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West Bengal University of
Animal and Fishery Sciences

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FOREWORD



Prof. Purnendu Biswas

Vice Chancellor

*West Bengal University of
Animal and Fishery Sciences*

*I*t 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, 2015 to March, 2016.

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 the responsibilities of education, 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 process of dissemination of knowledge and techniques has been significantly undertaken by the three Krishi Vigyan Kendras under the aegis of the University. The Directorate of Research, Extension & Farms has conducted various training programmes in livestock, poultry and fishery aspects for the State Govt. officials and also for the farmers.

I took this opportunity to state that as per the sanction received from the Govt. of West Bengal, one new College of Veterinary & Animal Sciences and one new College of Fishery Sciences are going to be established in the Jalpaiguri district and the Foundation Stone laying ceremony has been performed by the Hon'ble Chief Minister of West Bengal.

Quality teaching and research activities have received paramount importance during these years and I am happy to know that the University has achieved academic excellence and made valued contribution to human resource development.

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 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 comments on the information contained in this publication, which would prove to be very much valuable for future activities.

A handwritten signature in blue ink, appearing to be 'P. Biswas', with a stylized flourish at the end.

(Prof. Purnendu Biswas)
Vice Chancellor

PROLOGUE



Prof. Ashis Kr. Samanta
Registrar (Actg.)
West Bengal University of
Animal and Fishery Sciences

*T*his Annual Report is the mirror that reflects the image of the West Bengal University and Fishery Sciences by focusing its overall activities performed and achievements gained in 2015-16. Above and beyond the scheduled academic programmes, this university is accentuated to embarking on research and extension activities on timely issues through various projects financed from different Central, State government as well as non-government agencies.

This venerated institution marched well ahead for fulfillment of its mandates concerned to teaching, research and extension education in Veterinary and Animal Sciences, Fishery Sciences and Dairy technology during the reporting year.

The present compilation and publication of Annual Report is a cooperative endeavour of all the teaching departments, offices and units of the University. I am thankful to all the teachers, officers, employees and students of this university for their generous support in publishing this report.

I put across my unfathomable gratefulness to the Honourable Vice-Chancellor, Prof. Purnendu Biswas for his entire guidance in bringing out this Annual report of this University.

The efforts made by the members of Annual Report Editorial Committee comprising Prof. A. Goswami, Director of Research, Extension and Farms and others in amassing and editing of this report are highly creditable.

I hope that the university would progress further to achieve greater height of distinction in the coming years.

(Ashis Kr. Samanta)
Registrar (Actg.)

EDITOR'S COLUMN



Prof. Subhasish Biswas

*Director of Research
Extension & Farms (Actg.)
West Bengal University of
Animal and Fishery Sciences*

Indian Agriculture- the mainstay of nation's economy and the largest single occupation and enterprise, is taking a paradigm shift from conventional farming to precision agriculture in order to address a wide spectrum of constraints such as burgeoning population, shrinking arable land, restricted water availability, unpredictable climate change and feeling fatigue of green revolution. The question of 2nd green revolution particularly in eastern part of India as the earlier one had a minimum impact over this geographical area has now been crystallised and planned.

One aspect is now very transparent to agricultural scientists that crop husbandry alone can't be sufficient to overcome the challenges that can successfully bring about desirable changes in the arena of agriculture to make sustainable economic growth for the sector as needed. A Synergistic approach and appropriate importance of different facets of Agricultural Science like animal husbandry, horticulture, fisheries, sericulture, agricultural engineering is the need of the hour to achieve the affirmative changes. All these aspects are now experiencing the effect of climate change. The winter season 2015-2016 seems to have played truant in India. The season has passed, but the characteristic chill felt in many part was missed due to persistent 4 to 5 degree centigrade rise in normal temperature. The El-nino in the Pacific Ocean was being held responsible. This effect has shown low wheat production during two consecutive years. Livestock has been the buffer in such adverse situations which always helps the farmers to cope up with droughts.

India today faces an acute green fodder shortage of 63.5% where as for dry fodder it is 23.5%. It is because, fodder, at present is nobody's priority, resulting in a crisis of existence to these huge livestock population of the country. The observation can be substantiated with the fact that there is a sharp decline in the livestock population as recorded in the 19th livestock census in 2012, than that of earlier censuses. A many talked area is the aquaculture. In spite of India stands 2nd in the world fish production and export earnings from the sector is more than 30 thousand crore and it provides employment to about 15 million people, the technological dissemination of lab-to-land ideas are yet to be taken up adequately. Though West Bengal is the highest fish-seed producer in India, but question of

EDITORS' COLUMN Contd...

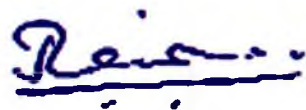
quality seed is an area to include besides many other aspect to concentrate like feed technology role of unauthorised entry of exotic species, studies on wider spectrum of poly culture system, surveillance and monitoring of fish diseases, marketing, cold chain, value addition and so on.

With all these, our University is primarily involved in imparting education, conducting need-based research work in the fields of veterinary, dairy and fishery. It is also working hard through some of its programmes on 'livelihood development' in certain outmost parts of West Midnapur district and coastal areas of West Bengal. Animal husbandry practices have been popularized amongst tribal women through the first programme, which have changed their lifestyle. Another programme on **Mariculture** has been adopted by the University recently. This programme aims to provide endeavor on enhancement of fish production particularly in marine environment. Marine capture fisheries In West Bengal has shown a tendency of wane. To overcome this situation, the project has been taken up which will be definitely focus on enrichment of livelihood of coastal fisher folks and enhance their income and livelihood.

At present there are about thirty one Research projects operating in the University relating to isolation of Blue Tongue viruses, new findings in orthopedic Surgery using bio-materials, Canine Eye Surgery techniques, Conservation of native breeds like Haringhata Black Chicken, Bonpala and Garole Sheep, Ghongroo Pig etc., Disease Surveillance in Fish, Molecular characterisation of native sheep breed of Bengal, Gastro-intestinal Parasitism etc. sponsored by ICAR, DST, DBT and other National and state funding agencies. Regular and specially organized extension programmes are taken up the University, where farmers and other stakeholders like technical personnel are being trained by the Directorate of Research, Extension & Farms wing of the University. The activities of the KVKs under the aegis of the University are in addition to all these Research & Extension jobs. Our mandate is to work for the rural people, livestock raisers, fish farmers, agro-industries etc. with a target to tone down agrarian crisis and farming distress through suitable sustainability. We are very much aware of the challenges in the livestock and fisheries sector and always try to take a lead in solving such challenges. The programs to be taken up by the University in future will definitely reflect such actions to counter the challenges, improve productivity and production in livestock and fisheries. The contribution of livestock sub-sector towards agriculture is always incremental and this trend is likely to be continued where contribution of the GDP from livestock in Agriculture will be enhanced to 6-7%, which is now below 5% (4.6%).

The Annual Report 2015-16, is presenting all these information and achievements of the University in different fields of its operation and action in a concise form as a ready reference. The help received by the concerned Deans and HODs of the departments for publication of the Annual Report is gratefully acknowledged. The suggestions poured in from the different sections, viz. office of the Vice-Chancellor, Registrar, Controller of Examinations, Finance Officer, Deans etc. have inspired the Editorial Board to publish the Annual Report. The guidance, advices and suggestions by Prof. P. Biswas, the Hon'ble Vice Chancellor, for publication of the Annual Report 2015-16 was the most encouraging force to make this publication somewhat different in its presentation and content and the Editorial Board expresses its sincere gratitude for the same.

I convey my heartiest gratitude to all the others who were involved in the process to make this endeavor a success.



(Prof. Subhasis Biswas)
Director of Research
Extension & Farms (Actg.)
& Editor

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EXECUTIVE SUMMARY

Livestock production has been growing faster than any agricultural sub-sector and it is foreseen by 2020, it will account for more than half of total global agricultural output. The effort for growth in livestock and other allied sectors have become much essential to achieve a growth rate of 4% in the agriculture sector as visualized in the XI plan. Different types of technological interventions have been introduced in these sectors to attain this target. It is believed that this will lay concrete on for significant improvement in productivity and production which will in turn increase per capita availability of livestock products. India possesses highest population of cattle, buffalo, goat and poultry as per the livestock census, 2012.

The State of West Bengal has the potential to enhance the livestock productivity with accelerated application of innovative technologies. The state has produced 4.86 million MT of milk during 2012-13 besides producing 697 thousand MT meat and 4.07 million egg. During 2013-14, India has produced 100.69 lakh tones of fish. West Bengal stood second producing 16.17 lakh tones of fish. Besides this, out of the total fish seed production of 43390 million fries (approx.) in India, West Bengal recorded the production as 16760 million fries (approx.) during 2014-15, which is very encouraging.

As most of the farmers in the state are small and marginal in nature, livestock and fish farming stand hand-in-hand for livelihood improvement of the farming population. The efforts of Animal Husbandry and Fisheries are well known for their contribution towards general economy of West Bengal in terms of production. Growth in human population, increase in urbanization, rising domestic incomes and changing lifestyles have led to an increase in demand for products of animal origin.

The West Bengal University of Animal and Fishery Sciences has already set up a goal in this direction and trying its best through its educational programmes and research activities. In one hand, the University has a mandate to promote – **Farmers FIRST**, which is an ICAR initiative to move beyond the production and productivity.

The West Bengal University of Animal and Fishery Sciences (WBUAFS), the second University of its kind in the country started its journey with a legacy of Century old Bengal Veterinary College on 2nd January 1995 with an objective to serve the State as well as the nation as a whole through imparting quality Education, accomplishing basic and need-based Research and disseminating proven technologies to the rural masses through its Extension wing. Another important aspect of attention is to attract and retain youth in agricultural sectors limiting the migration of youths to non-agricultural avocations. With these in perspective, the highlights of various activities of the University during the period 2015-2016 are narrated below :

Institutional :

The 10th convocation was organized to confer degrees to 97 Under-graduate, 64 Post-graduate and 18 Ph.D. students under the three Faculties of the University. 19 students have received gold medals in the convocation in different disciplines for their academic excellence. 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 :

Keeping in view of the globalization and relevance to changing needs and aspirations in the field of animal sciences and fishery, the University has tailored its academic system dynamically. The educational activities in the University are regularly put under evaluation and accordingly modification of course curricula and teaching methodologies are made.

EXECUTIVE SUMMARY (Contd...)

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. As a program to extend the academic activities and area of importance, a proposal has been initiated to introduce Post-Graduate courses in 'Animal Bio-technology' and 'Avian Science' under the Faculty of Veterinary and Animal Sciences. Proposal for opening of new departments named 'Dairy Business Management' in the Faculty of Dairy Technology and 'Fishery Nutrition' under the Faculty of Fishery Sciences has also been placed to the state Govt. These proposals are under consideration of the Govt. of West Bengal.

Hon'ble Chief Minister of West Bengal has laid the Foundation Stone for a new Veterinary & Animal Sciences college and a new Fishery College in the district of Jalpaiguri on 21st January, 2016. PWD, Govt. of West Bengal is looking after the drawing, design, planning and estimate etc. for this purpose.

Research :

The University is always interested 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 2015-16, WBUAFS has bagged two prestigious RKVY projects funded by the Animal Resources Development Department, Govt. of West Bengal worth Rs. 15 crores approximately. The University has already 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 31 numbers of research projects are being carried out by the Faculty members, Scientists and Researchers of the University with a total fund allocation of Rs. 3687.83 lakhs. Two number of Research projects on Niche Area of Excellence have been completed during the year while two Outreach Programmes are running successfully under the proficient supervision of the Principal Investigators. AICRP on Black Bengal Goat and two Network Programmes on Blue tongue and Gastro-Intestinal Parasitism are the longest running projects of the University.

Process is on to take up a few collaborative research projects in the near future.

Extension :

Besides academic and research activities, another vital feature of the University is to render services to farmers and rural community for implementation of their own farming units. The University is continuously undertaking different sorts of activities throughout the State to stretch out its area of action. University has been engaged in organizing various types of need based training programmes, mass contact camps in the form of animal and fish health camps, farm and home visits, workshops, seminars, kisan mela, farm produce exhibitions, consultancy and advisory services, on-farm trial, frontline demonstrations, field days and other extension activities 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. A MOU has been signed between the University and Agriculture Skill Council of India (ASCI) to conduct short term skill based 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. ASCI functions under the aegis of National Skill Development Corporation (NSDC), Ministry of Skill Development & Entrepreneurship, Govt. of India.



EXECUTIVE SUMMARY (Contd...)

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 242 research papers were published in different national and international journals. Apart from this, University has published about 80 number of publications of leaflets, booklets, books, newsletter, manuals, compendiums annual reports and activity highlights.

Krishi Vigyan Kendras:

The Krishi Vigyan Kendras act as a gateway to the University for the farming community. The University has three Krishi Vigyan Kendras (KVKs) in Jalpaiguri, North 24 Parganas and Murshidabad districts of West Bengal. All the KVKs are performing based on the mandates formulated by the Indian Council of Agricultural Research (ICAR) and the University through mutual understanding. Besides the routine jobs like FLD, OFTs, On & Off Campus Farmer's training etc, the KVKs are also associated with special collaborative programmes such as PPV & FR, FOCT, NABARD sponsored training, Short term Research of ATMA, NFDB Training, RKVY, Kisan Sammelan, Pradhan Mantri Fasal Bima Yojana etc. and participating in Tribal Sub Plan Programs alongwith monitoring jobs of Research Projects of the University.

A ABOUT UNIVERSITY

History reveals that whenever human race has felt a necessity to achieve certain goal, search has been on to fulfill such desires. This has often led to important discoveries by scientists and technologists. Likewise, the limitation of land resources was also visualized much earlier and resulted in alternative means of living using the land and aquatic animal resources. Later people handling such living resources faced challenges to maintain the flock under their control. Attention was given towards proper rearing of these livestock resources. Study of the relevant techniques, development of technology based upon knowledge, a desire to improve the skills for rearing the animals and fish varieties gave rise to a collection of information in the related fields. This later led the pavement for study of Veterinary and Animal Sciences and allied studies in the Dairy and Fishery sectors. In India, Bengal Veterinary College was established on 10th of January, 1883, by the British Govt., which was first of its kind in the country. During its journey through a century since then, it now stands in the shape visible to us – The West Bengal University of Animal and Fishery Sciences (WBUAFS). It was granted the status of a University 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 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. The proposal for introduction of Post-Graduate courses in 'Animal Bio-technology' and 'Avian Science' under the Faculty of Veterinary and Animal Sciences is under consideration of the Govt. of West Bengal. The proposal for inclusion of new departments named 'Dairy Business Management' in the faculty of Dairy Technology and 'Fishery Nutrition' under the Faculty of Fishery Sciences is also under the consideration of the State Govt.

A.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.

A.2. CAMPUSES OF THE UNIVERSITY

The University Headquarter 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 all courses of the Faculty of Dairy Technology are taught in the Mohanpur Campus of the University in the adjoining Nadia district. Post-graduation studies for the Faculty of Veterinary and Animal Sciences take place in the University Headquarters. The courses of the Faculty of Fishery Sciences are undertaken in the Chakgaria Campus, in Kolkata, which is itself a full fledged unit.

Besides these three Faculties, the University has three Krishi Vigyan Kendras under its aegis in the districts of Jalpaiguri, North 24 Parganas and Murshidabad. These extension centres serve as a direct connection of the University to the rural farmers and general public.



SET UP OF WBUAFS

B

West Bengal University of Animal & Fishery Sciences (WBUAFS) follows the organizational set up of the general State Agricultural Universities (SAUs). Management of Education, Research and Extension activities of the University are carried out by different bodies, which are as follows:

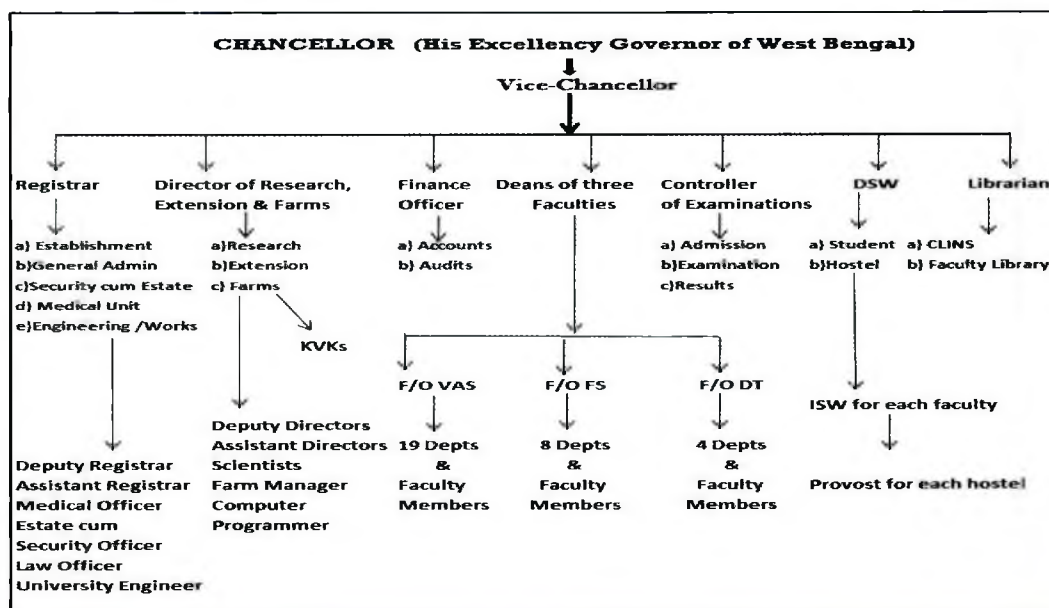
- ❖ Executive Council (EC)
- ❖ Faculty Council (FC)
- ❖ Academic Council
- ❖ Research and Extension Education Council (REEC)
- ❖ Finance Committee
- ❖ Board of Examinations
- ❖ Board of Studies

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 alongwith the conferment of the degrees and diploma to 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 is 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.

B.1. ADMINISTRATIVE ORANOGRAM OF WBUAFS



SET UP OF WBUAFS (Contd...)

B.2. STATUTORY BODIES :

B.2.1. Executive Council

Sl.No.	Name & Designation	Position
1	Prof. P. Biswas, Vice Chancellor	Vice Chancellor & ex-officio Chairman
2	Dr. S. Bose Director of Animal Husbandry & Vety. Services, Govt. of West Bengal	Director of Animal Husbandry & Vety. Services, Govt. of West Bengal, Ex-officio member
3	Smt. Malobika Jha Director of Fisheries, Govt. of West Bengal	Director of Fisheries, Govt. of West Bengal Ex-officio member
4	Sri Dibakar Mukhopadhyay Milk Commissioner, Govt. of West Bengal	Milk Commissioner, Govt. of West Bengal Ex-officio member
5	Prof. Subhasis Biswas Director of Research, Extension & Farms (Actg.), WBUAFS	Director of Research, Extension & Farms, WBUAFS, Ex-officio member
6	Prof. P.K. Senapati Dean, F/O Veterinary and Animal Sciences (Actg.), WBUAFS	Dean, F/O Veterinary and Animal Sciences, WBUAFS, Ex-officio member
7	Prof. B.K. Das Dean, F/O Fishery Sciences (Actg.), WBUAFS	Dean, F/O Fishery Sciences, WBUAFS Ex-officio member
8	Prof. T. K. Maity Dean, F/O Dairy Technology (Actg.), WBUAFS	Dean, F/O Dairy Technology, WBUAFS Ex-officio member
9	Prof. A.K.Samanta Dept. of Livestock Production Management, F/O Veterinary and Animal Sciences	Teacher's Representative, F/O Veterinary and Animal Sciences, WBUAFS, Elected member
10	Dr. Supratim Chowdhury Dept. of Fish Processing Technology, F/O Fishery Sciences	Teacher's Representative, F/O Fishery Sciences, WBUAFS, Elected member
11	Dr. P.K. Roy Dept. of Dairy Engineering, F/O Dairy Technology	Teacher's Representative, F/O Dairy Technology, WBUAFS, Elected member
12	Sri Amlan Bhattacharya Jr. Superintendant, Office of the Dean, F/O Veterinary and Animal Sciences	Elected member from the non-teaching staff of the University
13	Sri Dipanjan Jana	Elected member from the regular students of the University
14	Smt. Mala Saha MLA	Nominated Member of WB Legislative Assembly



SET UP OF WBUAFS (Contd...)

