the faculty-wise out-turns of the University are as follows:-

IV.7.1. Faculty of Veterinary & Animal Sciences:

- (i) State Govt. Department of Animal Resource Development,
- (ii) Livestock and poultry sector, medicine producing Private companies,
- (iii) Broiler poultry producing Private Companies,
- (iv) Animal feed producing Private Companies,
- (v) State Govt. Administrative services,
- (vi) KVKs
- (vii) Bank and P.O. etc.

IV.7.2. Faculty of Dairy Technology:

The students passed out from the Faculty get employment in National and Multinational milk & dairy product producers under Govt., Semi Govt. and Private Companies like.

 (i) Glaxo Smithklime, (ii) Nestle India Ltd., (iii) OSSOM Dairy Ltd, (iv) Dynamix Dairy Industries Ltd., (v) Mother Dairy, Kolkata, (vi) Metro Dairy, Kolkata, (vii) National Food Corporation Ltd., Jeddah, 	(ix) Amul, (x) Hindustan Lever, (xi) Keventer Agro Ltd. (xii) NDDB, (xiii) IDMC Ltd. (xiv) Kullick Dairy	(xvi) ITC (Food Division), (xvii) Almarai, Riadh, (xviiii) IBM, (xix) TCS, (xx) WCMPF Ltd., (xxi) ITC Infotech, (xxii) Paras Foods, etc.
(viii) IDPL	(xv) Vadilal Ltd.	(XXII) Paras Foods, etc.

IV.7.3. Faculty of Fishery Sciences

The passed out students of the faculty were placed at different Government, Non-Government organizations, Semi-Government organizations, Private Institutes, viz.,

- (i) State Govt. Department of Fishery and other Administrative services,
- (ii) Bank & PO,
- (iii) Central Govt. Research Services,
- (iv) Teaching in different SAUs,
- (v) Animal and fish feed producing Private Companies,
- (vi) KVKs etc.

IV.8. Placement Cell

The University has established a Placement Cell since February, 2006. This cell works towards the placement of the passed out students of the three Faculties of the University. Majority of the passed out students get employment through different Competitive examinations in the Government, Semi-Government and Private sector organizations.

IV.9. Anti Ragging Monitoring Cell

There exists an anti-ragging committee in the University to prevent ragging in the University. It comprises of the following members:

Prof. S.S. Dana, Registrar (Actg.)
Prof.S. Batabyal, Dean of Students Welfare
Prof.M.K.Mondal, Controller of Examinations
Prof.A.K. Sahoo, Dean, Faculty of Veterinary & Animal Sciences
Prof.B.K. Das, Dean, Faculty of Fishery Sciences
Prof.T.K. Maity, Dean, Faculty of Dairy Technology
Dr. Sourav Chandra, Deputy Registrar

IV.10. Achievements/ recognitions of the students:

The students of WBUAFS took part in several co-curricular activities, such as sports, quiz, All India Agricultural Festival (Agriunifest), Youth Festivals etc. throughout the year.

Regular activities such as, Annual Sports and Cultural meets are also organized by the University. Besides this, some other remarkable events that took place in the different campuses of the University are as follows:

IV.10.1. 20th All India Inter Agricultural Universities Youth Festival (Agri Unifest 2019-2020)

To cherish the diverse cultural and artistic skills of the youth students from all agricultural universities of entire country the Indian Council of Agricultural Research (ICAR) promotes All India Inter-Agricultural Universities Youth Festival every year. It provides a national platform to the youth students to display their commendable cultural and artistic skills. This year Indira Gandhi Krishi Vishwavidyalaya, Raipur (Chhattisgarh) hosted this mega festival from February 8-12, 2020, in which 2500 talented youth from 74 State Agricultural Universities/Deemed Universities/ Central Agricultural Universities exhibited their skills of stage performance, literary and fine arts.

This year a team of twenty six students from WBUAFS took part in 20th Agri Unifest under the guidance of Sri. Soumyadip Purkait, Asst. Professor, Dept. of Fishery Economics and Statistics from the Faculty of Fishery Sciences. In a procession of 74 Universities, WBUAFS highlighted the cultural heritage of Bengal by performing "Chhau Dance" and "Durga Puja" Festival and secured runner-up position. A total of four events viz. fine arts, theatre, literary, music were performed by the students. Sumangal Ghosh from F/o-DT won the 2nd prize in collage event.









IV.10.2. 20th All India Inter-Agricultural Universities Sports and Games Meet-2019-20

The West Bengal university of Animal and Fishery Sciences participated in ICAR sponsored "20th All India Inter-Agricultural Universities Sports and Games Meet-2019-20" organized at the Sri Venkateswara Veterinary University (SVVU), Tirupati from 1st to 5th March, 2020. A team comprising of 20 students from three faculties took part in the Meet under the guidance of Mr. Sutanu Karmakar, Assistant Professor, Department of Aquatic Environment Management, Faculty of Fishery Sciences. The team has actively participated in eleven athletic events and three games during this national event.





Participation of the students in various activities:

- 1) Celebration of World Veterinary Day on 27th April, 2019
- 2) Anti-tobacco day on 31st May
- 3) World Environment Day on 5th June
- 4) International Yoga Day celebration at University Hostels on 21/06/2019
- 5) World Women's Day on 8th August
- Independence Day on 15th August, 2019
- 7) Teacher's Day on 5th September
- 8) NSS Day on 24th September
- 9) Silver Jubilee of Faculty of Fishery Science on 25th September, 2019
- 10) University Foundation Day on 2nd January, 2020
- 11) Foundation Day of Bengal Veterinary College on 10th January, 2020
- 12) National Youth Day on 12th January, 2020
- 13) Workshop cum sensitization program on 'Pledge for life Tobacco free youth' organized by NSS Unit, Jadavpur University and conducted by Sambandh Health Foundation was attended by our University students of all faculties alongwith Programme Officers on 15th January
- 14) A total of 307 of our University students have registered in the NSS Pledge for life 'spit free India' movement online campaign through social media platforms
- 15) NSS programme cum Animal Health Camp, Vaccination Camp at Gosaba, 24 Parganas North and Haringhata, Nadia

Some other achievements of the students during the year:

1.	Department of Veterinary Physiology, WBUAFS organized institute and Zonal level SAPI quiz-2019 in collaboration with Society of Animal Physiologists of India. Institute level competition was held on December 09, 2019 at Mohanpur, Nadia. Nearly 50 teams comprising of two students of undergraduate level of BVSc&AH course participated in the competition. The winner team participated in zonal level (Eastern zone) quiz competition, held on January 17, 2020 at the Department of Veterinary Physiology, WBUAFS, Belgachia, Kolkata. The team from Orissa University of Agriculture and Technology won the zonal competition after a keen contest and participated in national level quiz competition held at CSWRI, Avikanagar, Rajasthan on February 17, 2020.
2.	Dr. Smruti Smita Mahapatra, PhD Scholar of the Dept. of Vety. Physiology of was awarded 2 nd prize in Bright S&T innovative idea proposal from DSIR-TOCIC (IIT-Kharagpur, CSIR-CGCRI, CSIR-CMERI)
3.	Abhadut Dey (M.V.Sc Scholar, LPT) & Saurabh Karunamoy (Ph.D scholar, LPT) - 1 st in the science model competition under Post Graduate level of West Bengal State student – Youth Science fair 2019, Govt. of W.B on 17-19 th November, 2019 at Netaji Indor Stadium, Kolkata Saurabh Karunamoy (Ph.D scholar, LPT): 1 st prize in 9 th IMSACON & International symposium -2019 on 6-8 th November at Palampur, H.P Abhadut Dey (M.V.Sc Scholar, LPT): 1 st prize in all India Independence day quiz competition-2020, Awarded 3 rd prize in National level e poster contest on Swanirbhar Bharat from 5-15 th July, 2020, Awarded 3 rd Prize in national level competition on Novel Corona Virus Disease Covid -19 and biological Diversity on 5 th June, 2020.
4.	Ms. Sneha Bhowmick, Ph.D. Life Sc. Scholar, Veterinary Microbiology received Best oral presentation award on 'Antimicrobial resistant bacteria in <i>Nicobari</i> fowls in Andaman and Nicober islands' in XXXVI Annual Conference and National Symposium of Indian Poultry Science Association (IPSACON-2019) at Chattisgarh Kamdhenu Viswa-vidyalaya, Anjora, Durg during 11-13 December, 2019
5.	Namrata Maity, PhD fellow, Life Science, Dept. of Veterinary Surgery & Radiology has been selected for CSIR-SRF in Biotechnology/Engineering.
6.	R Beryl Julinta, a student of Dept. of Aquatic Animal Health received Rula Awards - 2020: International Innovative Researcher in Fisheries for research work in Aquatic Animal Health

7.	Sagarika Das, Ph. D. Scholar (Life Sciences) received Best Oral Presentation Award (2 nd position)						
	International Conference on Animal Nutrition 2019 (INCAN 2019) on 'Nutritional Strategies for						
	Improving Farm Profitability and Clean Animal Production' held at Biswa Bangla Convention						
	Centre, Kolkata on 17-19 Dec, 2019.						
8.	Pavel Rout, student of the Dept. of Dairy Chemistry received Best Poster Award on the to "Enzymatic modification of Whey Protein Isolates using food grade enzymes and resulting functional properties" in the National Seminar on "Traditional Indian Da Products- Prospects of Commercialization" organized by the National Agricultural Hig Education Project (NAHEP)- Innovation Grant, at the Faculty of Dairy Technolo WBUAFS, Nadia held on 13 th March, 2020.						
9.	Chandrakanta Sen, student of the Dept. of Dairy Chemistry was awarded Second for poster presentation on the topic "Textural Quality of Paneer added with Nisin" in the National Seminar on "Traditional Indian Dairy Products- Prospects of Commercialization" Organized by the National Agricultural Higher Education Project (NAHEP)- Innovation Grant, at the Faculty of Dairy Technology, WBUAFS, Nadia held on 13 th March, 2020.						
10.	A number of students from WBUAFS have qualified ICAR NET Examination, 2019. Faculty wise distribution stands as follows:						
	F/O Veterinary & Animal Sciences: 7 ICAR (NET)						
	1 CSIR- UGC NET						
	F/O Fishery Sciences : 1 ASRB (NET)						



Reciepients with prizes and certificates for participation in several events at the Science Fair organized at Netaji Indoor Stadium during 17-19 December, 2019

V. RESEARCH

Research is the foundation for knowledge which creates the vast sea of innovation and application for providing wider benefit. The quality of education in any University is determined by the research that has been undertaken there. West Bengal University of Animal & Fishery Sciences endorses various Research activities in the fields of Veterinary & Animal Husbandry, Dairy Technology and Fishery Sectors. WBUAFS activities are now being expanded to span newer and frontier areas of research to create the partnership between the farmers and committed academics and scientific research as the basics for sustainable livestock, dairy and fishery development in the country in general and in the region in particular. Directorate of Research, Extension & Farms unit of WBUAFS plays a key role in providing focused attention in guiding and coordinating research activities of various departments and centres of the universities.

At present the University is conducting 32 various research projects/schemes with a fund allocation of about Rs. 2017 lakhs sponsored by different funding agencies like ICAR, State Govt. departments, DBT, DST and other institutes of national repute.

Two numbers of 'All India Network Project' on Mariculture and Fish Health are currently being operated in the Fishery Faculty of the University. 'Establishment of Biotech-KISAN Hub' granted by DBT, Ministry of Science & Technology, Government of India is currently functional under the Directorate of Research, Extension & Farms of the University.

V.1. FACULTY-WISE DISTRIBUTION OF RESEARCH PROJECTS

Sl.No.	Faculty	No. of projects	Fund allocation
1	Veterinary and Animal Sciences	23	638.6086 lakhs
2	Fishery Sciences	3	167.1462 lakhs
3	Dairy Technology	1	469.82 lakhs
4	4 DREF		742.39 lakhs
Total		32	2017.9648 lakhs

V.2. FACULTY-WISE COMPLETED RESEARCH PROJECTS

Sl.No.	Faculty	No. of projects	Fund allocation
1	Veterinary and Animal Sciences	2	13.81 lakhs
2	DREF	1	3.26 lakhs
Total		3	17.07 lakhs

V.3. TYPE OF ON-GOING PROJECTS AND FUNDING AGENCIES

Sl.No.	Type of Project	Funding Agency	Numbers
1	All India Coordinated Research Project (AICRP)	ICAR	1
2	All India Network Project (AINP)	ICAR	2
3	Outreach programme	ICAR	2
4	Tribal Sub Plan (TSP)	ICAR	1
5	Ministry of Agriculture, Govt. of India	GOI	1
	(AH &DF, NBFGR-NFDB etc.)		
6	Department of Biotechnology (DBT)	Govt. of India	9
7	Dept. of Higher Education, Science &	Govt. of WB	1
	Technology and Biotechnology (DHESTBT)		
8	Department of Science and Technology (DST)	Govt. of India	2
9	Department of Science and Technology (DST)	Govt. of WB	2
10	Department of Science & Technology and	Govt. of WB	2
	Biotechnology (DSTBT)		
11	ICAR project	ICAR	3
12	Industry (Foreign Funded - Danisco Animal	UK	1
	Nutrition, UK and Medical Research Council,		
	UK)		
13	Industry	Private	2
14	Medical Research Council, UK	UK	1
15	World health Organization	WHO	1
16	NAHEP	ICAR-World	1
		Bank	

V.4. BRIEF LISTING OF ON-GOING PROJECTS

V.4.1. FACULTY OF VETERINARY AND ANIMAL SCIENCES

Sl. No	Title of the Project	Funding	Principal Investigator and	Fund	Year of
		Agency	Department	Sanctioned	initiation
				(In lakhs)	
1	AICRP on Goat Improvement Black Bengal Field Unit-Kolkata	ICAR	Dr. M. Roy, Animal Genetics & Breeding	33.85	2000
2	Poultry Seed Project	ICAR	Dr A K Sahoo, Animal Genetics & Breeding	48.00	2008
3	Evaluation of Rice- Based IFB Newgen DDGS as an alternative protein source in Commercila Broiler Chicken	IFB, India	Prof. B. Roy, Animal Nutrition	9.72	2017

4	Studies on Supplementation of Selenium Yeast on Growth Performance, Immunity and Meat Quality in Broiler Chickens.	Unique Biotech Ltd.	Prof. B. Roy, Animal Nutrition	5.96	2019
5	Comparison of two phytase form in broilers	Danisco Animal Nutrition, UK	Dr. G.P. Mandal, Animal Nutrition	6.28	2018
6	Strategic inclusion of different varieties of dietary nano-iron and nano-zinc for better health and production of designer meat	DBT, GOI	Dr. P. N. Chatterjee, Animal Nutrition	27.00	2018
7	Strategic Dietary fortification with synthesized nano-minerals for better health and Environment friendly Poultry Production	DHESTBT, Govt. of West Bengal	Dr. P. N. Chatterjee, Animal Nutrition	10.00	2018
8	Molecular Characterization of indigenous ducks and study of its innate immunity particularly against avian influenza	Department of Science and Technology, SERB, Govt. of India	Dr. A. Pal, Livestock Farm Complex	47.08	2018
9	An Integrated Approach to explore and exploit the Innate and Adaptive immune response in Indigenous Duck Breeds of North Eastern and South India (A collaborative project under Duck consortium)	Department of Biotechnology , Ministry of Science and Technology, Govt. of India.	Dr. A. Pal, Livestock Farm Complex	94.92	2018
10	New dimension in Agricultural Marketing and Rural employment generation through value added duck meat products	DST, Govt. of W.B	Prof. S. Biswas, Livestock Products Technology	17.24	2015
11	Network Programme on BovineTuberculosisContro l: Mycobacterial Diseases in Animals Network (MyDAN) Programme	DBT, Govt. of India	Dr. ParthaSarathi Jana, Veterinary Epidemiology and Preventive Medicine	52.87	2018
12	Studies on antimicrobial and anti-biofilm activities of medicinal plant extracts obtained from North Eastern India against pathogenic bacteria isolated from pigs, cattle and poultry of NER India; and cattle, poultry and ducks of West Bengal	DBT, Govt . of India	Dr. S. N. Joardar, Veterinary Microbiology	30.36	2017

13	Improved Health Management Strategies in Duck Rearing: A Boon to Farmers' Income	DST and Biotechnology , Govt. of WB	Dr. S. N. Joardar, Veterinary Microbiology	12.5	2019
14	Potentiality of phytobiotics to counter prevalent bacteria vis-a-vis to replace use of antibiotics in poultry diet in West Bengal	DST, Govt. of West Bengal	Dr. I. Samanta, Veterinary Microbiology	18.80	2017
15	A multi-stakeholder approach towards operationalizing antibiotic stewardship in India's pluralistic rural health system'	Medical Research Council, UK	Dr. Indranil Samanta, Veterinary Microbiology	60.00	2020
16	Characterization of antimicrobial resistance and directionality of transmission of ESBL- E. coli between three compartments-human, animal and environment	World Health Organization (WHO)	Dr. Indranil Samanta, Veterinary Microbiology	12.00	2020
17	Outreach Programme on "Monitoring of Drug Residues and Environmental Pollutants"	Outreach Programme, ICAR, New Delhi	Prof. T.K. Mandal, Veterinary Pharmacology & Toxicology	7.21	2010
18	Outreach Programme on Zoonotic Diseases (Dermatophytosis and Cryptococcosis in Animals and their Public Health Importance)	Outreach Programme, ICAR, New Delhi	Dr. Chanchal Debnath, Veterinary Public Health	8.68	2009
19	Developing nanoformulations of crystal protein for rendering neuroprotection and cytoprotection to cornea and retina. DST Nanomission, Govt. of India	DST Nanomission.	Dr Sarbani Hazra, Veterinary Surgery & Radiology	70.21	2017
20	Developing new strategies for prevention of corneal blindness in dogs. DBT, Govt of India	DBT, GOI	Dr Sarbani Hazra, Veterinary Surgery & Radiology	35.00	2018
21	Engineering Natural inspired peptide based nano medicine for blood clotting wound healing	DBT, GOI	Prof. Samit Kumar Nandi, Veterinary Surgery & Radiology, Dr. P. Mukherjee, VCC	8.4286	2019

22	Development of fish collagen-doped bioactive glass electrospun mats/fibers for diabetic wound healing	DBT	Prof. Samit Kumar Nandi, Veterinary Surgery & Radiology	9.0	2019
23	Generation of induced Pluripotent Stem Cells (iPSCs) from cattle fetal fibroblasts for prospective therapeutic applications		Dr. Kinsuk Das, Department of Physiology	13.5	2019

V.4.2. FACULTY OF FISHERY SCIENCES

SI. No	Title of the Project	Funding Agency	Principal Investigator and Department	Fund Sanctioned (In lakhs)	Year of initiation
1	Surveillance of Freshwater Fish and Shellfish Diseases in West Bengal(NSPAAD)	NFDB	Dr. Gadadhar Dash, Aquatic Animal Health	76.43	2013
2	All India Network Project on Fish Health	ICAR	Dr. T. J. Abraham, Aquatic Animal Health	77.0162	2015
3	All India Network Project on Mariculture	ICAR	Prof. B.K. Das, Deptt. Of Aquatic Environment Management	13.70	2015

V.4.3. FACULTY OF DAIRY TECHNOLOGY

Sl. No	Title of the Project	Funding Agency	Principal Investigator and Department	Fund Sanctioned (In lakhs)	Year of initiation
1	Strengthening Post- Graduate Education and Outreach Programmes at Faculty of Dairy Technology, West Bengal University of Animal and Fishery Sciences, Kolkata, West Bengal	ICAR-WORLD BANK	Dr. Lopamudra Haldar, Dairy Microbiology	469.82	2019

V.4.4. DIRECTORATE OF RESEARCH, EXTENSION & FARMS

Sl. No	Title of the Project	Funding Agency	Principal Investigator and Department	Fund Sanctioned (In lakhs)	Year of initiation
1	National Information System on Agriculture Education network in India (NISAGENET)	ICAR	Dr. (Mrs.) S. Das, Scientist, DREF	3.08	2005
2	Livelihood Improvement of Poor and Tribal people through Livestock Based Enterprises of Selected villages of West Bengal	Tribal Sub Plan, ICAR	Dr Nilendu Jyoti Maitra, Deputy Director of Research	264	2017
3	Establishment of Biotech-KISAN Hub at WBUAFS, Kolkata	DBT, Govt of India	Dr. K.C. Dhara, Asstt. Director (Farms), DREF	137.03	2018
4	Improvement of knowledge & skill of SC students vis-a-vis livelihood generation among the SC communities through SC-SP	ICAR	Dr Nilendu Jyoti Maitra, Deputy Director of Research	100.00	2019
5	Expansion of Activities of Biotech- KISAN Hub in Five Aspirational Districts (Nadia, Murshidabad, Birbhum, Maldah and Dakshin Dinajpur)	DBT, Govt of India	Dr. K.C. Dhara, Asstt. Director (Farms), DREF	238.28	2019

V.5. BRIEF LISTING OF COMPLETED PROJECTS (2019-20)

V.5.1. FACULTY OF VETERINARY AND ANIMAL SCIENCES

Sl. No	Title of the Project	Funding Agency	Principal Investigator and Department	Fund Sanctioned (In lakhs)	Duration
1	Isolation, characterization of osteogenic and neurogenic potential from adipose tissue and its application in canine	ICMR	S.K.Guha, Veterinary Clinical Complex	12.68	2017-20
2	North East Silk Based Bio-engineered Vascular Conduits	Department of Biotechnology, Ministry of Science and Technology, Government of India	Prof. Samit Kumar Nandi, Veterinary Surgery & Radiology	1.13	2017-20

V.5.2. DIRECTORATE OF RESEARCH, EXTENSION & FARMS

Sl. No	Title of the Project	Funding Agency	Principal Investigator and Department	Fund Sanctioned (In lakhs)	Duration
1	Tilapia Farming in Aquaponics System for Biocontrol of Mosquito- borne diseases and Biopurification of Water with special reference to Duckweed Control		Dr. (Mrs.) S. Das, Scientist, DREF	3.26	2016-19

V.6. SALIENT ACHIEVEMENTS OF ON-GOING PROJECTS

V.6.1. HIGHLIGHTS OF THE PROJECTS CONDUCTED IN THE FACULTY OF VETERINARY AND ANIMAL SCIENCES

1. AICRP on 'Goat improvement, Black Bengal (Field unit)'

AICRP on Goat Improvement, Black Bengal-Kolkata Field Unit is now spread to five clusters viz. Sundarban Delta, Jhargram, Nadia, Murshidabad, and Dhupguri, covering 10 village centres distributed in five different agro-Climatic Zones of West Bengal. There is significant increase of population of Black Bengal Goats (61%)

and stakeholders (171%) under the project areas is noticed during last six years. Consistent improvement of body weight starting from birth to adult stage (i.e. 6.84%, 13.83%, 7.30%, 8.01% & 5.94% increase of birth weight, 3 months, 6 months, 9 months&12 months weight) as well as daily body weight gain is achieved by using superior bucks. Significant improvement of milk production is also noticed in Black Bengal does. The average litter size is increased to 1.83 where twinning is maximum (54.69%) followed by singlet (31.89%), triplet (12.21%), quadruplet (0.70%) and quintuplet (0.42%). The average flock size of Black Bengal goat in adopted areas is reached to 5.78 in 2019-2020. The morbidity of goats is reduced to 41.52% and the mortality rate is reduced to 3.91% in 2019-2020 by regular deworming and preventive vaccination. The average annual income of farmer from goat rearing has increased about 88.75% by last six years (from Rs 4820.00 to Rs 9098.00) with 58.27% more income from a doe (from Rs 2790.00 to Rs 4416.00). Different inputs like breeding bucks &does, feed, mineral mixture, feeding bottle for kids, feeding trough, mosquito net, umbrella, water bottle, torch light, and saplings have been distributed to ST and SC farmers. Technologies related to goat keeping have been transferred to the adopted farmers through different capacity building programmes. Goat exhibition and competition in all adopted clusters with suitable prize has been organized to promote maintaining superior germplasm. Research parer, leaflet, booklet has also been published.Linkages with Government bodies, KVK and NGO's are maintaining for overall development of Bengal Goat farmers.







Distribution of inputs at Nadia Cluster

Field Visit of ADG (AS),GoI

Goat Show at Jhargram Cluster

Fig. 5.1: Different Activities under the project

2. Comparison of two phytase form in broilers

Phytase supplementation at 750 FTU to diet deficient in energy, protein, digestible amino acids, calcium and phosphorous improved body weight gain, FCR, and digestibility of Ca and P in broiler chickens.

3. New dimension in Agricultural Marketing and Rural employment generation through value added duck meat products

Observation& findings of the Project:

- 1. Two field survey had been conducted in Nadia and South 24 pgs districts among the duck farmers especially women folk to select the groups. These groups were surveyed on various socio-economical parameters including the knowledge of duck meat consumption and marketing by a set of questionnaire.
- 2. 50 nos of women duck raisers were identified and given hands on training at two places, Mohanpur University campus, Nadia and TSRD,Rangabelia, Gosaba south 24 pgs with exposures visit to duck rearing farms.

- 3. Consumers market survey were conducted on the acceptability of duck meat and duck meat products in different places of Nadia, South 24 pgs, and Kolkata Districts among 300 consumers (100 from each District).
- 4. Results were statistically analyzed with different socio-economic parameters..
- 5. Further refinements of products preparation were also taken up for complete standardization of each product namely Duck Meat Ball, Duck meat Nuggets and Duck Meat Pickles.

First Training Programme at Mohanpur Campus, WBUAFS, Nadia





Training Programme at Mohanpur, Nadia

Hands on training at Departmental processing unit

Second training Programme at TSRD, Rangabelia, Gosaba, South 24 Pgs





"Fig. 5.2: Different Activities under the project"

Training Programme at TSRD, Rangabelia, Hands-on-training at Rangabelia, Gosaba

4. Developing nanoformulations of crystal protein for rendering neuroprotection and cytoprotection to cornea and retina. DST Nanomission, Govt. of India

Gene expression of crystalline protein Cry A and Cry B has been evaluated in corneal injury and PVR models. Protocol for nanodrug delivery to posterior segment of the eye through topical route has been established.

5. Developing new strategies for prevention of corneal blindness in dogs. DBT, Govt of India

Clinical trial with approved drug in dogs with corneal defects have been initiated and completed in seven patients. One paper has been published another manuscript has been submitted.

6. Engineering Natural inspired peptide based nano medicine for blood clotting wound healing

Peptide based sealant and material has been developed for wound healing. The animal experimentation has been carried out in rabbit model and our developed peptide based material showed good potential as sealant and wound healing material. Based on the outcome, one article has been published in American Chemical Society Journal titled "SnehasishGhosh; ParamitaGayen; Somnath Jan; Vijay Kishore; Vinod Kumar; Argha M Mallick; Asmita Mukherjee; SamitK Nandi and RituparnaSinha Roy. 2020. Bio-inspired Non-

immunogenic Multifunctional Sealant for Efficient Blood Clotting and Suture Free Wound Closure. ACS Biomaterials Science & Engineering" https://dx.doi.org/10.1021/acsbiomaterials.0c01254

7. Development of fish collagen-doped bioactive glass electrospun mats/fibers for diabetic wound healing

Fish (Rohu-Labeorohita) collagen has been isolated and subsequently Collagen concentration measurement was done by Lowry's modification method. Hydroxyprolineassay, collagen estimation by Sirius Red dye, SDS-polyacrylamide gel electrophoresis (SDS-PAGE)has beencarried out. Side by side, BG precursor solution of doped bioactive glass, synthesis and fabrication of electrospun Bio-mimetic fish collagen/doped BG nanofiber mats and their characterization through in vitro cell culture on electrospun fiber/ mats, In vitro cell proliferation on fiber mat, Ex-vivo angiogenesis by chorioallantoic membrane (CAM) analysis for biocompatibility and in Vitro hemocompatibility (Red Blood Cell Compatibility) was prepared.