15	Dr. Ravinder Kumar	Representative of the Indian Veterinary Council nominated by the Council
16	Dr. J. K. Jena Director, NBFGR, Lucknow	Representative of ICAR nominated by the Council
17	Smt. Swagata Das	Three members from farmers or producers of the state nominated by the State Govt.
18	Sri Madan Mohan Maity	Three members from farmers or producers of the state nominated by the State Govt.
19	Sri Abhijit Pramanick	Nominated member
20	Prof. A. K. Samanta Registrar (Actg.)	Registrar & ex-officio Non-member Secretary

B.2.2. Faculty Council

1. Faculty of Veterinary and Animal Sciences

Sl. No.	Name	Position
1	Prof. P. Biswas	Vice Chancellor, Chairman
2	Prof. A.K.Samanta	Registrar, Member
3	Prof. Subhasis Biswas	Director of Research, Extension & Farms, Ex-officio member
4	Vacant	Librarian
5	Prof. P.K. Senapati	Dean, F/O Veterinary and Animal Sciences
6	19 HODs	Head of the departments, F/O VAS
7	Prof. P.K. Senapati	Professor from the respective Faculty, Elected Member
8	Dr. Samar Halder	Reader from the respective Faculty, Elected Member
9	Dr. Joydeep Mukherjee	Lecturer from the respective Faculty, Elected Member
10	Sk. Samim Reja	Elected UG student's representative
11	Dr. Chandan Saha	Elected PG student's representative
12	Sri A.K. Chakraborty	Secretary, Faculty Council as Member Secretary

SET UP OF WBUAFS (Contd...)

2. Faculty of Fishery Sciences

Sl.No.	Name	Position
1	Prof. P. Biswas	Vice Chancellor, Chairman
2	Prof. A.K.Samanta	Registrar, Member
3	Prof. Subhasis Biswas	Director of Research, Extension & Farms, Ex-officio member
4	Vacant	Librarian
5	Prof. B.K. Das	Dean, F/O Fishery Sciences
6	8 HODs	Head of the departments, F/O FS
7	Prof. T.J. Abraham	Professor from the respective Faculty, Elected Member
8	Dr. Anadamoy Mondal	Reader from the respective Faculty, Elected Member
9	Dr. Supratim Chowdhury	Lecturer from the respective Faculty, Elected Member
10	Sri Sutanu Karmakar	Elected UG student's representative
11	Sri Arefin Bostanul	Elected PG student's representative
12	Sri A.K. Chakraborty	Secretary, Faculty Council as Member Secretary

3. Faculty of Dairy Technology

Sl.No.	Name	Position
1	Prof. P. Biswas	Vice Chancellor, Chairman
2	Prof. A.K.Samanta	Registrar, Member
3	Prof. Subhasis Biswas	Director of Research, Extension & Farms, Ex-officio member
4	Vacant	Librarian
5	Prof. T.K. Maity	Dean, F/O Dairy Technology
6	4 HODs	Head of the departments, F/O DT
7	Prof. T.K. Maity	Professor from the respective Faculty, Elected Member
8	Dr. S.K. Bag	Reader from the respective Faculty, Elected Member
9	Dr. P.K. Roy	Lecturer from the respective Faculty, Elected Member
10	Sri Ritam Bera	Elected UG student's representative
11	Sri Rajabendra Sarkar	Elected PG student's representative
12	Sri A.K. Chakraborty	Secretary, Faculty Council as Member Secretary

B.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



SET UP OF WBUAFS (Contd...)

B.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

B.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 Faculty	Member
9	One UG student from each Faculty and one PG student from the University elected by the regular students in a manner as shall be prescribed	Member
10	Two eminent academicians from the field of Veterinary / Dairy / Fishery Sciences nominated by the Vice Chancellor	Member

B.2.6. Research And Extension Education Council

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

SET UP OF WBUAFS (Contd...)

B.2.7. Finance Committee

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

B.3. ORGANIZATION OF MEETINGS OF DIFFERENT STATUTORY BODIES

Executive Council		
Sl.No.	Meeting No.	Date
1.	81	25/06/2015
2.	82	02/09/2015
3.	83	09/12/2015
4.	84	15/02/2016
5.	85	17/03/2016

Faculty Councils		
Sl.No.	Meeting No.	Date
Veterinary and Animal Sciences		
1.	69	04/06/2015
2.	70	04/12/2015
3.	71	12/02/2016
Fishery Sciences		
1.	48	05/06/2015
2.	49	06/08/2015
3.	50	04/12/2015
4.	51	12/02/2016
Dairy Technology		
1.	46	04/06/2015
2.	47	12/02/2016



SET UP OF WBUAFS (Contd...)

B.4. TEACHING DEPARTMENTS OF THREE FACULTIES OF WBUAFS

F/O. Vety. & Animal. Sciences

Sl No	Name of Department
1	Animal Genetics and Breeding
2	Animal Nutrition
3	Instructional Livestock Farm Complex
4	Livestock Production Management
5	Livestock Products Technology
6	Teaching Veterinary Clinical Complex
7	Veterinary Anatomy & Histology
8	Veterinary Biochemistry
9	Veterinary Epidemiology & Preventive Medicine
10	Veterinary Gynaecology & Obstetrics
11	Veterinary Medicine, Ethics & Jurisprudence
12	Veterinary Microbiology
13	Veterinary Parasitology
14	Veterinary Pathology
15	Veterinary Pharmacology & Toxicology
16	Veterinary Physiology
17	Veterinary Public Health
18	Veterinary Surgery & Radiology
19	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 Processing Technology
8	Fishery Resources Management

F/O Dairy Technology

Sl No	Name of Department
1	Dairy Chemistry
2	Dairy Engineering
3	Dairy Microbiology
4	Dairy Technology

B.5. STATUTORY OFFICERS IN THE UNIVERSITY

Sl. No.	Designation	Name
1	Vice-Chancellor	Prof. P. Biswas
2	Director of Research, Extension & Farms	Prof. S. Biswas
3	Registrar	Prof. A.K. Samanta
4	Finance Officer	Sri T. S. Majumder
5	Controller of Examinations	Prof. A. Goswami
6	Dean, F/O Veterinary & Animal Sciences	Prof. P.K. Senapati
7	Dean, F/O Fishery Sciences	Prof. B.K. Das
8	Dean, F/O Dairy Technology	Prof. T. K. Maity
9	Librarian	Vacant

SET UP OF WBUAFS (Contd...)

B.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



SET UP OF WBUAFS (Contd...)

B.7. TEACHERS OF THE UNIVERSITY

Faculty of Veterinary & Animal Sciences

Department	Name of Teacher	Designation	Qualification
Animal Genetics and Breeding	Dr. P.K. Senapati	Professor	M.V.Sc., Ph.D.
	Dr. A.K. Sahoo	Professor	M.V.Sc., Ph.D.
	Dr. S. Taraphder	Assistant Professor	M.V.Sc., Ph.D.
	Dr. M. Roy	Assistant Professor	M.V.Sc., Ph.D.
	Dr. U. Sarkar	Assistant Professor	M.V.Sc., Ph.D.
Animal Nutrition	Dr. T.K. Ghosh	Professor, Re-employed	M.V.Sc., Ph.D.
	Dr. G. Samanta	Professor, Re-employed	M.V.Sc., Ph.D.
	Dr. P. Biswas	Professor	M.V.Sc., Ph.D.
	Dr. B. Roy	Professor	M.V.Sc., Ph.D.
	Dr. A. K. Patra	Lecturer	M.V.Sc., Ph.D.
	Dr. G. P. Mandal	Sr. Lecturer	M.Sc.(Ani. Nutrition), Ph.D.
	Dr. P. N. Chatterjee	Assistant Professor	M.Sc.(Ani. Nutrition), Ph.D.
Instructional Livestock Farm Complex	Dr. M.C. Pakhira	Assistant Professor (Animal Nutrition)	M.V.Sc. Ph.D.
	Dr. (Mrs.) A. Pal	Assistant Professor (Animal Genetics and Breeding)	M.V.Sc. Ph.D.
	Sri D.C. Roy	Asst. professor (Agronomy)	M.Sc. (Ag.)
Livestock Production Management	Dr. S. Pan	Professor	M.Sc. Ph.D.
	Dr. A. K. Samanta	Professor	M.V.Sc. Ph.D.
	Dr. R. Samanta	Professor	M.V.Sc. Ph.D.
	Dr. S. Bera	Assistant Professor	M.V.Sc. Ph.D.
Livestock Products Technology	Dr. S. Biswas	Professor	M.V.Sc, Ph.D.
	Dr. D. Bhattacharyya	Lecturer	M.V.Sc, Ph.D.
	Dr. G. Patra	Assistant Professor	M.V.Sc, Ph.D.
Teaching Veterinary Clinical Complex	Dr. D. Ghosh	Associate Professor	M.V.Sc, Ph.D.
	Dr. S. S. Kesh	Assistant Professor	M.V.Sc, Ph.D.
	Dr. P. Mukherjee	Assistant Professor	M.V.Sc, Ph.D.
	Dr. S. Chaudhuri	Assistant Professor	M.V.Sc, Ph.D.
Veterinary Anatomy & Histology	Dr. S. Ray	Professor	M.V.Sc, Ph.D.
	Dr. P. Das	Associate Professor	M.V.Sc, Ph.D., PDF(Japan), FIAVA
Veterinary Biochemistry	Dr. S. Batabyal	Associate Professor & Head	M.V.Sc. Ph.D.
	Dr. S. Chattopadhyay	Reader- Re employed	M.V.Sc. Ph.D.
	Dr. S. Chowdhury	Guest Teacher	M.V.Sc. Ph.D.

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SET UP OF WBUAFS (Contd...)

Veterinary Epidemiology & Preventive Medicine	Dr. C. Guha	Professor	M.V.Sc. Ph.D.
	Dr. U. Biswas	Associate Professor	M.V.Sc. Ph.D.
	Dr. P. S. Jana	Assistant Professor	M.V.Sc. Ph.D.
Veterinary Gynaecology & Obstetrics	Dr. S. Basu	Professor	M.V.Sc. Ph.D.
	Dr.(Mrs.) K. Ray	Associate Professor	M.V.Sc. Ph.D.
	Dr. P. R. Nandi	Senior Lecturer	M.V.Sc.
	Dr. U. Datta	Reader (Re-employed)	M.V.Sc. Ph.D.
Veterinary Medicine, Ethics & Jurisprudence	Dr. S. Sarkar	Professor	M.V.Sc. Ph.D.
	Dr. N. R. Pradhan	Professor (Re-employed)	M.V.Sc. Ph.D.
	Dr. C. Lodh	Associate Professor	M.V.Sc. Ph.D.
	Dr. Pralay Kumar Mondal	Contractual Teacher	M.V.Sc. Ph.D.
Veterinary Microbiology	Dr. S. N. Joardar	Associate Professor	M.V.Sc. Ph.D.
	Dr. D. P. Isore	Assistant Professor	M.V.Sc. Ph.D.
	Dr. I. Samanta	Assistant Professor	M.V.Sc. Ph.D.
	Dr. K. Batabyal	Assistant Professor	M.V.Sc. Ph.D.
	Dr. S. Dey	Assistant Professor	M.V.Sc. Ph.D.
Veterinary Parasitology	Dr. J.D. Ghosh	Professor	M.V.Sc. Ph.D.
	Dr. S.C. Mandal	Professor	M.V.Sc. Ph.D.
	Dr. S. Baidya	Assistant Professor & Head	M.V.Sc. Ph.D.
	Dr. (Mrs.)R. Jas	Assistant Professor	MVSc., Ph.D.
	Dr. S. Pandit	Assistant Professor	MVSc., Ph.D.
Veterinary Pathology	Dr. S. K. Mukhopadhyay	Associate Professor	M.V.Sc., Ph.D.
	Dr. S. Pradhan	Assistant Professor	M.V.Sc., Ph.D.
	Dr. N. C. Patra	Assistant Professor	M.V.Sc., Ph.D.
	Dr. R. N. Hansda	Assistant Professor	M.V.Sc.
Veterinary Pharmacology & Toxicology	Dr. T. K. Mandal	Professor & Head	M.V.Sc., Ph.D.
	Dr. T. K.Sar	Sr. Lecturer	M.V.Sc., Ph.D.
	Dr. R.N. Chattopadhyay	Guest Teacher	M.D. (Pharma)
	Dr. R.K. Dutta	Guest Teacher	M.V.Sc.
	Dr. S. Manna	Guest Teacher	M.V.Sc., Ph.D.
Veterinary Physiology	Dr. P.K. Das	Associate Professor & Head	M.V.Sc., Ph.D.
	Dr. P. R.Ghosh	Assistant Professor (Sr. Scale)	M.V.Sc., Ph.D.
	Dr. K. Das	Assistant Professor	M.V.Sc.
	Dr. D. Banerjee	Assistant Professor	M.V.Sc., Ph.D.
	Dr. J. Mukherjee	Assistant professor	M.V.Sc., Ph.D.
Veterinary Public Health	Dr. C. Debnath	Assistant Professor	M.V.Sc., Ph.D.
	Dr. A. K. Pramanik	Professor (contractual)	M.V.P.H., Ph.D
	Dr.P. Nandy	Guest Teacher	M.V.Sc.



SET UP OF WBUAFS (Contd...)

Veterinary Surgery & Radiology	Dr. D. Ghosh	Associate Professor	M.V.Sc., Ph.D.
	Dr. S.K. Guha	Associate Professor	M.V.Sc., Ph.D.
	Dr. S.K. Nandi	Associate Professor	M.V.Sc., Ph.D.
	Dr. S. Halder	Associate Professor	M.V.Sc., Ph.D.
	Dr. (Mrs) S. Hazra	Associate Professor	M.V.Sc., Ph.D.
	Dr. A.K. Maji	Assistant Professor & Head	M.V.Sc., Ph.D.
Veterinary & Animal Husbandry Extension Education	Dr. A. Goswami	Professor	M. V. Sc., Ph. D., D. Litt., FNAVS, FAST, FAPHV
	Dr. D. Ganguli	Assistant Professor	M.V.Sc., Ph.D.
	Dr. A. De	Guest Teacher	M.V.Sc., Ph.D.

Faculty of Fishery Sciences

Department	Name of Teacher	Designation	Qualification
Aquaculture	Dr. T. K. Ghosh	Reader	M. Sc; Ph. D
	Dr. S. K. Das	Reader	M. Sc; Ph. D
Aquatic Animal Health	Dr. T. J. Abraham	Professor	M.F.Sc., Ph.D. (Microbiology)
	Dr. G. Dash	Reader	M.F.Sc., Ph.D.
Aquatic Environment Management	Dr. R. K. Trivedi	Professor	M.F.Sc., Ph.D.
	Dr. B.K. Das	Professor	M.Sc., Ph.D.
	Dr. S. K. Rout	Associate Professor	M.F.Sc., Ph.D.
Fishery Economics & Statistics	Dr. A. Mondal	Associate Professor	M.F. Sc, Ph.D.
	Dr. S. Sahu	Associate Professor	M.Sc, M.B.A., Ph.D.
Fishery Engineering	Dr. N. A. Talwar	Associate Professor	M.F.Sc., Ph.D.
Fishery Extension	Dr. S. S. Dana	Professor	M.V. Sc., Ph.D. (Extension Education)
Fish Processing Technology	Dr. K. C. Dora	Professor	M.F. Sc, Ph.D.
	Dr. S. Sarkar,	Associate Professor	M.F. Sc, Ph.D.
	Dr. S. Chowdhury,	Assistant Professor	M.F. Sc, Ph.D.
Fishery Resources Management	Dr. S. K. Das	Professor	M.F.Sc., Ph.D.
	Dr. T. S. Nagesh	Associate Professor	M.F.Sc., Ph.D.
	Dr. S. Behera	Associate Professor	M.F.Sc., Ph.D.

SET UP OF WBUAFS (Contd...)

Faculty of Dairy Technology

Department	Name of Teacher	Designation	Qualification
Dairy Chemistry	Dr. P.R.Ray	Associate professor	Ph.D. (DC)
	Dr. P.K.Ghatak	Professor (Re-employed)	Ph.D. (DC)
Dairy Engineering	Dr. P. K. Roy	Lecturer (Sr. Scale)	Ph.D.
	Dr.P. Maiti	Professor	Ph.D.
	Dr. S.K. Bag	Associate Professor	Ph.D.
Dairy Microbiology	Dr. T.K.Maity	Professor	M.Sc.(DM), Ph.D.(DM)
	Dr. S.P.Sarkar	Professor (Re employed)	M.Sc.(DT), Ph.D.(DM)
Dairy Technology	Dr. D. C. Sen	Professor (Re-employed)	M.Sc.(DT), Ph.D.(DT)
	Dr. M. K. Sanyal	Professor (Re-employed)	M.Sc.(DT), Ph.D.
	Dr. S. C. Pal	Professor (Re-employed)	M.Sc.(DT), Ph.D.(DT)
	Dr. S. K. Gangopadhyay	Professor (Re-employed)	M.Sc.(DT), Ph.D.(DT)

B.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 the Appellate Authority under this system of providing information. The unit is functional since 2005.

B.9. SC/ST (BCW) CELL

WBUAFS has established SC/ST (BCW) Cell for monitoring & implementation of the reservation policies for the State of West Bengal vide Notification No. WBUAFS/Admn/S-6(Pt-I)/0787 dated 20/09/2012 from the office of the Registrar, WBUAFS. The cell comprises of the following members :



SET UP OF WBUAFS (Contd...)

Sl. No.	Name	Position
1.	Prof. P. Biswas, Vice-Chancellor	Chairman
2.	Sri T. S. Majumder, Finance Officer	Liaison Officer
3.	Prof. A.K. Samanta, Registrar	Member
4.	Secretary, BCW Dept	Member
5.	Secretary, ARD Dept.	Member
6.	Sri Tarun Saha, Councillor	Member
7.	Sri Sujit Barua, Deputy Registrar, Calcutta University	Member
8.	Dr. Pankaj Kumar Biswas, Deputy Registrar	Member
9.	Dr. B.K. Biswas, Scientist	Member
10.	Dr. Samar Halder, Reader	Member
11.	Dr. (Mrs.) Kalyani Ray, Reader	Member
12.	Dr. S. Bag, Reader	Member
13.	Dr. N.A. Talwar, Reader	Member
14.	Sri Kishalaya Mandal, Jr. Store Keeper	Member
15.	Sri Ramesh Baskey, Farash	Member
16.	General Secretary, SU, F/OVAS,FS&DT	Member

B.12. 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/N-2/2316 dt. 03/10/2013 with 12 members including Presiding Officer Smt. Aparajita Biswas, Computer Programmer, DREF, WBUAFS and a third party NGO member.



FINANCIAL SUMMARY

C.1. Report of Finance & Accounts Section, WBUAFS for financial year 2015-16 :

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. No.	Heads	Receipt (Rs. in Lakhs)
1.	State Govt. Grant	
	Plan	1220.00
	Non-Plan	3334.79
2.	ICAR Grant – Plan	306.41
3.	Internal Resources	140.60

Sl. No.	Heads	Expenditure % of Total Allocation
1.	Teaching	39.80
2.	Research	3.14
3.	Extension	3.15
4.	Education	41.52
5.	Administration	8.49
6.	Infrastructural Developments	3.90



ACADEMICS



D.1. ACADEMIC PROGRAMMES (FACULTYWISE)

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 for Faculty of Dairy Technology is approved by AICTE, New Delhi.

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

Faculty of Veterinary and Animal Sciences :

	<i>Name of Course</i>	<i>Duration</i>	<i>Intake Capacity 2015-16</i>
i)	B.V.Sc. & A.H.	5 years Bachelor's degree course	74
ii)	M.V.Sc.	2 years Master's degree course	86
iii)	Ph. D.	3 years Doctoral degree course	42

Faculty of Fishery Sciences :

	<i>Name of Course</i>	<i>Duration</i>	<i>Intake Capacity 2015-16</i>
i)	B.F.Sc.	4 years Bachelor's degree course	38
ii)	M.F.Sc.	2 years Master's degree course	34
iii)	Ph.D.	3 years Doctoral degree course	16

Faculty of Dairy Technology :

	<i>Name of Course</i>	<i>Duration</i>	<i>Intake Capacity 2015-16</i>
i)	B.Tech. (DT)	4 years Bachelor's degree course	38
ii)	M. Tech. / M.Sc.	2 years Master's degree course	10
iii)	Ph. D.	3 years Doctoral degree course	2

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

D.2. ADMISSION

D.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

UG Courses

PG Courses

Ph.D Courses

Begins During

July

August – September

November - December

ACADEMICS (Contd...)

D.2.2. 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 the B.V.Sc. & A.H. course. The candidates qualified in the West Bengal Joint Entrance examination conducted for entrance into the Engineering/Technology course are considered for studies in 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.

D.2.3. 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 weight-age 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.

D.2.4. 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.



ACADEMICS(Contd...)

D.2.5. Intake of Students

Academic Year 2015-2016									
Courses	Level	General		SC		ST		Total	
		Male	Female	Male	Female	Male	Female	Male	Female
B.V.Sc. & AH	UG	46	5	14	3	3	2	63	10
M.V.Sc.	PG	14	7	3	2	3	0	20	9
Ph.D. in Vety. & Animal Sciences	Ph.D	11	3	0	0	1	0	12	3
B.Tech. (DT)	UG	13	0	4	1	0	1	17	2
M.Tech. (DT)	PG	0	3	1	1	0	0	1	4
Ph.D. in Dairy Technology	Ph.D	2	0	0	0	0	0	2	0
B.F. Sc.	UG	14	9	6	2	4	0	24	11
M.F. Sc.	PG	14	11	2	3	0	0	16	14
Ph.D. in Fishery Sciences	Ph.D	4	5	2	3	0	0	6	8

D.3. OUT-TURN OF STUDENTS

Year - 2014 - 2015					
Discipline	Level	Degree	Numbers of students passed out		
			Male	Female	Total
Veterinary & Animal Sciences	UG	B V Sc. & Ah	39	10	49
	PG	M V Sc	23	6	29
	Doctoral	Ph. D.	14	2	16
Fishery Sciences	UG	B F Sc	19	10	29
	PG	M F Sc	19	9	28
	Doctoral	Ph. D.	1	1	2
Dairy Technology / Sciences	UG	B. Tech (DT)	8	11	19
	PG	M.Tech (DT)	4	3	7
	Doctoral	Ph. D.	0	0	0

D.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 :

ACADEMICS (Contd...)

Faculty of Veterinary & Animal Sciences

- ❖ 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.)



ACADEMICS(Contd...)

Faculty of Dairy Technology

- ❖ 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.))

Faculty of Fishery Sciences

- ❖ 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.)

During the academic year of 2014-2015, 19 (nineteen) passed-out students received 19 different Gold Medals offered by the University.

List of the Gold Medal Winners for the year 2015 are as follows :

Sl. No.	Name of Medal	Recipient	Course
1	Smt. Mira Mallik Gold Medal	Bipasha Tripathy	B.V.Sc & A.H.
2	Prof. D. B. Mukherjee Gold Medal	Malay Das	B.V.Sc & A.H.
3	Dr. S. N. Roy Gold Medal	Malay Das	B.V.Sc & A.H.
4	First Batch(1953) B.V.Sc Students' Gold Medal	Bipasha Tripathy	B.V.Sc & A.H.
5	Dr. B. N. Dey Memorial Endowment Gold Medal	Malay Das	B.V.Sc & A.H.
6	Dr. B. N. Mukherjee Gold Medal	Malay Das	B.V.Sc & A.H.
7	Charu Chandra Koley Gold Medal	Geetanjali Thapa	B.V.Sc & A.H.
8	Dinesh Chandra De and Sova De Memorial Gold Medal	Malay Das	B.V.Sc & A.H.
9	Dr. Subir Kr. Sinha Memorial Gold Medal	Malay Das	B.V.Sc & A.H.
10	Dr. D. K. Biswas Gold Medal	Malay Das	B.V.Sc & A.H.
11	Dr. G. L. Sharma Endowment Gold Medal	Raya Sarkar	B.V.Sc & A.H.
12	Dr. (Mrs.) Gita Biswas Gold Medal	Bipasha Tripathy	B.V.Sc & A.H.
13	Dr. Animesh Kumar Chakraborty Gold Medal	Supriya Bhattacharya	B.V.Sc & A.H.
14	Dr. G. C. Banerjee Gold Medal	Bipasha Tripathy	B.V.Sc & A.H.
15	1972 Batch B.V.Sc. & A.H. Students Gold Medal	Bipasha Tripathy	B.V.Sc & A.H.
16	Prof. K. L. Bhowmick & Prof A.K. Majumdar Memorial Gold Meda	Malay Das	B.V.Sc & A.H.
17	Dr. P. Bhattacharya Gold Medal	Md. Tousif Zaman Khan	M.V.Sc.
18	Prof. Sukumar De Gold Medal	Sonanki Mitra	B.Tech. (DT)
19	Smt. Tirthamayee Ganguli Gold Medal	Indranil Choudhury	M.Tech. (DT)

ACADEMICS (Contd...)

D.5. HOSTEL

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

D.6. SCHOLARSHIPS

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.

D.7. CONVOCATION

Tenth Convocation of the University took place on 17th March, 2016 at University Headquarters, Belgachia Campus, Kolkata. His Excellency, the Governor of West Bengal and Chancellor of the University Hon'ble Sri Keshari Nath Tripathi inaugurated the convocation and presided over the ceremony.

A total of 18 students were awarded Ph.D degree, while 64 and 97 students received Master's and Bachelor's degree, respectively covering all the three faculties of the University.

Faculty wise following degrees were awarded to the students for the year 2015 –

<i>Degree in the Faculties</i>	<i>No. of Students</i>
<u>Faculty of Veterinary & Animal Sciences</u>	
B.V.Sc. & A.H.	49
M.V.Sc.	29
Ph.D.	16
<u>Faculty of Fishery Sciences</u>	
B.F.Sc.	29
M.F.Sc.	28
Ph. D.	2
<u>Faculty of Dairy Technology</u>	
B.Tech. (D.T)	19
M.Tech. (D.T)/ M.Sc.	07
Ph.D.	-

D.8. EMPLOYMENT OF THE STUDENTS

University Officials as well as the Faculty members are always attached with the passed out students for their counseling for 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 :-



ACADEMICS(Contd...)

B.7.1. Faculty of Veterinary & Animal Sciences :

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

B.7.2. Faculty of Dairy Technology :

The students passed out from the Faculty get employment in National and Multi-national milk & dairy product producing, Govt., Semi Govt. and Private Companies like,

- | | | |
|---|---------------------------------------|----------------------------|
| (i) Glaxo Smithkline, | (viii) Amul, | (xiv) ITC (Food Division), |
| (ii) Nestle India Ltd., | (ix) Hindustan Lever, | (xv) Almarai, Riyadh, |
| (iii) Perfetti Van-Melle, | (x) Fonterra New Zealand Corporation, | (xvi) IBM, |
| (iv) Dynamix Dairy Industries Ltd., | (xi) NDDB, | (xvii) TCS, |
| (v) Mother Dairy, Kolkata, | (xii) Sudha, | (xviii) WCMF Ltd., |
| (vi) Metro Dairy, Kolkata, | (xiii) Verka | (xix) ITC Infotech, |
| (vii) National Food Corporation Ltd., Jeddah, | | (xx) Paras Foods, etc. |

B.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 as well as follows :

- (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.

D.9. 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.

D.10. ANTI RAGGING COMMITTEE

There exists an anti-ragging committee in the University to prevent ragging in the University.

ACADEMICS (Contd...)

D.11. AWARD OF PG/PH.D. DEGREE TO STUDENTS FOR THE YEAR 2015-16:

D.11.1. List of Ph.D. students awarded :-

A. Faculty of Veterinary & Animal Sciences

Sl.No.	Name	Subject
1	BINITA ANGOM	Veterinary Pharmacology & Toxicology
2	RAJESH RANJAN	Veterinary Anatomy & Histology
3	ARKENDU HALDER	Veterinary Microbiology
4	MOUSAM DAS	Veterinary Microbiology
5	SAMIRAN MONDAL	Veterinary Pathology
6	SANJIT KUMAR	Veterinary Pathology
7	LEISHANGTHEM RONIBALA DEVI	Livestock Production Management
8	SANKAR SEKHAR BISWAS	Livestock Production Management
9	SOUMITRA PANDIT	Veterinary Parasitology
10	GAUTAM PATRA	Veterinary Parasitology
11	AJGAR ALI MONDAL	Veterinary Gynaecology & Obstetrics
12	SABYASACHI KONAR	Veterinary Surgery & Radiology
13	SUDIP KUMAR DAS	Livestock products Technology
14	PRASUN MUKHERJEE	Veterinary Medicine, Ethics & Jurisprudence
15	TRIPTENDU HAR	Veterinary Medicine, Ethics & Jurisprudence
16	ABHIJIT BARUI	Veterinary Biochemistry

B. Faculty of Fishery Sciences

Sl.No.	Name	Department
1	YARRAKULA MAHESH BABU	Fishery Extension
2	SWARNADYUTINATH	Fish Processing Technology

D.11.2. List of PG students awarded :-

A Faculty of Veterinary & Animal Sciences

Sl.No.	Name	Department
1	MD. SAMIM REJA	Veterinary Medicine, Ethics & Jurisprudence
2	SAJIDA BANO	Veterinary Medicine, Ethics & Jurisprudence
3	ABANISH BISWAS	Veterinary Medicine, Ethics & Jurisprudence
4	VINOD KUMAR	Veterinary Surgery & Radiology
5	SIDHARTH MOHAPATRA	Veterinary Surgery & Radiology



ACADEMICS(Contd...)

6.	SANJOY GOSWAMI	Veterinary Surgery & Radiology
7	RAJEN KUMAR SAHOO	Veterinary Surgery & Radiology
8	SUDHANSHU SHEKHAR SINGH	Veterinary Surgery & Radiology
9	NEVIDITA PRADHAN	Veterinary Epidemiology & Preventive Medicine
10	SAURABH KUMAR	Veterinary Gynaecology & Obstetrics
11	ROHIT PANDEY	Veterinary Gynaecology & Obstetrics
12	MANISH KUMAR PATHAK	Animal Nutrition
13	THOUNAOJAM NABAKUMAR SINGH	Animal Nutrition
14	MUKESH KUMAR TIWARI	Animal Nutrition
15	SUKHEN BANERJEE	Veterinary Microbiology
16	ROCK BORN NONGDHAR	Veterinary Microbiology
17	PRATIK GHOSH	Veterinary Microbiology
18	SOUBHAGYA RANJAN PRADHAN	Livestock Products Technology
19	SOUMYA BOSE	Livestock Products Technology
20	MD. TARIQUE ANWAR	Livestock Products Technology
21	TRIPTI SHARMA (BURAGOHAIN)	Veterinary Physiology
22	CHUDAMANI SHARMA	Veterinary Pathology
23	RAJEEV KUMAR CHOUDHARY	Veterinary Pathology
24	YASMINE BEGUM	Veterinary Pathology
25	RAKESH KUMAR	Veterinary Public health
26	AJIT SINGH	Veterinary Biochemistry
27	RESHMI GHOSH	Veterinary Biochemistry
28	BIDHAN CHANDRA DAS	Livestock production Management
29	MD. TOUSIF ZAMAN KHAN	Livestock production Management

B Faculty of Fishery Sciences

Sl.No.	Name	Department
1	KARISHMA MILI	Aquatic Environment Management
2	PULAK PRITI PATRA	Aquatic Environment Management
3	TANUSHREE MAITI	Fishery Extension
4	SUSOVAN SAU	Fishery Resources Management
5	SOHAM PANDA	Aquatic Animal Health
6	SUDESHNA SARKAR	Aquatic Animal Health
7	MADHURIMA SARKER	Aquaculture
8	SOURAV DHABAL	Aquaculture
9	RIYA DINDA	Aquaculture

ACADEMICS (Contd...)

10	MD. ABDUL AZIZ	Fishery Economics
11	VIKASH KUMAR	Fishery Economics
12	NAZRIN SULTANA AHMED	Fish Processing Technology
13	ARKA GUHA	Fish Processing Technology
14	SAYANTANI SARKAR	Fish Processing Technology
15	TARA MAITY	Aquaculture
16	TUHIN SUBHRO BHOWMIK	Fishery Resources Management
17	TANMAY MANDAL	Aquatic Animal Health
18	PRADIPTA PAUL	Aquatic Animal Health
19	TIRTHA BHATTACHARYA	Fish Processing Technology
20	VIJAY SUNDAR DEVA. G	Aquatic Animal Health
21	MASTER DAVID	Aquatic Animal Health
22	NANDAN PRAMANIK	Aquatic Environment Management
23	AJIT KUMAR SINGHA	Aquatic Environment Management
24	SAPTARSHI MANDAL	Fishery Resources Management
25	CHARAN KANUDAN SHAMBHUDAN	Fishery Resources Management
26	SUPRITI BAYAN	Fishery Resources Management
27	PUSPENDU SAMANTA	Fishery Resources Management
28	AVINASH KUMAR	Fishery Resources Management

C Faculty of Dairy Technology

Sl.No.	Name	Department
1	DEBIKA ROY	Dairy Microbiology
2	PUJA KUMARI	Dairy Microbiology
3	SURAJIT GANGULY	Dairy Microbiology
4	GIPING.P.	Dairy Microbiology
5	SOMA MAJI	Dairy Chemistry]
6	INDRANIL CHOUDHURY	Dairy Technology
7	RAJBENDRA SARKAR	Dairy Technology



ACADEMICS(Contd...)

D.1. 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:

D.12.1. Swachh Bharat Aviyan:

The program took place on 2nd October, 2015 in WBUAFS. Campus cleaning, cleaning of departments of the faculties etc. were the part of the activity.

D.12.2. World Yoga Day Celebration:

First International Yoga Day was celebrated in The University premises on 21st June, 2015.

D.12.3. Essay Competition on Life and Works of Tamil poet Thiruvalluvar:

Directive was received from UGC to take an initiative to popularize the life and works of the ancient Tamil poet Shri Thiruvalluvar. Prof TJ Abraham, Professor, Deptt of Aquatic Animal Health was assigned to organise an essay competition in English among the students of University on the life and works of celebrated Tamil poet and philosopher Shri Thiruvalluvar. Accordingly essays were collected on-line and later evaluated by external experts on Tamil Language and Literature. Two essays have been selected for prize distribution among the participants from the three faculties. Action taken Report was later forwarded to UGC in this regard.

Some other Highlights of the year:

1.	The department of Veterinary Physiology organized the Physiology Quiz amongst the under graduate students at the University level during October, 2015. The winner team of University level participated in Eastern zone level at OUAT, Bhubneswar and stood 2 nd in zonal level.
2.	<p>A number of students from WBUAFS have qualified ICAR NET Examination, 2015. Faculty wise distribution stands as follows:</p> <p>F/O Veterinary & Animal Sciences : 15 students from PG courses, 8 students from Ph.D courses</p> <p>F/O Dairy Technology : 13 students from PG courses, 1 student from Ph.D courses</p> <p>F/O Fishery Sciences : 5 students from PG courses, 4 students from Ph.D courses</p>
3.	<ul style="list-style-type: none"> • 28 students obtained Junior Research Fellowship (JRF) of ICAR during 2015. • 4 students obtained Senior Research Fellowship (SRF) of ICAR during 2015. • 18 students are passed ARS main examination.

ACADEMICS (Contd...)

Different Camps attended by the students during the year :

Sl.No.	Held on	Location	Student Particiaption	Camps
1.	09/04/15 - 10/04/14	Dakshin Chandan- piri, Namkhana	33 Nos. students alongwith 13 Nos. teachers	Health cum Vaccination Camp
2.	15/05/15	Swachh Bharat Mission Belgachia Campus	29 Nos. students alongwith 5 Nos. teachers	Awarness Camp
3.	29/10/15 - 31/10/15	Rangabelia, Gosaba, 24 Pgs. (S)	43 Nos. students alongwith 4 Nos. teachers and 9 Nos. NGO	Health cum Vaccination Camp
4.	07/11/15	Lakhapal, Khusmi of Garbeta, Paschim Midnapore	33 Nos. students alongwith 11 Nos. teachers	Health cum Vaccination Camp
5.	10/12/15 - 12/12/15	Monteswar	52 Nos. students alongwith 6 Nos. teachers	Health cum Vaccination Camp
6.	30/03/16 - 31/03/16	Chandanpiri. Namkhana, 24 Pgs. (S)	35 Nos. students alongwith 8 Nos. teachers	Health cum Vaccination Camp



E RESEARCH

Research activities in the fields of Veterinary & Animal Husbandry, Dairy Technology and Fishery Sciences in West Bengal University of Animal & Fishery Sciences are looked after by the Directorate of Research, Extension & Farms. Various research projects are being undertaken by the faculty members of academic departments, scientists and research workers under the supervision of the Directorate of Research, Extension & Farms.

Faculty members and scientists of the University develop new technologies for the farmers and entrepreneurs of the state through research and extension centres in various agro-climatic zones of the state. The technical knowledge gained from the projects is later disseminated to the livestock owners and fish farmers of the state. The University has always tried to identify priority research areas and set up its own research strategies keeping an eye on eco-friendly, farmer friendly and small farming unit based technologies.

At present the University is conducting 31 various research projects/schemes with a fund allocation of Rs. 3736.79 lakhs sponsored by different funding agencies like ICAR, State Govt. departments, DBT, DST and other institutes.

Funding has been provided by the State Govt. under four RKVY Programmes running under this University. Two of them are one-time grant for development. Two others are for projects – one for livelihood development of the tribal people of Jhargram Block of West Midnapore and the other for Extension of Animal Health Care Services in Remote Areas of West Bengal. Two Niche Area of Excellence programmes funded by ICAR on “Surveillance of diseases of aquaculture finfish and shellfish in West Bengal and development of disease management strategies” and “Animal Disease Registry and Tissue Bank” are going to complete very soon. Two new All India Network Project on Mariculture and Fish Health has recently been taken up by the University to glorify the prestige of the University.

E.1. FACULTY-WISE DISTRIBUTION OF RESEARCH PROJECTS

<i>Sl.No.</i>	<i>Faculty</i>	<i>No. of projects</i>	<i>Fund allocation</i>
1	Veterinary and Animal Sciences	25	3064.51 lakhs
2	Fishery Sciences	5	665.70 lakhs
3	DREF	1	6.58 lakhs
	Total	31	3736.79 lakhs

E.2. FACULTY-WISE COMPLETED RESEARCH PROJECTS

<i>Sl.No.</i>	<i>Faculty</i>	<i>No. of projects</i>	<i>Fund allocation</i>
1	Veterinary and Animal Sciences	10	74.76 lakhs + US \$ 7000
2	Fishery Sciences	5	326.38 lakhs
3	DREF	4	6.58 lakhs
	Total	19	439.58 lakhs + US \$ 7000

RESEARCH (Contd...)

E.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	Niche Area of Excellence	ICAR	2
3	All India Network Project (AINP)	ICAR	5
4	RKVY	Govt. of WB	4
5	Outreach programme	ICAR	2
6	Ministry of Agriculture, Govt. of India (AH & DF, NFDB etc.)	GOI	2
7	Ministry of Environment & Fisheries (NCSCM)	GOI	1
8	Department of Biotechnology (DBT)	GOI	7
9	Department of Science and Technology (DST)	GOI	2
10	Project Directorate on Poultry, Hyderabad	ICAR	1
13	ICAR project	ICAR	1
14	Industry	Private	3
Total			31

E.4. BRIEF LISTING OF ON-GOING PROJECTS

E.4.1. FACULTY OF VETERINARY AND ANIMAL SCIENCES

Sl. No	Title of the Project	Funding Agency	Principal Investigator and Department	Fund Sanctioned (In lakhs)	Year of initiation
1	AICRP on Goat Improvement Black Bengal Field Unit-Kolkata	ICAR,	Prof. P.K. Senapati, AGB	151.33	2000
2	Effect of "GALLIPRO" Supplemented Feed on Growth performance of Broiler Chicken – A challenge study.	Industry - EVONIK (SEA) Pte. Ltd.	Prof. B. Roy, AN	8.26	2014
3	Role of phytobiotics as alternative to antibiotic growth promoters on performance of weanling pig and poultry	DBT, Gov. of India	Dr. G.P. Mandal, AN	19.07	2014
4	Poultry Seed Project	ICAR,	Prof. A.K. Sahoo, AGB	269.89	2010



RESEARCH (Contd...)

5	In-situ Conservation on Animal Genetic Resources (Haringhata Black Chicken)	ICAR,	Dr. U. Sarkar, AGB	21.50	2014
6	Conservation of Threatened Breed (Ghoongroo Pig)	Department of AH, Dairying and Fisheries, Govt. of India	Dr. M.C Pakhira, ILFC Dr. D.C. Roy, ILFC	78.50	2004
7	RKVY Project on Livelihood Improvement of Poor and Tribal People through Livestock Based Enterprises under Selected Villages of Jhargram Block	RKVY ARD Dept., Govt. of West Bengal	Dr. M.C Pakhira, ILFC	950.00	2014
8	Molecular characterization and study of disease resistance genes of indigenous sheep in West Bengal	DBT, GOI	Dr. A. Pal, ILFC	48.00	2014
9	New dimension in Agricultural Marketing and Rural employment generation through value added duck meat products	Ministry of State, DST, Govt. of W.B	Prof. S. Biswas, LPT	17.25	2015
10	RKVY Project on Extension of Animal Health Care Services in Remote Areas of West Bengal through Mobile Veterinary Clinic (MVC)	RKVY ARD Dept., Govt. of West Bengal	Dr. Partha Sarathi Jana, VEPM	583.20	2014
11	All India Network Programme on Bluetongue	Network programme, ICAR	Dr. S. N. Joardar, VMicro	99.40	2001
12	All India Network programme on gastrointestinal Parasitism	Network programme, ICAR	Prof. J.D. Ghosh, VPara	122.93	2000
13	Niche Area of Excellence on Animal Disease Registry and Tissue Bank	ICAR	Prof. J. D. Ghosh, VPara	176.19	2011
14	Outreach Programme on "Monitoring of Drug Residues and Environmental Pollutants"	Outreach, ICAR	Dr. T.K. Mandal, VP&T	88.00	2010
15	Evaluation of hepato-protective efficacy of different formulations (approx.20 groups) in Wistar Rats"	Industry - M/S. Chigurupati Technologies Pvt. Limited, Hyderabad	Dr. T.K. Mandal, VP&T	4.00	2014

RESEARCH (Contd...)