8. North East Silk Based Bio-engineered Vascular Conduits

The completed research project "North East Silk Based Bio-engineered Vascular Conduits" has reported that, the silk based small diameter vascular graft was implanted in Rabbit carotid artery and Jugular vein and initial results were encouraging. We have tested the potency of the graft in terms of blood flow

9. A multi-stakeholder approach towards operationalizing antibiotic stewardship in India's pluralistic rural health system'

A multi institutional project was initiated by DrIndranilSamanta, Assistant Professor, Department of Veterinary Microbiology under the advisory of Prof P. Biswas, Honorable Ex-VC with London School of Hygiene and Tropical Medicine (LSHTM), Royal Veterinary College (RVC), Institute of Development Studies, UK; Centre for Public Health and Development, Public Health Foundation, India regarding value chain analysis of antibiotic usage in human and animals. A project start-up meeting was conducted in Kolkata and pilot field visit to the study villages were arranged during Feb-27-28, 2019. The field visits to the study villages, meeting with Government Veterinary Officers, *Pranaibandhu*, private paravet, veterinary drug wholesalers/retailers and veterinary pharmaceutical representatives were conducted during November, 2019 and January 2020. The qualitative interviews were conducted by Dr. Samanta and the team including two MSc students from LSHTM and RVC. An online project review meeting (OASIS) with the team was arranged during 20-29 March 2020 to analyze the data and to confirm the future course of action.

10. Potentiality of phytobiotics to counter prevalent bacteria vis-a-vis to replace use of antibiotics in poultry diet in West Bengal

In poultry industry antibiotics are used in diet in sub-therapeutic level to prevent illness or promote growth which may select for antimicrobial resistance in the commensal bacteria present in the gut. An urgent need to develop an alternative approach for the poultry farmers was felt because the antibiotic resistant bacteria are emerging as a potent health threat in the community. In the proposed project attempt will be taken to develop a phytobiotic which can act against the common pathogenic bacteria of poultry. Further study will be done whether addition of the phytobiotic in diet of experimental poultry could maintain the normal growth performance and whether it has any effect on intestinal microbial population.

Salient achievements:

 Occurrence of Salmonella and E. coli was higher in healthy poultry than cattle and pigs in studied samples collected from West Bengal

- Moderate occurrence of Klebsiella was detected in studied healthy pigs in West Bengal
- AmpC gene was detected as most prevalent antimicrobial resistance genes among the studied ESBL and AmpC -producing E. coli and Salmonella isolates followed by CTX-M in poultry and cattle in West Bengal
- bla_{CTX-M} was detected as most prevalent antimicrobial resistance genes among the studied ESBL and AmpC -producing E. coli isolates in pigs
- Ocimum sanctum Linn. (50 mg/ml) and Nyctanthes arbor-tristis(50 mg/ml) were found better
 effective than Spondiadulchis, Solanumtorvum, and Bryophyllumpinnatum against ESBL-producing
 E. coli isolated from poultry
- Nano-Zinc having the particle sized ranged within 90-100 nm (20 mg/ml) produced better antibacterial activity against ESBL-producing E. coli isolated from poultry
- MIC values of studied plant extracts and nano-particles against ESBL-producing E. coli were detected.

11. Characterization of antimicrobial resistance and directionality of transmission of ESBL- E. coli between three compartments-human, animal and environment

A multi institutional project was initiated by DrIndranilSamanta, Assistant Professor, Department of Veterinary Microbiology with PGIMER, Chandigarh (lead center), Kolkata Medical College and NRS Medical College on occurrence and WGS based characterization of ESBL-producing *E. coli* in animals, human and environment funded by world health organization (WHO) under TriCycle project. The objectives and mandate were discussed in a pilot meeting conducted on September, 2019 at Kolkata Medical College. The project work will be rejuvenated with recruitment of JRF and collection of samples after the COVID crisis.

12. Studies on antimicrobial and anti-biofilm activities of medicinal plant extracts obtained from North Eastern India against pathogenic bacteria isolated from pigs, cattle and poultry of NER India; and cattle, poultry and ducks of West Bengal

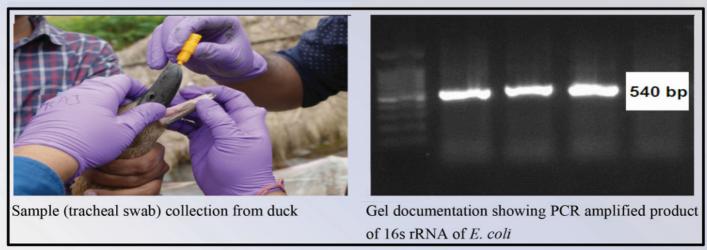
Important observations are as follows:

- Out of 310 samples of cattle, chicken and duck collected from different places of South Dinajpur, Nadia, Hoogly, Howrah and North 24 pgs districts, 156 (50.3%) E. coli and 39 (12.5%) Salmonella isolates could be generated.
- Among the *E coli* samples obtained from poultry (n=23), antimicrobial resistance gene *bla_{ampC}* was found to be quite high (in 29% cases), followed by *bla_{CTX-M}*, *bla_{SHV}* and *bla_{TEM}* genes. Similarly, among 30 cattle samples, antimicrobial resistance gene *bla_{ampC}* was present in 64.5% cases followed by *bla_{CTX-M}*, *bla_{SHV}* and *bla_{TEM}* genes. In case of duck (n=102), presence of *bla_{CTX-M}* was 46.1%.
- Among the Salmonella samples obtained from poultry (n=9), antimicrobial resistance gene bla_{ampC} was found to be quite high (55.5% cases) followed by bla_{TEM} and bla_{CTXM} . Among 17 cattle samples, antimicrobial resistance gene bla_{ampC} was present in 76.4% cases followed by bla_{TEM} and bla_{CTXM} genes. In case of duck (n=13), bla_{CTXM} genes were found 46.1% cases.

- While performing phenotypic determination of biofilm production by tissue culture plate assay, some (5.55%) *E. coli* isolates were found strong, whereas some (65%) moderate and some (25%) were weak biofilm producers. The biofilm genes *csgA* and *sdiA*were found in 100% cases, whereas *rcsA*were in 91.6% and *rpoS*were in 90% cases.
- More than 70% E. coli isolates and more than 80% Salmonella isolates having biofilm forming
 genes also possess antibiotic resistance gene bla_{ampC}indicating close relationship between
 antibiotic resistance and biofilm production in E. coli and Salmonella.

13. Improved Health Management Strategies in Duck Rearing: A Boon to Farmers' Income

Out of 130 duck samples (Tracheal swab, cloacal swab, egg, feed, drinking water and soil with excreta) collected from DakshinBarasat, (South 24 pgs) PatharPratima (South 24pgs) and Kalna (East Burdwan), 74 E. coli, 56 Salmonella, 65 Klebsiella and 5 Pseudomonas isolates could be generated. Molecular characteristics encompassing antibiotic resistance, biofilm producing ability and virulence production of the isolates is being carried out.



"Fig. 5.3: Sample collection and test Report from the project"

14. Outreach Programme on "Monitoring drug residues and environmental pollutants"

Out of 520 samples (Animal substrates), only 04 (four) nos. of samples are positive for pesticides which are below MRL. No antibacterials were detected in animal substrates collected from four districts of states of West Bengal and Odisha during 2019-20.

15. Outreach Programme on Zoonotic Diseases (Dermatophytosisand Cryptococcosis in Animals and their Public Health Importance).

The collaborating centre in West Bengal is working on "Dermatophytosis and Cryptococcosis in animals and their public health importance". Salient achievements of the project at this centre is as follows

- Antifungal properties of four phytoextracts were examined against the Zoonotic dermatophyteM.
 canisand MIC values of hot crude extracts of Piper betel S., Ficusracemosa L., Cassia fistula L., and
 Nerium oleander L. were detected as 1, 4, 16 and 32μg/mL respectively in in-vitro study.
- 2. In the same study, MIC values of cold crude extracts of *Piper betel* S., *Ficusracemosa* L., *Cassia fistula* L., and *Nerium oleander* L. were detected as 8, 16, 16 and 32µg/mL respectively.

- 3. *Piper betel* Hot and *Ficusracemosa*Hot crude extracts were found to be the best two effective extracts in the in-vitro study against the said pathogen.
- 4. On further study, MIC of *Piper betel* hot extract from chloroform was detected as 1μg/mL. No other fractional extract showed any sensitivity.
- 5. On the other hand, MIC of *Ficusracemosa* hot extract from methanol was detected as 2μg/mL. No other fractional extract showed any sensitivity.
- 6. Thus, Piper betel extract from chloroform was selected for trial in guinea pig for in-vivo study after evaluating its safety.
- 7. Complete cure was observed when treated with Piper betel extract on the 3rd week from the day of establishment of infection (Lesion became normal and hair growth was also detected).
- 8. Treatment with ketoconazole also cured on the 3rd week (Lesion and hair growth was less compared to herbal treatment).

16. Generation of induced Pluripotent Stem Cells (iPSCs) from cattle fetal fibroblasts for prospective therapeutic applications

Fetal tissue is a rich source of different adult cells as well as adult stem cells. Here we successfully isolated fibroblasts and mesenchymal stem cells from bovine fetal tissue. The cell lines were characterized and maintained *in vitro* by standard tissue culture techniques. Further, these cells were cryopreserved for future experimentation to fulfill the objective of the project.



17. Isolation, characterization of osteogenic and neurogenic potential from adipose tissue and its application in canine

- 1. Characterization of osteogenic, chondrogenic and neurogenic stem cells done after isolation from canine adipose tissue.
- 2. Application of allogenic and autologus stem cells in application of canine patients suffering from chronic osteoarthritis with success.
- 3. Application of autologus stem cells in treatment of bone injury resulted faster bone healing,
- 4. Application of autologus neurogenic stem cells in spinal cord injured canine patients with moderate success.

18. An Integrated Approach to explore and exploit the Innate and Adaptive immune response in Indigenous Duck Breeds of North Eastern, Eastern and South India

Certain genes identified responsible for resistance to Duck plague in indigenous duck of West Bengal, India.

19. Molecular Characterization of indigenous ducks and study of its innate immunity particularly avian influenza

"Bengal" breed of duck documented and characterized from different agroclimatic region of West Bengal



(old alluvial, new alluvial, terai, arid and coastal region). Distribution was observed to be scanty in Hilly region. Biomorphometric characterization with multivariate analysis was followed by molecular characterization with functional genes and mitochondrial genes (including whole mitochondrial genome sequencing). Bengal duck was observed to be hardy and resistant to most of the commonly occurring poultry diseases and can be reared in organic production system both intensive and extensive system of management.

Certain genes identified and characterized for providing disease resistance to indigenous duck population against Avian influenza.

V.6.2. HIGHLIGHTS OF THE PROJECTS CONDUCTED IN THE FACULTY OF FISHERY SCIENCES

1. Surveillance of Freshwater Fish and Shellfish Diseases in West Bengal(NSPAAD) Achievements of the project during 2019-20:

- Documented the prevalence of OIE listed disease (WSV) and diseases of National concern such as Myxoboliasis, Argulosis, Thelohanellosis, Lernaeasis, Edwardsiellatarda, Aeromoniasis and some other diseases like fungal diseases in Clariasbatrachus, nutritional & environmental problems and Lymphocystis like condition in Anabastestudineus in West Bengal.
- One NFDB funded training programme (2 days) for AOC Staffs and 04 farmer's awareness camps
 have been completed, benefitting huge number of fish/Shrimp farmers and technical persons during
 April 2019-March 2020. Aqua One Centre (AOC) Staffs training caters the services of fish farmers
 of four(4) States such as West Bengal, Orissa, Assam and Manipur.
- Farm advisory services to the farmers/ hatchery personnel's / NGOS/ Private entrepreneurs through which a strong rapport has been developed among the fish/shrimp farming community and also with the Government machinery.
- Published 01 research paper of International repute.
- Published one training manual and 03 news flashing (in regional languages) during this period.
- Extension activities, like, cover stories in Television on (i) Fish and Shrimp Diseases and it's remedial measures, (ii) Diseases in Fishes in Winter Season and (iii) Diseases in Carps and it's remedial measures, in DD Bangla (Bengali TV Channel) during 2019-2020.
- 49 nos. of farmers from different regions of West Bengal (Passive surveillance) throughout the year visited to COF, West Bengal with samples (fish/shrimp, soil & water) with different problems like diseases, management measures, pond soil & water, aqua-medicines etc.

2. All India Network Project on Fish Health Achievements of the project during 2019-20:

 Surveyed 702 freshwater finfish and shrimp aquaculture farms in 14 districts of West Bengal to record the use of aquadrugs. About 11.39% of the respondents used antibiotics in various stages of fish production. Insecticides and piscicides (mohua oil cake) were used by 56.80% and 48.52% of

- the West Bengal fish farmers. Among the aquadrugs, products of plankton blooming agents (50), oxygen enhancers (49), vitamins and minerals (47), feed stabilizers (42), pH stabilizers (40), enzymes (35), disinfectants (28) and mineral supplements (26) were predominant.
- Lime was used by all the respondent fish farmers ranging from 5.15 kg/ha to 387.10 kg/ha with a mean of 48.70±46.62 kg/ha per ton carp production. Human and veterinary medicinal products, i.e., antibiotics, were used at 1.38±1.34 g/kg feed or 4.59±2.13 mg/L or 0.35±0.23 L/ha per ton carp production. Pesticides and insecticides were used at 1.33±1.29g/kg feed or 41.32±37.70 mg/L or 17.62±9.33 mL/ha per ton carp production
- The LC-MS/MS residue accrual and depletion data of Nile tilapia *Oreochromisniloticus* revealed peak concentration of oxytetracycline (OTC) residues on day 10 OTC-dosing (161.4 ng/g), which persisted in the edible muscle even on 42nd day of cessation of OTC-dosing (8.97 ng/g). The OTC residue levels were within the permissible limit of USFDA on day 0. The residue levels reached the permissible limit of EC on day 7 post-OTC dosing. The observed mortalities (5%), reduced feed intake (7.5%) and biomass (5.84%), nephropathy and kidney malfunctioning at the approved dose and dosage in apparently healthy Nile tilapia, thus, raises questions on the effectiveness of oral OTC-dosing in Indian condition.
- The 7-day emamectin benzoate (EB)-dosing regimen caused 2.23±0.58% mortalities in Nile tilapia *Oreochromisniloticus* in 1X (50 μg/kg fish/day) group. In fish muscle, the EB residues peaked on day 7 EB-dosing (9.72 ng/g) and decreased subsequently. The EB-residues were noted in the edible muscle even on 45 post-EB-dosing at 0.022±0.01 ng/g. The withdrawal period was calculated as '0' day from the MRL of different agencies. The residue levels were within the acceptable limit of the European Commission and the Canadian Food Inspection Agency (100 ng/g) even during the EB-dosing period. Mild histopathological lesions were observed in the kidney, liver and intestine of EB-fed fish.
- In Nile tilapia *Oreochromisniloticus*, the withdrawal period for OTC was 7 days as per the European Commission regulation (100 ng/g) and 0 day as per the USFDA. The withdrawal period for EB was 0 day as per the European Commission and the Canadian Food Inspection Agency (100 ng/g).
- Published a total of 14 research articles in peer-reviewed international (9) and national (5) journals

3. All India Network Project on Mariculture

The Faculty of Fishery Sciences of West Bengal University of Animal and Fishery Sciences, Chakgaria has successfully implemented an "All India Network Project on Mariculture" funded by ICAR-Central Marine Fisheries Research Institute, Cochin atDigha in the existing Experimental Prawn Hatchery Complex of the Department of Fisheries, Govt. of West Bengal with active co-operation of the Department of Fisheries, Govt. of West Bengal.

Salient achievements of the project during 2019-20:

The installed cages at Kalnagini Greek in Kakdwip sustained to back to back cyclone namely Bulbul
and Amphan. The cages were able to sustain the severe threats of "AMPHAN", sustaining wind
speeds of 155-165 kmph gusting to 190 kmph coupled with 3-5 metres of tidalwaves. Except for
minor damages to the structure and few mortalities to the crop, the cages proved to be suitable for

- withstanding the tropical cyclones. This is attributed to the mooring and anchoring designed specially done for the West Bengal coast and indigenously developed by Kolkata centre.
- The maximum size of seabass recorded during the year is length 31.16 ± 1.42 cm and weight 447.57
 ± 54.04 g. This is for the first time that cage culture is successfully demonstrated in marine conditions in West Bengal and the present estimated biomass id about 400kg. The crop is ready for partial harvesting which is in itself a promising achievement.
- The state of West Bengal is presently looking for alternative livelihoods for fisher-folks in Sundarban region, and in this situation the AINP-M Kolkata Centre has proved on practical terms that cage culture is a viable alternative and the technology is successfully demonstrated amidst the cyclone-prone areas.



Fig. 5.5: Installed cagesat Kalnagini estuary, BashtalaGhat, Kakdwip





Fig. 5.6: Fish samples from the installed cages at Kalnagini estuary, Banshtala Ghat, Kakdwip

V.6.3. HIGHLIGHTS OF THE PROJECT CONDUCTED IN THE FACULTY OF DAIRY TECHNOLOGY

- 1. Strengthening Post-Graduate Education and Outreach Programmes at Faculty of Dairy Technology, West Bengal University of Animal and Fishery Sciences, Kolkata, West Bengal
 - i. Total of Five M.Tech students and one faculty member of the Department of Dairy Technology visited Dairy Chemistry division and Dairy Technology division of ICAR- NDRI, Karnal for advanced training in the respective field for 2 weeks.
- ii. Total of 09 (Nine) PG students and 03 (Three) faculty members visited laboratory of Department of Agricultural & Food Engineering, IIT, Kharagpur, West Bengalfrom 21st-23rd January, 20
- iii. A skill enhancement training programme as a part of the mandated outreach programme of the project was also organized from 10-15th February, 2020 in which 28 young rural and urban youths including few dairy farmers, from different layers of the society were given training on the 'Milk products development for augmenting their income'. The training programme covered different facets of milk products processing, quality control measures and small scale business development processes and funding. As per latest information obtained, 6 out of 28 participants have initiated entrepreneurial activities at domestic level and enjoying enhanced income, especially during nationwide lockdown situation due to COVID-19 pandemic.



Laboratory Exposure Visit by the PG students and faculty members at Agriculture & Food Engineering Department, IIT, Kharagpur, West Bengal in January, 2020



Hands on Training on Ghee preparation at Outreach Programme- National Training on 'Milk Products Development for Augmenting Income'

"Fig. 5.7: Glimpses from Project Activity"

V.6.4. HIGHLIGHTS OF THE PROJECT CONDUCTED IN THE DIRECTORATE OF RESEARCH, EXTENSION & FARMS

1. National Information System in Agricultural Education Network of India (NISAGENET)

The National Information System on Agricultural Education Network in India (NISAGENET) portal is undercontinuous monitoring at the Central Server of IASRI, New Delhi under the supervision of NISAGENET team, IASRI. The main objective of this project is to generate different types of reports or agricultural education in India. The nodes are provided with unified information system for collections compilation and modification of data which are later analysed and compiled at the Central unit to portray about the activities of the agricultural education system in India. The portal provides a wide spectrum of information relevant to the SAUs and Deemed universities under ICAR.

NISAGENET Cell was established at West Bengal University of Animal and Fishery Sciences in January, 2005 to update and upload information about the University on the NISAGENET portal server.

The NISAGENET system as a whole works on collection, compilation and analysis of information about the activities of the agricultural education system in India. It provides all the information as desired by National Statistical Commission (NSC-2001) from the data available at Central Server. The statistical data is also being provided to Ministry of HRD from IASRI, New Delhi, as per requirement from time to time.

2. Livelihood Improvement of Poor and Tribal people through Livestock Based Enterprises of Selected villages of West Bengal

Livelihood Improvement of Poor and Tribal people through Livestock BasedEnterprises of Selected villages of West Bengal under TSP is one of the flagship extension activities of ICAR implemented in West Bengal under West Bengal University of Animal and Fisher Sciences during the year 2019-20. Various extension activities including training, Health care and providing best quality of Black Bengal Goat, Gongroo Pig, Banraja poultry, fish fingerling etc along with inputs like feed, mineral mixture, vaccination etc. are being distributed to the needy farmers belonging to Schedule Tribes in two villages namely Dangorvita of Darjeeling district and Bandapani village of Alipurduar district of West Bengal. Total 150 nos of Tribal farmers were randomly selected from the two villages and 10 nos of capacity building program including launching workshop were organized to inculcate the

scientific knowhow to field level do how. Different institution like KVK, ARD departments, Panchayat etc were involved to make the TSP program a grand success with a convergence mode. After collecting the base line data from each individual farmer, they were motivated to take up the integrated farming system model with effective utilization of their own resources. After receiving training, each farmer were provided with 2 nos of Black Bengal goats, 2 nos of Ghoongroo piglets and 50 nos of Vanaraja Chicks/RIR to improve their economic status. Due to higher fecundity rate of the supplied animals, it is expected that with in the span of one year a substantial number of off- spring will be obtained which obviously help the Tribal families to have nutritious square meal in future. As a part of integration, each farmer was given 5 kgs of fish fingerling (IMC) and floating fish feed to utilize the water resources in a judicious manner along with the vegetable cultivation over the pond dyke and their back yard.

In the project villages, it was observed that the Tribal women were proactive to receive the technical information and also to implement the activities in a sustainable manner. Out of 150 nos of Tribal farmers more than 50 % were farm women who readily accepted the technologies of scientific management of farm in an integrated approach. The selected farmers from both the villages used to work as daily labour in the Tea gardens and often had to migrate elsewhere for search of their livelihood. After implementation of the project about 50 % of the family members got their employment in their own farm and average family income increased to the tune of 30-35%. Scientific feeding management by distributing the concentrate feed to a limited time period has induced the habit of the tribal farmers so that they are able to prepare the feed from the locally available ingredients which ultimately reduced the feed cost to the tune of 20-30% and increased the profitability to at least 30-35%. Periodical health and vaccination camp including the distribution of medicine and mineral mixture has improved the animal health status and reduced the disease incidence to the tune of 70-80% and thereby the mortality to less than 5%. Regarding marketing of their produce, the University is trying to make a liason with different ongoing scheme run by line departments and panchayets avoiding the interference of middle man.

Activities:

Type of activity (Trainings/ FLDs/ Exhibitions/ Exposure visits/ Others)	Title	Duration	Location
Training: 10 nos.	Training		
	1. Scientific	3 days each	
FLDs: 150 nos.	Management of		
Critical Input distribution through	Small Scale Pig		
FLDs:	Farming - 2 nos.		
a. Distribution of superior germplasm	2. Scientific		
of Ghoongroo Piglet - 300nos.	Management of	3 days each	
b. Distribution of superior germplasm	Goat Farming - 2		Dagarvita Village of
of Black Bengal Goat - 300nos.	nos.		Darjeeling District
c. Distribution of improved quality of	3. Scientific		
Vanaraja Chicks - 7500nos.	Management of	3 days each	and

	Backyard Poultry		
Others:	Farming - 2 nos.		Bandapani Village of
a. Goat feed - 27 q	4. Scientific		Alipurduar District
b. Poultry feed - 225 q	Management of		
c. Pig feed - 63 q	Fish Farming - 2	2 days each	
d. 750kgs fish fingerling (IMC)	nos.		
e. 30 q floating fish feed	5. Scientific		
f. 150 packs of vegetable seeds for	Management of		
Nutrition garden	Nutrition	1 day each	
g. 150 packs medicines and area	Gardening - 2		
specific mineral mixture	nos.		

Major outcomes

- Weight gain in Pig and Goat has been increased to the tune of 32% to 35% due to superior germplasms, feed and health management.
- Birth weight of Piglets and Kids are substantially increased following scientific management of breed able does and sows.
- Disease incidence reduce to 70-80%.
- Kidding and furrowing percentage has been increased due to better management, superior germplasms and reduced inbreeding phenomenon.
- 50-60% additional income achieved from the household goat, pig and backyard poultry farming.
- Meat and Egg production through improved Dual purpose poultry bird has been increased.
- Effective utilization of Backyard Nutrition Garden with year around production augmenting nutritional security and reduction of hidden hunger.
- Judicious utilization of water resources through scientific fish farming.
- Overall additional income is increased to the tune of 30-35% yearly.
- Engagement of farmers in their own farming avoiding seasonal migration.

3. Establishment of Biotech-KISAN Hub at West Bengal University of Animal and Fisheries Sciences, Kolkata

Biotech-KISAN Hub Programme is linking available Science & Technology to the farmers of Sundarban, West Bengal area through understanding their problems and to provide a suitable alternative solution for their better livelihood implemented in West Bengal University of Animal and Fishery Sciences from June 2018 on the basis of sanction order of DBT vide no BT/KIS/123/SP23438/2017 dated 14.03.2018. Following achievement has been so far observed under the project (till 22nd March, 2020). Selection of 1000 Woman Farmers based on the survey of 5998 sheep and goat farmers of Gosaba, Basanti (South 24 pgs), Hingalganj (North 24 pgs) Block of Surdarban. Out of them, total 852 nos. of women farmer have been trained with modern know how of scientific Sheep and goat rearing and average knowledge gain of 76%, Fellowship of an amount of Rs 1000/- per head including a book on Sheep and goat rearing, Mineral mixture, vaccine, medicine etc was provided among 852 farm women. A total 111

nos of scientists are being trained with modern technologies of sheep and goat husbandry. Establishment of Elite Germ plasm centre at Mohanpur has been started with 229 Garole sheep and 366 Black Bengal Goat from the farmers of Sundarban has been made of superior quality with annual production capacity of 500 kid/lamb.Establishment of HUB for farmers' knowledge through ICT was made with one complete ICT laboratory, one mobile App in the name of "MUUK" and Website in the name of Biotech Kisan (http://btkisanwbuafs.com/) to give solution to the farmers about their problems related to animal husbandry. Distribution of 850 quality Garole Sheep and Black Bengal Goat kid (out of which 150 nos male which will help in enhancement of population growth in this Island) of age of 8-10 months among the 425 trained Women Farmer of Sundarban along with goat and sheep feed and preventive care. Average economic gain of these farmers after implementation of the project was observed 48%. A Total 4224 nos. of farmers have been benefitted out of the implementation of the project.

Quantifiable achievement

Sl No	Activities to be carried out as	Achievement up to 22 nd March 2020	Quantifiable
	per time line up to March		achievement
	2020		
1.	Survey of socio-economic	5998 sheep and goat farmers have been	119.96%
	status of 5000 sheep and goat	surveyed.	
	farmers of Sundarban, West		
	Bengal.		
2.	Selection of 1000 Farmers out	1000 women Farmer selected.	100%
	of which 600 will be female		
	Farmers.		
3.	Training of 400 farmers.	852nos. of women farmer have been	213%
		trained.	
4.	Training of 40 scientists.	A total 111nos of scientists mainly	277.5%
		from ICAR including KVK, Extension	
		workers are being trained.	
5.	Fellowship to the 400 women	Fellowship to the 852 women farmer.	213%
	farmer.		
6.	Organization of one MELA	One EXHIBITION for farmers'	100%
	and EXHIBITION for farmers'	awareness has been organized on 2nd	
	awareness.	January 2019.	
7.	Establishment of HUB for	Establishment of HUB for farmers'	100%
	farmers' knowledge through	knowledge through ICT was made with	
	ICT.	one complete ICT laboratory, one	
		mobile App in the name of "MUUK"	
		and Website in the name of Biotech	
		Kisan (http://btkisanwbuafs.com/) to	
		give solution to the farmers about their	
		problems related to animal husbandry.	

8.	Establishment of Elite	Establishment of Elite Germ plasm	100%
	Germplasm Centre with 500-	centre has been started with 229 Garole	
	600 Garole sheep and Black	sheep and 366 Black Bengal Goat of	
	Bengal Goat at Mohanpur,	superior quality at Mohanpur.	
	University Farm.		
9.	Production of kids and	850 nos. of quality of Garole sheep and	106.25%
	distribution among 400	Black Bengal Goat obtained from	
	beneficiaries.	Germplasm centre have been	
		distributed among 425 selected traimed	
		beneficiaries.	



"Fig. 5.8:" Hands on training about Sheep and Goat husbandry to Women Farmer of Sunderban

4. Expansion of Activities of Biotech-KISAN Hub in Five Aspirational Districts (Nadia, Murshidabad, Birbhum, Maldah and Dakshin Dinajpur)

Biotech-KISAN Hub Programme is linking available Science & Technology to the farmers of Five Aspirational Districts (Nadia, Murshidabad, Birbhum, Maldah and Dakshin Dinajpur) of West Bengal, through understanding their problems and to provide a suitable alternative solution for their better livelihood implemented in West Bengal University of Animal and Fishery Sciences from January 2020 on the basis of sanction order of DBT vide no *BT/KIS/123/SP35985/2019* Dated 29.11.2019. Following achievement has been so far observed under the project.

- Selection of 200 Farmers from each Aspirational districts has been made based on the survey of randomly selected 4285 nos. of small and marginal farmers of Sriniketan-Santiketan, Illam bazaar, Haringhata, Bamon Gola, Kusmandi and Murshidabad-Jiagung Block of five aspirational districts namely Birbhum, Nadia, Malda. South Dinajpur and Murshidabad.
- 6 nos. of three days farmers' training programme on Scientific animal husbandry and aquaculture practices with suitable curriculum for the small and marginal farmers of Aspirational districts of West Bengal (Malda, Murshidabad, Nadia, Birbhum and Dakshin Dinajpur) through online mode.

- A total 914 farmers have been trained from aspirational districts (Birbhum- 183, Dakshin Dinajpur- 216, Malda- 185, Murshidabad- 274 and Nadia- 56).
- A total 420 nos. of women farmer have been provided fellowship of an amount of Rs 1000/- per head
- Application of different FLDs like application of region specific Mineral Mixture supplementation, Deworming with specific Antihelmenthics, Vaccination for Goat against PPR, Vaccination for Goat against Goat Pox, Vaccination for Poultry, Fodder cultivation and Application Lime in divided dose for water treatment has been provided 4944 nos of farmers of Aspirational districts maintaining all covid security measure.
- Establishment of modern hygenic mechanized slaughter house with outlet for sale of the biotech kisan hub products (Chevon and Chicken) has been completed and will be started shortly.
- A complete integrated model farm at Germplasm Centre, Mohanpur has already been eshtablished and the Duck house will be inaugurated soon.
- Development of moden Poultry hatchery for Vanraja Chicks at Murshidabad KVK for the benefit rural stake holders for hatching of their egg.
- Documentary film on sheep and goat production has been in local language for promotion of knowledge among the stake holders of biotech kisan hub. Establishment of HUB for farmers' knowledge through ICT was made with one complete ICT laboratory, one mobile App in the name of "MUUK" and Website in the name of Biotech Kisan (http://btkisanwbuafs.com/) to give solution to the farmers about their problems related to animal husbandry.

SALIENT ACHIEVEMENT

Biotech-KISAN Hub Programme is linking available Science & Technology to the farmers of Five Aspirational Districts (Nadia, Murshidabad, Birbhum, Maldah and Dakshin Dinajpur) of West Bengal, through understanding their problems and to provide a suitable alternative solution for their better livelihood implemented in West Bengal University of Animal and Fishery Sciences from January 2020 on the basis of sanction order of DBT vide no *BT/KIS/123/SP35985/2019* Dated 29.11.2019. Following achievement has been so far observed under the project

- The Survey about the socio-demographic picture, socio-economic status, adoption of technology, knowledge level and constrains faced in animal husbandry and fishery practices of randomly selected 4285 nos. of small and marginal farmers of the aspirational districts of West Bengal has been done between January 2020 to March 2020 to assess the problems of the local farmers for linking available Science & Technology and thereby to provide an alternative solution for their better livelihood. (Rest portion has not been done due lock down to combat COVID 19 pandemic situation.)
- ➤ 6 nos. of three days farmers' training programme on Scientific animal husbandry and aquaculture peactices with suitable curriculam for the small and marginal farmers of Aspirational districts of West Bengal (Maldah, Murshidabad, Nadia, Birbhum and Dakshin Dinajpur) through online mode.

A total 914 farmers have been trained from aspirational districts (Birbhum- 183, Dakshin Dinajpur- 216, Malda- 185, Murshidabad- 274 and Nadia- 56).

- ➤ Out of them, a total 420 nos. of women farmer have been provided fellowship of an amount of Rs 1000/- per head has been given.
- Application of different FLDs like application of region specific Mineral Mixture supplementation, Deworming with specific Antihelmenthics, Vaccination for Goat against PPR, Vaccination for Goat against Goat Pox, Vaccination for Poultry, Fodder cultivation and Application Lime in divided dose for water treatment has been provided 4944 nos of farmers of Aspirational districts maintaining all covid security measure.
- Establishment of modern hygenic mechanized slaughter house with outlet for sale of the biotech kisan hub products (Chevon and Chicken) has been completed and full fledged functioning will be started shortly.
- A complete integrated model farm at Germplasm Centre, Mohanpur has already been eshtablished and the Duck house will be inaugurated soon.
- ➤ Development of moden Poultry hatchery for Vanraja Chicks at Murshidabad KVK for rhe benefit rural stake holders for hatching of their egg.
- ➤ Documentary film on sheep and goat production has been in local language for promotion of knowledge among the stake holders of biotech kisan hub.

Sl No	Activities to be carried out as per time	Achievement	Quantifiable
	line up to March 2022		achievement
1.	Survey and analysis of survey records	4285 farmers have	45.85%
	with statistical interference	been surveyed.	
2.	Selection of 400 Farmers out of which	Under way 1000	50%
	240 will be female Farmers in each	farmers have selected.	
	aspirational district.		
3.	Procurement and distribution of quality	Contd.	0%
	lack Bengal Goat 600 farmers of		
	aspirational Districts.		
4.	Distribution of 16,000 28 days' old	Contd.	0%
	Vanraja Chicks among 700 beneficiaries		
	of aspirational district.		
5.	Distribution of 60,000 quality fish ling of	Contd.	0%
	Indian carps among 400 beneficiaries in		
	each aspirational district.		
6.	Establishment of a Mechanised	1	100%
	slaughterhouse to be established as		
	integral part of the project.		
7.	Quality animal may be procured ICAR-	Quality male (8	80%
	Directorate of Poultry Research	nos.) and female (32	20%

	(DPR) formerly Project Directorate on	nos.)Black Bengal	
	Poultry (PDP), Hyderabad.	Goat has been	
		procured	
		> .1000 Egg of	
		Bonraja Chicken	
		procured	
8.	Development of a Poultry hatchery for	1	100%
	Vanraja Chicks		
9.	Training of 400 farmers in each districts	914	45.7
10.	Organization of MELA and	0	0%
	EXHIBITION		
11.	Fellowship to the women farmers.	420	35%
	-		

4. Improvement of knowledge & skill of SC students vis-a-vis livelihood generation among the SC communities through SC-SP

The inaugural programme of SC-SP project was held on 21.12.2019 at Vivek Bhawan of University where about 150 number of students from different faculties like Veterinary, Fishery and Dairy Technology of the University participated. In the inaugural programme, the Director of Research, Extension & Farms, DSW of the university and other senior Professors and other Faculty Members delivered their speech regarding the objective of the SC-SP programme and its modus operandi to organize the tutorial classes for the students of three faculties in respect of future competitive examination.

In house training programme for the student were arranged by weekly for one month where the students were inculcated the modern techniques and procedures to be followed before any competitive examination. Different faculty members of the university, dignitaries from ICAR were invited to deliver their lectures in different subjects to make the students aware about the competitive examination conducted by the ICAR and other institutes. A number of relevant books in Veterinary and Animal Sciences including Dairy Technology were given to the SC students for their ready reference.

Two districts namely North 24PGS and Jalpaiguri were taken into consideration for conducting Human Resource Development and Capacity Building programme along with distribution of critical inputs to the Schedule Caste beneficiaries with a view to engaging themselves in their own farm with assured profit.

Jalpaiguri Krishi Vigyan Kendra, Ramshai under the aegis of WBUAFS had been bestowed with assignment for conduction of Training programmes under ICAR SCSP programme 2019-2020 in six specified districts of Jalpaiguri and Alipurduar district. According to the assignment, Jalpaiguri KVK conducted six (6) different training programmes on 'Poultry farming for improved income' for "Human Resource Development, Need based livelihood upliftment and awareness programme on Govt. Policies and Plans in SC clusters" for the SC beneficiaries of Maynaguri, Dhupguri, Jalpaiguri, Rajganj blocks of Jalpaiguri district and Alipurduar – 1 and Alipurduar – 2 block of Alipurduar district. The training programmes of five days duration were conducted on 24/ 12/ 2019 – 28/12/2019; 16/01/2020 –

20/01/2020; 03/02/2020- 07/02/2020; 12/02/2020 - 16/02/2020 for Maynaguri, Dhupguri, Jalpaiguri, Rajganj blocks of Jalpaiguri district and on 24/02/2020 - 28/02/2020 & 10/03/2020 - 14/03/2020 for Alipurduar - 1 and Alipurduar - 2 block of Alipurduar district. The total number of participants were 200. As poultry farming is mainly performed by female farmers therefore 200 SC female beneficiaries were selected through list from respective Block Veterinary Officials and local administrations. Out of total 200 SC Female beneficiaries 35 nos. of beneficiaries each from four blocks of Jalpaiguri district and 30 nos. of beneficiaries each from two blocks of Alipurduar district were enlisted.

The training programmes were conducted through several Audio – Visual presentations and interactive discussions with the participants. Local field veterinarians/ veterinary officers also attended the training programme as Resource persons and shared their knowledge with participants regarding poultry farming. On completion of five days training programmes in each block the respective trainees were provided with Certificate and Critical inputs as per the assignment.

After successful completion of training and distribution of critical inputs the units developed by the participants were also visited for supervision and monitoring by the coordinator and other KVK officials for better and sustainable practice of poultry farming under ICAR SC-SP programme.

In the same manner, Hingalganj, Bagda, Gaighata, Bongaon and Sandeshkhali-II blocks were also selected from North 24PGS district with 200 number of participants and similar types of activities like Jalpaiguri district were conducted to improve the economic condition of the SC communities. Besides, need based infrastructures were also constructed at North PGS district with a active support and collaboration with University KVK for taking up the entrepreneurship development programme for SC beneficiaries through modern poultry farming. A book bank has also been developed in the premises of Central Library of University, Belgachia Campus from where students can get access of it and get them prepared for any sorts of competitive examination as well. Few models of integrated farming system approach, effective land use pattern etc. have also been developed and displayed.

Activities

Type of activity	Title	Duration	Location
Tutorial Classes: 30 nos. for SC students at University Training: 12 nos. in two districts covering 400 nos. of SC beneficiaries FLDs: 400 nos. Critical Input Distribution through FLDs: a. Distribution of Vanaraja chicks - 1600 nos. b. Distribution of Mineral Mixtures - 800 kgs. c. Distribution of feed for Vanaraja Chicks - 8000kgs. d. Medicine (Vaccination kits etc.) - 400 nos.	different disciplines under Faculty of Veterinary & Dairy Technology 2. Training on	5 days each	University Campus, Jalpaiguri District and North 24PGS District

Major outcomes:

- Knowledge and skill of the SC students have been increased in relation to competitive examinations.
- Many students can improve their knowledge with the help of Book Bank so created in University level.
- The attitude of entrepreneurship development through Poultry faming have been increased from the students community.
- Weight gain in Poultry has been increased to the tune of 26% to 32% due to superior germplasms, feed and health management in field condition.
- Disease incidence reduce to 60-65%.
- About 20-25% additional income achieved from the household backyard poultry farming.
- Meat and Egg production through improved Dual purpose poultry bird has been increased.
- Judicious utilization of poultry resources through scientific farming.
- Overall additional income is increased to the tune of 30-35% yearly.
- Engagement of beneficiaries in their own farming avoiding seasonal migration.



"Fig. 5.9: Activities of the Project"

VI. EXTENSION & OUTREACH ACTIVITIES

Extension of knowledge, technology and service through extension education to the grass root level is of paramount importance for the growth of the livestock sector. To cater to the diverse needs of livestock farmers, dairy entrepreneurs and fish farming community an efficient livestock extension education system is required. Extension also aims to increase the efficiency of the family farm, increase production and generally increase the standard of living of the farm family. It links between existing educational system and programs of agricultural education with production programs. WBUAFS disseminates the latest technological innovations through farm advisory, training, information and communication services by involving scientists from different departments via extension. Extension and outreach activities intend to serve as a connection between research, extension and farmers and provide critical feedback for university research as well as to the main extension system.

VI.1. EXTENSION EDUCATION

The Directorate of Research, Extension & Farms is the key centre of WBUAFS for promoting development in agricultural and its allied sector through quick transfer of technology by providing training, consultancy and farm information to line departments' professional extension personnel and farmers. It also involves the assessment, refinement and adoption of technology through on-farm testing and front-line demonstrations. The directorate provides guidelines, monitors and evaluates the extension programs of Krishi Vigyan Kendras (KVKs) functioning under WBUAFS. The directorate also extends its support through disseminating farm information by publishing literature on dairy, fishery, livestock sector and related subjects. Besides, it aids to formulate and impart training to different categories of officers and functionaries from line departments of state and non-government organizations, conduct short and long-term trainings for farmers, farm women, youth and school dropouts, assess and refine the latest agricultural technology through front-line, demonstrations for their wider adoption, provide farm information services through various extension activities, including, literature, for the quick dissemination of technology. Through the DREF, WBUAFS extension service maintains live and intimate links with the departments' research on one hand and with the field-level functionaries of different state departments, development agencies and farmers on the other hand.

VI.2. CONFERENCE/WORKSHOP/SYMPOSIUM/SEMINAR/ TRAINING PROGRAMMES ORGANISED BY DIFFERENT DEPARTMENTS OF WBUAFS:

West Bengal University of Animal & Fishery Sciences							
Sl. No	Title	Program Type	Organizing Dept.	Venue	Date/ Duratio n	Participants	
1.	Accelerating Bovine TB Control in India	Seminar	WBUAFS	VivekBhawan, WBUAFS	17 July, 2019 1 day	Faculty Members, Research Scholars, students etc.	
2.	Transition Cow Nutrition and Management	Seminar	WBUAFS	Vice- Chancellor's Meeting Room, WBUAFS	18 July, 2019 1 day	Faculty Members, Research Scholars, students etc.	
3.	UGC Expert Committee Visit	Team Visit	WBUAFS	University Headquarters, Mohan and Chakgaria Campuses	26-27 August, 2019 2 days	University Officials alongwith Faculty Members, Research Scholars, students etc.	

Faculty of Veterinary & Animal Sciences						
Sl. No	Title	Program Type	Organizing Dept.	Venue	Date/ Duration	Participa nts
1.	International Conference on Animal Nutrition 2019 (INCAN 2019) on 'Nutritional Strategies for Improving Farm Profitability and Clean Animal Production'	Conference	Animal Nutrition	Biswa Bangla Convention Centre, Kolkata	17 – 19 December, 2019 3 days	Faculty Members, Research Scholars, students etc.
2.	Annual Conference of Indian Academy of Tropical Parasitology in Collaboration with Veterinary Parasitology Department WBUAFS and Eastern Regional Station of ICAR-IVRI	Conference	Veterinary Parasitology	WBUAFS Kolkata	7 – 8 December, 2019 2 days	Faculty Members, Research Scholars, students etc.
3.	Institute level SAPI quiz- 2019	Quiz	Veterinary Physiology	WBUAFS Kolkata	9December, 2019 1 day	BVSc&AH students
4.	Zonal level SAPI quiz-2019	Quiz	Veterinary Physiology	WBUAFS Kolkata	17 January, 2020 1 day	BVSc&AH students
5.	Refresher and Hands on training course on "Advanced Diagnostic Imagining in Veterinary Practices"	Training	Veterinary Surgery & Radiology	WBUAFS, Kolkata	17 – 22 February, 2020 6 days	Faculty Members, Research Scholars, students etc.

Faci	Faculty of Dairy Technology					
Sl. No	Title	Program Type	Organizing Dept.	Venue	Date/ Duration	Participa nts
1.	Hands on Training Programme on "Milk products development for augmenting income"	`Training	Dept. of Dairy Microbiology Faculty of Dairy Technology	Faculty of Dairy Technolog y, WBUAFS, Mohanpur, Nadia	10-15 February, 2020 6 days	Faculty Members, Students, Entreprene urs
2.	National Seminar on "Traditional Indian Dairy Products - Prospects of Commercialization"	Seminar	Dept. of Dairy Microbiology Faculty of Dairy Technology	Faculty of Dairy Technolog y, WBUAFS, Mohanpur, Nadia	13 March, 2020 1 day	Faculty Members, Students, Entreprene urs
3.	Commemoration of National Milk Day-2019 thru' motivational speech to the students and the faculties by Swami Shivapurnananda Maharaj, Assistant Administrative Head, School of Agriculture & Rural Development, Narendrapur Ramkrishna Mission	Motivational speech	Dept. of Dairy Microbiology Faculty of Dairy Technology	Faculty of Dairy Technolog y, WBUAFS, Mohanpur, Nadia	26 November, 2019 1 day	Faculty Members & Students
4.	Two Lecture sessions on communication & Personality Development conducted by Dr. R.K Samanta, Ex Joint Director, ICAR-NAARM, Hyderabad and Ex-Vice Chancellor, Bidhan Chandra KrishiViswavidyalaya	Lecture Sessions	Dept. of Dairy Microbiology Faculty of Dairy Technology	Faculty of Dairy Technolog y, WBUAFS, Mohanpur, Nadia	16 December, 2019 1 day	PG students and Faculty members

Direc	torate of Research, Ex	ktension &	Farms			
Sl. No	Title	Program Type	Organizing Dept.	Venue	Date/ Duration	Participants
1	Two Review Meetings of all the PCs, SMS of all disciplines and other technical staff from three KVKs under WBUAFS	Review Meetings	DREF, WBUAFS	Farmers' Hostel, DREF WBUAFS, Kolkata	8 May, 2019 and 21 June, 2019	PCs, SMS of all disciplines and other technical staff from three KVKs
2	Meeting on PFMS	Meeting	DREF, WBUAFS	Farmers' Hostel, DREF WBUAFS	17 May, 2019	DREF, DREF Officers and KVK Officials
3	Meeting with LDC	Meeting	DREF, WBUAFS	Farmers' Hostel, DREF WBUAFS	25 June, 2019	DREF, DREF Officers and KVK Officials
4	Short term Training course on Preparation & Dissemination of Agromet Advisories at Block Level under GKMS scheme for SMS (Agromet) and Agromet Observers of KVKs	Training	DREF, WBUAFS	Farmers' Hostel, DREF WBUAFS	06 – 11 August, 2019	DREF and Agro metereology Staffs from KVKs
5	QRT Team Visit (KVK) and Meeting	Team Visit	DREF, WBUAFS and KVKs of WBUAFS	University Headquarter, Belgachia	19 August, 2019	DREF Officers and KVK Officials
				North 24 Parganas KVK	20 August, 2019	DREF Officers and KVK Officials
				Jalpaiguri KVK	24 August, 2019	DREF Officers and KVK Officials
6	HRD Programme titled "Climate Resilient Agri- Horticultural Practices – Need of Hour"	Training	DREF, WBUAFS	Farmers' Hostel, DREF WBUAFS	04 – 07 November, 2019	PCs, SMS of related disciplines and other technical staff from KVK
7	HRD Programme entitled "Financial Management System including Budget preparation and its utilization"	Training	DREF, WBUAFS	Farmers' Hostel, DREF WBUAFS	13 – 14 November, 2019	PCs, SMS of related disciplines and other technical staff from KVK
8	Best Management Practices in Freshwater Fish Farming	Training	DREF, WBUAFS	Joygopalpur village, Sundarban	18– 20November, 2019	Fish farmers

Sl. No	Title	Program	Organizing	Venue	Date/	Participants
		Type	Dept.		Duration	
9	Best Management Practices in Fish Seed Production	Training	DREF, WBUAFS	Joygopalpur village, Sundarban	21- 23November, 2019	Hatchery owners & Fish Seed growers farmers
10	HRD Programme on "Recent Advancement in Animal Husbandry and Fishery Sectors"	Training	DREF, WBUAFS	Farmers' Hostel, DREF WBUAFS	25 – 28 November, 2019	PCs, SMS of related disciplines and other technical staff from KVKs
11	ASCI Training of Trainers' (TOT) Programme	Training	DREF, WBUAFS	Farmers' Hostel, DREF WBUAFS	09 – 11 December, 2019	DREF Officers, KVK Officials
12	Workshop in collaboration with Calcutta University	Workshop	DREF, WBUAFS	Farmers' Hostel, DREF WBUAFS	30 December, 2019	DREF and University Students
13	200 hours ASCI Skill Development Programme on Aquaculture Worker funded by ICAR ATARI Kolkata	Training (Course Coordinator – Dr. S.Das, Scientist)	DREF, WBUAFS	Farmers' Hostel, DREF WBUAFS, Kolkata	8 – 28 January, 2020 200 hours	Farmers from Fisheries' Sector
14	200 hours ASCI Skill Development Programme on Dairy Farmer/ Entrepreneur funded by ICAR ATARI Kolkata	Training (Course Coordinator – Dr. N.Haque, Asstt. Dir. (Ext))	DREF, WBUAFS	Farmers' Hostel, DREF WBUAFS, Kolkata	8 – 28 January, 2020 200 hours	Dairy Farmers/ Entrepreneurs
15	Professional Skill Development Certificate Course on Aqua Clinics & Aquapreneurship Development Programme (AC&ADP)	Training (Course Coordinator – Dr. B.K. Chand, Deputy Director)	DREF, WBUAFS	Farmers' Hostel, DREF WBUAFS, Kolkata	20 January – 16 February, 2020	Youth and budding entrepreneurs
16	Scientific rearing practices of Garole Sheep and Black Bengal Goat	Training	Project : Bio- Tech Kisan Hub DREF, WBUAFS	Farmers' Hostel, DREF WBUAFS, Kolkata	2019-20 (6 TrainingProgra mmes of 3 days duration each)	Farmers' Training – 914 beneficiaries were from the aspirational districts of the project coverage area
17	Scientific rearing practices of Garole Sheep and Black Bengal Goat	Scientist Training	Project : Bio- Tech Kisan Hub, DREF, WBUAFS	Farmers' Hostel, DREF WBUAFS, Kolkata	12- 14 March, 2020 3 days	Scientist and Farmers (project beneficiaries)

Photographs of different programs of WBUAFS organized by different Faculties, DREF and KVK



Fig: 6.1 Seminar on "Innovation and Entrepreneurship"



Fig: 6.2 ASCI Training Programmes on (i) Aquaculture Worker and (ii) Dairy Farmer/Entrepreneur





Fig: 6.3 Best Management Practices in Freshwater Fish Farming





Fig: 6.4 Professional Skill Development Certificate Course on Aqua Clinics & Aquapreneurship Development Programme (AC&ADP)





Fig: 6. 5 HRD Programmes organized for KVK Staff

VI.3. CONSULTANCY CELL AND ADVISORY SERVICES

Consultancy and advisory services of are specifically to encourage practical learning approach undertaken by the experts in their field of expertise. In WBUAFS, these services are accomplished under the guidance of extension wing of Directorate of Research, Extension and Farms. Consultancy and advisory services are essential programs to train livestock farmers, dairy and fishery farmers and entrepreneurs for creation of new knowledge, widening and expansion of existing knowledge to enhance the productivity and profitability in the respective fields which are essential. DREF officers, scientists and faculty members deliver their expertise through lectures in training, workshop, farm or home visits, face-to-face discussions, over telephone, e-mails and postal communications. Consultancy wing also provide assistance in preparation of project schemes to farmers, entrepreneurs. They become aware of processing for bank loan. Beneficiaries also get adequate knowledge through extension literature published by extension wing of DREF to begin their start up in small or large scale.

VI.4. DOCUMENTARY FILMS

Documentary Video films have been created by WBUAFS both in vernacular as well as in English language. Documentaries related to animal husbandry, dairy and fish farming community for better understanding the scientific knowledge. These films are shown in different training programs organized by DREF in a regular manner.

VI.5. ORGANIZATION OF ANIMAL / FISH HEALTH CAMPS

Animal / fish health camps are regularly organized by West Bengal University of Animal & Fishery Sciences for betterment of rural poor people for livelihood development. KVKs under the University are regularly organizing health camps for animal and fishes at free of cost. During the camp, inputs in terms of deworming tablets, mineral mixtures, vitamins etc for livestock and poultry farmers are provided and suggestions are also given for livestock, poultry and fish farming. These camps serves as awareness programme to make the farmers informed about the importance of mineral mixture supplement, deworming etc which ultimately led to the socio-economic upliftment of the rural poor, small marginal farmers, physically challenged landless labourers, women and the unemployed in general.

VI.6. WOMEN EMPOWERMENT

In India, 85% of rural women are engaged in agriculture and its allied field. Women play a pivotal role in social economic development. Women's economic empowerment could reduce poverty for everyone. However, the tasks are laborious and since the woman is unaware of the latest technical knowhow, her output and productivity are low. Therefore, to uplift the socio economic status of this group,

WBUAFS and its three KVKs are organizing various training program throughout the year. The prime focus of the training is to mobilize women farmers to form self help groups (SHGs) through awareness programmes, provide them technical assistance through capacity building, and motivate them to generate on-farm as well as off-farm income through various activities. Demonstrations are laid out in the fields of SHG members to apprise them about productivity enhancing practices. Interaction with scientists and subject experts during exposure sensitize them to the benefits of diversified agricultural practices.