16	Evaluation of CNS, hepato-toxicity and other related symptoms of different alcohol formulations in Wistar Rats	Industry - M/S. Chigurupati Technologies Pvt. Ltd., Hyderabad	Dr. T.K. Mandal, VP&T	3.00	2015
17	Outreach Programme on Zoonotic Diseases (Dermatophytosis and Cryptococcosis in Animals and Their Public Health Importance).	Outreach, ICAR	Dr. Chanchal Debnath, VPH	71.48	2009
18	Effect of Ultraviolet-A/Riboflavin Corneal Collagen Cross-linking on the Virulence Factor of Fungi	DBT, GOI	Dr. Sarbani Hazra, VS&R	30.00	2013
19	Influence of corneal nerve regeneration on wound healing and its therapeutic modulation	DST, GOI	Dr. Sarbani Hazra, VS&R	60.00	2014
20	Delivery of drugs and cells to the cornea using silk protein-A novel therapeutic approach"	DBT, GOI	Dr. Sarbani Hazra, VS&R	82.00	2014
21	Development of Animal cartilage for surgical implantation in Microtia and Rhinoplasty of human patient"	DBT, GOI	Dr. Samit Kumar Nandi, VS&R	44.66	2013
22	Development of novel tissue engineered silk biomaterial based wound dressing patch for diabetic foot ulcers As Principal Investigator	DBT, GOI	Dr. Samit Kumar Nandi, VS&R	56.96	2014
23	Multi-layer Customized Skin Graft for Full Thickness Wound	DBT, GOI	Dr. Samit Kumar Nandi, VS&R	28.89	2014
24	Establishment of laboratory for stem cell therapy in Belgachia campus, Kolkata	RKVY ARD Dept., Govt. of West Bengal	Dr. S.K. Guha, VS&R	25.00	2015
25	Modernization of Hospital Set up at Belgachia and Mohanpur	RKVY ARD Dept., Govt. of West Bengal	Dr. D. Ghosh, VS&R & In-charge TVCC	25.00	2015



RESEARCH (Contd...)

E.4.2. FACULTY OF FISHERY SCIENCES

Sl. No	Title of the Project	Funding Agency	Principal Investigator and Department	Fund Sanctioned (In lakhs)	Year of initiation
1	Niche Area of Excellence on Surveillance of diseases of aquacultured finfish and shellfish and development of disease management strategies	ICAR	Dr. T. J. Abraham, AAH	488.97	2012
2	Development of Surveillance Programme for Aquatic Animal Diseases in West Bengal in collaboration with National Bureau of Fish Genetic Resources (NBFGGR), ICAR, Lucknow, Uttar Pradesh, (National Co-ordinator)	NFDB	Dr. Gadadhar Dash, AAH	76.43	2013
3	All India Network Project on Fish Health	ICAR	Dr. T. J. Abraham, AAH	23.00	2015
4	Development of Seed Bank and Propagation of Cage Culture of Asian Seabass and Mulletts in Coastal West Bengal (AINP on Mariculture)	ICAR	Dr. B. K. Das, AEM	65.30	2014
5	Assessment of Extent of Community Dependence on the Coastal Ecologically Sensitive Areas (ESAS) in Sundarban, West Bengal and Bhitarkanika, Odissa	NCSCM Ministry of Environment & Forests Govt. of India	Prof. R. K. Trivedi, AEM	12.00	2015

E.4.3. 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	6.58	2005

RESEARCH (Contd...)

E.5. BRIEF LISTING OF COMPLETED PROJECTS (2015-16)

E.5.1. FACULTY OF VETERINARY AND ANIMAL SCIENCES

Sl. No	Title of the Project	Funding Agency	Principal Investigator and Department	Fund Sanctioned (In lakhs)	Year of initiation
1	A.B. Vista feed ingredient project	Industry – A.B. Vista	Dr. G.P. Mandal, AN	US\$ 7000	2009-2015
2	Enteric methane emissions from livestock and mitigation strategies (Lalbahadur Shastri Young Scientist Award)	ICAR	Dr.A.K.Patra, AN	11.71	2013-2015
3	Study on exploring the antibacterial and nutrient spearing effects of Amaril in broiler chicken	Industry – Dex iberica, Spain	Dr. G.P. Mandal, AN	4.10	2014-2015
4	Effect of enzyme A on the performance and economic benefit of commercial broiler chickens	Industry - Danisco UK Ltd, UK	Dr. G.P. Mandal, AN	US\$ 5000	17/02/2015 - 30/06/2015
5	To Study the effect of feeding AMUNITY (from Virbac India – Mumbai) to control the incidences of Mastitis in dairy animals under field condition.	Industry – M/S Virbac Animal Hlth, care	Prof. Chanchal Guha, VEPM	1.80	2014-2015
6	Twinning Programme for NE (on Leptin)	DBT, GOI	Dr. S. N. Joardar, Vmicro	16.73	2011-2015
7	Twinning Programme for NE (on ESB�)	DBT, GOI	Dr. S. N. Joardar, Vmicro	24.63	2011-2015
8	'In vivo animal trial of CSIR-CGCRI formulation of ceramic based antacids'	Bioceramics and Coating Division, CSIR-CGCRI	Co-PI - Prof. T.K. Mandal, Pharma. & Toxi.	1.93	Sept 2015 - March 2016
9	Animal testing for “Biocompatibility of intraocular lens”	Industry - SAP & PAP	Dr. Sarbani Hazra, V S&R	4.20	2014-2015
10	Niche Area of Excellence on Animal Disease Registry and Tissue Bank	ICAR	Prof. J.D. Ghosh, VPara	176.19	2011- March, 2016



RESEARCH (Contd...)

E.5.2. FACULTY OF FISHERY SCIENCES

Sl. No	Title of the Project	Funding Agency	Principal Investigator and Department	Fund Sanctioned (In lakhs)	Year of initiation
1	Development of Climate-Resilient Aquaculture Strategies for Sagar and Basanti Blocks of Indian Sundarban (NICRA)	ICAR	Prof. R. K. Trivedi, AEM	100.00	2011-2015
2	Determination of the conservation value of the Mangroves of Indian Sunderban	NCSCM Ministry of Environment & Forests Govt. of India	Prof. R. K. Trivedi, AEM	11.00	2014-2015
3	AICRP on PHT	ICAR	Dr. Sreekanta Sarkar, FPT	215.00	2004-2015
4	Niche Area of Excellence on Surveillance of diseases of aquacultured finfish and shellfish and development of disease management strategies	ICAR	Dr. T. J. Abraham, AAH	488.97	2012-March, 2016

E.5.3. 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	Pilot Project on Climate-Resilient Adaptation through physical protection and enhanced food production for Indian	International Pilot Project Dept. for International Cooperation (GIZ), Govt. of Germany	Dr. B. K. Chand, Farm Manager, DREF	25.14	05.07.2012 – 25.06.2014
2	Pre-feasibility Study for an Envisaged Sustainable Aquaculture Programme under Indo German Financial Cooperation (International Consultancy Project)	German Development Bank (kfw)	Dr. B. K. Chand, Farm Manager, DREF	10.00 (13,000 Euro)	31.10.2014 – 30.06.2015
3	Environmental and Social Impact Assessment for Traditional Shrimp Farming Clusters in North 24 Parganas District of West Bengal (International Consultancy Project)	Organic Services, Germany	Dr. B. K. Chand, Farm Manager, DREF	3.30	12.02.2015 – 31.08.2015
4	NAARM	NAARM	Dr. S. Das, Scientist, DREF	---	2015-16

RESEARCH (Contd...)

E.6. SALIENT ACHIEVEMENTS OF ON-GOING PROJECTS

E.6.1. Highlights of the Projects Conducted in the Faculty of Veterinary and Animal Sciences

1. RKVY on Livelihood Improvement of Poor and Tribal People through Livestock Based Enterprises under Selected Villages of Jhargram Block

The Animal Resources Development Department, Govt. of West Bengal, and the State Level Sanctioning Committee (SLSC) has approved RKVY project on Livelihood Improvement of Poor and Tribal People through Livestock Based Enterprises under Selected Villages of Jhargram Block to WBUAFS. Primary target of the project is to reach 1000 farmers of 50 villages under Lodhasuli, Agubani and Patasimul G.P. Three GPs of Jhargram block under West Midnapur district has a target to improve the livelihood of small, marginal, landless and tribal women farmers through productivity enhancement of livestock through the Project.

For the year 2015-16, a total of 94 numbers of Health and Vaccination camp were organized covering 31 villages under the project area and vaccination was done against PPR (2502 dose), Goat Pox (317 dose), FMD (1467 dose), HSBQ (375 dose), RD (7000). Area specific mineral mixture and Balanced Livestock Feed were supplied. Nearly 50 numbers of Crate & Livestock shed at different villages had been constructed. 18 numbers of vermi-compost units and 10 nos of Phospho-Sulpho-Nitro Compost pit have been developed for improvement of soil health and this increased the crop yield by 10-20%.

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

The ongoing AICRP on Goat Improvement - Black Bengal Field Unit came into existence in the year 2001 under West Bengal University of Animal & Fishery Sciences, Kolkata with the main objective to conserve and genetic improvement of Black Bengal Goat in the farmer's flock. As per the technical programme the baseline information on production, reproduction, growth traits, population trend, management practices, feeding pattern, disease prevalence and socio-economics in goat production system were recorded. The registration of animals at farmer's flock with proper identification was carried out in village units.

- ❖ To fulfill the objectives, four village units i.e. Ayeshpur, Ganguria and Doluipur (in Nadia district), and Jatirampur (in South 24 Parganas district) were established under the project. But Doluipur village unit was closed in March 2013 due to non-cooperation from goat keepers and unsatisfactory performance. Later on during 2014-15 a new cluster at Bamunia and Beliapukur village in Murshidabad district has been adopted in collaboration with Murshidabad KVK under this University. Sundarban cluster and Murshidabad cluster has been further extended in 2015-16.
- ❖ Further a new cluster at Lodhasuli (Dhangri, Ranidihi, Manapara and Malapada village) in Jhargram Block of West Midnapur District has been adopted in March 2015. Thus the unit is now working in four clusters i.e. Ayeshpur and Ganguria (Nadia cluster); Jatirampur and Rangabelia (Sundarban cluster); Bamunia and Beliapukur (Murshidabad cluster); Lodhasuli (Jhargram cluster).
- ❖ A total of 751 registered doe (133,121,163, 62,30,78 and 75 does in Ayeshpur, Ganguria, Jatirampur, Rangabelia, Bamunia, Beliapukur and Lodhasuli units respectively) from which 1358 kids are born from 1st April 2015 to 31st March 2016.



RESEARCH (Contd...)

- ❖ 18 Bucks were selected based on their 6 months body weight and prolificacy status of their dams. Out of these 12 bucks were distributed in the village units in addition to previous males for selective breeding. Remaining bucks are being maintained at buck raising centre under the project.
- ❖ With the opening flock of 3217 in 2015-16, after breeding with selective males the closing flock has reached the size of 4403.
- ❖ As per the initial doe the population growth rate of Black Bengal for 2015-16 is 254.46 %
- ❖ The average flock strength of the farmers has recorded as 5.65 ± 0.21 in 2015-16 which was 5.94 in 2014-15.
- ❖ Majority of farmers have the flock size of 1 to 4 goats (48.05 %) followed by 5 to 8 (38.27 %), 9 to 12 (10.55%) and then by above 12 (3.13 %). It is an indicator of the breed becoming popular for goat rearing among the farmers with flock size 1 to 4.
- ❖ Improvement in body growth has also been observed in 2015-16 over the previous year. The average body weight at birth, 3 month, 6 month, 9 month and 12 month were 1.271 ± 0.012 kg, 5.230 ± 0.217 kg, 7.508 ± 0.053 kg, 10.152 ± 0.075 kg and 12.922 ± 0.108 kg respectively in 2015-16.
- ❖ The mean body length, height at wither and heart girth were 20.41 ± 0.02 cm, 21.68 ± 0.04 cm and 23.80 ± 0.07 cm at birth; 33.49 ± 0.05 cm, 34.63 ± 0.05 cm and 38.60 ± 0.01 cm at 3 months; 37.62 ± 0.14 cm, 38.87 ± 0.56 cm and 43.86 ± 0.24 cm at 6 months; 40.77 ± 0.08 cm, 42.57 ± 0.23 cm and 48.69 ± 0.08 cm at 9 months; 43.70 ± 0.13 cm, 45.40 ± 0.16 cm and 53.54 ± 0.19 cm at 12 months of age. Male kids are bigger than female kids at all ages.
- ❖ Improvement in reproductive performances from previous year has also been noticed. During 2015-16 the average age at first mating /service and 1st kidding were recorded as 228.14 ± 12.28 days and 375.88 ± 11.89 days respectively which were 237.54 ± 5.07 days and 383.24 ± 5.31 days in 2014-15.
- ❖ The average service period, gestation period and kidding interval was 74.74 ± 6.82 days, 146.69 ± 0.09 days and 223.25 ± 6.61 days during 2015-16.
- ❖ The kidding rate (litter size) was recorded as 1.78%. Twin birth kidding is 54.53% followed by singlet kidding (34.03%), triplet kidding (10.51%), quadruplet kidding (0.79%) and quintuplet kidding (0.13%) has been observed during 2015-16.
- ❖ With the intervention of health care and prevention the kid mortality (upto 12 month) has been reduced to 3.80% in 2015-16 and the overall mortality in the total flock was only 4.77%.
- ❖ In landless, marginal (upto 20 katha land), small (20 - 40 katha land) and medium (above 40 katha land) level farmers, the annual income was recorded as Rs 3035.00 \pm 1296.20, Rs 6485.74 \pm 344.54, Rs 4085.89 \pm 480.651 and Rs 7985.05 \pm 487.97 respectively.
- ❖ In illiterate, partially literate (Class - I to IV) and moderately literate (Class - V to XII) group of farmers, the annual income was around Rs 6645.83 \pm 1083.25, Rs 6795.02 \pm 410.14 and Rs 5620.75 \pm 308.16 respectively.

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- ❖ Animals sold by farmers have increased in 2015-16 (22.65 %) than the previous year (17.39%).
- ❖ The average annual income from goat rearing per farmer also has also been increased from previous year i.e. Rs 6073.44 \pm 240.82 in 2015-16, although the income per doe is Rs. 2748.00 which is almost similar to that of previous year (Rs 2790.00 in 2014-15).
- ❖ The AICRP on Goat Improvement was successful enough to create awareness among the goat farmers about identification and record keeping, disadvantages of early breeding of young does; regular vaccination and de-worming; importance of giving supplementary feeding to does, bucks and kids; optimum age and weight of kids for sale with expected market rate; first aid treatment etc through organization of several treatments cum vaccination camps along with other extension activities like meeting, interactive sessions, training etc.



Salient Achievements during 2015-16

- ❖ The population growth, over the initial strength, of 191.15% in 2003-04 has increased to 254.46% in 2015-16.
- ❖ As per the initial doe the annual growth rate of Black Bengal for this year is 254.46 %.
- ❖ Improvement in body growth has also been observed in 2015-16 over the previous years.
- ❖ The reproductive efficiency has improved substantially.
- ❖ The average flock strength of the farmers has reached to 5.65 in 2015-16 over the initial flock strength of 2.53 in 2002-2003.
- ❖ Mortality of kids has been reduced to 3.80% in 2015-16.
- ❖ Morbidity of goats also has been substantially reduced in 2015-16.
- ❖ Sale of goat has increased from 17.39 % in 2014-15 to 22.65 % in 2015-16.

The average income from goat per farmer per year has increased in 2015-16 (Rs 6073.44) than previous year.

3. Niche Area Excellence programme on Animal Disease Registry and Tissue Bank - A brief report of the achievements during 2015-16 are:

- *Babesia gibsoni* constituted the predominant (42%) amongst the canine vector borne diseases in and around Kolkata and some other parts of west Bengal as revealed in the molecular analysis (PCR) followed by *Ehrlichia. canis*, *Haemobartonella canis* and *Hepatozoon canis* (i.e. 23%, 11% and 9% , respectively).



RESEARCH (Contd...)

- Adult dogs revealed higher rate of incidence compared to those of the younger age groups; the GSD (33%) followed by Labrador (32%) and cross-bred dogs (19%) had moderate to high incidence rate of *B. gibsoni*.
- The incidence of all the CVBDs was higher in the female compared to the male; mixed infection with two or more vector-borne protozoan / rickettsial pathogens was predominant.
- Only three animals each out of 79 indigenous and 72 cross-bred cattle of Midnapore, Nadia, Hoogly and South 24-Parganas districts of West Bengal were seopositive for paratuberculosis as tested by the commercially available kit.
- Ten out of 25 faecal samples of chronic diarrhoeic cattle were detected positive for acid-fast bacilli. Molecular characterization of the organisms is under process.
- Data on canine distemper and parvo virus infection based on clinical diagnosis have been collected.
- Format for disease registry of the project has been developed for recording the data and their digitization.

4. All India Network Programme on Gastro-intestinal parasitism

Salient achievements during 2015– 2016

- The overall prevalence of gastrointestinal parasites irrespective of the four ruminant livestock species in the three agro-climatic zones was 62.61%. The highest was in Red Laterite zone (64.67%) followed by Coastal zone (64.25%) and the lowest in the New Alluvial zone (63.1%).
- The highest seasonal prevalence was in the monsoon season (72.56%) followed by winter (64.06%) and the lowest (55.12%) in summer. Intensity of GIN infection faecal egg count (EPG) revealed the similar seasonal pattern.

Prevalence of GIP in Ruminant Livestock of different agro-climatic zones of West Bengal

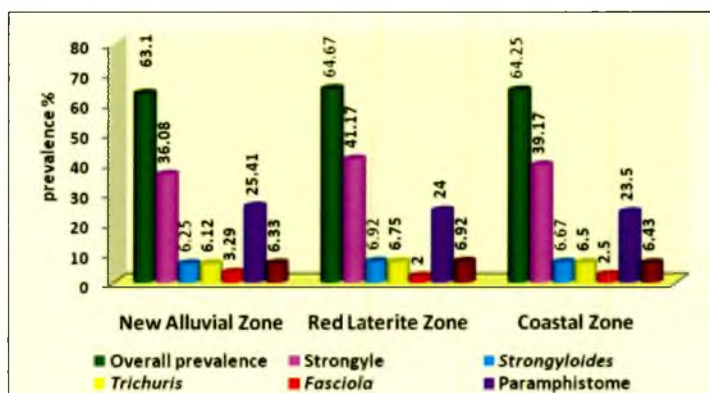
- Evaluation of three commonly used anthelmintics in small ruminant livestock of five organised farms revealed that Albendazole had lower than the desired efficacy (81.54% to 95.00 %) indicating the emergence of resistance, while Ivermectin (96.67% to 98.46%) and Levamisole (95.00% to 96.92%) yielded the desired efficacy.
- The per capita net economic losses due to G.I. nematodosis in terms of reduced body weight/meat production alone in small ruminants were Rs. 220.00 to 260.00 in sheep, whereas it was Rs. 318.00 in case of goat.
- *Haemonchus* resistant Garole sheep exhibited a significant ($p < 0.05$) elevation in the level of IL-13 after 7 to 14 days of infection with *H. contortus* compared to their susceptible counterparts in both the groups, indicating that *Haemonchus* resistance in Garole sheep might be mediated, among other mechanisms, through stimulated Th2 type response mediated through IL-13.
- *Haemonchus* infection did have significant effect on the concentration of IFN- γ in the *Haemonchus* resistant Garole sheep compared to their susceptible counterparts. This indicated that in absence of

RESEARCH (Contd...)

down regulatory role of IFN- γ (i.e. its low level) after the infection some other mechanism of immune response to *Haemonchus* might take the upper hand in exhibiting the resistance.

- The expression level of IL-13 in the resistant Garole sheep after the infection was more than seven-fold higher than both the susceptible groups after 14-day-post-infection. Whereas, the expression level of IFN- γ was lower after the infection in the *Haemonchus* resistant compared with the susceptible sheep.
 - The nucleotide sequence analysis of the 302 bp fragment of IL-13 gene from the nine sheep did not reveal any single nucleotide polymorphism (SNP), neither in the resistant Garole nor the susceptible Sahabadi sheep. The phylogenetic tree also did not reveal any different cluster.
 - The 302 bp fragment of IL-13 gene from the nine sheep did not reveal any single nucleotide polymorphism (SNP), neither in the resistant Garole nor the susceptible Sahabadi sheep. However, the 176-bp sequence of the IFN- γ gene on sequence alignment revealed a single polymorphism (SNP) in the exon 3 region only in the three resistant Garole sheep. This SNP in the exon 3 region was considered synonymous substitution with no substitution of any amino acid. The phylogenetic tree of exon 3 sequence did not reveal any distinct clusters.
5. **All India Network Programme on 'Bluetongue disease'**
Some of the achievements of this Network project during 2015-16 are depicted below :
- A. **Seropositivity against bluetongue virus was detected for the first time in ruminants of Meghalaya and Sikkim**

A total of 881 animal serum samples (sheep-141, goat-271, cattle-469) were tested for sero-monitoring to detect anti-BT antibodies. The sera were collected from different parts of West Bengal, Meghalaya, and Sikkim. Out of 881 serum samples, 255 samples (sheep-40, goat-65 & cattle-150) were found positive to anti-BT antibodies. The percent (%) positivity of animals includes sheep-28.36%, goats-23.98%, and cattle-31.98%. In this year, 300 serum samples (sheep-115, goat-185) were collected from different districts (agro-climatic zones) of **West Bengal** and tested subsequently. The results showed 34 (29.56 %) sheep and 21 (11.35 %) goat serum samples were positive. This year for the first time, serum samples were collected from animals of two eastern and north-eastern states, viz. Meghalaya and Sikkim. Out of total 430 samples (sheep-26, goat-69 and cattle-335) collected and tested from **Meghalaya**, 6 sheep (23.07%), 39 goat (56.52%) and 142 cattle (42.38%) were found to possess anti-BT antibodies. Out of total 134 samples (goat- 17 and cattle- 134) collected and tested from **Sikkim**, 5 goat (29.41%) and 8 cattle (5.97%) were found to possess anti-BT antibodies.