VI.7. PUBLICATIONS

Extension wing of Directorate of Research, Extension & Farms publishes different type of literatures like newsletters, leaflets, booklets, pamphlets, handouts etc. on livestock and poultry rearing, fish farming, farm management etc on a regular basis. It also supervises publication of research papers and scientific popular articles in both online and offline mode as released by the faculty members, scientists and officials of the University. Various reports on research findings, practical class manuals, training programme compendiums are also being composed by the departments of the faculties under the dynamic direction of the Directorate of Research, Extension and Farms. The extension literatures are prepared and distributed amongst the stakeholders through the Extension wing of the Directorate. Books / booklets published in Bengali by the Extension wing of the Directorate of Research, Extension & Farms are also available for sale at a nominal rate. These booklets give the basic information and answers to relevant quarries generally asked by the farmers and hence are found very useful to the farmers.

VI.7. 1. PUBLICATION OF ACADEMIC, SCIENTIFIC AND EXTENSION LITERATURES (2019-20):

1.	WBUAFS Newsletter	1
2.	University Annual Report	1
3.	Research Project Annual Reports	4
4.	Course Practical Manuals	4
5.	Laboratory Manuals	2
6.	Text Books other Books/Book Chapters	21
7.	Extension Book/Booklets/Pamphlets(Bengali)	3
8.	Manual for trainees	8
9.	Compendium of Training Programmes	4

VI.8. OTHER EXTENSION ACTIVITIES UNDERTAKEN

Sl. No.	Job Undertaken	Faculty / Dept
1.	Routine Biochemical and Hematological Tests from	Dept. of Vety. Bio-Chemistry,
	clinical samples are done regularly on payment basis.	F/O VAS

VI.9. ACTIVITIES OF KRISHI VIGYAN KENDRAS

KVKs are functioning as Knowledge and Resource Centre of agricultural technology supporting initiatives of public, private and voluntary sector for improving the agricultural economy of the district and are linking the National Agricultural Research System with extension system and farmers. The mandate of KVK is **Technology Assessment and Demonstration** for its **Application** and **Capacity Development**. In addition, KVKs produce quality technological products (seed, planting material, bio-agents, livestock) and make it available to farmers, organize frontline extension activities, identify and document selected farm innovations and converge with ongoing schemes and programs within the mandate of KVK.

At present there are three KVKs underWest Bengal University of Animal & Fishery Sciences functioning in the districts of Jalpaiguri, Murshidabad and North 24 Parganas. A glimpse of information about these KVKs for 2019-20 are as under:

Sl.No.	Information on	KVK Jalpaiguri	KVK Murshidabad	KVK North 24 Parganas
1.	Funding	ICA	R ATARI Kolkata, Zone -	
2.	SAC Meeting Dates	6 th March, 2020	24 th February, 2020	Postponed due to Covid -19 Pandemic
3.	Several Programs and Days Celebrated	 World Soil Day World Food Day Gandhi Jayanti Swachhata Hi Sewa Arannya Saptaha National Fish Farmers Day Adivasi Divas World Veterinary Day 2019 Constitution Day 2019 Rashtriya Ekta Divas 2019 Fertilizer Application Awareness Programme 	 Celebration of Swachhata hi Seva Celebration of 150th Gandhi Birth Day Celebration of Kisan Diwas Celebration of Kisan & Vigyan Day Celebration of World Environment Day Celebration of Yoga Day Celebration of Parthenium 	 Swachh Bharat Programme Mahila Kisan Diwas 'Sankalp Se Siddhi' Programme Technology Week World Soil Day

Sl.No.	Information on	KVK Jalpaiguri	KVK Murshidabad	KVK North 24 Parganas
	Several Programs and Days Celebrated Continued	12. Plantation Awareness Programme 13. Jal Shakti Abhiyan Programme 14. Vigilance Awareness Week 15. RAWE programme under student Student Ready 16. Awareness Campaign on Anti-Counterfeit and Safe and Judicious use of Crop Protection Products	Awareness Week 8. Celebration of World Soil Day 9. Celebration of World Veterinary Day 10. Celebration of Constitution Day 11. Celebration of Swachhata Pakhwada 12. Celebration of World Fisheries Day 13. Celebration of National Unity Day 14. Celebration of National Fish Farmers Day 15. Awareness Programme of Jal Shakti Abhiyan 16. Celebration of World Adibasi Day 17. Celebration of Independence Day 18. Celebration of Republic day 19. Celebration of Technology Week cum Krishi Mela	T at gailas

Brief report of the activities of these KVKs areas hereunder:

VI.9. 1. KRISHI VIGYAN KENDRA, JALPAIGURI

Details of target and achievement of mandatory activities by KVK during 2019-20

OFT				FLD				
Numl	ber of OFTs	Numbe	Number of farmers		Number of FLDs		Number of farmers	
Target	Achievement	Target	Achievement	Target	Achievement	Target	Achievement	
10	10	80	91	21	18	460	596	

	Training				Seed production (q)		material (Nos.)
Number	of Courses	Number of Participants		Target	Achieve	Target	Achievement
					ment		
Target	Achieveme	Target	Achievement				
	nt						
135	103	3910	3582	15	12	100000	94400

Award received by Farmers from the KVK district (2019-20)

Sl. No.	Name of the Award	Name of the Farmer	Year	Conferring Authority	Amount	Purpose
1	Recognition	Sri Bipul Roy	2019	ICAR, New Delhi	Certificate & Memento	Innovator for Indigenous low cost incubator machine
2	Recognition	Sri Dilip Mondal	2019	State Level Innovative Farmers Meet	Certificate & Memento	Adoption & Dissemination of new technology on Innovative Plough.

PROGRAMMES ORGANIZED BY THE KVK

Webacast programme of honorable PM on Animal Disease Control and Awareness about FMD and AI Programme on 2019/09/19

Webcast programme on interaction of Honourable PM with farmers held at KVK training hall at morning 9:30 & continued up to 11AM on 19th Sep, 2019. More than 150 farmers from different farming community were actively participated in the important programme. Farmers were happy to see the programme where Honourable PM interaction with farmers like them. Farmers was also aware about different Government flagship programme for doubling the farmer's income. How farmers can benefit from KVK. What are the region specific and sustainable technology for better livelihoods and nutritional security? How other farmers are being benefited by application of technologies through KVK? They got all the answers during this programme. The programme ended with interaction with KVK scientists & distribution of critical inputs for conducting FLD & CFLD programme.



Fig: 6. 6 Webacast on interaction of Honourable PM

Web-casting on 'Balanced Fertilizer Application' Awareness Programme on 22/10/2019

Jalpaiguri KVK organized the Awareness programme on Balance use of Fertilizers through Webcasting of Agri Minister, GOI, Technical Session, Film show, Leaflet distribution & KVK Farm visit in convergence mode with our active farmers of Jalpaiguri District. Total Participants were 212 and they are directly interacted with scientist on different issues of soil health, liquid manure, INM, IPNS, etc.



Fig: 6.7 Webcast on Balanced Fertilizer Application of Agril. Minister, GOI

QRT Team Visit to Jalpaiguri KVK on 24/08/2019

To review the KVK mandatory activities, financial performance, Asset & infrastructure, different linkage programme, etc. The Power point presentation of Jalpaiguri KVK was held at Vice-chancellor, Conference Hall, WBUAFS, Kolkata on 19.08.2019 along with other listed KVKs. As per the Schedule of second phase of QRT visit, Jalpaiguri KVK visit was held on 24/08/2019. Both the power point presentation and the KVK field visit and interaction with KVK Staffs and other members was successfully conducted.

01.Dr. R.K.Samanta, Former Vice Chancellor, BCKV, Mohanpur, (Chairman) 02. Prof. C.Satpathy, Former Dean, Extension Education, OUAT, Bhubaneswar, 03. Dr. R.B.Sharma, Former Director Extension Education, IGKV, Raipur, 04. Dr.F.H. Rahman, Principal Scientist & Member Secretary, ICAR-ATARI, Kolkata, 05. Dr. Bikash Roy, Senior Scientist & Head, Coochbehar KVK, UBKV, Coochbehar, 06. Dr. Biplab Das, Senior Scientist & Head, Jalpaiguri KVK, WBUAFS, Ramshai, 07. All the KVK Staff members. The Chairman of the QRT team, Dr. R.K.Samanta, suggested that the KVK is performing well for the sustainable development of the farm.



Fig: 6.8 QRT Team Visit to Jalpaiguri KVK

VI.9. 2. KRISHI VIGYAN KENDRA, MURSHIDABAD

Achievements in Mandated Activities

Training

Category	No. of courses	No. of participants
Farmers and	77	2310
farm women		
Rural youth	26	780
Extension	9	270
functionaries		
Total	112	3360

Soil & Water Testing

No. of Sample Tested	No. of Health Card Issue
282	282
54	-

OFT

No. of OFT	No. of locations
8	81

FLD

Category	No. of farmers	Area (ha)/Number
Pulse	-	-
Oil seed	-	-
Other	319	22.46/40

Involvement of KVK in other programmes

Name of Project	Fund Received
	(Rs. in lakh)
Agricultural Skill Council of India (ASCI)	3.9
Pashu Aarogya Mela	0.15
Tree Plantation	0.10
Fertilizer Application Awareness Programme	0.50
CSISA	1.60
Swachhata Activity	0.30
NEMA	0.085

NIAM	0.173
Short Term Research	2.50
DAESI	16.00
Skill Training in Rural Youth	0.42
Technology Week cum Krishi Mela	1.00
Installation of Micro Irrigation	1.00

Resource Generation (Rs. in lakh)

Name of Organization	Fund Received	Purpose
Agricultural Skill Council of India	3.90	Skill Development Training
(ASCI)		
IFFCO	0.10	Tree Plantation
National Institute of Agriculture	0.173	Awareness Programme
Marketing		
ATMA (Murshidabad)	2.50	Short Term Research
Input Dealer	16.00	Diploma Course for Input Dealer
SAMETI, West Bengal	0.42	Skill Training
Department of Agriculture,	1.00	Technology Week cum Krishi Mela
Murshidabad, W.B		

VI.9. 3. KRISHI VIGYAN KENDRA, NORTH 24 PARGANAS

The KVK has conducted 14 nos. of On Farm Trails (OFT), 17 nos. of demonstration covering 450 nos. of beneficiaries in 2019-2020. More over 94 nos. of training covering 3150 nos. of participants and 483 nos. of different extension activities has been followed up with 4728 beneficiaries throughout the year. Total 55.5 quintal seed and 38600nos. of planting materials, 10500 nos. of quality chicks and 4,30,000 quality fish fry have been produced and supplied or marketed in the last year.

The KVK farm sector produced total 55.5 q seed and 38600 different planting materials in the year 2019-20 which had been supplied to famers. Along with this, KVK also cultivating different rice varieties like GS1, Shatabdi (IET 4786), Gobindavog, Khitish etc; sesamum (Rama), tuber crops (Bidhan Kusum), Grams (Prakash), Mustard (B54) in its own instructional farm area. Beside these, selling livestock strain and fish fingerling has generated a total of 4.15 lakh revenue in the same year.

Blackgram (Sulata), Lentil (Moitree WBL77) and Mustard (YSH0401) had been successfully demonstrated by cluster basis at different blocks of district through CFLD of Pulse and Oil seeds programme.

QRT Team Visit to North 24 Parganas Krishi Vigyan Kendra on 20th August, 2019

A high power Quinquennial Review Team (QRT) appointed by ICAR recently visited the North 24 Parganas Krishi Vigyan Kendra on 20th August, 2019 to evaluate the performance of the KVK for last 8 years (2011-19). The team was comprised with Dr. R. K. Samanta (Chairman), Former Vice Chancellor, BCKV, Mohonpur; Prof. C. Satpathy, former DEE, OUAT, Bhubaneswar (Member); Dr. Y.V. Singh, Former Director, ARARI, Jodhpur (Member) and Dr. F.H. Rahman, Pricipal Scientist, ICAR-ATARI, Zone-II, Kolkata (Member Secretary). Mr. Subal Das, Project Director, District ATMA; Dr. N. J. Maitra, Deputy Director of Research, DREF, WBUAFS and Dr. S. Sadhukhan, WBARD were also present during this occasion.

The team visited the office building and instructional farm complex including technology information centre "Anneswon", Air breathing fish breeding unit, bio-floc unit, mushroom production unit, low cost incubator made by farmer, ethnomedicinal plant unit, hydroponics unit, sheep and goat unit, improved variety poultry chicken unit, improved poultry duck unit, vermin-compost unit, crop cafeteria unit, nursery unit, green fodder units, aromatic and special rice units, sugarcane and sweet potato units. Beside these a low cost incubator and a low cost breeding cum hatching unit made by local farmers and further technologically upgraded by KVK scientist was demonstrated and much applauded by the team members. The team members also highly appreciated the collaborated work units like RKVY sponsored polyhouse, WBLDC sponsored broiler production unit, NFDB sponsored hatching and stocking ponds,

ATMA sponsored poultry house and ornamental fish breeding unit, RFS sponsored green fodder field etc. and advised for more such demonstration for the benefits of the farmers.



Fig: 6.9 QRT Team Visit to North 24 Parganas KVK

Other activities

Farmers are being awared regarding weather and other agriculture related events through mobile advisory service (KMAS). Soil Health Cards are also being distributed regularly among the farmers after testing the soil samples in its own laboratory. Significant no of farmers are being encouraged by KVK personnel for Introduction of newly HYV of black gram, to rear "Vanaraja" birds under backyard poultry farming system, "Jayanti Rohu" promotion and Chital farming with Tilapia for better return in fishery. Different Blocks of this district are procuring chicks of this variety from the KVK for demonstration centre under ATMA programme.

Among the different non-ICAR funded projects, Demonstration by NFDB, STR (ATMA funded), DAESI(SAMETI guided and self financed), FOCT(CDB funded) and ASCI (NSCI funded) trainings were very much successful. Besides these special achievements includes establishment of "Mini oil mill" through Farmars' club by combined effort of KVK and District Agriculture office and Propagation of "Minihatchery" by active marketing linkage with WBADMIP –KVK-Farmers for more economic benefit.

VI.10. TRANSFERABLE TECHNOLOGIES DEVELOPED

Certain useful technologies have been generated / evolved through various research programmes undertaken by the three faculties and the Directorate of Research, Extension & Farms of the University. The technologies developed during the studies are lying ready for distribution to the grass root level. The developed and tested technologies might be of immense help to the State farmers for enhancement of their livelihood and income. These technologies may also be applied to the other regions of the country after going through proper refinement, thus in turn benefiting the vast farming community of the country. The technologies developed during the research works carried out in 2019-20 are as follows:

- 1. New analytical method (Multi-residue method) for the analysis of Antibacterials and Pesticides has been developed by the Dept. of Veterinary Pharmacology & Toxicology.
- Oligonucleotide primer pair useable for RT-qPCRhas been developed by Dr. LalchawimawiaRalte, Dr. Subhas Chandra Mandal, Dr. SurajitBaidya, Dr. Ruma Jas, Dr. Siddhartha Joarder, Dr. SubhasisBatabyal, Dr. Pranab Kumar Senapati and Dr. SoumitraPandit and for the technology an application for patent has been submitted through Patent application number -201931035697 dt. 05.09.2019.
- 3. New modality for treatment for corneal scarring entitled "Pirfenidone compositions for eye diseases" 232/Kolkata/2013" has been developed by Prof. SarbaniHazra, UdayKompella, RuchitTrivedi and a patent has been applied by WBUAFS.
- 4. New modality for sealant and wound healing material having a title "Peptide based tissue sealant, Process and Application thereof" has been developed by SnehasisBiswas, Vinod Kumar, V. Kishore, RituparnaSinha Roy, Prof. Samit Kumar Nandi and a patent has been submitted jointly with IISER Kolkata and WBUAFS.
- 5. A Process for development of Cenosphere Dispersed Ti Composite Foam with Improved Performance for use as implant material in orthopaedic surgeryhas been developed by D. DuttaMajumder, Vinod Kumar, AmitRoychoudhury, DehipadaMondal, ManojitGhosh, Prof. Samit Kumar Nandi and a patent has been submitted jointly with IIT, Kharagpur Kolkata and WBUAFS vide application No. 201931039872 Indian Patent dated 02.10.2019.
- 6. Cage culture of Asian Sea bass in marine cages under AINP on Mariculture has been successful. Production of Asian Sea bass in marine cages in coastal West Bengal will augment the present fish production in West Bengal and benefit the coastal fishermen through employment generation and alternative livelihood.
- 7. Instant noodles was fortified with tilapia surimi powder @ 15%. It was studied in the Dept. of Fish Processing Technology, Faculty of Fishery Sciences, WBUAFS during 2019-2020. The shelf life of the product was observed to be 6 months at ambient temperatures packed in LDPE pouches. The technology is yet to be commercialized.
- 8. In the Dept. of Fish Processing Technology, Faculty of Fishery Sciences, WBUAFS, Pasta was fortified with tilapia surimi powder @ 10% and dried at a temperature of 70°C during 2019-2020. The shelf life was 45 days.

VII. PUBLICATION ON RESEARCH FINDINGS

VII.1. RESEARCH PUBLICATIONS OF FACULTY OF VETERINARY & ANIMAL SCIENCES

VII.1.1. Department of Livestock Farm Complex

Sl. No.	Scientific Research Publication in Journals
1.	Pal, A, Pal, A. Jr., Mallick, A.I., Biswas, P. And Chatterjee, P.N. 2020. Molecular
	characterization of Bu-1 and TLR2 gene in Haringhata Black chicken. Genomics.
	112(1):472-483. https://doi.org/10.1016/j.ygeno.2019.03.010 NAAS:9.16
2.	Pal, A., Pal, A. Jr., Banerjee, S., Batobyal, S. and Chatterjee, P.N. 2019. Mutation
	in Cytochrome B gene causes debility and adverse effects on health of sheep.
	Mitochondrion 46: 393-404. https://doi.org/10.1016/j.mito.2018.10.003. NAAS:
	9.9
3.	Pal, A., Pal, A. Jr. and Chakravarty, A.K. 2020. Mutations in Growth hormone gene affect stability of protein structure leading to reduced growth, reproduction and milk production in Cross Bred cattle- an insight. Domestic Animal Endocrinology. https://doi.org/10.1016/j.domaniend.2019.106405. NAAS: 8.3
4.	Kumar B, Sahoo AK, Dayal S, Das AK*, Taraphder S, Batabyal S, Ray PK and
	Kumari R (2020). Investigating genetic variability in Hsp70 gene-5'-fragment and
	its association with thermotolerance in Murrah buffalo (Bubalus bubalis) under
	sub-tropical climate of India. Cell Stress and Chaperones, 25(2): 317-326.
	https://doi.org/10.1007/s12192-020-01075-3 NAAS Rating: 8.9 & Impact Factor:
	2.903
5.	Kumar B, Sahoo AK, Dayal S, Das AK, Taraphder S, Batabyal S, Ray PK and
	Kumari R (2019). Genetic profiling of Hsp70 gene in Murrah buffalo (Bubalus
	bubalis) under sub-tropical climate of India. Cell Stress and Chaperones, 24(6):
	1187-95. https://doi.org/10.1007/s12192-019-01042-7 NAAS Rating: 8.9 &
	Impact Factor: 2.903
6.	Das AK, Kumar S, Rahim A and Kokate LS (2019). Genetic analysis of body
	weights in a selected line of Rhode Island Red grower chicken. <i>Ind. J. Anim.</i>
	Sci., 89 (3): 310-13. NAAS Rating: 6.23 & Impact Factor: 0.227
7.	Debnath J, Kumar S, Das AK and Rahim A (2019). Investigating association of
	microsatellites with pre-housing body weights and age at sexual maturity of
	Rhode Island Red chicken. <i>Ind. J. Anim. Sci.</i> , 89 (10): 1118-22. NAAS Rating:
	6.23 & Impact Factor: 0.227
8.	Rahim A, Kumar S, Das AK, Debnath J and Krishnan J (2019). Genetic analysis
	of immunocompetence and growth performances in a selected strain of Rhode
	Island Red chicken. <i>Ind. J. Anim. Sci.</i> , 89 (8): 866-70. NAAS Rating: 6.23 &
	Impact Factor: 0.227
	•

VII.1.2. Department of Livestock Products Technology

Sl. No.	Scientific Research Publication in Journals
1.	G. Mahapatra, S. Biswas, G. Patra and D. Bhattacharya (2019). Improving shelf-life of raw pork and pork meatballs by starfruit powder supplementation. <i>Indian Journal of Animal Science</i> .90 (1); 74-79. NAAS-6.28.
2.	Biswas, S., Banerjee, R., Bhattacharyya, D., Patra, G., Das, A., & Das, S. (2019) Technological investigation into duck meat and its products - a potential alternative to chicken(2019). <i>World's Poultry Science Journal</i> , 75(4), 609-620. doi:10.1017/S004393391900062X. (IF-1.802)
3.	Das AK, Nanda PK, Madane P, Biswas S, Das A, Zhang W and Lorenzo JM (2020). A comprehensive review on antioxidant dietary fibre enriched meat-based functional foods. <i>Trends in Food Science and Technology</i> , 99(5): 323-336 doi: doi.org/10.1016/j.tifs.2020.03.010 (IF-11.077).
4.	Banerjee DK, Das AK, Banerjee R, Pateiro M, Nanda PK, Gadekar YP, Biswas S, McClements DJ and Lorenzo JM (2020). Application of enoki mushroom (<i>Flammulina Velutipes</i>) stem wastes as functional ingredients in goat meat nuggets. <i>Foods</i> , 9(4): 432 doi:doi.org/10.3390/foods9040432 (IF-4.091).
5.	Das AK, Nanda PK, Bandyopadhay S, Banerjee R, Biswas S and McClements, DJ (2020). Application of nanoemulsion-based approaches for improving the quality and safety of muscle foods: A comprehensive review. <i>Comprehensive Review in Food Science and Food Safety</i> , doi:10.1111/1541-4337.12604 (IF-9.912).

VII.1.3. Department of Veterinary Anatomy & Histology

Sl. No.	Scientific Research Publication in Journals
1.	Sinha B P, Chatterjee S, Buragohain R., Samanta, I, Joardar S N, P Mukherjee,
	Majhi A K,Das P & Sar T K (2019). Efficacy evaluation of ethanolic extract of
	Tamarindus indica L. leaves as possible alternate therapy in septic arthritis
	model of rabbit. BMC complementary and alternative medicine, 19(1), 1-12.
	NAAS rating 8.11
2.	Sen S, Basak P, Sinha P B, Maurye P, Jaiswal K K, Das P, Mandal T K, (2020)
	Anti-inflammatory effect of epidermal growth factor conjugated silk fibroin
	immobilized polyurethane ameliorates diabetic burn wound healing,
	International Journal of Biological Macromolecules, 143,15th Januarry,P
	1009-1032 NAAS rating 9.11

VII.1.4. Department of Veterinary Biochemistry

Sl. No.	Scientific Research Publication in Journals
1.	Patra G, Efimova M A, Ana S, Borthakur S K, Ghosh S, Behera P, Polley S,
	Debbarma A (2019): Incidence of ecto-and endo-parasitic fauna in small wild
	ruminants from North Eastern region of India. Biological Rhythm
	Research (2019): 1-12. NAAS rating: 6.77
2.	Patra G, Efimova M A, Ana S, Al-Awsi G R, Ghosh S, Polley S, Kumar S B,
	Debbarma A (2020). Expression Profiling and Quantification of Interferon Gamma
	(IFN-Y) Gene in Sheep Experimentally Infected with
	HaemonchusContortusApproaches in Poultry, Dairy & Veterinary Sciences 7(3):
	638-643. NAAS rating: 6.5
3.	Kumar B, Sahoo AK, Dayal S, Das AK, Taraphder S, Batabyal S, Ray PK,
	Kumari R (2020). Investigating genetic variability in HSP 70 gene-5'-fragment
	and its association with thermotolerance in Murrah buffalo (Bubalus bubalis)
	under sub-tropical climate of India. Cell Stress and Chaperons. 25:317-326.

VII.1.5. Department of Veterinary Clinical Complex

Sl. No.	Scientific Research Publication in Journals
1.	Sinha, B.P., Chatterjee, S., Buragohain, S., Samanta, I., Joardar, S.N., Mukherjee,
	P., Maji, A.K., Das, P., Mandal, T.K. and Sar, T.K. (2019). Efficacy evaluation of
	ethanolic extract of Tamarindus indica L. leaves as possible alternate therapy in
	septic arthritis model of rabbit. BMC complementary and alternative medicine.
	19(1): 261. NAAS Scoring: 8.48
2.	Samanta, S.K., Devi, K.B., Das, P., Mukherjee, P., Chanda, A., Roy, M. and
	Nandi, S.K. (2019). Metallic ion doped tri-calcium phosphate ceramics: Effect of
	dynamic loading on in vivo bone regeneration. Journal of the mechanical behavior
	of biomedical materials. 96: 227-235. NAAS Scoring: 9.49

VII.1.6. Department of Veterinary Gynaecology & Obstetrics

Sl. No.	Scientific Research Publication in Journals
1.	Somraj Chattaraj, Siddhartha Basu, Kalyani Ray, and Dhiman S. Pal (2019) Vitamin D
	As an important constituent of epididymal luminal micro-environment for maturation of
	spermatozoa in Large White Yorkshire boar. Veterinarski Arhiv 89(2):169-182. NAAS
	rating: 6.43
2.	Somraj Chattaraj, Siddhartha Basu, Kalyani Ray, Sanjoy Datta, Pradip Sarkar and
	DURGADAS MANDAL. (2020). Analysis of biomarkers for prediction of idiopathic
	infertility in Large White Yorkshire boar (Sus scrofa domesticus) Indian Journal of
	Animal Sciences 90(2): 176–180. NAAS rating : 6.23

VII.1.7. Department of Veterinary Medicine, Ethics & Jurisprudence

Sl. No.	Scientific Research Publication in Journals
1.	Maji Chinmoy, Biswas S, Sarkar PK, Patra PH, Bandopadyay S, Sarkar S, Chattopadhyay
	A and Mandal TK (2020): Evaluation of ameliorative effect of two selected plant drugs on
	experimentally induced arsenic toxicity in sheep. Environmental Science and Pollution
	Research, 27(29): 3674-36753. Impact factor: 3.056, NAAS rating: 8.31.

VII.1.8. Department of Veterinary Microbiology

Sl. No.	Scientific Research Publication in Journals
1.	Banerjee A., Bardhan R., Chowdhury M., Joardar S.N., Isore D.P., Batabyal K., Dey S., Sar, T.K., Bandyopadhyay S., Dutta T.K. and Samanta I. (2019). Characterization of beta-lactamase and biofilm producing <i>Enterobacteriaceae</i> isolated from organized and backyard farm ducks. <i>Letters in Applied Microbiology</i> . 69: 110-115. NAAS 7.81
2.	Mahanti A., Joardar S.N., Bandyopadhyay S., Banerjee J., Ghosh S., Batabyal K., Sar T.K., Dutta T.K., and Samanta I. (2020). Characterization of methicillin-resistant and enterotoxins producing <i>Staphylococcus aureus</i> in bovine milk in India. Journal of Agriculture and Food Research, 2: 100017.
3.	Puii L., Dutta T.K., Roychoudhury P., Kylla, H., Chakraborty S., Mandakini R., Kawlni L., Samanta I., Bandopaddhay S. and Singh S. (2019). Extended spectrum beta-lactamase producing Shiga-toxin producing - <i>Escherichia coli</i> in piglets, humans and water sources in North East region of India. <i>Letters in Applied Microbiology</i> . 69: 373-378. NAAS 7.81
4.	Sinha B.P., Chatterjee S., Burahohain R., Samanta I., Joardar S.N., Mukherjee P., Maji A.K., Das P., Mandal T.K., Sar T.K. (2019). Efficacy evaluation of ethanolic extract of <i>Tamarindus indica</i> L. leaves as possible alternate therapy in septic arthritis model of rabbit. <i>BMC Complementary and Alternative Medicine</i> 19:261. NAAS 8.48
5.	Buragohaina R., Sar T.K., Samanta I., Biswas U., Mandal T.K. (2019). Disposition of ceftizoxime in Staphylococcal mastitis in Indian crossbred cows. <i>Veterinary Journal</i> (<i>British Veterinary Journal</i>). 245: 12-14. NAAS 7.92
6.	Banerjee A., Batabyal K., Debnath C., Joardar S.N., Isore D.P., Dey S., Taraphder S., Singh A.D., Pal S., Samanta I. (2020). Antifungal resistance in CNLAC1 possessing Cryptococcus neoformans isolated from domestic and feral pigeons in West Bengal, India. Indian Journal of Animal Research. 54(2): 228-233. NAAS 6.44
7.	Chakraborty S., Roychoudhury P., Samanta I., Subudhi P.K., Lalhruaipuii, Das M., De A., Bandyopadhyay S., Joardar S.N., Mandal M., Quereshi A., Dutta T.K. (2020). Molecular detection of biofilm, virulence and antimicrobial resistance associated genes of <i>Salmonella</i> serovars isolated from pig and chicken of Mizoram, India. <i>Indian Journal of Animal Research</i> . 54(5): 608-613. NAAS 6.44
8.	Chakraborty S., Dutta T.K., Roychoudhury P., Samanta I., Lalhruaipuii, Kalai S., Bandyopadhyay S. (2020). Molecular characterization of biofilm-producing <i>Pseudomonas aeruginosa</i> isolated from healthy pigs and chicken in India. <i>Indian Journal of Animal Research</i> (in-press, doi: 10.18805/ijar.B-3903). NAAS 6.44

9.	Das, P., Singh, Y.P., Joardar, S.N., Biswas, B., Bhattacharya, R., Nandi, S.K. and Mandal, B.B. (2019). Decellularized chonchal cartilage toward repair and regeneration of damaged cartilage. <i>ACS Applied Biomaterials</i> DOI: 10.1021/acsabm.9b00078.
10.	Sinha, B., Chatterjee, S., Burangohain, R., Samanta, I., Joardar, S.N., Mukherjee, P., Maji, A.K., Das, P., Mandal, T.K. and Sar, T.K. (2019). Efficiency evaluation of ethanolic extract of <i>Tamarindus india</i> L. leaves as possible alternate therapy in septic arthritis model or rabbit. <i>BMC Complementary and Alternative Medicine</i> 19:261-270. http://doi.org/10.1186/s12906-019-2676-4 . NAAS 8.11

VII.1.9. Department of Veterinary Parasitology

Sl. No.	Scientific Research Publication in Journals
1.	Shakya M, Kumar S, Fular A, Upadhaya D, Sharma A K, Bisht, Nandi A and Ghosh S.
	Emergence of fipronil resistant Rhipicephalus microplus populations in Indian
	states. Exp Appl Acarol 80, 591–602 (2020). NAAS rating: 7.76
2.	Das, S., Mandal, S.C., Pandit, S., Nandi, A., Baidya, S., Jas, R. and Batabyal, S. (2020)
	Explanatum explanatum strain Sud1 5.8S ribosomal RNA gene, partial sequence;
	internal transcribed spacer 2, complete sequence; and large subunit ribosomal RNA gene,
	partial sequence. NCBI GenBank Accession No. : MT053286
3.	Das, S., Mandal, S.C., Pandit, S., Nandi, A., Baidya, S., Jas, R. and Batabyal, S. (2020)
	Explanatum explanatum strain Sud2 5.8S ribosomal RNA gene, partial sequence;
	internal transcribed spacer 2, complete sequence; and large subunit ribosomal RNA gene,
	partial sequence. NCBI GenBank Accession No.: MT117844
4.	Das, S., Mandal, S.C., Pandit, S., Nandi, A., Baidya, S., Jas, R. and Batabyal, S. (2020)
	Explanatum explanatum strain Sud3 5.8S ribosomal RNA gene, partial sequence;
	internal transcribed spacer 2, complete sequence; and large subunit ribosomal RNA gene,
	partial sequence. NCBI GenBank Accession No.: MT117846

VII.1.10. Department of Veterinary Pharmacology & Toxicology

Sl. No.	Scientific Research Publication in Journals
1.	J. Chowdhury, T.K. Mandal, S. Mondal. Heliyon 6(2020). Genotoxic impact of emerging
	contaminant amoxicillin residue on Zebra fish (Danio rerio) embryos(2020). e 05379
2.	S. Sen, P. Basak, B. Sinha, P. Maurya ((2020): Anti inflammatory effect of epidermal
	growth factor conjugated silk fibrosin immobilized poly urethane ameliorates diabetic
	burn wound healing. International Journal of Biological Macromolecule. Vol.143;
	p.1009-1032. NAAS Rating: 10.78

VII.1.11. Department of Veterinary Physiology

Sl. No.	Scientific Research Publication in Journals
1.	Madhusoodan AP, Das K, Mili B, Kumar K, Kumar A, Saxena AC, Singh P, Dutt T, Bag
	S (2019). In vitro proliferation and differentiation of canine bone marrow derived
	mesenchymal stem cells over hydroxyl functionalized CNT substrates. Biotechnology
	Reports, 24: e00387. doi.org/10.1016/j.btre.2019.e00387 (Elsevier CiteScore 5.9)
2.	Perveen S, Das P K, Ghosh P R, Banerjee D and Mukherjee J (2019): Alterations in
	plasma sodium (Na), potassium (K), calcium (Ca) and iron (Fe) during different days of
	pre-pubertal male and female black Bengal kids. Biological Rhythm Research 50 (4):
	626-636. NAAS rating: 6.77.
3.	Perveen S, Das P K, Ghosh P R, Banerjee D, Mukherjee J and Naskar S (2019): Pre-
	pubertal growth performance and its inter-relationship with physiological responses of
	black Bengal goats in free range rearing system. Indian Journal of Animal Sciences
	89(9): 1021–1024. NAAS rating: 6.23.
4.	Bhattacharya R, Das P, Joardar S N, Biswas B K, Batabyal S, Das P K and Nandi S K
	(2019): Novel decellularized animal conchal cartilage graft for application in human
	patient, Journal of Tissue Engineering and Regenerative Medicine, 13:46-57. DOI:
	10.1002/term.2767 [IF: 4.089]
5.	Malvika S, Ghosh P R, Devi N N, Paul R, Halder A, Mazumder A, Choudhury Y,
	Ghosh S K (2019): Genetic status of indigenous poultry (red jungle fowl) from
	India. Gene. 705: 77–81. [IF: 2.984]

VII.1.12. Department of Veterinary Surgery & Radiology

CI N	
Sl. No.	Scientific Research Publication in Journals
1.	Ghosh T, Maity N, Sur VP, Konar A, Hazra S. Mitigating fibrosis-An impediment to
	corneal re-innervation following lamellar flap surgery. Exp Eye Res. 2020;194:108009.
	doi:10.1016/j.exer.2020.108009. NAAS rating 9.011
2.	Yu Y, Hsu KH, Gharami S, Butler JE, Hazra S, Chauhan A. Interfacial polymerization
	of a thin film on contact lenses for improving lubricity. J Colloid Interface Sci.
	2020;571:356-367. doi:10.1016/j.jcis.2020.03.060 NAAS rating 12.361
3.	Gharami, S., Bhattacharjee, A., Konar, A. et al. Antheraea mylitta Silk Films Support
	Corneal Re-epithelialisation as Inlay Grafts in Large-Sized Corneal Defect. Regen. Eng.
	Transl. Med. (2020). https://doi.org/10.1007/s40883-020-00159-x. NAAS rating 7.43
4.	S. Dasgupta, Kanchan Maji and Samit Nandi. 2019. Investigating the Mechanical,
	Physiochemical and Osteogenic Properties in Gelatin-Chitosan-Bioactive Nanoceramic
	Composite Scaffolds for Bone Tissue Regeneration: In Vitro and In Vivo. Material
	Science & Engineering C 94: 713-728 NAAS rating 10.96
5.	Lalzawmliana V, Akrity Anand, Prasenjit Mukherjee, Shubhamitra Chaudhuri,
	Biswanath Kundu and Samit Kumar Nandi and Narsinh L. Thakur. 2019. Marine
	organisms as a source of natural matrix for bone tissue engineering". Ceramics
	International 45: 1469-1481 NAAS rating 9.45
6.	Rupnarayan Bhattacharya, Piyali Das, Siddhartha Narayan Joardar, Bikash Kanti
	Biswas, Subhasis Batabyal, Pradip Kumar Das and Samit Kumar Nandi. 2019. Novel
	decellurized animal choncal cartilage graft for application in human patient" Journal of
	Tissue Engineering and Regenerative Medicine 13(1):46-57 NAAS rating 9.078
7.	V. Lalzawmliana, Akrity Anand, Vinod Kumar, Piyali Das, K. Bavya Devi, Jayanta
	Mukherjee, Asit Kumar Maji, Biswanath Kundu, Mangal Roy and Samit Kumar Nandi.
	2019. Potential of growth factor incorporated mesoporous bioactive glass for in vivo
	bone regeneration. Journal of the Mechanical Behavior of Biomedical Materials 91:182-192 NAAS rating 9.49

8.	K. Bavya Devi, Bipasa Tripathy, Abhijit Roy, Boeun Lee, Prashant N. Kumta, Samit Kumar Nandi and Mangal Roy. 2019. In Vitro Biodegradation and In Vivo Biocompatibility of Forsterite Bio-Ceramics: Effects of Strontium Substitution. ACS Biomaterials Science & Engineering 5 (2):530–543 NAAS rating 10.152
9.	Akrity Anand, V. Lalzawmliana, Vinod Kumar, Piyali Das, K. Bavya Devi, Asit Kumar Maji, Biswanath Kundu,, Mangal Roy, Samit Kumar Nandi. 2019. Preparation and in vivo biocompatibility studies of different mesoporous bioactive glasses. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> 89: 89-98 NAAS rating 9.49
10.	Joseph Christakiran Moses, Mainak Dey, K. Bavya Devi, Mangal Roy, Samit Kumar Nandi and Biman B. Mandal. 2019. Synergistic effects of silicon/zinc doped brushite and silk scaffolding in augmenting the osteogenic and angiogenic potential of composite biomimetic bone grafts. ACS Biomaterials Science & Engineering 5 (3): 1462–1475 NAAS rating 10.152
11.	Sujan Krishna Samanta, K. Bavya Devi, Piyali Das, Prasenjit Mukherjee, Abhijit Chanda, Mangal Roy and Samit Kumar Nandi. 2019. Metallic Ion Doped Tri-calcium Phosphate Ceramics: Effect of Dynamic Loading on <i>in vivo</i> Bone Regeneration. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> 91:182-192 NAAS rating 9.49
12.	Piyali Das, Kanike Rajesh, V. Lalzawmliana, K. Bavya Devi, Piyali Basak, Debrupa Lahiri, Biswanath Kundu, Mangal Roy and Samit Kumar Nandi. 2019. Development and characterization of acellular caprine choncal cartilage matrix for tissue engineering applications. <i>Cartilage https://doi.org/10.1177/1947603519855769</i> NAAS rating 9.857
13.	Dimple Chowhan, Piyali Das, Naresh Thatikonda, Samit Kumar Nandi, My Hedhammar, and Biman B. Mandal. 2019. Silkworm silk matrices coated with functionalized spider silk accelerate healing of diabetic wounds. ACS Biomaterials Science & Engineering 5(7): 3537-3548 NAAS rating 10.152
14.	Kaushik Sarkar, Vinod Kumar, K. Bavya Devi, Debaki Ghosh, Samit Kumar Nandi and Mangal Roy. 2019. Anomalous <i>in vitro</i> and <i>in vivo</i> Degradation of Magnesium Phosphate: Role of Zinc Addition. <i>ACS Biomaterials Science & Engineering</i> DOI: 5(10): 5097-5106 NAAS rating 10.152
15.	Mangal Roy, Bavya K. Devi and Samit Kumar Nandi. 2019. Magnesium Silicate Bioceramics for Bone Regeneration -A Review" <i>Journal of the Indian Institute of Science</i> 99(3):261–288 NAAS rating 6.742
16.	Vinod Kumar, Kaushik Sarkar, K. Bavya Devi, Debaki Ghosh, Samit Kumar Nandi and Mangal Roy. 2019. Quantitative assessment of degradation, cytocompatibility and in vivo bone regeneration of silicon incorporated magnesium phosphate bioceramic. <i>Journal of Materials Research</i> 34(24): 4024-4036 NAAS rating 8.502

VII.2. RESEARCH PUBLICATIONS FACULTY OF FISHERY SCIENCES

VII.2.1. Department of Aquaculture

Sl. No.	Scientific Research Publication in Journals
1.	Mondal, B., & Das, S. K. (2019). Comparative evaluation of mahua (<i>Bassia latifolia</i>) oil cake and castor bean (<i>Ricinus communis</i>) seed as fish toxicants for
	tilapia (<i>Oreochromis mossambicus</i>) and panchax (<i>Aplocheilus panchax</i>) with residual toxicity assessment on <i>Labeo bata</i> . <i>Aquaculture Research</i> , 50(9), 2341-
	2349. John Willey and Sons (UK). doi: 10.1111/are.14115. Impact Factor: 1.748, NAAS: 7.748

2. Widyastuti, Y. R., Prihadi, T. H., Taufik, I., Pamungkas, B. A., & Das, S. K. (2020) Increasing productivity of snakehead fish (*Channa striata*) juvenile in ponds with different bottom substrates. Ecological intensification: A new paragon for sustainable aquaculture *IOP Conference Series: Earth and Environmental Science* (Vol. 521, No. 1, p. 012017). IOP Publishing (UK). doi:10.1088/1755-1315/521/1/012017. Impact Factor: 0.85, NAAS: 6.85

VII.2.2. Department of Aquatic Animal Health

Sl. No.	Scientific Research Publication in Journals
1.	Julinta, R.B., Abraham, T.J., Roy, A., Singha, J., Dash, G., Sar, T.K., and Patil, P.K., 2020. Effects of oral-dosing of an antiparasitic drug emamectin benzoate on the growth and serum biomarkers of Nile tilapia <i>Oreochromis niloticus</i> (L.) juveniles. <i>Journal of Environmental Biology</i> , 41. NAAS: 6.73; IF: 0.555
2.	Julinta, R.B., Abraham, T.J., Roy, A., Singha, J., Bardhan, A., Sar, T.K., Patil, P.K., and Kumar, K.A., 2020. Safety of emamectin benzoate administered in feed to Nile tilapia <i>Oreochromis niloticus</i> (L.). <i>Environmental Toxicology and Pharmacology</i> , 75 (2020) 103348. NAAS: 9.061; IF: 3.061
3.	Abraham, T.J., David, M., Patra, A., Banerjee, S., and Adikesavalu, 2020. Surveillance of herpesviruses in koi carp <i>Cyprinus carpio koi</i> and goldfish <i>Carassius auratus</i> cultured in West Bengal, India. <i>Journal of Exotic Pet Medicine</i> , 33: 1-6. NAAS: 6.244; IF: 0.244
4.	Sarker, S., Abraham, T.J., Dash, G. and Nagesh, T.S., 2019. Pathogenicity and pathology of <i>Chryseobacterium</i> sp. PLI2 in experimentally challenged ornamental goldfish, <i>Carasius auratus</i> (L.). <i>Veterinarski Arhiv</i> , 89(5): 697-707. DOI: 10.24099/vet.arhiv.0476. NAAS: 6.426; IF: 0.426
5.	Roy, A., Abraham, T.J., Namdeo, M.S., Singha, J., Julinta, R.B., and Boda, S., 2019. Effects of oral oxytetracycline-therapy on wound progression and healing following <i>Aeromonas caviae</i> infection in Nile tilapia (<i>Oreochromis niloticus</i> L.). <i>Brazilian Archives of Biology and Technology</i> , 62: e19180766, 2019. http://dx.doi.org/10.1590/1678-4324-2019180766. NAAS: 6.76
6.	Julinta, R.B., Abraham, T.J., Roy, A., Singha, J., Boda, S., Patil, P.K., 2019. Dietary influences of oxytetracycline on the growth and serum biomarkers of <i>Oreochromis niloticus</i> (L.). <i>Ecotoxicology and Environmental Safety</i> , 186: (2019) 109752. https://doi.org/10.1016/j.ecoenv.2019.109752. NAAS: 10.527; IF: 4.527
7.	Karmakar, S., Abraham, T.J., Kumar, S., Kumar, S., Shukla, S.P., Roy, U. and Kumar, K., 2019. Triclosan exposure induces varying extent of reversible antimicrobial resistance in <i>Aeromonas hydrophila</i> and <i>Edwardsiella tarda</i> . <i>Ecotoxicology and Environmental Safety</i> , 180: 309-316. https://doi.org/10.1016/j.ecoenv.2019.05.010 . NAAS: 10.527; IF: 4.527
8.	Hoque, F., Abraham, T.J., and Jaisankar, P., 2019. Isolation and partial characterization of secondary metabolites from fish-borne antagonistic bacterium, <i>Pseudomonas aeruginosa</i> . <i>Indian Journal of Fisheries</i> , 66(1): 81-91. NAAS: 6.26
9.	Hoque, F., Abraham, T.J., Nagesh, T.S. and Kamilya, D., 2019. <i>Pseudomonas aeruginosa</i> FARP72 offers protection against <i>Aeromonas hydrophila</i> infection in <i>Labeo rohita</i> . <i>Probiotics and Antimicrobial Proteins</i> , 11(3): 973–980. https://doi.org/10.1007/s12602-018-9456-1. NAAS: 8.96; IF: 2.35
10.	Chakraborty, R., Mukherjee, D. Bardhan, A., Mali, P. Bhattacharya Sanyal, K. and Dash, G., 2020. Prevalence of <i>Argulus</i> sp. In Indian Major Carps from Bhangore Block of South 24 Parganas District, West Bengal, India <i>Journal of Fisheries Science</i> , Vol.02. Issue 01:05

Julinta, R.B., Abraham, T.J., Roy, A., Singha, J., Dash, G., Sar, T.K., and Patil, P.K., 2020. Effects of oral-dosing of an antiparasitic drug emamectin benzoate on the growth and serum biomarkers of Nile tilapia *Oreochromis niloticus* (L.) juveniles. *Journal of Environmental Biology, 41.* NAAS: 6.73; IF: 0.555

VII.2.3. Department of Fish Processing Technology

Sl. No.	Scientific Research Publication in Journals
1.	Siddhnath, Ranjan A, Mohanty B P, Sakhlani P, Dora K C and Chowdhury S (2020):
	Dry fish and its contribution towards food and nutritional security. Food Reviews
	International. DOI: 10.1080/87559129.2020.1737708. NAAS: 9.93

VII.2.4. Department of Fishery Resources Management

Sl. No.	Scientific Research Publication in Journals
1.	Dibakar Bhakta, Sudhir Kumar Das, Basanta Kumar Das, T.S. Nagesh and Samarendra
	Behera, (2019) . Food and feeding habits of Otolithoidespama (Hamilton, 1822)
	occurring from Hooghly-Matlah estuary of West Bengal, India. Regional Studies in
	Marine Science 32: 1-10. NAAS: 6.1. <u>https://doi.org/10.1016/j.rsma.2019.100860</u>
2.	Abraham, T.J., Ramudu, K.R., Rajesh, S.C., Banerjee, S., Adikesavalu, H., Dash, G.
	and Nagesh, T.S. (2019) Evaluation of health status of Indian major and minor carps
	cultured in West Bengal, India. Iranian Journal of Ichthyology 6(1): 41-53.
3.	DibakarBhakta, Sudhir Kumar Das, Basanta Kumar Das, T.S. Nagesh and Samarendra
	Behera and S.C.S. Das (2019). Length-weight relationship and condition factor of
	Otolithoidespama (Hamilton, 1822) from Hooghly-Matlah estuarine system of West
	Bengal, India. <i>Indian J. Fish.</i> 66(4): 51-59. NAAS:6.28.
	https://doi.org/10.21077/ijf.2019.66.4.82585-07
4.	Sarker, S., T.J. Abraham, G. Dash, T.S. Nagesh. (2019). Pathogenicity and pathology
	of Chryseobacteriumsp. PLI2 in experimentally challenged ornamental goldfish,
	Carasiusauratus(L.) VeterinarskiArhiv. 89: 697-707, (2019). NAAS: 6.43.
	https://doi.org/10.24099/vet.arhiv.0476
5.	Ipsita Biswas, T. S. Nagesh, A. M. Sajina (2019). Stock delineation in
	Clupisomagarua(Hamilton, 1822) populations of Ganga riverine system using truss
	network analysis.Indian J. Fish. 66(2): 1-7. 6.28.
	https://doi.org/10.21077/ijf.2019.66.2.77163-01

VII.3. RESEARCH PUBLICATIONS OF FACULTY OF DAIRY TECHNOLOGY

VII.3.1. Department of Dairy Microbiology

Sl. No.	Scientific Research Publication in Journals
1	Yadav K, Bajaj R K, Mandal, S and Mann B (2020) Encapsulation of grape seed extract phenolics using whey protein concentrate, maltodextrin and gum arabica blends. <i>Journal of Food Science and Technology</i> 57 (2): 426-434. NAAS rating: 7.85
2	Haldar L and Gandhi D N (2019) Development of vacuum-dried probiotic milk powder with <i>Bacillus coagulans</i> . <i>International Journal of Dairy Technology</i> 73 (1): 283-291. NAAS Rating: 7.52

VII.4. RESEARCH PUBLICATIONS OF DIRECTORATE OF RESEARCH, EXTENSION & FARMS

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Sl. No.	Scientific Research Publication in Journals
1.	Surajit Mistry, Subhasish Burman, Subhasis Roy, Nilendu Jyoti Maitra, Rajiv Roy and
	Abhijit Chanda (2020) Surface characteristics of titanium dental implants with
	improved microdesigns: An in vivo study of their osseointegration performance in goat
	mandible. Journal of Biomaterials Applications 0(0): 1-15.
2.	Keshab Chandra Dhara, Nilendu Jyoti Moitra, Sanchayeta Misra, Shilpa Ghosh,
	Sayantani Bose and Kaustav Poddar (2019) Socio- Economic Status of the Sheep &
	Goat Farmers in Sundarban, West Bengal. Int. J. Livest. Res 9(9): 168-179
	Conviction of the contraction of
3.	Dhara, K. C., N. Ray, S. S. Kesh, P. K. Bandopadhyay, S. Batabyal and Goswami, A.
	2020. Haemato-Biochemical Profile of Black Bengal Goat on Different Gastro-
	Intestinal Parasitic Load. Int.J.Curr.Microbiol.App.Sci. 9(04): 1601-1610. doi:
	https://doi.org/10.20546/ijcmas.2020.904.187
	https://doi.org/10.20510/1jehitts.2020.501.107
4.	B.Santra, K.C.Dhara, S.Ghosh, S.Bhattacharjee, P.Dasputa, A.K.Giri, B Sarkar, S. Roy,
	S. Bose, K.Poddar, A.Dey and A Goswami (2020) Impact of training on Sheep and
	Goat production among the farm women of Sundarban of West Bengal. RESEARCH
	REVIEW International Journal of Multidisciplinary 5(10) 79-84.
	DOI: https://doi.org/10.31305/rrijm.2020.v05.i10.018
	DOI: https://doi.org/10.51505/11jjiii.2020.v05.110.016
5.	K. C. Dhara, S S Kesh and Suprava Roy (2020). Goat Breeds of India. Int. J. of
	Creative Research Thoughts. 8(10): 3204-3214.

VIII. HUMAN RESOURCE DEVELOPMENT (HRD)

Faculty members and scientists of West Bengal University of Animal & Fishery Sciences always look forward for interactive and collaborative work with the scientists from other institutes within the State, inside Country and Internationally to strengthen its basic, applied and strategic research in the fields of Veterinary and Animal Sciences, Dairy Technology and Fishery Sciences. They participate in different conferences, training programmes, summer/winter school, short courses on their related subjects, seminars, symposiums, workshops etc. to refresh and update themselves with the latest scientific knowledge and technologies. WBUAFS also encourages its faculty members to participate in such Human Resource Development programs. The important programs attended by the Faculty members and scientists during 2019-20, are enlisted below:

VIII.1. PARTICIPATION OF THE TEACHERS / SCIENTISTS/ OFFICERS IN THE SEMINAR, SYMPOSIUM, WORKSHOP, TRAINING PROGRAMMES ETC.