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- B. One BTV isolate was generated from goat blood, collected from Belda areas (District –West Medinipur) of West Bengal.**

Isolation of BTV was done from 32 suspected sheep (n=15) and goat (n=17) samples, collected from Belda (Paschim Midnapur district), Krishnagar (Nadia district), Adra (Purulia district), Suri (Birbhum district) and Burdwan town (Burdwan district) of West Bengal. Only Belda samples (n=4) showed positive signs at 3rd passage level in embryonated chicken eggs (ECE).

Healthy BHK-21 cells in growing stage were selected for virus isolation. CPE was observed in one of the Belda samples (WB/G/13), indicating presence of BTV in it. The viral genomic RNA was extracted from BHK-21 cell line and was subjected to guanidinium isothiocyanate (GIT) lysis method and polyacrylamide gel electrophoresis was performed. RNA-PAGE revealed 10 segments with classical migration pattern.

Extracted RNA was used to amplify the specific gene of the viral genome. When NS1 gene was amplified and run in agarose gel, a 270 bp band was observed. The molecular characterization of BTV isolate was done targeting the VP2 gene for sequence based serotyping. The detailed study of the isolated bluetongue virus by different molecular methods revealed its serotype identity. The isolate generated from goat was BTV-16.

- C. As a part of vector biology study, bionomics of probable vector species and laboratory based observations of life history were carried out for *Culicoides innoxius*, *C. Peregrinus* and *C. oxystoma*.**

Vector biology work was carried out by the collaborators of the AINP-BT Kolkata centre, working at Entomology Research Unit, Department of Zoology, The University of Burdwan, Burdwan (West Bengal).

- 6. Epidemiology of Extended-Spectrum Beta Lactamases (ESBL) in Enterobacteriaceae group of bacteria isolated from swine in NER (Assam, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim & Tripura) and swine & poultry in West Bengal**

Important observations during 2015-16 are as follows:

- A. Isolation of pathogenic strains of Enterobacteriaceae from kuroiler birds for the first time**

From 80 kuroiler birds, 191 broiler, and 50 indigenous birds, total 60, 150, and 37 isolates were identified as *E. coli*, respectively. From the collected samples of 80 kuroiler birds, 191 broiler, and 50 indigenous birds, 35 (43.7%), 138 (72.2%), and 36 (72%) samples, respectively were found positive for *Klebsiella* spp.

- B. Isolation of ESBL-producing Enterobacteriaceae from kuroiler birds for the first time**

Among the 60 *E. coli* isolates of Kuroiler birds, 14 isolates (14/60, 23.3%) were detected to possess at least one of the studied ESBL gene and phenotypically they were confirmed as ESBL-producing *E. coli*. However, *bla*_{CTX-M} gene is not detected in any of the *E. coli* isolate. All the 14 *E. coli* isolates possessed either *bla*_{SHV} or *bla*_{TEM} and 6 *E. coli* isolates possessed both the genes.

Among the 307 *Klebsiella* spp. isolates from poultry, 34 (11.07%) and 29 (9.5%) isolates were detected as phenotypically CTX-M and TEM/SHV producers, respectively. All the 34 *Klebsiella* spp. isolates were positive for *bla*_{CTX-M} gene in PCR. Further, 17 and 18 *Klebsiella* spp. isolates possessed *bla*_{TEM} and *bla*_{SHV} gene, respectively in PCR.

RESEARCH (Contd...)

C. Phylogenetic analysis of ESBL-producing *E. coli* and *Klebsiella* isolates

Even though the RAPD banding patterns were not identical, the phylogenetic analysis found similarity between some of the isolates from different places and breeds of the birds.

D. First time *in vivo* detection of proper anti-bacterial drug against selected antibiotic resistant (ESBL-producing) strains in pigs

From the study, it is suggested that ceftriaxone may be administered @ 25 mg/kg body weight, intramuscularly at 48 hour interval to check ESBL-producing and cefotaxime resistant *E. coli* infection in pigs. Pharmacokinetics of ceftriaxone was evaluated by HPLC.

7. Outreach Programme on 'Livestock related environmental pollutants, contaminants and toxicants (Monitoring of drug residues and environmental pollutant)'

Major areas of work under the project are to monitor drug residues and pesticide residue in edible tissues of livestock and evaluation of their safety for consumption. The project has the objective to determine marker residues and to prepare data base of monograph of pesticides and drugs in animal products with special reference to metabolism study of pesticides in farm animals.

Samples were collected from open markets of Darjeeling, Coochbihar, Jalpaiguri & Dakshin Dinajpur. A total number of 98 chicken, 105 chevon, 120 milk and 98 egg samples were analyzed for pesticides residue from the four districts. Chlorpyrifos and endosulphan were present in some of the chicken meat, chevon, egg and milk. Lindane and DDT were also present in some of the samples of milk and egg.

No antibacterial could be detected in any animal substrates collected from four districts (Coochbihar, Darjeeling, Dakshin Dinajpur & Jalpaiguri).

8. Outreach Programme on Zoonotic Diseases (Dermatophytosis and 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*".

Dermatophytosis:

- 7 species of dermatophytes (*Microsporum canis*, *M. gypseum*, *M. nanum*, *Trichophyton verrucosum*, *T. mentagrophytes*, *T. rubrum*, *T. equinum*) has been isolated from different species of animals and human.
- On the basis of the data collected during sample collection we have made an epidemiological study in respect of age, sex, species, season etc. and we noticed the following trends:
 - ✓ **Highest incidence of ringworm infections** was observed during **April to September**. During this time avg. rainfall, humidity and temperature in this tropical area remains most favorable for the growth and infection of dermatophytes.
 - ✓ After screening nine species of animals & some human patients it is observed that *M. gypseum* and *T. mentagrophytes* are most common species associated with infections of almost all types of animals and human.



RESEARCH (Contd...)

- ✓ **Equines** are most susceptible to *T. equinum* infections.
- ✓ **Pigs** are most commonly affected by *M. nanum*. As this is a zoonotic fungus, there are possibilities of infection in the workers working in the piggeries.
- ✓ Highest numbers of *M. canis* isolates were obtained from **Dog & Cat** population. *T. mentagrophytes* infections are also common among them. Infections due to *M. gypseum* and *T. rubrum* were also found.
- ✓ *M. canis*, *T. rubrum* & *M. gypseum* are most common causative agents for ringworm infections in **human**.
- **Epidemiological study on Human population revealed the following facts:**
 - ✓ Individuals from the age group of **11-30 years found most susceptible**. The possible cause may be they are the most physically active age group.
 - ✓ **Males are most commonly affected** than females may be as they are more actively working outside and more frequently coming in contact with animals and soil than females.
 - ✓ **Tinea corporis is the most common** form observed.
 - ✓ People from **rural areas are mostly affected by zoophilic and geophilic dermatophytes** as they frequently come in contact with soil and free living household pets.
 - ✓ People from **urban areas are mostly affected by zoophilic and anthropophilic dermatophytes**.
- A retrospective study was done to reveal the zoonotic potency of the isolated dermatophytes. Around 25% dermatophyte positive cases were found zoonotic.
- Antifungal sensitivity testing of the isolates was done. Most of the isolates showed low MIC values for Ketoconazole, Itraconazole, Miconazole, and Amphotericin-B. Increasing trends of resistance was observed for Fluconazole, Ketoconazole, and Gresiofulvin.
- Generation of awareness among the general people about this disease was done.

Cryptococcosis:

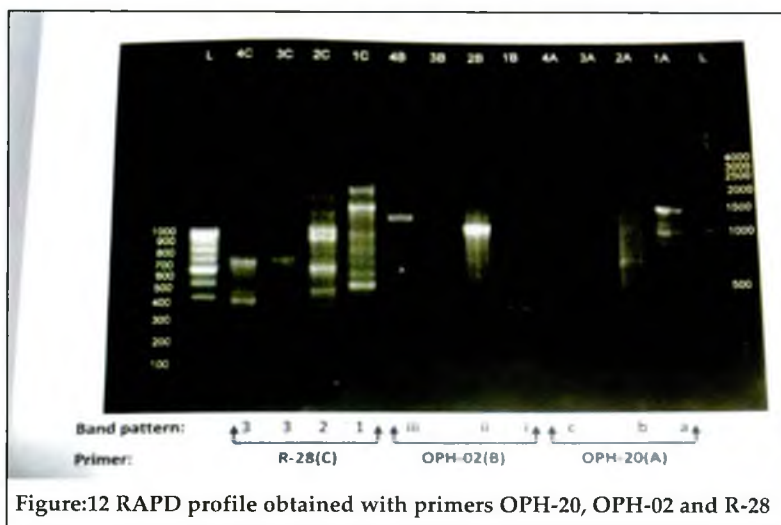
- *Cryptococcus* sp. was isolated from HIV positive human patients and a retrospective study was done to examine the zoonotic relationship of the pathogen in spreading among the HIV positive patients.

Total no. of CSF samples collected	Positive (%) for <i>C. neoformans</i>	No. of samples collected from birds (for positive CSF samples only)	No. of bird samples positive for <i>C. neoformans</i>	
			Total : 12	
			Excreta samples	Cloacal swab
50	19 (38%)	15 (both, excreta and cloacal swab from each case)	12	0

RESEARCH (Contd...)

Antifungal sensitivity testing of the isolates was done. Agar Diffusion Assay was adopted to determine the MIC values of Fluconazole, Ketoconazole, Itraconazole, Voriconazole, & Amphotericin-B by using MIC strips (Antifungal Ezy™ MIC Strips, Himedia). Almost all the isolates were found susceptible to most of the drugs. Some of the isolates showed higher MIC values (indicating resistance) for Fluconazole.

Molecular Identification by RAPD method was done for the isolates obtained from HIV positive patients and four different patterns of genetic diversity were observed.



➤ The centre is routinely working on isolation, identification, antifungal sensitivity testing, and epidemiological data analysis of the above mentioned pathogens.

9. Centrally sponsored scheme on In-situ Conservation of Threatened Breed (Haringhata Black Chicken)

About twenty five years back Haringhata Black, an indigenous fowl genetic resource came to the notice of scientists, planners and developers by virtue of its superb adaptability to back yard system, productivity and disease tolerance. The breed has been listed by Acharya and Bhat (1984), NBAGR (2004) and World Watch List (FAO, 2009). Haringhata Black chicken is limited mainly in Haringhata Block of Nadia District, West Bengal. Sparse population of the breed is also found in adjoining blocks, viz., Amdanga, Gaighata, Bongaon, Habra-II and Chakdah. The bird lays about 45-50 eggs per year with brooding. The eggs are smaller in size but outstanding in taste, high in demand and fetch about 1.5 times higher market price in comparison to eggs from industrial production system. The birds are smaller in size but chicken value is double of the prevailing broiler rate. The breed possesses high foraging and escaping capacity as also brooding and mothering ability. Disease tolerance is outstanding. The keepers find a flock of 8 to 10 birds as a dependable source of supplementary income but without much botheration about their day to day management. Sonakhali village under Birohi Gram Panchayet-I, Haringhata Block of Nadia district was identified as project area. The village is located within core breeding tract of the breed. It is situated at an altitude of 11 meters above the mean sea level on 23°00' N latitude and 88°55' E longitude. Each household was given poultry feed throughout the year in equal interval. 800 artificially hatched and reared up to 4 weeks chicks have been given back to the households depending upon the number of hatching eggs given. Deworming camp and vaccine camps were done as per schedule. Doordarshan and E-TV has repeatedly telecasted programme produced on In-situ



RESEARCH (Contd...)

Conservation of Harringhata Black Chicken at Sonakhali village. A documentary film on Backyard Poultry Farming has been produced by the Department of Audio- Visual & Publicity, Govt. of India at the Sonakhali village to be released shortly.

10. Development of Animal cartilage for surgical implantation in Microtia and Rhinoplasty of human patient

The biocompatibility of chemically processed goat choncal cartilage in xeno-transplanted rabbit model was assessed qualitatively (collagen, reticulin and elastin) and quantitatively (hydroxyproline, glycosaminoglycan, elastin, fibronectin, Transforming Growth Factor β (TGF β), TGF- α_1 , TGF- α_2). Treated cartilage was implanted in human volunteer, and samples were retrieved after 4 month for histological and histochemical examinations including one rhinoplasty operation. Treated samples had higher concentration of hydroxyproline as compared than untreated samples. Quantitative estimation of glycosaminoglycan, elastin, fibronectin, TGF β , TGF β_1 , TGF β_2 showed higher concentration than the untreated samples respectively. Histochemically, there were well organized collagen fibers which interwoven the architectural matrix between cells and other supported structures, peripheral orientation and organization of elastin without disturbing the structure and architectural pattern of the tissue and numerous chondrocytes placed in collagenous reticular stroma interwoven discretely throughout the section were observed. Samples extracted from human volunteer had normal arrangement of the cartilaginous cells without any inflammatory or exudative reactions and arrangement of collagen fiber in peripheral portion of cartilaginous matrix, damaged area of epithelium and intercellular junction. The rhinoplasty operation utilizing the treated acellular animal cartilage showed satisfactory recovery resulting improved facial look.

11. Development of novel tissue engineered silk biomaterial based wound dressing patch for diabetic foot ulcers

The animal experiments were performed following an ethical committee approved protocol in accordance with Institutional Animal Ethical Committee (IAEC), West Bengal University of Animal and Fishery Sciences (WBUAFS), West Bengal, India (Permit No. Pharma/IAEC/136 dated 30.6.2014).

Twenty four adult New Zealand White rabbits (1.2 – 1.5 kg) of either sex were randomized into two groups in three time points of 7, 14 and 21 days consisting of 4 animals in each time point. All surgeries were performed under intramuscular anesthesia using xylazine hydrochloride (6 mg/kg) (Xylaxin®, Indian Immunologicals, India) and ketamine hydrochloride (33 mg/kg) (Ketalar®, Parke-Davis, India). Three full-thickness skin wounds (6 mm diameter) in each animals were created on mid thoraco-lumbar area and respective patches were placed in the created defect keeping control as well. Haemorrhage, if any, was controlled by digital gauze pressure. The patches were replaced in every alternate days and the healing efficacy of the wound bed were closely monitored. An analgesic meloxicam (Melonex®, Intas-Polivet, India) at 0.2 mg/kg intramuscularly were administered to all the animals for 3 consecutive days from the day of operation. Tissue samples from the wound bed were collected at different time intervals of 7, 14 and 21 days for histological, histochemical like collagen, reticulin and elastin and quantitative estimation of hydroxyproline, glycosaminoglycan, elastin and DNA content.

After collections, samples were preserved in 10% neutral buffer formalin. The preserved samples were embedded in paraffin and sections of 5- μ thickness were prepared. From each tissue, slides were prepared in quadruplet, one for histomorphology and other three for histochemistry. Histological sections were

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subjected to routine haematoxylin and eosin stain for general morphological observations. Histochemical sections were stained for collagen with Masson's trichrome stain (Masson, 1929), reticulin with Gridley's modification of the silver impregnation method (Gridley, 1951) and elastin with Weigert's Resorcin-Fuschin method (Mallony, 1961) and observed under light microscope.

Apart from qualitative characterization of wound healing at different time points, quantitative estimation of hydroxyproline, Glycosaminoglycan, Elastin and DNA concentration was carried out. The hydroxyproline content in wound tissue was measured colorimetrically using hydroxyproline assay kit (Sigma Aldrich, USA) as per manufacturer's protocol. The sulfated GAG content of the wound tissues in rabbits was estimated using rabbits GAGs ELISA kit (Mybiosource, USA). The soluble elastin content of the wound tissues in rabbits was estimated using rabbits Elastin (ELN) ELISA kit (mybiosource, USA). DNA concentration was measured by QUANT-iT™ Picogreen method.

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

1. Niche Area of Excellence on Surveillance of diseases of aquacultured finfish and shellfish and development of disease management strategies

Salient achievements during 2015-16:

- Established a fish disease diagnostic laboratory with facilities for Level 3 diagnosis
- Prepared a fish disease database and a fish disease calendar comprising 75 infectious and non-infectious diseases prevalent in West Bengal
- Documented the prevalence of Transboundary Aquatic Animal Diseases (TAAD) such as WSV, CyHV2, CyHV3, lymphocystis, EUS and streptococosis, of which WSV, CyHV3 (yet to be validated by referral laboratory) and EUS were OIE listed diseases.
- First to report the molecular characterization of *Myxobolus* spp., *Thelohanellus* spp. and *Argulus* spp. on the basis of 18S rRNA gene sequence from India.
- Generated genetic database for molecular taxonomy of 12 *Myxobolus* spp. and 14 *Thelohanellus* spp. and two *Argulus* spp. on the basis of 18S rRNA gene sequence.
- First outbreak report of Cyprinid herpes virus-2 disease in ornamental (goldfish) aquaculture farms in West Bengal
- Documented four different types of vertebral deformities such as platyspondyly, kyphosis, lordosis and scoliosis, and fish opercula deformity syndrome (FODS) in finfish species



RESEARCH (Contd...)



Ulcers on *Notopterus notopterus*



Bacterial gill disease of
Carassius auratus



Carassius auratus with *Microcystis*
filled digestive system



Dropsy in *Clarias gariepinus*



Nodule formation in the organs
of *Pangasius pangasius*



Catfish larva with swollen head,
brain myxoboliasis



National Seminar on "Trends and Future Strategies of Fisheries Research and Extension: Bangladesh and West Bengal" at the auditorium of FFSc, WBUAFS, Chakgaria in presence of the Professors of Bangladesh, Scientists of CIBA, KRC, Kakdweep, Dean, FFSc. and Vice Chancellor, WBUAFS

RESEARCH (Contd...)



Scoliosis in *L. bata*

Left to Right: The Chief Guest, Dr. P. K. Mukhopadhyay (Retd.) Principal Scientist (CIFA), Prof. S Biswas, Director of Research, Extension and Farms, WBUAFS, Prof. A. K. Samanta, Registrar, WBUAFS and Prof. B.K. Das, Dean, FFSc, WBUAFS during the NSPAAD workshop on "Advance Practices on Fish and Shrimp Health Management for Sustainable Aquaculture" on 22nd March-2016 at FFSc., WBUAFS, Kolkata



Argulosis in *Carassius auratus*

- Documented normal serum biochemistry of apparently healthy *Labeo rohita* for 16 parameters and *Pangasius pangasius* for 12 parameters and normal serum immune chemistry of healthy *P. pangasius* for 7 parameters
- First to report the serum insulin-like growth factor-1 and insulin-like growth factor binding protein-1 concentrations in cultured Indian major carps and *P. pangasius* in India
- Standardized the appropriate packing density for fish seed transportation for 2-3 h duration
- The packing density of 1 kg/bag (1 kg/7.5 L of water) was ideal for fish seed transportation for 2-3 h duration as against 1.5 kg/bag (1.5 kg/ 7.5 L of water) in practice.
- Relative risk, putative and sparing factors that induce disease in carps and catfish have been identified for ecofriendly interventions and for the development of BMPs.
- Developed Dot ELISA techniques for the detection of *Edwardsiella tarda* and *Aeromonas hydrophila*

- Standardized multiplex PCR technique for simultaneous detection of *Edwardsiella tarda* and *Aeromonas hydrophila* infection in catfish
- Standardized the PCR based detection of *Edwardsiella tarda* and *Flavobacterium columnare* infection in finfish by culture independent metagenomic approach
- Developed appropriate protocols for the application of *Pseudomonas aeruginosa* P72 isolated from fish mucus as biocontrol agent, probiotic and immunomodulator
- Developed an outer membrane protein (OMP) vaccine for *Edwardsiella tarda* and assessed its efficacy in *Pangasius oangasius* against *Edwardsiella tarda* infection.
- Organized 59 training programmes for the benefit of 2070 fish farmers and 137 extension personals
- Involved 14 MFSc and 3 Ph D scholars in the NAE the programme
- Four research papers of the NAE programme were adjusted as best papers in Journal and seminar presentations.
- Submitted a total of 122 numbers of 16S rDNA gene sequences/18S rRNA gene sequences comprising 81 numbers of 16S rDNA gene sequences, and 25 numbers of 18S rRNA gene sequences of *Thelohanellus* spp., 13 numbers of 18S rRNA gene sequences of *Myxobolus* spp., 6 numbers of 18S rRNA gene sequences of *Argulus* spp. to NCBI GenBank database.
- Developed a set of keys for the species level identification of motile aeromonads on the basis of biochemical tests

CMFRI Institute of the country with same objective but on different species available in that locality. It is a unique effort for enhancing the fish production particularly in marine environment. In West Bengal, the marine capture fisheries have been declined day by day. In this situation, the project will be given a new light to the coastal fisher folks for enhancing their income and livelihood.