VIII.1.A. FACULTY OF VETERINARY & ANIMAL SCIENCES

VIII.1.A.1. Department of Animal Biotechnology

Name of the faculty member with	Title of Seminar, Symposium, Workshop, Training attended	Venue	Date/s & Duration
Designation			
Dr. Aditya Pratap Acharya, Assistant Professor	International Conference of Animal Nutrition, INCAN 2019	Kolkata	17-19 December, 2019 3 days
	Advances in management of Inland	ICAR-CIFRI,	21st January -10th
	open-water ecosystem health	Kolkatta	February 2020
	200		21 days

VIII.1.A.2. Department of Animal Genetics & Breeding

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Date/s & Duration
Prof. A. K. Sahoo Dean & Professor Dr. Manoranjan Roy Associate Professor	International Conference on Animal Nutrition 2019 (INCAN 2019) on 'Nutritional Strategies for Improving Farm Profitability and Clean Animal Production'	Biswa Bangla Convention Centre, Kolkata	17-19Dec, 2019 3 days

VIII.1.A.3. Department of Animal Nutrition

Name of the	Title of Seminar, Symposium,	Venue	Date/s &
faculty member	Workshop, Training attended		Duration
with Designation	50000		
Dr. G.P. Mandal,	International Conference on Animal	Biswa Bangla	17-19Dec, 2019
Associate Professor	Nutrition 2019 (INCAN 2019) on	Convention Centre,	3 days
	'Nutritional Strategies for Improving	Kolkata	
	Farm Profitability and Clean Animal		
	Production'		

VIII.1.A.4. Department of Avian Science

Name of the faculty	Title of Seminar, Symposium,	Venue	Date/s &
member with	Workshop, Training attended		Duration
Designation			
Dr. M.C. Pakhira,	Winter School Training on "Recent	WBUAFS,Kolkata	4-24 September,
Associate Professor	Biotechnological Advances for		2019
	Precision Feeding of Livestock and		21 days
	Poultry"		
	International Workshop on	Veterinary College &	17-21 February, 2020
	Molecular Diagnosis on Poultry	Research Institute,	5 days
	Diseases	Namakkal, Tamilnadu	
Dr. M.C. Pakhira,	International Conference of Animal	WBUAFS, Kolkata	17-19 December,
Associate Professor	Nutrition, INCAN 2019		2019
Dr.H.K.Maity,			3 days
Assistant Professor	National seminar for	WBUAFS, Kolkata	10-11January 2020
Dr.I.Kar,	49thVeterinary ReunionNational	11,70%	2 days
Assistant Professor	symposium on Role of		
Dr.P.Biswas,	veterinarians forSustainable livestockand poultry production		
Assistant Professor	to boost up rural economy		
Dr.S. Biswas,	to coost up ruini veolionis		
Assistant Professor			

VIII.1.A.5. Department of Livestock Farm Complex

Name of the faculty	Title of Seminar, Symposium,	Venue	Date/s &
member with	Workshop, Training attended		Duration
Designation			
Dr. Dulal Chandra	Short Term Training Course	ICAR-CRIJAF,	Nov. 14-23, 2019
Roy, Assistant		Barrackpur	10 days
Professor			
Dr. Dulal Chandra	International Conference on	Biswa Bangla	17-19Dec, 2019
Roy, Assistant	Animal Nutrition 2019 (INCAN	Convention Centre,	3 days
Professor	2019) on 'Nutritional Strategies	Kolkata	
Dr. Aruna Pal,	for Improving Farm Profitability		
Assistant Professor	and Clean Animal Production'		
Dr. Amitava Roy,			
Assistant Professor			
Dr.ChittapriyaGhosh,	Advanced Short course training	ICAR-IVRI,	03-23 December,
Assistant Professor		Izatnagar, UP	2019
			21 days

VIII.1.A.6. Department of Livestock Products Technology

Name of the	Title of Seminar, Symposium,	Venue	Date/s &
faculty member	Workshop, Training attended		Duration
with Designation			
Prof. S. Biswas, Professor & Head Dr.GopalPatra, Assistant Professor	International Conference on Animal Nutrition 2019 (INCAN 2019) on "Nutritional Strategies for Improving Farm Profitability and Clean Animal Production" National Symposium on Role of Veterinarians for sustainable livestock and poultry Production to boost up rural economy	Biswa Bangla Convention Centre, Kolkata WBUAFS, Kolkata	17-19 December, 2019 3 days 10-11 January, 2020 2 days

VIII.1.A.7. Department of Veterinary Anatomy & Histology

Name of the	Title of Seminar, Symposium,	Venue	Date/s &
faculty member	Workshop, Training attended		Duration
with Designation			
Prof. P. Das, Professor	National Symposium and Annual Convention of IAVA	CVSC, Hebbal Bangalore	28-30th , November, 2019 3 days
Prof. P. Das, Professor Prof. S.Ray, Professor Dr. N.K. Tudu, Assistant Professor	International Conference on Animal Nutrition 2019 (INCAN 2019) on "Nutritional Strategies for Improving Farm Profitability and Clean Animal Production"	Biswa Bangla Convention Centre, Kolkata	17-19 December, 2019 3 days
Dr. N.K. Tudu, Assistant Professor	National Symposium on Role of Veterinarians for sustainable livestock and poultry Production to boost up rural economy	WBUAFS, Kolkata	10-11 January, 2020 2 days
Prof. P. Das, Professor	20 th Indian Veterinary Congress	TANUVAS, Chennai	21-22 February, 2020 2 days

VIII.1.A.8. Department of Veterinary Biochemistry

Name of the	Title of Seminar, Symposium,	Venue	Date/s &
faculty member	Workshop, Training attended		Duration
with Designation			
Prof. S. Batabyal, Professor & Head Dr. A. Maity, Associate Professor Dr. ShamikPolley, Assistant Professor	International Conference on Animal Nutrition 2019 (INCAN 2019) on "Nutritional Strategies for Improving Farm Profitability and Clean Animal Production"	WBUAFS, Kolkata	17-19 December, 2019 3 days
Prof. S. Batabyal, Professor & Head Dr. A. Maity, Associate Professor Dr. ShamikPolley, Assistant Professor Dr. SwarajBiswas, Assistant Professor	20th Indian Veterinary Congress, XXVII Annual Conference of IAAVR and National Symposium on "Veterinary Research Priorities in Translational Animal Health, Production and Food safety" organized by Tamil Nadu Veterinary And Animal Sciences University (TANUVAS) &Indian Association for the Advancement of Veterinary Research (IAAVR)	Madras Veterinary College Chennai – 600007	February 21-22, 2020 2 days

VIII.1.A.9. Department of Veterinary Clinical Complex

Name of the	Title of Seminar, Symposium,	Venue	Date/s &
faculty member	Workshop, Training attended		Duration
with Designation			
Dr. Mrityunjoy	National Symposium on	College of	06-08 November,
Mondal	"Advances in Veterinary	Veterinary Science	2019
Associate	Pathology for Fostering One	& AH, CAU,	3 days
Professor	Health, Food Security and	Selesih, Aizawl	
	Environment Protection"		
Dr. Falguni Mridha	National seminar on	Kolkata	07 March, 2020
Assistant Professor	"Antimicrobial Resistance - A		1 day
	Global Menace: One Health		
	Approach" organised by Indian		
	Journal of Animal Health, Kolkata		

VIII.1.A.10. Department of Veterinary Epidemiology & Preventive Medicine

Name of the	Title of Seminar, Symposium,	Venue	Date/s &
faculty member	Workshop, Training attended		Duration
with Designation			
Dr. Ujjwal Biswas,	National Symposium on	Veterinary College,	5-7 February, 2020
Professor	"Advancement in Veterinary	K.V.A.F.S.U.,	3 days
Dr. Partha Sarathi	Medicine in Mitigating Challenges	Hebbal, Bengaluru -	
Jana,	to Animal Health"	560024	
Assistant Professor			

VIII.1.A.11. Department of Veterinary Gynaecology & Obstetrics

Name of the	Title of Seminar, Symposium,	Venue	Date/s &
faculty member	Workshop, Training attended		Duration
with Designation	Assertion (Assertion)		
Prof. Siddhartha	International Conference on	WBUAFS, Kolkata	17-19 December,
Basu, Professor	Animal Nutrition 2019 (INCAN		2019
Prof. Kalyani Ray,	2019) on "Nutritional Strategies		3 days
Professor	for Improving Farm Profitability		
Dr.PradipSarkar,	and Clean Animal Production"		
Assistant Professor	and Crean Ammai i roduction		
Dr.DurgadasMandal,			
Assistant Professor			
Dr.AmitKumarSaren			
Assistant Professor			

VIII.1.A.12. Department of Veterinary Microbiology

Name of the	Title of Seminar, Symposium,	Venue	Date/s & Duration
faculty member	Workshop, Training attended		
with Designation			
Dr. Indranil Samanta,	International Conference on Animal	WBUAFS	17 – 19 December,
Assistant Professor	Nutrition -2019		2019
			3 days
	Farmer's training and Zoonoses	KrishiVigyan Kendra,	28 February, 2020
	awareness camp	Ashoknagar	1 day
	Farmer's training on 'Scientific	West Bengal	14 June, 2019
	rearing of Kadaknath and	Comprehensive Area	1 day
	charachameli duck'	Development	
		Corporation	
		(WBCDAC),	
		Haringhata Unit	
	ICAR Sponsored Winter School on		12 September, 2019
	'Gut Microbiome', organized by		1 day
	Deptt. of Animal Nutrition,	WBUAFS	
	WBUAFS		
	National seminar on 'Antimicrobial		7 March, 2020
	Resistance-a global menace: One		1 day
	Health approach', organized by	WBUAFS	
	Indian Journal of Animal Health		
	WHO (India) workshop on 'ESBL	Kolkata Medical	04-06 September,
	EcEpi-X tricycle project'	College	2019
			3 days
Dr. K. Batabyal,	World Rabies Day, organized by	WBUAFS	27 September,2019
Assistant Professor	APCRI, APHV and WBUAFS	WIDILL FO	1 day
	Workshop on "Innovation &	WBUAFS	13 August, 2019
	Entrepreneurship", org. by DSIR-		1 day
	TOCIC, IIT-KGP, CSIR-CGCRI,		
	CSIR-CMERI & WBUAFS	WDUAEC	06 1.1. 2010
	World Zoonosis Day – Seminar –	WBUAFS	06 July, 2019
	org. by APHV	CVC 9- ALL DUNACLI	1 day
	National Symposium and XIV	CVS & AH, DUVASU, Mathura	24–25 January, 2020
	Biennial Conference of APHV, org. by APHV	Iviauiura	2 days
	21 Days ICAR Sponsored Winter	CVS, AAU, Khanapara,	03–23 December,
	School, org. by CVS, AAU, Assam	Assam	2019
	School, org. by CVS, AAU, Assam	Assam	21 days
			21 days

VIII.1.A.13. Department of Veterinary Parasitology

Name of the	Title of Seminar, Symposium,	Venue	Date/s & Duration
faculty member	Workshop, Training attended		
with Designation			
Prof.S.C.Mandal,	DSIR Workshop cum Awareness	WBUAFS, Kolkata	13 August, 2019
Professor	Camp		1 day
	International Conference on	WBUAFS, Kolkata	17-19 December,
	Animal Nutrition 2019 (INCAN		2019
	2019) on "Nutritional Strategies for		3 days
	Improving Farm Profitability and		
	Clean Animal Production"		
Dr. Surajit Baidya	Conference of Indian Academy of	WBUAFS, Kolkata	7 – 8 December,
Associate Professor	Tropical Parasitology	(997)	2019
Dr. R. Jas,			2 days
Assistant Professor			8978
Dr. S. Pandit,			
Assistant Professor			
Dr. Surajit Baidya	National symposium and XIV	DUVASU, Mathura	24 – 25 January,
Associate Professor	biennial National Conference of		2020
	APHV		2 days

VIII.1.A.14. Department of Veterinary Pathology

Name of the	Title of Seminar, Symposium,	Venue	Date/s & Duration
faculty member	Workshop, Training attended		
with Designation			
Prof.S.K.	Participated in Indian Association	CVSc& AH, BAU,	22-23 February,2020
Mukhopadhayay	of Veterinary Pathologists Zonal	Ranchi, Jharkhand	2 days
Professor	Conference, 2020 on "Recent		
Dr. S. Pradhan	Advances in Diagnostic Pathology		
Assistant Professor	for Emerging and Re-emerging		
Dr. R.N. Hansda	Diseases of Livestock, Poultry		
Assistant Professor	Under Farming Conditions and		
Dr. SamiranMondal	Wildlife" of IAVP-Jharkhand		
Assistant Professor	Chapter, ICAR NAHEP-CAAST		
	Programme, BAU, IAVP Central		
	Zone & East Zone		
Prof. S. K.	Veterinary Pathology Congress-	Selesih, Aizawl,	06-08 November,
Mukhopadhayay	2019 XXXVI Annual Conference	Mizoram	2019
Professor	of IAVP -IV Annual Meeting of		3 days
	ICVP and National Symposium,		
	Central Agricultural University		
Dr.R.N.Hansda	UGC-Sponsored Orientation	Jadavpur University,	
Assistant Professor	Programme (HRDC) at Jadavpur	Kolkata	26 August – 16
	University, Kolkata		September, 2019
			21 days
	Mahatma Gandhi National Council	Jadavpur University,	06-07 September,
	of Rural Education (MGNCRE),	Kolkata	2019
	Department of Higher Education,		2 days
	MHRD, GOI & UGC-Sponsored		
	Orientation Programme (HRDC) at		
	Jadavpur University, Kolkata		
Dr.SamiranMondal	International Conference on	WBUAFS, Kolkata	17-19 December,
Assistant Professor	Animal Nutrition, 2019 on	1000	2019
	"Nutritional Strategies for		3 days
	Improving Farm Profitability and		
	Clean Animal Production"		
	7 th KVAFSU/CVA Workshop on	CVA, Bengaluru	24-25 February,
	Rabies Diagnosis		2020
	NV		2 days
	UGC-Sponsored Orientation	Jadavpur University,	03-24 February,
	Programme (HRDC) at	Kolkata	2020
	JadavpurUniversity, Kolkata		21 days

Clean Animal Production"		
7th KVAFSU/CVA Workshop on	CVA, Bengaluru	24-25 February,
Rabies Diagnosis		2020
		2 days
UGC-Sponsored Orientation	Jadavpur University,	03-24 February,
Programme (HRDC) at	Kolkata	2020
JadavpurUniversity, Kolkata		21 days

VIII.1.A.15. Department of Veterinary Pharmacology & Toxicology

Name of the faculty member	Title of Seminar, Symposium, Workshop, Training attended	Venue	Date/s & Duration
with Designation Prof. T.K. Mandal, Professor Dr. T.K. Sar, Assistant Professor Prof. T.K. Mandal,	29 th Annual Conference of Indian Pharmacological Society World Zoonosis Day	Medical College, Kalyani WBUAFS, Kolkata	6-7 February, 2020 2 days
Professor	Summer School Training World Rabies Day	Dept. of Animal Nutrition, WBUAFS WBVC	September, 2019 27 September, 2019
	National symposium on Public health challenge mitigation strategies at the confluence of One health approaches and XIV Biennial National Conference of Association of Public health Veterinarians	College of Veterinary Science and Animal Husbandry, U.P. Pt. Dean DayalUpadhyayaPashuc hikitsaVigyanVishwavid yalayaEvam Go- AnusandhanSansathan, Mathura	24-25 January, 2020 2 days
	One day workshop on Bioactive glass, ceramics and composites in healthcare: current technological trends BIOCOM, 2020	Central Glass and Ceramic Research Institute	29 January, 2020 1 day

VIII.1.A.16. Department of Veterinary Physiology

Name of the	Title of Seminar, Symposium,	Venue	Date/s&
faculty member	Workshop, Training attended		Duration
with Designation	,		
Dr. P. K Das, Professor Dr. P. R. Ghosh, Associate Professor Dr. D. Banerjee, Assistant Professor	International Conference on Animal Nutrition 2019 (INCAN 2019) on "Nutritional Strategies for Improving Farm Profitability and Clean Animal Production"	Biswa Bangla Convention Centre, Kolkata	17-19 December, 2019 3 days
Dr. J Mukherjee, Assistant Professor	National seminar on "Antimicrobial Resistance – A Global Menace: One Health Approach" organised by Indian Journal of Animal Health, Kolkata	Kolkata	07 March, 2020 1 day
Dr. P. K. Das, Professor Dr. P. R. Ghosh, Associate Professor	National Symposium on Physiological approaches to address environmental challenges for increasing animal productivity and farmer's income organized by Society of Animal Physiologists of India	CSWRI, Avikanagar, Jaipur, Rajasthan	18-19 February, 2020 2 days
Dr. J. Mukherjee Assistant Professor	Acted as resource person in Refresher and Hands on Training Course on 'Advanced Diagnostics Imaging in Veterinary Practices'	WBUAFS	17-22 February, 2020 5 days
	Acted as resource person in ICAR Sponsored Winter School on "Recent Biotechnological Advances for Precision Feeding of Livestock and Poultry	WBUAFS	04-24 September, 2019 21 days
	Acted as an expert in the tutorial class for the SC students under ICAR SC-SP programme	WBUAFS	04 January, 2020 1 day
	Acted as an expert in Farmers' Training Programme on "Reproductive disorders in farm animals.	Farmers Hostel	13 January, 2020 1 day
	Acted as Convener in Zonal level Quiz programme	Dept. of Veterinary Physiology	17 January, 2020 1 day
Dr. D Banerjee, Assistant professor	Acted as resource person in Refresher and Hands on Training Course on 'Advanced Diagnostics Imaging in Veterinary Practices'	WBUAFS	17-22 February, 2020 5 days
	Acted as resource person in ICAR Sponsored Winter School on "Recent Biotechnological Advances for Precision Feeding of Livestock and Poultry	WBUAFS	04-24 September, 2019 21 days
	Acted as Programme Convener and an experts in the tutorial class for the SC students under ICAR SC-SP programme	WBUAFS	21 December, 2019 – 26 January, 2020 Imonth
	Acted as an expert in Farmers' Training Programme on "Metabolic diseases in cattle".	Farmers Hostel	13 January, 2020 1day
Dr. Kinsuk Das Assistant Professor	ICAR sponsored short term course on 'Neuroendocrine regulations of livestock production: prospect and retrospect'	Centre of Advanced Faculty Training in Veterinary Physiology, ICAR-IVRI, Izatnagar	28 January – 17 February, 2020 21 days

VIII.1.A.17. Department of Veterinary Surgery & Radiology

Name of the	Title of Seminar, Symposium,	Venue	Date/s &
faculty member	Workshop, Training attended		Duration
with Designation			
Prof. Sarbani Hazra,	ECVO (European college of	Hotel Hilton Antwerp	23-26 May,
Professor	Veterinary Ophthalmologists) 2019	***	2019
	Antwerp, Belgium		3 days
			101
Prof. Samit Kumar	3 rd International Symposium on	Bhubaneswar, Odisha	21-23 January,
Nandi	Genomics in Aquaculture (ISGA- III)		2020
Professor	100		3 days

VIII.1.A.18. Department of Veterinary & Animal Husbandry Extension Education

Name of the	Title of Seminar, Symposium,	Venue	Date/s &
faculty member	Workshop, Training attended		Duration
with Designation			
Prof. A. Goswami, Professor Dr. S. Biswas, Associate Professor	International Conference on Animal Nutrition 2019 (INCAN 2019) on "Nutritional Strategies for Improving Farm Profitability and Clean Animal Production"	Biswa Bangla Convention Centre, Kolkata	17-19 December, 2019 3 days
Prof. A. Goswami, Professor Dr. S. Biswas, Associate Professor Dr. D. Saha, Assistant Professor	National Symposium on Role of Veterinarians for sustainable livestock and poultry Production to boost up rural economy	WBUAFS, Kolkata	10-11 January, 2020 2 days
Dr. S. Biswas, Associate Professor	Training of Biotech-Kishan Hub Project of DBT, GOI	DREF, WBUAFS	22 November, 2019 1 day
	Training of DST project, GWB by the Dept. of LPT, WBUAFS	Mohanpur, WBUAFS	5 December, 2019 1 day
	External Examiner of M.Sc. at RKMVERI, Narendrpur, WB	RKMVU, Kolkata	23 December, 2019 1 day
	KrishiDarshanProgramme of Doordarshan, Govt. of India	Kolkata	24 December, 2019 1 day

VIII.1.B. FACULTY OF FISHERY SCIENCES

VIII.1.B.1. Department of Aquaculture

Name of the	Title of Seminar, Symposium,	Venue	Date/s &
faculty member	Workshop, Training attended		Duration
with Designation			
Prof. S.K. Das,	International Conference on Ecological	Bogor, Indonesia	28-30 October,
Professor	intensification: A new paragon for		2019
	sustainable aquaculture		3 days
	International Conference on Animal	Biswa Bangla	17-19
	Nutrition 2019 (INCAN 2019) on	Convention Centre,	December, 2019
	"Nutritional Strategies for Improving	Kolkata	3 days
	Farm Profitability and Clean Animal		
	Production"		
	National Seminar on Antimicrobial	WBUAFS, Kolkata	7 March, 2020
	Resistance - A Global Menace: One		1 day
	Health Approach		

VIII.1.B.2. Department of Aquatic Animal Health

Name of the	Title of Seminar, Symposium,	Venue	Date/s &
faculty member	Workshop, Training attended		Duration
with Designation			
Prof. G.D. Dash	National Seminar on Antimicrobial	WBUAFS, Kolkata	7 March, 2020
Professor & Head	Resistance - A Global Menace: One		1 day
Prof. T.J. Abraham,	Health Approach		
Professor			
Prof. G.D. Dash	Workshop on Fish and Shrimp	COF, OUAT,	27-28
Professor & Head	Diseases and their remedial	Rangailunda	December, 2019
	measures.	(Under NAHEP)	2 days
	Two - days workshop: Hands-on	Fisheries Research and	22-23 Feb, 2020
	Training on Fish Disease Management	Training Centre (FRTC),	2 days
	in Aquaculture	Dept. Of Zoology,	
		University of North	
		Bengal, Darjeeling	
Prof. T.J. Abraham,	International Conference and	Tamil Nadu	19-21 June 2019
Professor	Exposition 'Asian-Pacific	Fisheries University,	3 days
	Aquaculture'	Chennai	
	(APA-2019).	CD D . III	17.10.5.1
	International Conference on	G.B. Pant University of	17-19 February,
	Ecosystem health and fisheries of	Agriculture and	2020
	Indian inland waters: Multiple stressors, management and	Technology, Pantnagar, Uttarakhand	3 days
	conservation and AEHMS-12	Ottaraknand	
Sri P. Mali	International Conference on Animal	Biswa Bangla	17-19
Asst. Professor	Nutrition 2019 (INCAN 2019) on	Convention Centre,	December, 2019
	"Nutritional Strategies for Improving	Kolkata	3 days
	Farm Profitability and Clean Animal		
	Production"		

VIII.1.B.3. Department of Aquatic Environment Management

Name of the	Title of Seminar, Symposium,	Venue	Date/s &
faculty member	Workshop, Training attended		Duration
with Designation			
Dr. Sangram Keshari Rout,		Biswa Bangla	17-19 December, 2019
Professor and Head Mr. Sutanu	Nutrition 2019 (INCAN 2019) on "Nutritional Strategies for Improving	Kolkata	3 days
Karmakar, Assistant Professor	Farm Profitability and Clean Animal Production"		

VIII.1.B.4. Department of Fishery Economics & Statistics

Name of the	Title of Seminar, Symposium,	Venue	Date/s &
faculty member	Workshop, Training attended		Duration
with Designation	10000		
Prof. SomenSahu	International Conference on Animal	Biswa Bangla	17-19 December,
Professor and	Nutrition 2019 (INCAN 2019) on	Convention Centre,	2019
Sri Soumyadip	"Nutritional Strategies for Improving	Kolkata	3 days
Purkait	Farm Profitability and Clean Animal		
Assistant Professor	Production"		

VIII.1.B.5. Department of Fishery Engineering

Name of the	Title of Seminar, Symposium,	Venue	Date/s&
faculty member	Workshop, Training attended		Duration
with Designation			
Dr.N.A.Talwar, Professor	Workshop on National Marine Fisheries Bill-2019, organized by NETFISH(MPEDA), Govt.of India (as Resource Person)	Central Institute of Fisheries Education (CIFE), 32, G. N. Block, Sector-V,	6 December, 2019 1 day
	Delivered Lecture in the Professional Skill Development Certificate Course on "Aqua Clinics and Aquapreneurship Programme (AC&ADP) Training Programme on Aquaculture Technician, organized by DREF in partnership with NFDB,Govt.Of India (as Resource Person)	SaltLake City Kolkata Farmer's Hostel, DREF section, Belgachia Campus, WBUAFS Belgachia campus, WBUAFS, Kolkata	20 January, 2020 1 day 28 February, 2020 1 day
Olipriya Biswas, Assistant Professor	Training programme on "Aquaculture Worker" organized by DREF (as Resource Person)	Farmer's Hostel, DREF section, Belgachia Campus, WBUAFS	14 January, 2020 1 day
	Delivered Lecture in the Professional Skill Development Certificate Course on "Aqua Clinics and Aquapreneurship Programme (AC&ADP)	Farmer's Hostel, DREF section, Belgachia Campus, WBUAFS	13 February, 2020 1 day

VIII.1.B.6. Department of Fish Processing Technology

Name of the faculty	Title of Seminar, Symposium,	Venue	Date/s &
member with	Workshop, Training attended		Duration
Designation	0000		
Dr. S.Chowdhury,	National Conference on Doubling	Birsa Agricultural	10-11 August, 2019
Associate Professor	Farmers Income for Sustainable and	University, Ranchi,	2 days
Dr. Swarnadyuti Nath,	Harmonious Agriculture 'DISHA	Jharkhand	
Assistant Professor	2019'		
Prof. K. C. Dora,	DSIR-PRISM sponsored workshop	WBUAFS	13 August, 2019,
Professor	on "Innovation and		1 day
Dr. S. Chowdhury,	Entrepreneurship" TePP Outreach		
Associate Professor	cum Cluster Innovation Centre		
Mr. Prasanta Murmu			
Assistant Professor			
Dr. Swarnadyuti Nath,	International Research Conference on	SidhuKanhuBirsha	28-29Nov, 2019
Assistant Professor	'Recent Trends in Life Sciences'	University (SKBU),	2 days
		Purulia, West Bengal	
	3 rd National Conference on	Dhanbad, Jharkhand	24-25Dec, 2019
	Promoting and Reinvigorating Agri-		2 days
	Horti, Technological Innovations,		555.0
	'PRAGATI 2019'		
Prof. K. C. Dora,	International Conference on Animal	Biswa Bangla	17-19Dec, 2019
Professor	Nutrition 2019 (INCAN 2019) on	Convention Centre,	3 days
Dr. S. Chowdhury,	'Nutritional Strategies for Improving	Kolkata	
Associate Professor	Farm Profitability and Clean Animal		
Dr. SwarnadyutiNath,	Production'		
Assistant Professor			

VIII.1.C. FACULTY OF DAIRY TECHNOLOGY

VIII.1.C.1. Department of Dairy Chemistry

Name of the faculty	Title of Seminar, Symposium,	Venue	Date/s &
member with	Workshop, Training attended		Duration
Designation			
Prof. P.R.Ray, Professor Dr. ChaitaliChakraborty, Associate Professor	National Seminar on "Traditional Indian Dairy Products- Prospects of Commercialization" Organized by the National Agricultural Higher Education Project (NAHEP)-Innovation Grant of Dairy Faculty	Faculty of Dairy Technology, WBUAFS, Nadia	13 March, 2020 1 day

VIII.1.C.2. Department of Dairy Engineering

Name of the faculty	Title of Seminar, Symposium,	Venue	Date/s &
member with	Workshop, Training attended		Duration
Designation			
Dr. S. K. Bag,	Regional Workshop on Efficient	NDDB Block,	18 January, 2020
Professor	Operation & Daintenance of	Salt Lake	1 day
Sri KumareshHalder,	Boilers and Energy Conservation		
Assistant Professor	377		
Prof. P. Maiti,	48 th Dairy Industry Conference	Jaipur,	20-22
Professor		Rajasthan	February,2020
Prof. S. K. Bag,			3 days
Professor			

VIII.1.C.3. Department of Dairy Microbiology

Name of the faculty	Title of Seminar, Symposium,	Venue	Date/s &
member with	Workshop, Training attended		Duration
Designation			
Dr. Surajit Mandal,	Launching workshop	Dairy Technology,	26 December,
Professor	Under the Aegis of ICAR-World Bank Sponsored National	WBUAFS, Mohanpur	2019
Dr. Lopamudra Haldar	Agricultural Higher Education Project	Campus, Nadia	1 day
Associate Professor	(Innovation Grant):	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	
	Strengthening Post Graduate		
	Education: Lab, Field & Self		
	Employment-Integration and Strategy		
Mr. Amit Kumar	National Seminar on	Dairy Technology,	13 March, 2020
Barman	'Traditional Indian Dairy Products-	WBUAFS, Mohanpur	1day
Assistant Professor	Prospects of Commercialization'	Campus, Nadia	
	Under the Aegis of ICAR-World	600 - 94	
	Bank Sponsored National		
	Agricultural Higher Education Project		
	(Innovation Grant)		

Mr. Amit Kumar Barman Assistant Professor	International Conference on Animal Nutrition 2019 (INCAN 2019) on 'Nutritional Strategies for Improving Farm Profitability and Clean Animal Production'	Biswa Bangla Convention Centre, Kolkata	17-19 Dec, 2019 3 days
Dr. Lopamudra Haldar Associate Professor	Acted as Resource person in ASCI and ICAR-ATARI, Kolkata Sponsored Training Programme on Dairy Farmer/ Entrepreneur, Organized by DREF, WBUAFS	Farmer's Hostel, DREF, WBUAFS, Belgachia,	8-27 January, 2020 1 day
	IISF-Agricultural Scientists'meet	Biswa Bangla Convention Centre, Kolkata	05-08 November, 2019 3 days

VIII.1.C.4. Department of Dairy Technology

Name of the faculty	Title of Seminar, Symposium,	Venue	Date/s &
member with	Workshop, Training attended		Duration
Designation			
Dr. AninditaDebnath, Assistant Professor (As Assistant Co-ordinator) SriGoutam Kumar Das, Assistant Professor (As expert) Sri ParthaPratimDebnath, Assistant Professor	National Training Programme on "Milk Products Development for augmenting income"	Faculty of Dairy Technology, WBUAFS, Mohanpur	10-15 th February, 2020 6 days
(As expert) Dr. AninditaDebnath, Assistant Professor Sri Kuntal Roy, Assistant Professor Sri ParthaPratimDebnath, Assistant Professor	National seminar on "Traditional Dairy Products- Prospects & Commercialization"	WBUAFS, Mohanpur	13 March, 2020 1 day
Sri Kuntal Roy, Assistant Professor	Hands on training on Processing, Analysis and Packaging of cheese	ICAR-NDRI, Karnal	5 – 19 February, 2020 15 days
	48 th Dairy Industry Conference on "Dairying for health and wealth"	Jaipur	20-22 February,2020 3 days
Sri Kuntal Roy, Assistant Professor Sri ParthaPratimDebnath, Assistant Professor	Regional workshop on "Efficient operation and maintenance of boilers and energy conservation"	Kolkata	18 January, 2020 1 day

VIII.1.D. DIRECTORATE OF RESEARCH, EXTENSION & FARMS

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Date/s& Duration
Dr. S. Das, Scientist Dr. Nilufar Haque, Asstt. Director (Ext)	ASCI Training of Trainers' (TOT) Programme	Farmers' Hostel DREF, WBUAFS, Kolkata	09 – 11 December, 2019 3 days
Dr. Nilufar Haque, Asstt. Director (Ext)	International Conference on Animal Nutrition 2019 (INCAN 2019) on 'Nutritional Strategies for Improving Farm Profitability and Clean Animal Production' – Poster Presentation	Biswa Bangla Convention Centre, Kolkata	17-19Dec, 2019 3 days
	National seminar on 'Antimicrobial Resistance-a global menace: One Health approach', organized by Indian Journal of Animal Health	WBUAFS	7 March, 2020 1 day
Dr. B.K.Chand, Deputy Director (Research), Dr. N.J. Maitra, Deputy Director (Research), Dr. B K Biswas, Scientist Dr. S. Das, Scientist Mrs. A. Biswas Comp. Progg. Dr. S. Das Asstt. Dir (Research) Dr. N. Haque, Asstt. Director (Ext)	Scientific rearing practices of Garole Sheep and Black Bengal Goat	Farmers' Hostel, DREF WBUAFS, Kolkata	12- 14 March, 2020 3 days

VIII.2. ABROAD VISIT OF SCIENTISTS

Sl. No.	Name, Designation	Institute/ Country visited	Purpose of Visit	Perio	d of Visit
110.	& Department	Visited		From	То
1.	Prof (Dr.) Sarbani Hazra, Dept. of Veterinary Surgery & Radiology	Annual conference of European college of Ophthalmologists (ECVO) Antwerp, Belgium	To attend the Annual conference of European college of Ophthalmologists (ECVO) Antwerp, Belgium	23/05/2019	26/05/2019
2.	Prof. T.J. Abraham, Dept. of Aquatic Animal Health	United States Soybean Export Council (USSEC), Vietnam Saigon City, Ho Chi Minh City, Vietnam	International training program on Breeding and grow-out farming of freshwater and marine water fishes and exposure study tour	22/09/2019	28/09/2019
3.	Prof. S. K. Das, Professor, Dept. of Aquaculture	Institut De Recherche Pour Le Développement, France	Attending International Conference as Invited Speaker	28/10/2019	30/10/2019

VIII.3. HONOURS / AWARDS/ FELLOWSHIPS ETC. RECEIVED BY THE TEACHERS/ SCIENTISTS/ OFFICERS OF THE UNIVERSITY

Sl.	Name of the	Name of the	Offering	Field of remarkable
No.	recipient	honour/ award/ fellowship/ scholarship etc.	organization	activity
1	Prof. Subhasis Biswas, Professor & Head, Deptt of Livestock Products Technology	Appreciation Award	Indian Association for the Advancement of Veterinary Research (IAAVR)	Contribution in veterinary education and research
		Member, Research Advisory Committee, NRC on Meat, Hyderabad	Nominated by ICAR, New Delhi	
		Member, , State level Committee of slaughter house	Nominated byDeptt. of Urban Development, Govt. of W.B	
		Member, VCI accreditation committee for establishment of new colleges	Nominated byVCI, New Delhi	
2	Prof. Partha Das, Professor, Dept. of Vety. Anatomy &	Life time achievement Award	PasudhanPraharee	Significant contribution in Animal Welfare
	Histology	Certificate of Appreciation	International Journal of Livestock Research	Member, Scientific Advisory Board
3	Dr. Arun Kumar Mandal, Assistant Professor, Dept. of Vety. Anatomy & Histology	Certificate of Appreciation	International Journal of Livestock Research	Member, Scientific Advisory Board
4	Prof. SubhasisBatabyal, Professor & Head, Deptt of Veterinary Bio-Chemistry	Reviewer Excellence Award	ARCC	Reviewer of Indian Journal of Animal Research and Asian Journal of Dairy and food Research
5	Prof. SubhasisBatabyal, Professor & Head,	Appreciation Award	Indian Association for the Advancement of Veterinary	For conduction of 19 th Indian Veterinary Congress at

	Deptt of Veterinary Bio-Chemistry		Research (IAAVR)	Kolkata
6	Dr. Indranil Samanta, Assistant Professor, Dept. of Veterinary	Best Teacher Award (University level)	WBUAFS	Veterinary Microbiology
	Microbiology	Acts as reviewer of research article for high-impact factor journals such as Frontiers in Microbiology (NAAS: 10.26), Food Control (NAAS: 10.25), Transboundary and Emerging Diseases (NAAS: 9.55), BMC Microbiology (NAAS: 9.29), Plos One (NAAS: 8.78), Epidemiology and Infection (NAAS: 8.05), BMC Veterinary Research (NAAS: 7.79), Letters in applied microbiology (NAAS: 7.81), International Journal of Environmental Health Research (NAAS: 7.47), Indian Journal of Medical Research (NAAS: 7.25)		
7	Dr. K Batabyal, Assistant Professor, Dept. of Veterinary Microbiology	Basic & Clinical	Pharmacology &	-impact factor journals such as Toxicology (NAAS: 8.66), nal of Animal Health (NAAS:
8	Dr. S.K.Mukhopadhayay Professor, Dept. Of Veterinary Pathology	Fellow Indian Association of Veterinary Pathologist	Indian Association of Veterinary Pathologist(IAVP)	Excellence contribution in Veterinary Pathology
9	Dr. Kinsuk Das Assistant Professor, Dept. of Veterinary Physiology	First prize in Innovative Idea Competition	Jointly by DSIR- TOCIC, IIT- Kharagpur, CSIR- CGCRI & CSIR- CMERI	Innovation and Entrepreneurship
10	Prof. S. K. Das, Professor, Dept. of Aquaculture	Felicitated as Chairman of a Session in the International Conference on Ecological Intensification	Institut De Recherche Pour Le Développement, France	Aquaculture
11	Prof. T. J. Abraham, Professor, Dept. of Aquatic Animal Health	Research Excellence Award-2020	The Institute of Scholars (InSc), Bengaluru - 560091, Karnataka	Research in Fisheries Science and Aquatic Animal Health
12	Prof. Gadadhar Dash, Professor, Dept. of Aquatic Animal Health	Best Parenting Award - 2019	West Bengal University of Animal and Fishery Sciences (WBUAFS)	Activity of the parenthood.
		Invited as an expert member for the Inauguration of Aqua One Centre	AOC funded by NFDB in collaboartion with Marsco Aqua	Expert Member

		(AOC)	Clinics Pvt. Ltd. at Balasore,Odisha	
13	Dr. SwarnadyutiNath, Assistant Professor, Dept. of Fish Processing Technology	Best Oral Presentation	National Conference on Doubling Farmers Income for Sustainable and Harmonious Agriculture 'DISHA 2019', Birsa Agriculture University, Ranchi, Jharkhand	Fish Processing Technology
		IASR Excellence Award – 2019	International Research Conference on 'Recent Trends in Life Sciences' held at SidhuKanhuBirsha University (SKBU), Purulia, West Bengal	Fish Processing Technology
		Best Oral Presentation Award	International Conference on Animal Nutrition 2019 (INCAN 2019) on 'Nutritional Strategies for Improving Farm Profitability and Clean Animal Production' held at Biswa Bangla Convention Centre, Kolkata.	Fish Processing Technology
		Excellence in Teaching Award (Young Teacher Award)	3 rd National Conference on Promoting and Reinvigorating Agri- Horti, Technological Innovations, 'PRAGATI 2019' held at Dhanbad, Jharkhand.	Teaching
14	Prof. PinakiRanjan Ray, Professor	Received Best Poster Award on the topic "Enzymatic	National Seminar on "Traditional	Dairy Chemistry

	and Dr. Chaitali Chakraborty, Associate Professor Dept. of Dairy Chemistry	modification of Whey Protein Isolates using food grade enzymes and it's resulting functional properties" Awarded Second prize for poster presentation on the topic "Textural Quality of Paneer added with Nisin"	Indian Dairy Products- Prospects of Commercialization " Organized by the National Agricultural Higher Education Project (NAHEP)- Innovation Grant, at the Faculty of Dairy Technology, WBUAFS, Nadia held on 13 th March, 2020.	Dairy Chemistry
15	Dr. B.K. Chand, Deputy Director (Research), DREF, WBUAFS	Received Prof. J S Dattamunshi Medal 2020	Zoological Society of India during 32 nd All India Congress of Zoology (32nd AICZ) and International Conference on "Life Security Earth" (LSOE-2020) held at Mandu, Madhya Pradesh from 22 nd to 24th February, 2020	Outstanding Research and Academic Contribution in the Field of Aquaculture

IX. DETAILS OF PUBLICATION OF BOOK, BOOKLETS, LEAFLETS, MANUAL ETC.BY DIFFERENT UNITS:

IX.1. FACULTY OF VETERINARY & ANIMAL SCIENCES

IX.1.1. Department of Animal Biotechnology

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
SSR marker development through probe enrichment method for nutritionally rich Giant-river catfish <i>Sperata</i> seenghala (Sykes-1839)	Abstract	Dr. Aditya Pratap Acharya and Dr. Sagarika Swain, Dr. A.Pavan Kumar	International Conference on Animal Nutrition 2019

IX.1.2. Department of Animal Genetics & Breeding

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
Package of Practices for rearing	Booklet	Dr. M. Roy,	March'2020
of Black Bengal kids		Dr. U. Sarkar,	(16 pages)
C B 13		Dr. M. C. Pakhira,	
(in Bengali)		Dr. S. Bera,	
		Dr. G. Patra,	
		Dr. S. Pandit	
Seasonal wise care and	Leaflet	Dr. M. Roy,	March'2020
management of goats		Dr. U. Sarkar,	(2 pages)
		Dr. M. C. Pakhira,	
		Dr. S. Bera,	
		Dr. G. Patra,	
		Dr. S. Pandit	
Parasitic diseases of goat and	Leaflet	Dr. M. Roy,	March'2020
their treatment		Dr. U. Sarkar,	(2 pages)
		Dr. M. C. Pakhira,	
		Dr. S. Bera,	
		Dr. G. Patra,	
		Dr. S. Pandit	

IX.1.3. Department of Livestock Farm Complex

Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
Book	Aruna Pal and	Elsevier Publication.1st
	A.K.Chakravarty	Edition.ISBN:
	-	Paperback ISBN:
		9780128164068
		eBook ISBN:
		9780128172674
	of Item published	of Item published Book Aruna Pal and

IX.1.4. Department of Livestock Products Technology

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
Chapter 6-Hazards and Safety	Book	AK Das, PK Nanda, A Das,	Page- 145-168 published
Issues of Meat and Meat		S Biswas	in 2019
Products			
Book- Food safety and human health			

IX.1.5. Department of Veterinary Anatomy & Histology

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
Mastitis in dairy animals - an update	Book	Prof. Partha Das (Co-Author)	Satish serial publishing house
Question Bank on Veterinary Anatomy	Book (Reprint)	Dr. Arun Kumar Mandal	ISBN:978-93-86110- 33-6, Jaya Publishing House, Delhi
Recent Biotechnological Advances for Precision Feeding of Livestock and Poultry	Manual/Compilation on Winter School (Chapter 31)	Dr. Arun Kumar Mandal	2019, Page No.269-281, WBUAFS
Recent Biotechnological Advances for Precision Feeding of Livestock and Poultry	Manual/Compilation on Winter School (Chapter 13)	Prof. Partha Das	2019, Page No.120- 127,WBUAFS
Advanced Diagnostic imaging in Veterinary Practice	Manual on Refresher and Hands on training Course	Prof. Partha Das	2019 Page No. 1-7 Dept. of Surgery and Radiology

IX.1.6. Department of Veterinary Bio-Chemistry

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
Practical Manual	Veterinary Biochemistry Paper I & II	Prof. S Batabyal Dr. A Maity	01.09.2019
Practical Manual	Veterinary Biochemistry of Veterinary Laboratory Diagnosis	Prof. S Batabyal Dr. A Maity	01.09.2019

IX.1.7. Department of Veterinary Clinical Complex

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
Clinical Application of	Book Chapter	Lalzawmliana, V.,	07/2019
Biomimetic Marine-Derived		Mukherjee, P, Kundu, B.	Vol. 14
Materials for Tissue		and Nandi, S.K.	pp. 329-356
Engineering. In: Clinical			Springer
Application of Biomimetic			
Marine-Derived Materials for			
Tissue Engineering			
Veterinary laboratory diagnosis	Book	M. Mondal	2019
			First Edition
			Narendra Publishing
			House, New Delhi

IX.1.8. Department of Veterinary Microbiology

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
Antimicrobial Resistance in agriculture: Perspective, policy and mitigation	Book	Indranil Samanta and Samiran Bandyopadhyay	Academic Press (Elsevier); 2019; ISBN: 9780128157701; Pages: 500
Annual Report of DBT (Biofilm) scheme	Annual Report	Dr. S. N.Joardar	2019
Chapter name- 'Food chain vis-a-vis antimicrobial resistance' published in the compendium of the Winter school- "Recent Biotechnological Advances for Precision Feeding of Livestock and Poultry, Org by Animal Nutrition Department, WBUAFS (Sept. 04-24, 2019)	Chapter contribution in Winter school Compendium	Dr. S. N. Joardar	September, 2019

IX.1.9. Department of Veterinary Parasitology

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
Topic "Advances in vaccine development against ticks for resistance management" In the manual for ICAR funded ten days Short Course entitled "Advances in the management of drug resistance in economically important parasites"	Training Manual	Srikanta Ghosh, Abhijit Nandi and Partha Sarthi B.C	November, 2019 Page 38
Topic "Use of acaricide resistance monitoring tools" In the manual for ICAR funded ten days Short	Training Manual	Anil Kumar Sharma, Abhijit Nandi, Sachin Kumar, Ashutosh Fular, S. Ghosh	November, 2019 Practical 4 Page-1-6
Course entitled "Advances in the management of drug resistance in economically important parasites"			

IX.1.10. Department of Veterinary Pathology

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
Paper – I Unit 1 - General Veterinary Pathology Unit 2 - Systemic Veterinary Pathology Unit 3 - Animal Oncology, Veterinary Clinical Pathology And Necropsy	Practical Manual	Dr. S. Pradhan Dr. S. Mondal Dr. N.C. Patra Dr. R. N. Hansda Prof. S.K.Mukhopadhayay	2019
Paper – II Unit-4 Pathology of Infectious and Non-Infectious Diseases of Domestic Animals Unit-5 Avian Pathology Unit-6 Pathology of Diseases of Laboratory and Wild Animals	Practical Manual	Dr. N.C. Patra Dr. S. Pradhan Dr. S. Mondal Dr. R. N. Hansda Prof. S. K. Mukhopadhayay	2019

IX.1.11. Department of Veterinary Physiology

Name of book healther	Catagomicos	Author/Co Author(s)	Date/Year of
Name of book, booklets, Handout, report, manuals etc.	Category of Item	Author / Co-Author (s)	publication with details
Trandout, report, mandais etc.	published		publication with details
Biosecurity Strategies for Backyard Poultry: A Controlled Way for Safe Food Production. In: Food Control and Biosecurity, Academic Press, Elsevier, The Netherlands	Book chapter	Samanta I., Joardar S.N. and Das P.K.	2018. (pp. 481-517)
Physiology of milk secretion and its alteration during mastitis with related biomarkers. In Mastitis symptoms, triggers and treatment. (Ed. Sar T K). Nova Science publishers, Inc. New York. ISBN: 978-1-53616-124-3.	Book chapter	Das P K and Mukherjee J	2019. Pp 17-86
Immune responses of the mammary gland. In Mastitis symptoms, triggers and treatment. (Ed. Sar T K). Nova Science publishers, Inc. New York. ISBN: 978-1-53616-124-3	Book chapter	Mukherjee J and Das P K	2019. Pp 87-118
Physiological basis of precise nutrition for improving reproductive health of bovine. In: Biotechnological advances for precision feeding, Patra AK, Chatterjee PN and Roy B (eds.), Published by West Bengal University of Animal & Fishery Sciences, Kolkata.	Chapter in the training compendium	Das P K and Roy B	2019. pp: 138 – 149
Mukherjee J and Banerjee D (2019): In vitro assessment of functional capabilities of immune effector cells. In training compendium of ICAR Sponsored Winter School on "Recent Biotechnological Advances for Precision Feeding of Livestock and Poultry	compendium	Mukherjee J and Banerjee D	2019
Mukherjee J (2019): Diagnosis of cardiovascular diseases in dogs. In training compendium of Advanced Diagnostics Imaging in Veterinary Practices	Chapter in the training compendium	Mukherjee J	2019
Banerjee D and Mukherjee J (2019): 'Circadian rhythm and its significance on feeding pattern of animals' In training compendium of ICAR Sponsored Winter School on "Recent Biotechnological Advances for Precision Feeding of Livestock and Poultry"	Chapter in the training compendium	Banerjee D and Mukherjee J	2019

IX.1.12. Department of Veterinary Surgery & Radiology

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Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
Organic-inorganic micro/nano fibre composites for biomedical applications. 2019. In Book "Materials for Biomedical Engineering: Biopolymer Fibers".	Book chapter	Samit Kumar Nandi, Arnab Mahato, Biswanath Kundu and Preasenjit Mukherjee	Elsevier 4: 21-44. Editor: Dr. Valentina Grumezescu and Dr. Alexandru Mihai Grumezescu, Romania
2020. Fibre-nano bio- composites for cranioplasty and other orthopaedic applications" in Book "Fiber- Reinforced Nanocomposites: Fundamentals and Applications"	Book chapter	Pulak Barua, Arnab Mahato, Pradyot Datta, Samit Kumar Nandi and Biswanath Kundu	2020 Elsevier Pp: 525- 558 Edited by Baoguo Han, Sumit Sharma,Tuan Anh Nguyen, Li Longbiao and K. Subrahmanya Bhat ISBN: 978-0-12- 819904-6
Tissue-derived decellularized extracellular matrices towards cartilage repair and regeneration	Book chapter	Piyali Das, Yogendra Pratap Singh, Biman B. Mandal and Samit Kumar Nandi	2019 in book MCB: Cell-derived Matrices part B Volume 157 Chapter 10, Elsevier. Pp: 185-221
Clinical application of biomimetic marine-derived materials for tissue engineering.	Book Chapter	Lalzawmliana V, Prasenjit Mukherjee, Biswanath Kundu and Samit Kumar Nandi	2019. Book on "Marine-Derived Biomaterials for Tissue Engineering Applications" by Springer Nature Publishing under the "Springer Series in Biomaterials Science and Engineering" Pages 329-356. Editors: Choi, Andy, Ben-Nissan, Besim

IX.1.13. Department of Veterinary & Animal Husbandry Extension Education

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
Laboratory Manual on Vety. &	Manuals on	Prof. A. Goswami; Dr. S.	December, 2019
A.H. Extension Education	Practical Exercise	Biswas, Dr. D. Ganguly &	Vol.I & II;
(Volume-I & II)	for UG-BVSc &	Dr. D. Saha	Page No.57 & 72
	AH 3 rd Year		
Role of Animal Husbandry in	Technical article	Prof. A. Goswami & Dr.	December, 2019;
self employment of Rural	in Feere Asuk	S. Biswas	Vol-I; Page No;20
women	Sabuj Patrika		_
Role of Animal Husbandry in	Scientific article	Prof. A. Goswami & Dr.	November, 13, 2019
Rural development	in State ARD	S. Biswas	Vol01;
	Week:2019		

IX.2. FACULTY OF FISHERY SCIENCES

IX.2.1. Department of Aquatic Animal Health

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of
Trandout, report, manuals etc.	nem published	(3)	publication with details
Chapter: Application of	Training manual on	Prof. T.J. Abraham	ICAR-CIFA, Training
antagonistic bacteria in aquatic	Advanced Molecular		Manual No. 101 2019;
animal health management.	Techniques in Fish		pp. 127-130
	Disease Diagnosis and		
	Management in		
	Freshwater Aquaculture		
Bacterial and fungal diseases of	Training Manual on	Prof. T.J. Abraham	ICAR-CIFRI, pp. 59-62
freshwater fish and their	Fish Health		
management	Management		
Training manual on Finfish and	Training manual	Prof. G.D.Dash	Training Manual
Shell Fish Sample Collection,			Nov.2019
Preservation and transport for			Pages:1-26
disease Surveillance			

IX.2.2. Department of Fish Processing Technology

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
Chapter in a book: Fish Preservation by eco- friendly solar drier	Book	Shiv Mohan Singh, S. Nath, S. Chowdhury and K.C. Dora	Organic Farming for Sustainable Agriculture and Horticulture. Ed. P.K. Ojha, A. Kumar, Arun Kumar Singh and P. Mishra. Biotech Books, New Delhi, pp. 197-208.2019
Recent advances in fish processing technology	Training manual	Supratim Chowdhury	Aquaclinics and Aquapreneurship Development. ICAR- CIFE training manual. 26 th February to 25 th March 2019. pp. 176- 180. 2019

IX.3. FACULTY OF DAIRY TECHNOLOGY

IX.3.1. Department of Dairy Engineering

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
Chapter in Book "Recent Technological Advances in Dairy Science" Today & Tomorrow's Printers and Publishers, New Delhi - 110 002, India	Book Chapter Chapter No.3. Thermal Processing of Milk	Ronit Mandal, Subrata Kumar Bag and Anubhav Pratap Singh	(2019): 39-66

IX.3.2. Department of Dairy Microbiology

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
Genetic Improvement of	Book Chapter	Lopamudra Haldar &	October, 2019
Dairy Starter Cultures and		Soumyashree Saha	
Lactic Acid Bacteria In:			
Engineering Practices for			
Milk Products-			
Dairyceuticals, Novel			
Technologies, and Quality,			
Edited by: Megh R. Goyal			
and SubrotaHati, Apple Academic Press			
Encapsulation Of Probiotics	Book Chapter	Subrota Hati, Mitali R	June 2019
For Enhancing The Survival	Book Chapter	Makwana, Surajit	pp. 225-244.
In Gastrointestinal Tract.		Mandal	pp. 223-244.
In: Nanotechnology		Wandar	
Applications in Dairy			
Science: Packaging,			
Processing, and			
Preservation, Innovations in			
Agricultural and Biological			
Engineering, Edts. Lohit			
Kumar Dasarahally-			
Huligoda, Megh R. Goyal,			
Hafiz Ansar Rasul Suleria,			
Apple Academic Press.			

IX.3.3. Department of Dairy Technology

Name of book, booklets,	Category of	Author / Co-Author (s)	Date/Year of
Handout, report, manuals	Item		publication with
etc.	published		details
Objective Question Bank In	Book	Authors:	Jaya Publishing House,
Food Chemistry, Dairy			May' 2020
Technology, Dairy		Anamika Das, Anindita	
Engineering, Dairy Chemistry		Debnath, Anu Kumari,	
And Dairy Microbiology		Tanmay Hazra, Falguni	
		Patra	

IX.4. DIRECTORATE OF RESEARCH, EXTENSION & FARMS

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
Annual Report	Annual Report	Directorate of Research, Extension & Farms	March, 2020
Framework for Rapid Evaluation of a Mangrove Restoration Site: A Case Study from Indian Sundarban	Book Chapter	Sourabh Kumar Dubey, Udo Censkowsky, Malancha Roy, Bimal Kinkar Chand, and Ajanta Dey	Sabkha Ecosystem Volume VI: Asia/Pacific, Gul et al. (eds.), Springer Publication https://doi.org/10.1007/978- 3-030-04417-6 22 2019
National Freshwater Fish Brood bank, Kausalyagang, Bhubaneswar	Book Chapter	Bimal Kinkar Chand	Indian Aquaculture 2020, Sugunan et al. (eds.), Society for Indian Fisheries and Aquaculture (SIFA) Publication 2020

X. CENTRAL INSTRUMENTATION FACILITIES & CLINICS

West Bengal University of Animal & Fishery Sciences had received a fund from the Indian Council of Agricultural Research (ICAR), New Delhi under 'Establishment of Central Instrumentation Facility' during 11th five year plan. Utilizing that fund the Universityhas strengthened its Central Instrumentation facilities in its' faculties. Several valuable scientific equipments have been procured out of the fund received from several funding agencies such as, Government of India, ICAR, State Government etc. The present status of such equipments / instruments are furnished below -

List of Valuable Equipments under the Central Instrumentation Facility:

A. Faculty of Veterinary & Animal Sciences

Sl. No.	Equipments
1	8 TPL Lab Model Torque Twin
	Screw Centrifuge
2	Electron capture detector
3	Inverted Tissue Culture (Sigma)
4	Inverted Trinocular
5	ECD with Electrometer
6	Low Pressure Chromatography
	System
7	HP Proliant Server : Web &
	Mail Server
8	UV – VIS Spectrophotometer
9	Ultra Pure Water Purification
	System
	(Animal Nutrition Dept.)
10	ELISA Reader
	(Vet. Physiology & VEPM)
11	PCR Thermocycler
12	Gel Doc System
13	Electrophoresis System
14	Inverted Microscope,
	Steriozoom Microscope and
	Fluorescence Microscope with
	Photographic attachment
1.5	
15	Fluorescence Spectrophotometer
16	HPLC Unit
	(Vety. Biochemistry)

GL N		
Sl. No.	Equipments	
17	Rotary Microtome	
	(Vety. Pathology)	
18	Trinocular Research Microscope	
	(Vety. Anatomy)	
19	Gradient Microplate	
	Spectrophotometer (VEPM)	
20	BOD incubator with	
	Shaker(VEPM)	
21	Refrigerator, 2 nos. (VEPM)	
22	ESCO Microprocessor	
	Controlled Class Il Total	
	Exhaust Biological Safety	
	Cabinet with Exhaust Facility	
	(VEPM)	
23	ESCO Ultra Low Temperature,	
	Vertical Laboratory Freezer (-	
	86° C)	
24	Real-time PCR	
25	Gel doc system	
26	Cooling centrifuge	
27	Deepfreeze -20C	
28	Vortexer	

B. Faculty of Fishery Sciences

Sl. No.	Equipments	
1	High Performance Liquid	
	Chromatography	
2	Analytical Balance	
3	Modular Laboratory	
4	Atomic Absorption	
	Spectrophotometer	
5	Water purification system	
6	Carbon di-oxide Incubator	
7	Microfuge	
8	Thermal cycler	
9	Microblock Digestion system	
10	U-V Trans-illuminator	
11	Air purifier/curtain	
12	Gas chromatograph	
13	Inverted Microscope	
14	Deep freeze	
15	Generator	
16	Canning Machine	
17	Applied Biosystems 7500	
	Real-time PCR system	
18	Refrigerated centrifuge	

C. Faculty of Dairy Technology

Sl. No.	Equipments
1	Protein Analyzer
2	Infra red Analyzer
3	Ice Cream Plant
4	Condensing Unit
5	Drying Unit
6	Moisture Analyzer
7	Gel Filtration
8	Rheometer
9	BOD Analyzer
10	PCR
11	Vacuum Milk Concentrator

VETERINARY CLINICS

Veterinary Clinics under WBUAFS deals with the diagnosis and treatment of sick animals in and around Kolkata as well as the Mohanpur Campus.