RESEARCH (Contd...)



Cage Culture

Some of the highlights of project activities during 2015-16 are:

- a. The nursery rearing of Bhetki seed has already been started at Digha and marine cages will be installed shortly for intensive culture of the candidate species.
- b. Fabrication of cages for nursery and grow-out culture has already been started at Digha.

2. Assessment of Extent of Community Dependence on the Coastal Ecologically Sensitive Areas (ESAS) in Sundarban, West Bengal and Bhitarkanika, Odissa

A first time comprehensive rapid survey work to assess the status of community dependence on the Coastal Ecological Sensitive Area (ESA) of Sundarban was carried out and the data analysis is going on. A total number of 2350 households covering 56 villages within 11 community development blocks falling near Coastal Ecological Sensitive Area (ESA) of Sundarban have been surveyed in this study.



Community dependence survey work in Sundarban



Address by the P.I. in enumerators' training programme

RESEARCH (Contd...)



Welcome Address by the Dean during enumerators' Training Programme



Project enumerators' Training Programme, at F.F.Sc.



Project enumerators' Training Programme, at F.F.Sc.



Project enumerators' Training Programme, at Joygopalpur Gram Vikash kendra, Basanti

3. Development of Surveillance Programme for Aquatic Animal Diseases in West Bengal Salient achievements during the year 2015-16 are as follows :

- Surveillance of 15 different cultured food fish and 3 cultured shrimp/prawn species and 10 different freshwater ornamental fish species resulted in the detection of infectious and non-infectious diseases
- Documented the prevalence of OIE listed disease (WSV) and diseases of National concern such as Myxoboliasis, Argulosis, Thelohanelliosis, Trichodiniasis, Dactylogyrosis, Ichthyophthiriasis, Aeromoniasis and Vibriosis in West Bengal.
- Three different types of vertebral deformities such as lordosis, scoliosis and fish opercula deformity syndrome (FODS) were observed in finfish species.
- Submitted 04 numbers of 16S rRNA /18S rRNA gene sequences to NCBI, GenBank.

RESEARCH (Contd...)

- A total of 13 Farmers training programmes and 9 Awareness Camps have been completed, benefitting 692 numbers of fish/Shrimp farmers and 58 Fishery Extension Officers during April 2015-March 2016 excluding 3 mega events namely Bengal Fish Fest, Kolkata, Bengal Aqua Expo, Midnapore and Fish Fair, Dhaniyakhali, Hooghly, where thousands of farmers were benefitted.
- 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 Govt. machinery.
- Extension activities, like, cover story on Argulosis and its control in ETV, Annadata (Bengali) has been circulated during March' 2016. Circulation of the technical programme (Bengal Aqua Expo) in local cable channel in Contai, East Midnapore, regarding Advance practices in Shrimp farming and health management had been made during January' 2016.

E.6.3. 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 under continuous 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 on agricultural education in India. The nodes are provided with unified information system for collection, 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.



EXTENSION ACTIVITIES



The aim of Extension activity in the perspective of WBUAFS is to enhance productivity from the animal and fishery sectors through generation of employment as well as income. On the other hand, such activities help in receiving feed-back from the beneficiaries. These feedbacks help in the design of future research and education activities as well as setting up farmers' need based training modules. Outreach activities are basically farmers' programme in presence of scientists and extension educationists, alongwith the support and initiative from the Government and non-government organisations. So farmers' or their representative's participation is a must in such extension programmes. The extension system has to keep in mind socio-economically weak farming community, which is large in size, with either small or no landholdings thus demanding for lesser infrastructural requirement for their development.

F.1. EXTENSION EDUCATION

Directorate of Research, Extension & Farms manages planning and execution of all the extension activities of the University in close consultation and co-operation of the faculty members through the Deans of the faculties. It collaborates and coordinates the research findings and outreach programmes with the State Govt. Department of Animal Resource Development, Fishery Development and other Government and Non-Government organizations. The Directorate also organizes different types of seminars, symposium training programmes, workshops and refresher courses etc. at regular intervals. Another activity in this area is publication of periodicals, newsletters, research highlights, leaflet, booklets etc. to create awareness amongst the farmers on latest technological advancements in the field of Veterinary, Dairy and Fishery Sciences. The department is also responsible for arranging awareness camps, production of documentary films, participation in technology demonstration fairs and exhibitions, radio and TV shows at frequent intervals. It also coordinates several programs with the aim to disseminate knowledge evolved through technologies developed in the University to the rural mass through its extension wing. The Directorate also provides guidance and supervises the activities of the different KVKs under its control. Moreover, it monitors the extension of knowledge and information about the activities of the University through the use of media, both in the print form and on the web.

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

Faculty of Veterinary & Animal Sciences

Sl. No	Title	Program Type	Organizing Dept.	Venue	Date/ Duration	Participants
1.	30 th National Symposium and Annual Convention of Indian Association of Veterinary Anatomists	Symposium & Annual Convention	Veterinary Anatomy & Histology	WBUAFS Belgachia	3 days 16 th Dec.- 18 th Dec. 2015	PG & Ph.D. students and Faculty members
2.	Summer Training on 'Immunobiochemical Techniques'	Training	Veterinary Bio-Chemistry	WBUAFS Belgachia	1 month June – July, 2015	B. Tech. (Bio-technology) students
3	"Some Issues in current Research and Publication"	Seminar	Vet. Pharm. & Toxicology	Dept. of Pharmacology & Toxicology, WBUAFS Belgachia	1 day 18 th July, 2015	PG & Ph.D. students and Faculty members of VAS

EXTENSION ACTIVITIES (Contd...)**Faculty of Fishery Sciences**

Sl. No	Title	Program Type	Organizing Dept.	Venue	Date/ Duration	Participants
1	Survey methodology to assess the dependency value of the community residing near the Critically Vulnerable Coastal Areas (CVCA) of Sundarban	Training	AEM, FS	Faculty of Fishery Science, WBUAFS and Joygopalpur Gram Vikash kendra, Basanti	4 days 8 th -11 th June, 2015	Project Enumerators'
2	Cage Culture of Sea Bass	Training	AEM, FS	Digha Field Station	1 day 27 th Feb. 2016	Beneficiaries of the Project

Faculty of Dairy Technology

Sl. No	Title	Program Type	Organizing Dept.	Venue	Date/ Duration	Participants
1.	Organized a workshop cum Scientists' Dairy Industry partners meet by Faculty of Dairy Technology, WBUAFS and ICAR- National Dairy Research Institute – ERS Kalyani on 'Commercialization of Dairying through production and traditional processing'	Workshop	Faculty of Dairy Technology, Mohanpur and ICAR- National Dairy Research Institute – ERS Kalyani	ERS of NDRI, Kalyani	1day 12 th Dec. 2015	Scientists & Dairy Industry Partners
2.	Organized a seminar on 'food safety regulations in dairy industry'	Seminar	Faculty of Dairy Technology, Mohanpur	Faculty of Dairy Technology, Mohanpur	1day 7 th Oct. 2015	PG & Ph.D. students and Faculty members of DT
3.	Organized a special Lecture on 'Potential application of high pressure homogenization in the Dairy industry'	Special Lecture	Faculty of Dairy Technology, Mohanpur	Faculty of Dairy Technology, Mohanpur	1day 28 th March, 2016	PG & Ph.D. students and Faculty members of DT



EXTENSION ACTIVITIES (Contd...)

Directorate Of Research, Extension & Farms

Sl. No	Title	Program Type	Organizing Dept.	Venue	Date/ Duration	Participants
1	Participated in celebration of 19 th National Animal Resource Development (Pranisampad Bikash) Week, 2015	Technology Week	DREF	Hatgobindapur, Burdwan	3 days 19 th 20 th November, 2015	DREF Officials & Staff, Faculty members from F/O VAS and Farmers
2	Dissemination of Technologies developed by WBUAFS : Prospects, Policies and Programmes	Workshop	DREF	Farmer's Hostel, Belgachia	1 day 27 th November, 2015	PC & SMS of KVK, Researchers of WBUAFS, officials from line depts.
3	Organic Farming	Training	DREF	Farmer's Hostel, Belgachia	3 days 28 th – 30 th November, 2015	PC, SMS & Farm Managers of KVKs, officials of DREF, Faculty members from ILFC Dept.
4	Bengal Fish Fest	Fish Fest	Dept. of Fisheries & Indian Chamber of Commerce	Nalban Food Park, Salt Lake, Kolkata	3 days 18 th – 20 th December, 2015	DREF Officials & Staff, Faculty members from F/OFS
5	International "Lok-Sanskriti Krishi Mela"	Mela	DREF	Srirampur, Burdwan	7 days 12 th - 18 th January, 2016	Officials from WBUAFS
6	4 th Paschim Banga Poultry Mela	Mela	DREF	Milan Mela Campus, Kolkata	1 day 18 th February 2016	DREF Officials & Staff, Faculty members from F/OVAS

EXTENSION ACTIVITIES (Contd...)

7	Workshop on Intellectual Property Rights	Workshop	DREF, WBUAFS and Patent Information Centre, DST-Govt. of WB	Farmer's Hostel, Belgachia	1 day 25 th February, 2016	DREF Officials & Staff, Faculty members from the three faculties, SMS from KVKs
8	Exposure visit of farmers of KVK	Exposure Visit	DREF	Farms of Mohanpur Campus, Haringhata Farm, Kalyani SLF & Farmers' Hostel, Belgachia	1 day 28 th March, 2016	Farmers from KVK
9	Annual Review Meeting of the KVK activities	Review Meeting	DREF	Headquarter, WBUAFS	1 day 29 th March, 2016	PC & SMS from KVKs under WBUAFS

F.3. CONSULTANCY CELL AND ADVISORY SERVICES

The Extension wing of the Directorate of Research, Extension and Farms provides Consultancy and Farm Advisory services to the stakeholders in the fields of livestock farming, dairy product processing and fish farming. Faculty members and officials/scientists of the University render their expertise through field visits, farm or home visits, face-to-face discussions, over telephone, e-mails and postal communications. During 2015-2016, several livestock owners and farmers were rendered technical advises through this Directorate. The Extension wing also provides consultancy on animal husbandry, dairy technology and fishery related laboratory and field services. Livestock owners approach the cell to provide them projects / schemes etc. for establishment of livestock, dairy and fishery farms as well as other animal origin food products processing. Such schemes help them to obtain financial assistance from the funding agencies. Additionally, need based self-financing training programmes are conducted when sufficient number of farmers turn-up in its requirement. Extension literature, books, booklets etc. are provided to the beneficiaries through nominal prices under such Advisory and Consultancy services.

EXTENSION ACTIVITIES (Contd...)

Photographs of different programs organized by the different faculties and DREF, WBIAFS



Workshop cum Scientists' Dairy Industry partners meet by Faculty of Dairy Technology



30th National Symposium and Annual Convention of Indian Association of Veterinary Anatomists
16th - 18th Dec., 2015



Workshop on Intellectual Property Rights held on 25th February, 2016



ASCI - Train the Trainers Programme



Exposure visit of farmers from KVK at the feedback session on 28th March, 2016

EXTENSION ACTIVITIES (Contd...)

F.4. DOCUMENTARY FILMS PRODUCED

Six numbers of Documentary Video film have been produced by WBUAFS utilizing the funds received in the projects as well as by the University, which are enlisted below :

Sl.No.	Title	Language	Topic
1.	Gabadi	Bengali	Cattle husbandry
2.	Garoler golpo	Bengali	Garole sheep husbandry
3.	Chhagoler golpo	Bengali	Bengal goat husbandry
4.	Hangsomin	Bengali	Integrated farming of duck cum fishery
5.	Choroibeti	Bengali	Institution Village Linkage Programme (IVLP)
6.	Ghoongroo	Bengali	Ghoongroo pig production through Centrally sponsored scheme on Threatened breed – Ghoongroo pig

Copies of these documentaries are available for sale through the Extension wing of the Directorate of Research, Extension & Farms.

A documentary film entitled “Sustaining Communities in the Sunderbans through Adaptation” of duration of 24 minutes was prepared by the GIZ project.

F.5. ORGANIZATION OF ANIMAL / FISH HEALTH CAMPS

The West Bengal University of Animal & Fishery Sciences is continuously working towards livelihood development of the rural poor people of the State. The Directorate of Research, Extension and Farms stretches out its extension services on behalf of the University to the farming community residing at remote villages, where conventional aid/systems are yet not available. Some of the teaching departments of the Veterinary and Animal Sciences faculty alongwith the Extension wing of the Directorate of Research, Extension and Farms regularly organize treatment camps or vaccination camps free of cost against major livestock diseases at different corners of the State. During the reporting period, a total of nearly 18 animal health camps have been organized throughout the State.

In the similar fashion, the faculty of Fishery Sciences also organizes fish health camps and extends advisory services free of cost to the practicing fishermen inhabiting at different remote areas of the State.

F.6. WOMEN EMPOWERMENT

It is a good practice in the Indian households that the majority of the activities of livestock rearing are carried out by the women folk of the farmer families. The same is also true for indigenous dairy product preparation and fishery operations. The State is involved in the activities of boosting up the social as well as financial status of rural women. Since its inception, the University is also involved in improvement of the womenfolk through the overall development of their socio-economic status. The University organizes awareness camps, skill development training programmes, sensitization camps, capacity building programmes etc. for the self-help



EXTENSION ACTIVITIES (Contd...)

groups regularly for the improvement of the condition of farming women. The Krishi Vigyan Kendras at Murshidabad, North 24 Parganas and Jalpaiguri districts under the aegis of WBUAFS, also organize specific women empowerment programmes frequently throughout the year.

F.7. PUBLICATIONS

The publication of newsletters, extension literature like leaflets, booklets, pamphlets, handouts etc. are published regularly by the Extension wing of Directorate of Research, Extension & Farms. It also monitors publication of research papers and scientific popular articles in different print, electronic and web media 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 prepared by the departments of the faculties under the active supervision of the Directorate of Research, Extension and Farms. The extension literatures are circulated amongst the stakeholders through the Extension wing of the Directorate.

F.7.1. PUBLICATION OF ACADEMIC, SCIENTIFIC AND EXTENSION LITERATURES (2015-16):

1. WBUAFS Newsletter	1
2. University Annual Report	1
3. Research Project Annual Reports	5
4. Status Report of KVKs under WBUAFS	3
5. Course Practical Manuals	11
6. Laboratory Manuals	6
7. Text Books and other Books	11
8. Extension Book/Booklets/Pamphlets (Bengali)	20
9. Manual for trainees	5
10. Folder English/Bengali	1
11. Extension Literature	10
12. Compendium of Training Programmes	5

F.8. OTHER EXTENSION ACTIVITIES UNDERTAKEN

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

EXTENSION ACTIVITIES (Contd...)

F.9. ACTIVITIES OF KRISHI VIGYAN KENDRAS

The Krishi Vigyan Kendras (KVK) are front-line extension centres, meant for extension activities in agriculture and allied sectors, financed by ICAR. They actually form a network of pioneering science based institution, primarily working to exert an influence on the extension system of the district, caters to the training needs of the farmers and extension functionaries. It also facilitates the expansion of technologies tailored to the needs of farming community. It works on the principle of "Teaching by Learning" and "Learning by Doing" methods.

At present there are three KVKs under West Bengal University of Animal & Fishery Sciences functioning in the districts of Jalpaiguri, Murshidabad and North 24 Parganas. Brief report of the activities of these KVKs are as hereunder:

F.9. 1. KRISHI VIGYAN KENDRA, JALPAIGURI CELEBRATION OF RABI KISHAN SAMMELAN & TECHNOLOGY WEEK - 2016

Venue : Jalpaiguri Krishi Vigyan Kendra, Ramshai, Maynaguri, Jalpaiguri

Date : 10th - 12th February, 2016

Background :

Entrusted upon by Indian Council of Agricultural Research, Govt. of India Jalpaiguri Krishi Vigyan Kendra organized Technology Week, 2016 during 10th - 12th February, 2016 at Jalpaiguri Krishi Vigyan Kendra, Ramshai, Maynaguri, Jalpaiguri, West Bengal.

Rationale:

In the context of changing scenario of agricultural practices, Technology Week was celebrated to show the worth of different emerging technologies through live demonstrations as well as to accelerate the transfer of technology process through wider adoption. Moreover, celebration of such programme at KVK level would enhance the effectiveness KVKs in pursuit for knowledge empowerment of farmers, extension personals and other stake holders in the District

Modality:

The event was organized in a true sense of Public-Public and Public-Private partnership mode and was organized at KVK with the cooperation Farmers Club, SHG and NGO as active partners. The chief financial patron of the event was NABARD besides other Co-operative societies and development departments like Horticulture in the District.

Programme:

The event was a blending of seminars on need based thematic areas of local importance and agro based enterprises; agricultural quiz; Farmers- scientist interaction; Field visit to demonstration sites and Agricultural Exhibition; Plant and Animal Health and advisory clinic; agricultural exhibition involving Public sector organizations, Private companies and NGOs with live samples, models and products; competitive exhibitions for farmers club; SHGs etc.





EXTENSION ACTIVITIES (Contd...)

15TH SAC MEETING OF JALPAIGURI KRISHI VIGYAN KENDRA :

Venue : KVK Conference Hall Date : 20th February, 2015 Time : 10.30 A.M.

AGENDA FOR THE 15TH SCIENTIFIC ADVISORY COMMITTEE MEETING

- Agenda-1. Confirmation of the proceeding of 14th SAC meeting held on 13th February, 2015
- Agenda-2. Review of Annual Progress Report for the year 2015-2016
- Agenda-3. Finalization of Action Plan for the period from April-2016 to March-2017
- Agenda-4. Miscellaneous



Members present at 15th Scientific Advisory Committee Meeting of Jalpaiguri KVK

Sl. No. Members Present

- 1 The Vice Chancellor, West Bengal University of Animal & Fishery Sciences, Kolkata-37
- 2 The Director of Research, West Bengal University of Animal & Fishery Sciences, Kolkata-37
- 3 The Deputy Director & Parishad Officer, ARD Department, Jalpaiguri
- 4 The Assistant Horticulturist, Office of the District Horticulture, Jalpaiguri
- 5 The Assistant Director of Fisheries, Jalpaiguri
- 6 The Lead Bank Manager, Central Bank of India, Jalpaiguri
- 7 The District Development Manager, NABARD, Jalpaiguri
- 8 Sri Pradip Roy, Farmers Representative, Panbari
- 9 Sri Mukunda Pradhan, Farmers Representative, Barohati
- 10 Smt. Namita Majumder, Farmers Representative, Panbari
- 11 Smt. Kokila Sen, Farmers Representative, Panbari
- 12 Dr. Subhasish Giri, Assistant Director of Horticulture, Jalpaiguri
- 13 Programme Coordinator, Jalpaiguri KVK
- 14 Sri D.R.Sen, Director of RSETI, Jalpaiguri
- 15 Smt. Dipanwita Bandyopadhyay, Project Manager, LANDESA, Jalpaiguri
- 16 Smt. P.Pradhan, Field Support Officer, LANDESA, Jalpaiguri
- 17 Sri Bhabotosh Sarkar, NGO Representative, Panbari
- 18 Sri L.S.Roy, KWO, Jalpaiguri
- 19 Sri Sumanta Misra, Innovative Farmer, Jalpaiguri
- 20 Sri Kamal Sharma, Farmers Club Representative
- 21 Sri Jyoti Ram Roy, Secretary, Jalpaiguri District Farmers Club Federation, Maynaguri
- 22 Sri Bhupendra Nath Roy, SARADA Farmers Club Representative, Jalpaiguri

EXTENSION ACTIVITIES (Contd...)