Working hour of the Units:

Belgachia Unit:

OPD : Monday to Friday – 8:00 AM to 2:00 PM Extended OPD : Monday to Friday – 2:00 PM to 8:00 PM

Emergency service : Monday to Friday

8:00 PM to 8:00 AM (Next day) Saturday, Sunday & Govt. Holidays

24 Hours

Mohanpur Unit:

Out patient treatment: Monday to Friday: 10am to 2.30 pm and Emergency patient treatment 10 am to 5.30pm

Saturday: OPD Hours



Fig 10.1: Outdoor of Veterinary Clinics at Belgachia

Services provided by the Units:

BelgachiaUnit:

- 1. Specialized treatment for Medicine, Surgery and Gynaecological cases
- 2. Major and Minor Surgery
- 3. Digital X-Ray, ECG and USG, Physiotherapy etc.
- 4. All types of diagnostic
- 5. Burial of carcasses
- 6. CCU
- 7. Blood transmission and Dialysis

MohanpurUnit:

- 1. Routine medical treatment and immunization for pet animals and farm animals.
- 2. Routine surgeries for animals.
- 3. Routine gynecological treatment for animals.
- 4. Various obstetrical surgeries for animals.
- 5. Artificial Insemination for cattle.
- 6. Diagnostic facilities such as X-Ray, USG, Endoscopy, ECG for animals.
- 7. ABC programme for different scientific institutes and NGO.
- **8.** Stem cell transplantation facility to the pet animals both at Belgachia and Mohanpur Clinics. It is done for the first time in India.
- **9.** Routine hematological, biochemical, pathological and microscopical exam facility for animals.
- 10. Routine blood transfusion facility for canines.

Examinations undertaken at both the Units:

Sl. No.	Name of Examination / Activity
1	X-Ray
2	ECG
3	Antibiotic Sensitivity Teat
4	ARV
5	USG (Whole Abdomen / Cranial Abdomen / Caudal Abdomen)
6	Ultra Sound Therapy
7	Blood, Urine and Stool Examination
8	Skin Test
9	Oxygen
10	Canine Distemper
11	Castration by close method
12	Major/Minor Operation (Dog)
13	Major/Minor Operation (Cat)
14	Major/Minor Operation(Sheep)
15	Major/Minor Operation (Bird)
16	Major/Minor Operation (Cow)
17	Major/Minor Operation (Buffalo)
18	Major/Minor Operation (Monkey)
19	Dressing Major & Minor
20	Physiotherapy
21	All Health Certificate

RATE CHART (Diagonostic):

SL	SL HAEMATOBIOCHEMICAL		MOHANI	PUR
NO.	TEST	BELGACHIA	Exotic / non	Other
			Mongrel Dog	
1.	CBC (Hb, TLC, DLC, TPC, PCV)	500.00	500.00	250.00
2.	Complete Haemogogram	600.00	600.00	300.00
	(Hb,TEC, TLC, DLC, PCV, ESR,			
	TPC, MCV, MC,HC))			
3.	Hb, TLC, DLC	250.00	250.00	125.00
4.	Hb, TLC, DLC, ESR	300.00	300.00	150.00
5.	Hemoglobin	100.00	100.00	50.00
6.	TLC	100.00	100.00	50.00
7.	TEC	100.00	100.00	50.00
8.	DLC	100.00	100.00	50.00
9.	PCV	100.00	100.00	50.00
10.	ESR	100.00	100.00	50.00
11.	Platelet Count	100.00	100.00	50.00
12.	MCV	100.00	100.00	50.00
13.	MCH	100.00	100.00	50.00
14.	MCHC	100.00	100.00	50.00
15.	LFT (Total Bill, Direct Bill, TP, ALB, AST, ALT, ALP)	700.00	700.00	350.00
16.	TP	100.00	100.00	50.00
17.	ALB	100.00	100.00	50.00
18.	Bill (T+D)	200.00	200.00	100.00
19.	AST	150.00	150.00	75.00
20.	ALT	150.00	150.00	75.00
21.	ALP	150.00	150.00	75.00
22.	KFT	400.00	400.00	200.00
23.	URIC ACID	100.00	100.00	50.00
24.	PLASMA GLUCOSE	100.00	100.00	50.00
25.	CREATININE	100.00	100.00	50.00
26.	BUN	100.00	100.00	50.00
27.	LIPID PROFILE	700.00	700.00	350.00
28.	TOTAL CHOLESTEROL	200.00	200.00	100.00
29.	TRIGLYCERIDE	300.00	300.00	150.00
30.	HDL CHOL.	200.00	200.00	100.00
31.	LDL CHOL.	400.00	400.00	200.00
32.	VLDL CHOL	200.00	200.00	100.00
33.	CHOL HDL	400.00	400.00	200.00
34.	TOTAL ELECTRO (Na+, K+, Cl-)	400.00	400.00	200.00
35.	Na	150.00	150.00	75.00
36.	K	150.00	150.00	75.00
37.	Cl	150.00	150.00	75.00
38.	Ca	200.00	200.00	75.00
39.	Mg	300.00	300.00	150.00
40.	PO4	200.00	200.00	100.00
41.	LDH	300.00	300.00	150.00
42.	Haemo Protozoa	100.00 /50.00	100.00 / 50.00	30.00
43.	Faecal	50.00 / 25.00	50.00 / 25.00	15.00

Belgachia unit:

A) OPD REGISTRATION CHARGES:

Sl.No	<u>Animals</u>	Existing charges
1.	Dog	50.00
2.	Cat	50.00
3.	Cattle/Buffalo/Monkey	50.00
4.	Exotic / Game bird	50.00
5.	Horse, Donkey, Mule	50.00
6.	Bird(Poultry/Duck/Turkey/Quail/ Non Pet Bird)	10.00
7.	Goat/ Sheep/Pig	10.00
8.	Rabbit/ Guinea pig/ Squirrel/ Rat/ Mongoose	10.00

B) OT CHARGES:

Sl No.	Animals	Category	Exisiting charges
1.	Dog	Major	1500.00
		Minor	750.00
2.	Cat	Major	600.00
		Minor	300.00
3.	Goat/ Sheep	Major	200.00
		Minor	200.00
4.	Cow/Buffalo/Monkey	Major	1,000.00
		Minor	500.00
5.	Rabbit	Major	100.00
		Minor	50.00
6.	Equine	Major	2000.00
		Minor	1000.00

C) DRESSING CHARGES:

Animals	Types	Existing Charges
Any Species	Major	100.00
	Minor	50.00

CASTRATION CHARGES BY CLOSED METHOD: Rs. 20.00

HEALTH CERTIFICATE CHARGES : Rs. 100.00

Mohanpur unit:

A) OPD REGISTRATION CHARGES:

Sl.No	<u>Animals</u>	Existing charges
1.	Dog (Mongrel)	15.00
2.	Dog (Non Mongrel)	30.00
3.	Cattle	10.00
4.	Goat & Sheep	5.00
5.	Pig	5.00
6.	Bird	5.00
7.	Cat	10.00
8.	Monkey	15.00
9.	Rabbit, Guinea pig, Mongoose, Squirrel, Rat	5.00
10.	Horse, Donkey, Mule	25.00
11.	Exotic / game bird	50.00

B) OPERATION CHARGES:

Sl No.	Animals	Category	Exisiting charges
1.	Cat	Major	250.00
30000		Minor	100.00
2.	Cow/ buffalo	Major	300.00
		Minor	150.00
3.	Goat/ Sheep	Major	50.00
	_	Minor	25.00
4.	Equine	Major	1,000.00
		Minor	500.00
5.	Rabbit	Major	50.00
		Minor	25.00
6.	Dog (Mongrel)	Major	625.00
TO SOCIAL STATE OF THE STATE OF		Minor	325.00
7.	Dog(Non Mongrel)	Major	1,000.00
		Minor	500.00

C) DRESSING CHARGES:

Animals	Types	Existing Charges
Exotic /Non mongrel Dog	Major	100.00
	Minor	50.00
Any Species	Major	50.00
-	Minor	25.00

D) SOUNDNESS & HEALTH CERTIFICATE:

Animals	Existing Charges (Rs.)
Exotic /Non mongrel Dog	100.00
Any Species	50.00

E) A .I. IN COW:

EXISTING CHARGES (Rs.)
35.00

F) HAEMOPROTOZOAN SCREENING:

Species	Rate(in Rs.)		
Dog	Exotic / non-mongrel dog	Other	
	100.00	50.00	
Other		30.00	

G) FAECAL SAMPLE EXAMINATION:

Species	Rate(in Rs.)		
Dog	Exotic / non-mongrel dog Other		
	50.00	25.00	
Other		15.00	

H) CASTRATION BY CLOSED METHOD:

CASTRATION BY CLOSED METHOD	Rate(in Rs.)
	10.00

Rate chart of ECG for PET Animals:

SL NO.	Service	Rate(in Rs.)
1.	ECG for pet animals	150.00

Rate of service charges for the dept. VCC:

SL NO.	Name of the Test	Rate
1.	Antibiotic Senstivity Test	Rs. 200.00 clinical sample
2.	Indentification of Bacteria (Bio-chemical	Rs. 1,000.00 per sampe
	test)	V000 NTO TO
3.	Serological Test for diagonosis of Brucella	Rs. 50.00 per sample
4.	Serolical Test for diagonosis of	Rs. 50.00 per sample
	Salmonella	

Rate chart for X-ray and USG under the dept VCC:

A	USG	Mohanpur		
		Exotic / Non-mongrel dog	Others	
		(Rs.)	(Rs.)	
1.	Whole abdomen	700.00	350.00	
2.	Cranial	400.00	200.00	
	Abdomen			
3.	Caudal abdomen	400	200.00	
В	X-Ray	Manual X ray	Manual X ray	
		Belgachia TVCC	Mohanpur TVCC	
		(only report will be given,	(only report will be given,	
		Processed film will be	Processed film will be	
		retained by the dept.)	retained by the dept.)	
		(in Rs.)	(in Rs.)	
1	Dog (mongrel)	120.00	60.00	
2	Dog(non mongrel)	120.00	120.00	
3	Cattle	120.00	60.00	
4	Goat & sheep	120.00	60.00	
5	Pig	120.00	60.00	
6	Bird	120.00	60.00	
7	Cat	120.00	60.00	
8	Monkey	120.00	60.00	
9	Rabbit,guinea pig,	120.00	60.00	
	Mongoose, squirrel, rat			
10	Horse, donkey, mule	120.00	60.00	
11	Exotic /game	120.00	120.00	
	Bird			

XI. CENTRAL LIBRARY AND INFORMATION NETWORK SERVICES (CLINS)



University library is an integral part of an institution of higher education. The prime necessity for a university library is a good library with a balanced and adequate collection which can satisfy the needs of the university faculties, research scholars & students and help to promote advanced study and research programme. A well stocked university library serves as an invaluable aid in the conservation of knowledge & ideas and also performs as an active force in the teaching, research and extension programmes of the university through direct assistance to the faculty members, research scholars and students at the right time, pin-pointedly, exhaustively and expeditiously. It is characterized by the abundance of both print & digital information sources and it ensures potential learning environment that functions at the university.







XI.1. Location:

Central Library, Kolkata:

At present, the library is functioning in a total floor space of about 15,000 sq. ft. in two storied building at University Headquarters, Belgachia.

Ground Floor: The lending section, book stack room, separate stack room for PhD Theses and Printed Journals, reading room for students and

Faculties & Research Scholars

First Floor: Internet Server room, Information hub for library users, Meeting Room and Deputy Librarian's Chamber

The Central Library is also maintaining three setups in the other campuses for the faculties :

- 1. Central Library Unit at Mohanpur, Faculty of Veterinary and Animal Sciences.
- 2. Central Library Unit at Mohanpur, Faculty of Dairy Technology.
- 3. Central Library Unit at Chakgaria, Faculty of Fishery Sciences.

XI.2. Library timings and usages

Library Hours:

On working days the services of the following sections of the Libraries at the different campuses remains open, as follows:

	Central Library, Belgachia	Library, F/VAS, Mohanpur	Library, F/DT, Mohanpur	Library, F/FSc, Chakgaria
Working hours	10.30 am- 5.30 pm	10.30 am - 5.30 pm	10.30 am - 5.30 pm	10.30 am - 5.30 pm
	(Server room 24X7)	3.30 x 20 x 20 x 3 x 4 x 4 x 10 x 20	(1) 2000 (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	

XI.3. Information on Books/Periodicals/ Serials/Journals:

Printed Books : Upto 2019 - 25860 nos.

2019-20 - 854 nos.

e-books : Upto 2019 - 176 nos.

2019-20 - 59 nos.

e-Journals (foreign):

Upto 2019 - 10 nos.

2019-20 - NIL

e-Journals (Indian) :

Upto 2019 - 05 nos. 2019-20 - NIL

XI.4. Summary of Facilities Available in the Libraries in the different campuses of WBUAFS:

Facilities	Central Library, Belgachia	Library, F/VAS, Mohanpur	Library, F/DT, Mohanpur	Library, F/FSc, Chakgaria
Reference Service	Yes	Yes	Yes	Yes
Online Public Access Cataloguing (OPAC)	Yes (Through KOHA)	Yes (Through KOHA)	Yes (Through KOHA)	Yes (Through KOHA)
Printing Facilities to the library users	Yes	Yes	Yes	- KOIIA)
Resource sharing through Document Delivery Service (DDR)	Yes	Yes	Yes	Yes
e-books (EBSCO) and e-journals access	Yes	Yes (Through RemoteXS)	Yes (Through RemoteXS)	Yes (Through RemoteXS)
Access to Consortium for e-Resources in Agriculture(CeRA) by ICAR.	Yes	Yes (Through RemoteXS)	Yes (Through RemoteXS)	Yes (Through RemoteXS)
Book Bank	-	Yes	-	-
The Internet facility	Yes (1 Gbps bandwidth, from NKN)	Yes (Alliance Broadband)	Yes (Alliance Broadband)	Yes (Alliance Broadband)
The Wi-Fi facility	Yes	Yes	Yes	Yes
Photocopy facility	-	Yes	Yes	Yes
Electronic ID card for Library users and University staff also.	Yes	Yes	Yes	Yes

XI.5. Service offered by CLINS:

Facilities	Central Library, Belgachia	Library, F/VAS, Mohanpur	Library, F/DT, Mohanpur	Library, F/FSc, Chakgaria
Reference Service	Yes	Yes	Yes	Yes
Online Public Access Cataloguing (OPAC)	Yes (Through KOHA)	Yes (Through KOHA)	Yes (Through KOHA)	Yes (Through KOHA)
Printing Facilities to the library users	Yes	Yes	Yes	-
Resource sharing through Document Delivery Service (DDR)	Yes	Yes	Yes	Yes
e-books (EBSCO) and e-journals access	Yes	Yes (Through RemoteXS)	Yes (Through RemoteXS)	Yes (Through RemoteXS)
Access to Consortium for e-Resources in Agriculture(CeRA) by ICAR.	Yes	Yes (Through RemoteXS)	Yes (Through RemoteXS)	Yes (Through RemoteXS)
Book Bank	-	Yes	-	-
The Internet facility	Yes 1 Gbps bandwidth from NKN)	Yes (Alliance Broadband)	Yes (Alliance Broadband)	Yes (Alliance Broadband)
The Wi-Fi facility	Yes	Yes	Yes	Yes
Photocopy facility	-	Yes	Yes	Yes
Electronic ID card for Library users and University staff also.	Yes	Yes	Yes	Yes

XI.6. Information on Library Automation:

- The resources of the Library in terms of printed accessioned books have been entered, catalogued and classified into the Library Management Software.
- Digitization of all PG and Ph.D Theses, these are accessible through KrishiKosh.
- Information hub has been introduced in four libraries.
- Wi-fi Facilities given in four libraries.
- Electronic circulation control system.
- Bar coding of all library document
- Electronic ID cards for library users and University's staff.
- University library has subscribed several e-books and e-journal -.
 - EBSCO- e-books database
 - o CeRA Journals
 - o E-Journals (Foreign)
 - o J-Gate Online Portal
 - o Willey Online Journals
 - Krishi kosh: Full text access to Theses, and other documents of all SAUs.
 - o Remote XS for accessing the University e-resources from anywhere.

XII. IMPORTANT PROGRAMS/VISITS OF THE HONOURABLE VICE-CHANCELLOR OF THE UNIVERSITY DURING THE YEAR

SI.	Hon'ble VC's Programs	Venue	Duration (Dates)
No.			(Dates)
1.	Workshop of the Vice-Chancellors organized by	GBPUAT,	07.05.2019 –
	IAUA	Pantnagar	11.05.2019
2.	Zonal Workshop of KVKs organized by ATARI and	UBKV &	07.06.2019 -
	UBKV	Ramsai KVK	15.06.2019
3.	10 th Brain Storming Session organized by IAUA	CSKHPKV,	27.06.2019 -
		Palampur	30.06.2019
4.	Annual Review Meeting of NAHEP organized by	NASC, New	04.08.2019 -
	ICAR	Delhi	06.08.2019
5.	Meeting with the ICAR Officials and the Director	Krishi	
	General, NTA	Anusandhan	
		Bhavan, ICAR,	
		New Delhi	
		&	
		National Testing	04.11.2019 -
		Agency, IITK	05.11.2019
		Outreach Centre,	
		C-20, 1A/8, C	
		Block, Phase 2,	
		Industrial Area,	
		Sector 62, Noida	
6.	Meeting with the ADG (EP&HS), ICAR and DDG	Krishi	
	(Animal Science), ICAR	Anusandhan	26.12.2019 -
		Bhavan, ICAR,	27.12.2019
		New Delhi	

XIII. IMPORTANT EVENTS, EMINENT VISITORS, ACTIVITES & ACHIEVEMENTS

Like every year, West Bengal University of Animal & Fishery Sciences passed through series of events during 2019-20. Some of the important activities that took place in the University are as follows:

XIII.1. IMPORTANT EVENTS / ACHIEVEMENTS

XIII.1.1. International Internship Training Programmes For Students Of Hajee Mohammad Danesh Science And Technology University, Dinajpur, Bangladesh

The University is imparting international internship training programmes to the DVM students of the Faculty of Veterinary & Animal Science, Hajee Mohammad Danesh Science and Technology University (HSTU), Dinajpur, Bangladesh. For the year 2019-20, total 95 students are undergoing twenty-day of internship training in 5 batches at the Veterinary Clinical Complex, Belgachia campus of WBUAFS. First batch of internship training was conducted from 11.11.2019 to 30.11.2019. During the internship, the students worked extensive clinical hours and performed basic hospital work under direct supervision of teachers and senior staff. The clinical hours were divided among medicine, surgery and gynaecology including a final elective period in which each student chose an area for further experience. On successful completion of the internship, the students were awarded with the certificate of participation.



Fig. 13.1Glimpses from International Internship Training Program

XIII.1.2. The Aqua Show 2019

The Aqua Show 2019 was held during 19th-21st September, 2019 at the Community Hall of the University. The event was organized by Aquafarm India and Aqua Vet Consulting in collaboration with the University. The purpose was to bridge the gap amongst the farmers, buyers, suppliers, academia and industry professionals. The showcased the technological advances, innovations event development achieved in the Fisheries and Aquaculture Sector for the benefit of fishers, fish farmers and general public through exhibition Knowledge Conclave. The Fisheries Department, Academic Institutions, manufacturers of Pharmaceuticals and Nutriceuticals, Seed Producers, Input Dealers, Processors, Exporters & Importers across the country put up the stalls to exhibit their technologies and products. There was parallel Knowledge Conclave where the experts, scientists and entrepreneurs delivered presentations on the topics of current interest related to aquaculture development in the county for the benefit of the participants. The event was inaugurated by Hon'ble Minister In-Charge, Sri Chandra Nath Sinha, Department of Fisheries, Government of West Bengal in the presence of Hon'ble Vice Chancellor, Prof. Purnendu Biswas, Former Union Secretary of Animal Husbandry & Dairy, Shri Tarun Sridhar and other Stalwarts of Aqua industry. The event received overwhelming response from all quarters.





Fig. 13.2 Aqua Show event organized by WBUAFS in the Community Hall and an exhibition stall outside

XIII.1.3. UGC EXPERT COMMITTEE VISITED THE UNIVERSITY

West Bengal University of Animal & Fishery Sciences (WBUAFS) is a state-aided University which is accredited by Indian Council of Agricultural Research (ICAR) and recognized by University Grants Commission (UGC). WBUAFS has sought for sanction of 12(b) status under UGC Act 1956. In this connection, an Expert Committee constituted by UGC visited Belgachia, Chakgaria and Mohanpur campuses of the University on 26th & 27th August, 2019. The Committee was headed by Prof. K M L Pathak, former DDG (Animal Science, ICAR & Former Vice Chancellor of Deen Dayal Upadhyaya Pashuchikitsa Vigyan Viswavidyalaya. Other members of the committee were Dr. V V Singh, Prof. Suneeta Pinto and Mrs. Paramjeet. The esteemed members expressed their satisfaction on the facilities and functioning of the University.







Fig. 13.3 : UGC Team Visit to WBUAFS

XIII.1.4. QR TEAM VISIT TO WBUAFS



Fig. 13.4 Meeting of QR Team at the Headquarters alongwith KVK Scientists

A high power Quinquennial Review Team (QRT) appointed by ICAR visited the North 24 Parganas Krishi Vigyan Kendra on 20th august, 2019 to evaluate the performance of the KVK for last 8 years (2011-19). The team comprised of Dr. R. K. Samanta (Chairman), former Vice Chancellor, BCKV, Prof. C. Satpathy, former DEE, OUAT, Bhubaneswar (Member); Dr. Y.V. Singh, former Director, ARARI, Jodhpur Member and Dr. F.H. Rahman, Principal Scientist, ICAR-ATARI, Zone-II, Kolkata (Member Secretary).

XIII.1.5. CELEBRATION OF FOUNDATION DAY OF WBUAFS

Like every year 'Foundation Day' of WBUAFS was celebrated on 2nd January, 2020 with great enthusiasm. The event took place in the newly built Community Hall of the University. The function was presided over by the Hon'ble Vice-Chancellor Prof. P. Biswas. Registrar, Deans of faculties, Director of Research, Extension & Farms, Controller of Examinations, Dean of Student Welfare, Faculty members from the three faculties, other officials, Staff members and students from all the faculties were present on the occasion.

Awards were distributed to the teachers, staff, students and farmers for their performance in respective fields. Person who received the awards are as follows:

Faculty Members:

Dr. I. Samanta : Best teacher of the University and

Prof. S. Sahu : Best teacher, Faculty of Fishery Sciences

Prof. G. Dash : Best Parenting Award

Students:

Sri Sayantan Bhattacharjee: Best student of the University and Dr. Abadhut Dey : Best student, Faculty of Veterinary

& Animal Sciences

Miss Sayari Chakrabarti : Best student, Faculty of Fishery Sciences

Sri Subhadip Manik : Best student, Faculty of Dairy Technology

Employee:

Sri Angshuman Gupta : Best employee of the University

Farmers (KVK):

Sri Tapan Adhikari : Best progressive farmer, Jalpaiguri KVK

Mr. Sadrul Ola : Best progressive farmer, Murshidabad KVK and Sri Bivas Pal : Best progressive farmer, North 24 Parganas KVK.

Cultural programmes were presented by the students, faculty and staff members of the University family.

XIII. 2. DISTINGUISHED VISITORS IN THE UNIVERSITY

- Sri Swapan Debnath, Hon'ble Minister of State (Independent Charge), Department of Animal Resource Development, Govt. of West Bengal
- Sri Chandranath Sinha, Hon'ble Minister Incharge, Deptt. of Fisheries, Govt. of West Bengal
- 3. Sri Pradip Majumdar, Chief Advisor of Agriculture to Hon'ble Chief Minister, Govt. Of West Bengal
- 4. Prof. S.K. Ghosh, Hon'ble Vice Chancellor, Kalyani University
- 5. Dr. S.S. Singh, Director, ICAR ATARI, Kolkata
- 6. Dr. Vivek Kapur, Huck Distinguished Chair in Global Health, Professor of Microbiology and Infectious Diseases in the Department of Animal Science and Associate Director for strategic initiatives at the Huck Institutes of the Life Sciences at Penn State, Professor of Infectious Diseases and Global Health at the Nelson Mandela African Institute of Science and Technology in Tanzania.
- 7. Prof. K M L Pathak, former DDG (Animal Science, ICAR & Former Vice Chancellor of Deen Dayal Upadhyaya Pashuchikitsa Vigyan Viswavidyalaya and Chairman of UGC Team to WBUAFS.
- 8. Dr. V V Singh, Member of UGC Team to WBUAFS.
- 9. Prof. Suneeta Pinto Member of UGC Team to WBUAFS.
- 10. Mrs. Paramjeet, Member of UGC Team to WBUAFS.
- Dr. R. K. Samanta (Chairman), Former Vice Chancellor,
 BCKV, Mohonpur, Chairman, QR Team for KVK
- 12. Prof. C. Satpathy, former DEE, OUAT, Bhubaneswar Member, QR Team for KVK
- Dr. Y.V. Singh, Former Director, ARARI, Jodhpur Member, QR Team for KVK
- Dr. F.H. Rahman, Pricipal Scientist, ICAR-ATARI, Zone-II, Kolkata Member Secretary QR Team for KVK

XIV. IMPORTANT CONTACTS

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	Controller of Examinations	(033)25467696 (Fax)	wbuafce@gmail.com
		9330961430 (M)	
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10	Farmers' Advisory Service	(033)25563396 (O)	kajer.jonno@gmail.com dref.wbuafs@gmail.com
11	University website	http://wbuafscl.ac.in	

XV. EDITORIAL BOARD

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(02/03/2020 onwards)

Prof. Purnendu Biswas Hon'ble Vice Chancellor

(upto 12/02/2020)

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Dean, F/O Fishery Sciences

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DREF

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