SANSAD ADARSH GRAM YOJONA

Name of the village under Sansad Adarsha Gram Yojana : **Bhangarhat under Churabhandar GP**
 Contribution of KVK in the programme : Dissemination of technology through Training & Demonstration; Awareness camp,

Celebration of Important days –
Joy Kisan Joy Vigyan Divas
(23 rd December, 2015),
 Joint Visit programme with line department. Advisory programme and outreach programme



Kharif Sammelan

Name of the state	Name of district/ KVK	Date on which conducted	Number of participants		Name of public representative	Details of Technology Demonstrated and other programmes organized
			Farmers	Others		
West Bengal	Jalpaiguri	30.09.2015	372	155	1. Mr. Bijoy Ch. Barman, Hon'ble Member of Parliament, Jalpaiguri 2. Mr. Ananta Deb Adhikary, Hon'ble Member of Legislative Assembly & Chairman, West Bengal Livestock Development Corporation 3. Mr. Subhas Bose, Sabhapati, Maynaguri Panchayet Samity 4. Mr. Bhupen Roy, Pradhan, Ramshai Gram Panchayet, Ramshai, Jalpaiguri 5. Mr. Manoj Roy, Karmadhyaksha, Krishi, Motoso & Samabay, Maynaguri Panchayet Samity,	1. Training programme on cluster demonstration for pulse & oilseed. 2. Awareness programme on Soil Health Management 3. Awareness programme on Organic Farming 4. Exhibition of Model of New Technology 5. Leaflet published & distribution 6. Distribution of inputs under TSP programme



EXTENSION ACTIVITIES (Contd...)

Programme with Seema Suraksha Bal (SSB) + (BSF)

Title of Programme	Place & Date	No. of participants	 
Training of Tribal youth for better livelihood under border area.	KVK premises 5 th – 9 th October, 2015	26	
Training of Tribal youth for better livelihood under border area.	Nagrakanta	38	
Technology dissemination under border area of Jalpaiguri	Daikhata 17 th September, 2015	58	

Observation of National Science day:

Date of Observation	Activities undertaken
28 th February, 2016 at Maynaguri in collaboration with Bagjan Pragatishil Farmers' Club.& rural school	<ul style="list-style-type: none"> ➤ Importance of science on lab to land programme for the farming people ➤ Importance of Good Agricultural Practices for natural resources management ➤ Importance of farmers friendly agricultural equipments for the low expenses in the farming pattern ➤ Importance of Eco-friendly cultivation practices for 'Grow Safe Food, Awareness on Per Drop More Crop etc' ➤ Proper bio security measures for semi intensive farming and small ruminants. ➤ Awareness on Green Environment, vermicompost for organic farming, Swachh Bharat, ➤ Quiz competition



EXTENSION ACTIVITIES (Contd...)

Celebration of Aranya saptaha – 2015

A programme was organized in collaboration with Forest Department, Ramshai Range for celebration of **Aranya Saptaha** (14th July to 20th July) at KVK premises on and from 14th July - 17th July, 2015. An off-Campus planting materials distribution programme was held on & from 18th - 20th July, 2015 at the TSP and surrounding villages. Around 110 farmers, members of SHG'S, rural youths from different villages specially Tribal villages under Tribal Sub Plan participated in the programme. Panchayat functionaries and nursery personnel were also present. The programme was inaugurated by Mr. Bhupen Roy, Pradhan, Ramshai Gram Panchayat. All the members of Scientific Advisory Committee (SAC) actively participated in the programme. They suggested that such plantation programmes will be a step towards the holistic community development and bring up a **GREEN VILLAGE**. Dr. Biplab Das, Programme Coordinator, Jalpaiguri KVK entrusted his welcome address upon 'green technology for green earth'. Dr. Kesab Chandra Dhara, Assistant Director of Farms, WBUAFS elaborated the importance of **Aranya Saptaha** to strengthen of eco-system and socio-economic condition. KVK scientists explained the importance and objectives of Aranya Saptaha celebration and elaborated some technologies to take the challenges of improving agricultural situation and ensuring livelihood security in adverse climatic condition through extension of **Social Forestry**. All the participants assured that they would keep their village green with mass plantation and they will also plant ornamental trees along the road side and other fallow land to protect the environment for next generation. Planting materials were provided to a large number of participants on the program days from KVK premises and also from the surrounding villages later on.



KVK Programme on Petroleum Conservation Measures in Agriculture

An awareness programme among farmers about Petroleum Conservation Measures in Agriculture was organized at KVK premises on 15th March, 2016 on the thematic area of **Conserve Fuel Save Future**. The programme was organized as per the directives of Executive Director, Petroleum Conservation Research Association (PCRA), Ministry of Petroleum & Natural Gas, Govt. of India and ICAR-ATARI, Kolkata to take necessary steps towards saving of fuel in agriculture sector and to minimize the expenditure in agriculture as well as safe guard the environment.



EXTENSION ACTIVITIES (Contd...)



Dr. Biplab Das, PC, Jalpaiguri KVK stressed upon the areas related to agriculture and allied sector, where, more intervention was required, to conserve petroleum. To create wider awareness and better impact among farmers about Petroleum Conservation Measures Jalpaiguri KVK organized a training programme, displayed posters, distributed pamphlets and presentation was made through CD- ROM supplied by the PCRA. About 85 rural farmers & youths from different Farmers Club participated in the programme. All the members of Scientific Advisory Committee (SAC) actively participated and discussed to promote eco- friendly Agriculture through uses of new fuel efficient machine.

Celebration of International Soil Day - 2016

Sl. No.	Name of KVK	Venue of Program	No. of Participants	No. of Soil Health Cards distributed	Name of public representative / or other dignitaries	Specific KVK wise highlights (2-3)
1	Jalpaiguri Krishi Vigyan Kendra	KVK Training	265	250	Mr. Subhas Bose, Sabhapati, Maynaguri Panchayet Samity Mrs. Sreyashi Ghosh, Block Development Officer, Maynaguri Mr. Manoj Roy, Karmadhyksha, Krishi, Setch, Motso & Samabaya, Maynaguri Panchayet Samity Mr. G.C.Biswas, District Development Manager, NABARD, Jalpaiguri Mr. Sanjeeb Das, Assistant Director of Agriculture, Maynaguri Mr. Subhasish Giri, Assistant Director of Horticulture, Jalpaiguri	Seminar on Healthy Soil for Healthy Life Hall Leaflet published on Healthy Soil for Healthy Life and distributed Field demonstration on Soil Sample Collection Soil Testing Laboratory visited by the dignitaries Jalpaiguri Doordarshan Kendra covered the programme Soil Health Card distribution

EXTENSION ACTIVITIES (Contd...)



Celebration of Women's Day – 2016



Dignitaries' visit to the KVK

EXTENSION ACTIVITIES (Contd...)

Achievement under TSP Project

Name of the village adopted under TSP	Block	Population of the village			ST Population of the village			Percentage of ST population to total population
		M	F	T	M	F	T	
Barohati Uttar	Maynaguri	240	205	445	103	95	198	44%
Barohati Paschim		196	172	368	81	63	144	39%

Asset created under TSP : One 2 HP Pumpset for irrigation to the crop field
 Spray Machine – 2 nos,
 40 nos each of Spade and weeder,
 15 nos vermibed.
 Installation of tube well both for drinking water and irrigation in Kitchen garden.
 Distribution of planting materials.



EXTENSION ACTIVITIES (Contd...)

F.9.2. KRISHI VIGYAN KENDRA, MURSHIDABAD

Background information:

Murshidabad district is the 5th populated district in West Bengal. The district comprises of 5 sub-division, 26 blocks, 19 Assembly constituencies and 3 Lok Sabha constituencies. The net area under cultivation in the district is 3,65,000 ha which constitutes 69% of the total geographical area, the cropping intensity being 233.5%. More than 70% of the population of the district depends on agriculture. The Krishi Vigyan Kendra Murshidabad, since its establishment during 2005-06, is engaged for the upliftment of lively hood of the rural farming community of the district through conducting on farm testing, demonstration of latest technology and training for the practicing farmers, farm women, unemployed rural youths and extension functionaries of the district. During the financial year 2015-16 the Kendra has undertaken 21 nos. of long duration residential training programme for practicing farmers, 62 nos. of on/ off campus, 8 nos. of training programmes for rural youth, 8 nos. for Extension functionaries, 4 nos. of vocational training. Besides this the Kendra received a fund of Rs. 9,69,840/- from NABARD for conducting 24 nos. of sponsored training programme of 6 days duration, covering 480 no. of progressive farmers and Rs. 1,34,000/- was received from CDB for conducting 2 nos. of sponsored training programmes each of 6 days duration for young rural youth. Several other collaborative training programmes are also undertaken by the KVK with different organization like BCKV, District Agriculture department, ATMA Murshidabad, Horticulture department, ADR, District Fishery department etc. Along with these the Kendra also conducts several training programmes for Farmers club, producer organisations, NGOs as and when required. The brief report of different programme undertaken by the KVK is furnished below:

Details of mandatory activities taken up by the KVK during 2015-16:

Programmes	Number of programmes undertaken	Number of farmers benefited
On Farm Trials	8	70
Front Line Demonstration	26	654
Training	129	3473
Extension activities	1182	11450

➤ Salient achievement on OFT:

- TITLE:** Nutrient expert based fertilizer application for higher yield of wheat in alluvial soil of Murshidabad district

TECHNOLOGIES:

Farmer's practices: Cultivation with imbalance use of fertilizer;

Treatment 1: State RD of NPK (140:60:70);

Treatment 2: IPNI NE recommended dose of fertilizer.

RESULT:

The assessment of above three technologies namely Farmers Practice, State RD of NPK 140:60:70, IPNI NE recommended dose. The IPNI NE recommended dose of fertilizer. in different farmers' field, the result is





EXTENSION ACTIVITIES (Contd...)

showing that the IPNI recommended dose is giving more yield of 32.25q/ha as compared to other two treatments(28.5 q and 24 q per ha). So the BC ration(1.46) is more in case of IPNI NE recommended dose of fertilizer compared to other two treatments(1.35 and 1.10). Farmers are giving feedback that number of tillers are more in IPNI recommended plot followed by State recommendation and farmers practice plots respectively. The data are showing that the net return also more in IPNI recommended plots.

2. **TITLE:** Assessment of yield enhancement of Kharif Paddy through balance fertilization compiled with Zinc in Zinc deficient soils of Murshidabad district

TECHNOLOGIES:

Farmer's practices: No use or very less use of Zinc;

Treatment 1: RD of NPK application+ ZnSo₄-25kg/ha;

Treatment 2: RD of NPK application + ZnSo₄-12.5kg/ha+ 2 spray of Chelated Zinc @ 1 gm/Liter.

RESULT:

The assessment of above three technologies in 10 different farmers' field, the data is showing that the application of zinc in paddy field increasing the yield as compared to farmers practices of non application of Zinc. But when we are looking on the dose and time of Zinc application, we are getting that the soil application with 2 foliar application of zinc is showing more grain yield as well as net economic return. The farmer's feedback and results are below in detail-

1. The Number of productive tillers are 16, 20 and 23 in case of farmers practice, T-1 and T-2 respectively. The numbers of productive tillers are more in T-2 which indicate the higher yield.
2. The yield increments are 11.17% and 20.58% for only soil application and soil application plus 2 foliar application of zinc respectively over farmers practice.
3. Net return is more when zinc applied as basal application and 2 foliar applications at 15 DAT and 45 DAT.
4. Cost of cultivation is also lowering due to efficient nutrient management and no infestation of khaira disease in T-1 and T-2. But in case of T-2(RD of NPK application + ZnSo₄-12.5kg/ha+ 2 spray of Chelated Zinc @ 1 gm/Liter) the cost of cultivation is much lower than farmers practice as well as T-1.
5. The BC ratio T-2 is 1.58 where as other treatments are giving BC ratio of 1.15 and 1.43 for farmers practice and T-1 respectively.

3. **TITLE:** Assessment of productivity of *Pangasius pangasius* (Pangas) fish culture in jute retting pond or shallow beel in new alluvial zone of Murshidabad district

TECHNOLOGIES:

Farmers' practice: IMC culture 15000 nos./ha;

Technology Option I: *Pangasius pangasius* (Pangas) 11250 nos./ha, stocking size 2-2.5";

Technology Option II: *Pangasius pangasius* (15000 nos./ha), stocking size 2-2.5"

RESULT:

The OFT was conducted among seven farmers field. This is 3rd year of trial. Here give the better production in Technology-II option. The B: C ratio was 2.3 and the other B: C ratio was 1.9 and 1.2 for Technology-I and Farmers practice respectively. From three year of trials find that T-II always gives net profit Rs. 361308.0 per ha area. So now farmers can culture in jute retting pond using this technology. But during culture period farmers can

EXTENSION ACTIVITIES (Contd...)

remember that in winter seasons they can handle fishes very carefully. Maximum length was 49 cm and weight was 1.2 kg within 8 months of culture period with low inputs.

4. **TITLE:** Assessment of chital (*N. chitala*) and Tilapia (*T. mossambica*) culture in seasonal fish pond in Murshidabad district

TECHNOLOGIES:

Farmers' practice: Composite fish culture system (2000 nos) + chital (10 nos.);

Technology Option I: Chital+ Tilapia (stocking rate chital 1500 nos. / ha) (1:100) or 150 kg (37.5 kg male and 112.5 kg female tilapia);

Technology Option II: Chital+ Tilapia (stocking rate chital 2250 nos. / ha) (1:100) or 150 kg (37.5 kg male and 112.5 kg female tilapia)

RESULT:

The OFT was conducted among seven farmers field. This is 1st year of trial. Here give the better production in Technology-II option. The B: C ratio was 2.86 and the other B: C ratio was 2.31 and 1.90 for Technology-I and Farmers practice respectively. From first year of trials find that T-II gives net profit Rs. 232643.00 per ha. Maximum length was 40 cm and weight was 1.1 kg found in case of chital and maximum 240g and max. length was 21cm for tilapia were recorded within 8 months of culture period with low inputs.

5. **TITLE:** Evaluation of performance of different rural poultry breeds in Murshidabad district under backyard farming

TECHNOLOGIES:

Farmers' practice: Composite Local breed;

Technology Option I: Rhod Island Red (RIR);

Technology Option II: Banaraja

RESULT:

The trail is continuing and the birds are in laying condition. Only 6 months egg production (49, 97 & 92 egg/hen/6 month in FP, TO1 & TO2 respectively) data have been recorded but adoptability and growth rate of Banaraja breed are very much attractive to the farmers. The fighting habit of banaraja breed helps to adopt them in rural free range farming situation in compare to RIR poultry.



EXTENSION ACTIVITIES (Contd...)

➤ Technology week celebration:

Type of activities	No. of	Number of activities	Related crop/livestock technology participants
Exhibition	112 nos.	223 nos	Mainly horticultural product & Animal Product
Training	10 nos.	402nos	Agriculture, Fishery, Animal Husbandry, Soil
Quiz	3 nos.	210 nos	Agriculture, Fishery, Animal Husbandry, Soil, Misc.
Farmers' interface	2 nos.	285 nos	Agriculture, Fishery, Animal Husbandry, Soil, Misc.
Film show	4 nos.	448 nos	Agriculture, Fishery, Animal Husbandry, Soil sc
Group discussion	3 nos.	61 nos	Agriculture, Fishery, Animal Husbandry, Soil
Field visit	2 nos.	48 nos	Agriculture, Fishery, Animal Husbandry, Soil
Cultural programme	7 nos.	201 nos	Agriculture, Fishery, Animal Husbandry, Soil, Misc.
Demonstration stall	26 nos.	110 nos	Agriculture, Fishery, Animal Husbandry, Soil, Misc

➤ Extension Activities undertaken:

Nature of Extension Activity	No. of activities	Farmers			Total		
		M	F	T	M	F	T
Field Day	10	198	23	222	198	23	222
Kisan Mela	2	632	108	740	632	108	740
Technology Week Cum Krishi Mela	5	1093	306	1399	1093	306	1399
Kisan Sammelan	2	321	61	382	321	61	382
Workshop	2						
Lectures delivered as resource persons	8						1601
Newspaper coverage	6						
Radio talks	11						
Extension Literature	101						2332
Scientific visit to farmers field	50	666	42	708	666	42	708
Farmers visit to KVK	950	855	95	950	855	95	950
Vaccination camp	16	1022	222	1244	1022	222	1244
Soil health Camp	3	149	6	155	149	6	155
Farm Science Club Conveners meet	6	750	5	755	750	5	755
Celebration of important days							
1. 15 th August &							
2. Jai Kisan Jai Vigyan (28.12.15 & 29.12.15)							
3. World Soil Day (05.12.2015)							
4. Prani Sampad Saptaha (15.11.15)							
5. Fish Farming Day (10.07.15)							
6. 26 th Jan., 2016	6	490	177	667	490	177	667
Any Other							
1. Exposure Visit in different village of different block							
2. Awerence Camp							
3. Soil Health Awareness Camp							
4. NSS Camp							
5. SAC Programme	3	273	22	295	273	22	295
Total	1182	6449	1067	7517	6449	1067	11450

EXTENSION ACTIVITIES (Contd...)

➤ Other Extension activities undertaken:

Nature of Extension Activity	No. of activities
Newspaper coverage	6
Radio talks	3
TV talks	9
Popular articles	0
Extension Literature	16

➤ Production and supply of Technological products:

Crop	Variety	Quantity of seed (q)	Value (Rs)	Provided to number of farmers
Jute	Suren	0.75		75
Groundnut	TG37A	21.0		78
Green Gram	Samrat	3.0		44
Paddy	Pusa-44	0.2		5
Black gram	Sulata	3.5		48
Total		28.45		250

➤ Impact of KVK activities:

Name of specific technology/skill transferred	No. of participants	% of adoption	Change in income (Rs.)	
			Before (Rs./Unit)	After (Rs./Unit)
1. Pangas fish culture in seasonal fish culture	12(in three groups)	57	Rs. 16225.0/0.13 ha	Rs. 43887.0/0.13 ha
2. Vermicompost Production	8	37.5	Rs.36300.00	Rs.700000.00
3. Supplementation of Mineral Mixture	45	51.11	Rs.25920.00 (one cross breed Cow/lactation)	Rs. 33179.75 (One cross breed cow/lactation)
4. Introduction of New Poultry Breed	72	38.89	Rs. 2052.00 (One unit=18 birds)	Rs. 9210.00 (One unit=18 birds)

➤ Cases of large scale adoption:

Horizontal spread of technologies	
Technology	Horizontal spread
Hybrid paddy cultivation	240 farmers in 6 villages
Cultivation of EFY var. Kovur with Inter crop Amaranthus	430 farmers in 21 Blocks
Cultivation of Okra var No.-152	400 farmers in 19 Blocks
Red cabbage	35 farmers of 6 villages
Beans	100 farmers of 12 villages
Backyard poultry farming (Vanaraja & RIR)	5 nos. of farms are running in 5 diff. villages & one SHG group develop large scale brooding farm in MJ block with the help of BLDO, MJ block also
Pangas fish culture	Twelve nos. of progressive farmers already run their farm successfully till date



EXTENSION ACTIVITIES (Contd...)

➤ Details of impact analysis of KVK activities carried out during the reporting period:

- Farmers' phone call increased by 25%
- Farmers' footprint increased by 30%
- More numbers of ATMA training organized by KVK
- No. of sponsored training increased
- Resource generation has been increased
- Demand for soil testing has been increased
- Farmers interest in formation of farmers' club and producer organization has been increased
- Farmers interest in training programme is gradually increased
- NABARD selected KVK as a Producers Organization Promoting Institute for Murshidabad district

➤ Programme for other activities:

Name of the programme/scheme	Purpose of programme	Date/ Month of initiation	Funding agency	Amount (Rs.)
Technology week	Krishi mela	25.01.16-29.01.16	NABARD	100000.00
FLD, OFT	Short term research	Nov., 2015	ATMA	150000.00
Sponsored training	Training to the farmers	Jun., 2015	NABARD	969840.00
FOCT	Training to the farmers	Feb., 2016	Coconut development board	134000.00

➤ Joint activity carried out with line departments and ATMA:

Name of activity	Number of activity	Season	With line department	With ATMA	Both
Training cum exposure visit	24	2015-16	NABARD	0	0
Training cum exposure visit	6	2015-16	0	ATMA	0
Short term research	4	2015-16	0	ATMA	0
Expertise on Soil sample collection through Grid formation	4	2019-16	Agriculture	0	0
Nursery accreditation	4	2015-16	NHB	0	0
Financial literacy programme	4	2015-16	NABARD	0	0
World Soil Day celebration	1	2015-16	Agriculture	0	0
National Fish Farmers' Day	1	2015-16	State fishery	0	0
Producers Organization Promoting Institute	10	2015-16	NABARD	0	0
Vaccination cum Health camp	16	2015-16	MJ block, Bhagwangola-1 & Bhagwangola-1 block ARD department	0	0

EXTENSION ACTIVITIES (Contd...)

➤ Observation of Swacha Bharat Programme:

Date of Observation	Activities undertaken
1.02/10/2015 2.15/12/2015	Awareness camp Cleaning of campus and Amdahara Village in participation with Farmers' club members and young youth. Film show on different activities related to cleanliness and hygiene Distribution of leaflets

➤ Agriculture Knowledge in rural school:

Name and address of school	Date of visit to school	Areas covered	Teaching aids used
Hossainagar Dural Ulum Senior High Madrasha	14.10.16	-Awareness camp -Film show on different activities related to cleanliness and hygiene - Distribution of leaflets	Audio Visual Ads Leaflets

➤ Kharif Sammelan:

Name of district/ KVK	Date on which conducted	Number of participants Farmers Others	Name of public representative	Details of Technology Demonstrated and other programmes organized
Murshidabad	28-29.08.2015	800 40	Md. Badrudojja Khan, MP	the following schedule basic Care and management of small ruminants after floodCultivation of Wheat, Rice, Potato and crops to be grow after floods, Integrated pest management, Recent Technology used in vegetable and fruit crops, Paddy cultivation culture and integrated fish farming , Soil health management

➤ Rabi Sammelan:

Name of district /KVK other	Date on which conducted	Number of participants Farmers Others	Name of public representative	Details of Technology Demonstrated and programmes organized
Murshidabad	25-26.01.2016	750 45	Md. Badrudojja Khan, MP	Off season vegetable cultivation for better remuneration, Cultivation of fish in winter season, Importance of Organic farming, Discussion on vaccination for different live- stocks,



EXTENSION ACTIVITIES (Contd...)

➤ Contingent crop planning:

Name of the state	Name of district/ KVK	Thematic area	Number of programmes organized	Number of Farmers contacted	A brief about contingent plan executed by the KVK
WB	Murshidabad	Heavy rainfall announce Flood affected zone	5	92	<ul style="list-style-type: none"> - Where paddy affected by Flood if recovery is not possible go for pulses - Green fodder is affected during flood go for concentrate feed along with mineral mixture for productive ruminants - After mitigation of affected condition must Vaccinate the animals - Due to high water seepage use more amount of Raw cow dung in pond - Loss in vegetables can be minimize by Introduction short duration vegetable - Damage of Tomato due to scorching sunlight can be prevented by Introduction of Heat tolerant tomato variety

➤ Achievement under TSP Project:

KVK started special programme on Tribal Sub-Pan where different training programme, FLD, OFT, distribution of Implements and different agricultural inputs has been provided to the tribal people of few selected villages where the population of Tribal near about 30% of that particular village.

Name of the village adopted under TSP	Block	Population of the village			ST Population of the village			Percentage of ST population to total population
		M	F	T	M	F	T	
Kusumkhola	MJ	810	870	1680	387	443	830	49.41%
Chandpur	MJ	149	138	287	149	138	287	100%
Dahapara	MJ	4659	4341	9000	2468	2532	5000	55.56%
Baliapukur	MJ	533	317	850	122	88	210	24.71%

Asset created under TSP:

1. Distribution of 40 nos. of Feeding Manger for large Ruminants as Implements among Tribal People in different villages
2. Distribution of 20 nos. of handi used for fish fishing
3. Distribution of 15 nos. of cast net used for fish seed transfer as Implements among Tribal People in different villages

EXTENSION ACTIVITIES (Contd...)

4. Distribution of 15 nos. of Aquarium used for gold fish breeding and spawn rearing among the farm women
5. Distribution of 10 nos. of sprayer used for agricultural purpose
6. Distribution of 11 nos. of seed storage bin used for proper storage of seed
7. Distribution of 60 nos. of leaf colour chart used for proper storage of seed
8. Distribution of 2 nos. of Paddy thrasher used for proper storage of seed
9. Distribution of 12 nos. of Irrigation delivery pipe used for proper storage of seed

➤ Award received by Farmers from the KVK district:

Sl. No.	Name of the Award	Name of the Farmer	Year	Conferring Authority	Amount	Purpose
1	Krishak Samman	Abdul Mohit Khan	2016	Mahindra Samriddhi	Rs. 51000.00	Poly house capsicum cultivation
2.	Krishak Ratna	Md. Abul Kalam	2016	Deptt. of Agriculture, Govt. of WB	Rs. 10000.00	Round the year vegetable cultivation

➤ Any significant achievement of the KVK:

5. Induced breeding programme of Threatened species at KVK: Induced breeding of *Nandus nandus* (Veda) in cement tank using Gonadoprime/Wova-FH hormone: *Nandus nandus* is a native freshwater species of Murshidabad district. This is the threatened species in India. For its conservation and also purpose of culture its required breeding. This breeding was done in breeding hapa using Gonadoprime hormone with the dose of 0.38 ml/ kg of female and 0.25 ml/kg of body weight of male. They lay very small sticky eggs.
6. IARI post office linkage:

IARI provided different seeds for distributing among the farmers' under selected post offices and the details are given below-

- a) Bottle gourd : Distributed among the 35 nos. of farmers'
- b) Paddy : -Var. Pusa Basmati- 5 Distributed among 3 farmers
- Var. Pusa 44, distributed among 5 farmers
- c) Moong : Distributed among 4 farmers
- d) Mustard : Var. Pusa Mustard 28, distributed among 5 farmers



EXTENSION ACTIVITIES (Contd...)

F.9.3. KRISHI VIGYAN KENDRA, NORTH 24 PARGANAS

F.9.3.1. List of OFTs taken up by KVK and Recommendations:

Details of each On Farm Trial:

Sl No.	Discipline	Topic	No of farmers	Area (ha)	Recommendation
1.	Agronomy	Assessment of yield performance of Aman paddy cv. MTU 1010 by application of Zinc under rainfed medium to medium low land situation of North 24 Parganas district.	7	0.13	Application of zinc in three split doses i.e. 20 kg/ha of ZnSO ₄ as soil application, 2.5 kg/ha as foliar application at 30 DAT and 2.5 kg/ha as foliar application at 45 DAT resulted maximum no of yield (61.43 q/ha) and a benefit cost ratio of 1.73.
2.		Assessment of Boron application on yield of Lentil cv. Moitree in irrigated medium land situation of North 24 Parganas district.	7	0.13	Application of boron (0.5%) in three intervals i.e. at 15, 40 DAS and at flower initiation stage resulted maximum no of harvestable pod (46 per plant) as well as yield (11.93 q/ha) and a benefit cost ratio of 2.40.
3.	Horticulture	Assessment of performance of different micronutrient on yield and quality of papaya cv. in irrigated medium land situation of North 24 Parganas district.	7		Foliar application of Boron and Fe (both are @ 0.1%) significantly increase the yield of papaya over control. Application of boron resulted maximum no of harvestable fruit (16.94/ plant) as well as yield per unit (20.84kg/ plant & 59.05t/ha) and a benefit cost ratio of 2.54
4.		Evaluation of YVMV tolerant okra varieties during kharif season under irrigated medium land situation of North 24 Parganas district.	7		Introduction of YVMY resistant varieties like Sonal may minimize the YVMV infestation upto 3.64 per cent, followed by Hybrid Okra-152 (4.18%) along with maximum yield (12.21t/ha) and B:C ratio (2.13).

EXTENSION ACTIVITIES (Contd...)

5.	Fishery	Studies on frequency of lime application for increasing the fish productivity in ponds	7	0.13	Pisciculture is a common practice of the farmers of North 24 Parganas district belonging. Poor fish productivity in domestic small and medium sized pond due to low P^H of (Water pH range from 6.0 to 6.5) the zone. Acidic water (pH <7.0) reduces the growth of fish. Lime improves the mineralization of organic matter which acts as buffer in controlling pH of fish pond. Optimum fish production is expected when pH of fish pond ranges between 7.5 - 8.5.
6.		Assessment of growth performance of "Rohu" in medium sized fish culture pond	7	0.13	Composite fish farming in proper ratio (4:3:3) and replacement Jayanti rohu with local rohu. using proper liming and manuring. Production 3.85t/ha. This technology is more profitable (B:C ratio 2.28:1)
7.	Animal Sciences	Problem of poor growth and low productivity in Black Bengal goat rearing for rural women in North 24 Paraganas district	7	2	
8.		Problem of low productivity in backyard poultry rearing for rural women in North 24 Paraganas district	7	4	
9.	Animal Health	Management of post-mastitis stress in crossbred milch cows of North 24 Parganas district	6	1	
10.		Assessment of efficacy of herbal deworming agent in goats	6	1	



EXTENSION ACTIVITIES (Contd...)

9.3.2. LIST OF OFTs TAKEN UP BY KVK :

Details of each Field Level Demonstration:

Sl. No.	Discipline	Topic	No of farmers	Area (ha)
1.	Agronomy	Replacement of traditional variety Sulata (WBU 109)	10	3.5
2.		Replacement of traditional variety Improved Selection-5 (Roma)	10	3.0
3.		Replacement of traditional variety JD 6	15	3.0
4.		Replacement of traditional variety by Gabindobhog (Scented Rice)	15	4.0
5.		Replacement of traditional variety by Triguna (Disease resistant)	10	2.5
6.	Horticulture	Bunch covering with 20% perforated polythene	10	0.25
7.		Root feeding of insecticide	60	0.75
8.	Fishery	Farming of desi Magur (<i>C. batrachus</i>) in composite fish farming	10	0.5
9.		Farming of <i>Notopterus chitala</i> with <i>tilapia</i>	20	1.0
10.	Animal Science	Area specific mineral mixture (UAFSMIN- P) supplementation in cattle.	50	100 cattle
11.		Rearing of Banaraja birds	50	500 bird
12.	Animal Health	Prevention of occurrence of PPR in goats	200	600 goat
13.		Prevention of occurrence of FMD on cattle	50	100 cow

9.3.3. TRAINING PROGRAMMES TAKEN UP IN 2015-2016 :

Year	No. of training	No. of male farmers	No. of female farmers	No. of SC farmers	No. of ST farmers
2015-16	149	1222	441	1902	512

9.3.4. EXTENSION ACTIVITIES IN 2015-2016 :

Field day	Kishan Mela	Scientist visit to farmer's field	Farmers visit at KVK	Helpline Service	Diagnostic Service	Clinic days	Extension literature	Farmers/ Science Club	Total of beneficiaries
26	3	160	550		340	2	30	2	3515

In 2015-16, a total no. of 51950 farmers were directly benefitted by KVK booklet distribution under BGREI programme

EXTENSION ACTIVITIES (Contd...)

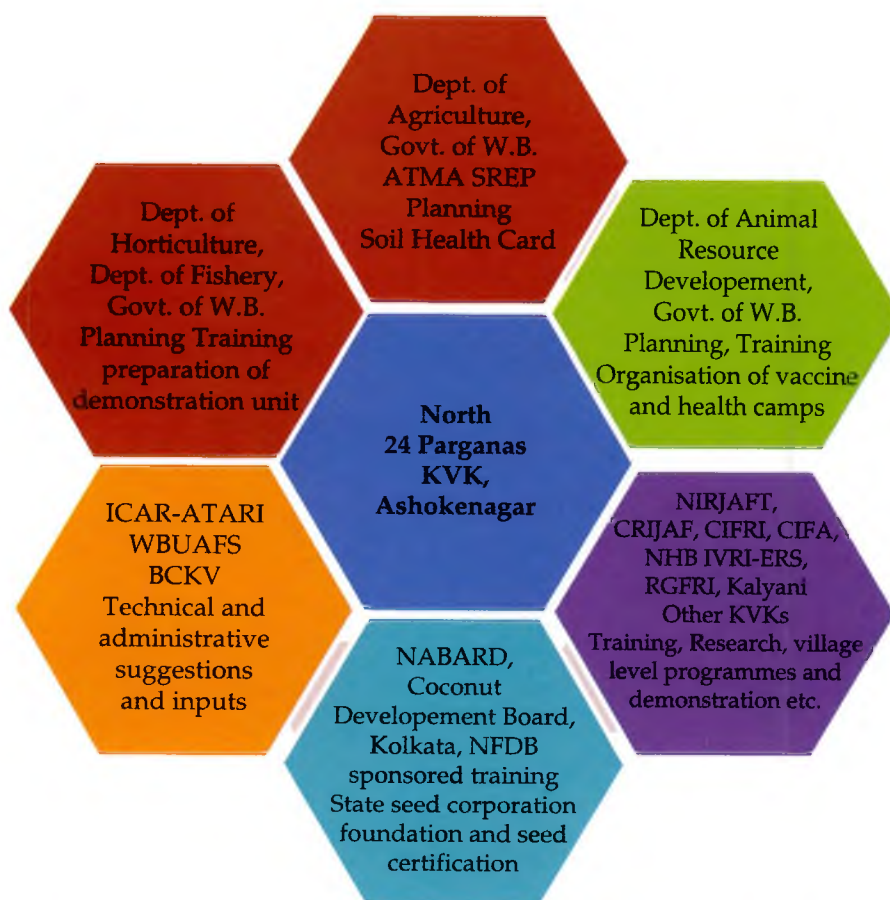
9.3.5. DETAILS OF SOIL HEALTH PROGRAMME :

Year	Soil health campaign No. of campaign Farmers benefitted	Soil testing laboratory set up in KVK	Soil tested
2015-16	KVK celebrated "2015-International year of Soil" within its own campus with glorious presence of about 200 farmers, district agricultural officials, Local MLA and other renowned personalities.	IARI approved soil testing kit "Mridaparikshak" is being used in the Laboratory.	260 no. of grid tested benefitting 3900 farmers of 20 villages till 31 st March, 2016

9.3.6. DETAILS OF ARS-FET/ EXTENSION EDUCATION :

Year	ARS-FET	B.F. Sc. Fishery
2015-16	6 (102 FOCARS batch)	28 (1 batch)

9.3.7. CONVERGENCE OF KVK WITH OTHER DEPARTMENTS :





EXTENSION ACTIVITIES (Contd...)

FUNCTIONAL LINKAGE WITH DIFFERENT ORGANIZATIONS :

Name of organization	Nature of linkage
ATMA	Governing body and management committee member Strategic Research & Extension Plan (SREP) preparation. Short term research planning for KVK.
RKVY	Governing body and management committee member CDAP preparation as a technical support institution
State Seed Corporation,	For seed village program, Foundation and certified seed etc., certification programme
Department of Fisheries, Govt. of W.B	Awareness camp on subsidized loan scheme,
Bidhan Chandra Krishi Viswavidyalaya, Mohanpur	Time to time planning execution, Planting material collection Bio fertilizers collection, Resource persons, Demonstration Seed village for Aromatic rice, Exposure visit
State Department of Agriculture	Technical support on BGREI programme and Time to time planning execution, Universalization of soil health card programme, contingent planning.
Regional Station for Forage Production Demonstration, Kalyani	Demonstration, Training and fodder seed collection
CRIJAF	Technical help in different training
CIFRI	Technology backstopping for farmers
CIFA	Jayanti rohu seed supply for OFT and technology support
State Department of Horticulture	Time to time planning execution Preparation of demonstration unit
State Department of ARD	Resource person, Planning, organizing Health camps
All India Radio	Participation in different radio talk program and meeting for proper planning
Doordarshan Kendra	Participation in different TV show programme

9.3.8. SPECIAL INNOVATIONS RECORDED BY THE KVK :

Thematic area	Farm Implement
Name of the Innovation	Rotovator ('Tornado')
Details of Innovator	Mr. Binay Krishna Dey, a 67 years old farmer-cum-mechanic-cum-tractor driver of Kamarthuba village, Habra, North 24 Parganas, West Bengal (Ph.: 03216-211078)
Back ground of innovation	After introduction of power tiller use of large tractor decreased tremendously day by day during the 9 th decay as because there was no implements like rotovator in use on that time in this districts.

EXTENSION ACTIVITIES (Contd...)

Technology details	Tornado is a new improved type rotavator, requires less power to operate with higher efficiency and depth. Observing the performance of his creation by trial and error method over few years, he finally develops the present rotovator (<i>Tornado</i>). Tornado has chain system with both side drives/ pull mechanism which reduce the load on the tractor. A complete vivel set of 8 penium was used in this rotavator which results less friction, less power to drive, reduces fuel consumption and increase the durability of the implements.
Practical utility of innovation	Most effective plowing implements for paddy growing region.

9.3.9. DETAILS OF SPECIAL ENTREPRENEURSHIP DEVELOPMENT BY KVK:

	Entrepreneurship development
Name of the enterprise	Horticulture based
Name & complete address of the entrepreneur	Mr. Ujjal Mali Vill : Kultala, Badar, Prithiba Dist-North 24 Parganas
Intervention of KVK with quantitative data support:	Planting of BAU ber are done at a distance of 2 x 2 miters in months of May to June. Plants were be irrigated in regular interval. At the time planting cowdung manure @5kg/pit should applied, their mustard oil cake @1.5kg/plant was applied once in the month of July and again in the month of October. Budding Methods: Root stock of Indian ber are raised in the month of April, after 4-5 months (September-October), when seedling attained a height of 1.5-2 ft, scion of the BAU ber are budded on it. Within 10-15 days bud started sprouting. The saplings are ready for planting in the main field after 7-8 months of budding (May-June).
Time line of the entrepreneurship development	Initially he brought 70 planting materials of BAU-Kul for planting in an area of 10 cottah (0.5 bigha). With an investment of Rs.7000/- for planting materials, he obtained a profit of Rs.17000/- from the introduced variety. In the next year, he brought another 3 acres of leased in land under BAU -Kul orchard. Under the supervision of KVK scientists his gross return from ber cultivation rose to more than Rs.3.9 lakh. In the year 2012-13, he produced 38,000 planting materials of BAU -kul to earn more than Rs.7.0 lakh besides selling the fruits of his ber orchard in the market for an amount of nearly Rs.5.0 lakh. Thus, his yearly income from ber cultivation has reached to more than Rs.12.0 lakh per year.
Technical Components of the Enterprise	Scientific cultivation of Kul (ber) and production of quality plantlets.
Status of entrepreneur before and after the enterprise	Before starting BAU kul cultivation he used to cultivate paddy in 1 acre land followed by vegetables and jute. From this area his annual income was around Rs. 1,00,000/- but after BAU Kul (ber) cultivation now he earn around Rs. 12,00,000/- per year. (which includes 3 acre more leased land)



EXTENSION ACTIVITIES (Contd...)

Present working condition of enterprise in terms of raw materials availability, labour availability, consumer preference, marketing the product etc. (Economic viability of the enterprise):	In the process of developing orchard, he has also engaged 4 persons to look after cultivation practices, 3 persons to look after selling of planting materials, 3 persons to carry out budding and another 2 persons for overall supervision.
Horizontal spread of enterprise	The planting materials are mainly sent various districts of West Bengal. Mr. Mondal, besides improving his own economic condition, also enabled 12 families to earn assured income and a good number of farmers to start their orchard of BAU-Kul.

Successful efforts made so far to establish market intelligence networks to enable the farming communities to get remunerative prices for their produce:

- ❖ **The “Kojagori Farmers Producer Company Limited”** of Purba Khilkapur, Babpur, P.S. : Duttapukur, Dist.: North 24 Parganas is incorporated on 13.10.15 under the Companies Act, 2013. The Babpur is the adoptive village of KVK and different mandated activities are going on in this village. The KVK helps in formation of Company along with the guidance of different district department. The company is now marketing agricultural produces from Babpur and other 6-8 villages. The company is now planning to better marketing of fish and fish products, establishment of banana ripening and storage structure, vegetable and fruit packaging unit.
- ❖ **Gobardanga Seba Farmers Samity (NGO)**, Gobardanga, N-24 Parganas District becomes one of the **Producer Organisation Promoting Institution (POPI)** under NABARD where KVK is playing a major role upon formation and functioning of this institution. KVK is also trying to link its adoptive villages through this POPI for smart agricultural market linkage for the benefits of farmers.

9.3.10 FARMERS' CLUB FORMATION BY KVK IN 2015-16:

- Galda Sabuj Farmers Club at Galda Village
- Nabadiganta Farmers Club at Iswarigacha

9.3.11. LITERATURE DEVELOPED/PUBLISHED BY THE KVK:

Item	Title	Authors name	Number	Circulation
Books	Unnato prathay Chas bas	Dr. B. Tudu, Mrs. S. Giri, Mr. Anindya Nayak, Dr. K. Pal, Dr. C. Maji, Mr. P. Adhikary, Mr. A. Hansda, Mr. S. Saren	500	500
Booklet	Sankar Dhan	Mr. P. Adhikary and Dr. P.K.Pathak	7300	7300
	Dhan Chase Susarhato Sasya Surakhar Upay	Mr. P. Adhikary and Dr. P.K.Pathak	21450	21450
	Matir Sastha Surakhar Upay	Mr. P. Adhikary and Dr. P.K.Pathak	20250	20250

EXTENSION ACTIVITIES (Contd...)

Extension Pamphlets/ literature	"Pat pochanopukure mach chas"	Mr. A. Nayak	1000	400
	"Desi Magur macher chas"	Mr. A. Nayak	1000	400
	"Banaraja murgi palon -gramin bikaser notun sambhabona".	Dr. C. Maji and Dr. K. Pal	1000	400
	"Has –Murgir kichu tika prodan somoysima o kichu proyojonio osudh"	Dr. K. Pal and Dr. C. Maji	1000	400
Electronic Publication (CD/DVD etc)	Technology week,2016	North 24 Parganas KVK	50	50
TOTAL			55550	51950

9.3.12. SEVERAL ACTIVITIES OF THE KVK:



Rabi Kisan Sammelan



Training Programme

EXTENSION ACTIVITIES (Contd...)



FLD on Groundnut



Sample testing in the Laboratory



National Soil Day Programme



RKVY sponsored Bio-Village

F.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, so developed, are lying in transit ready for distribution. The developed and tested technologies might be of immense help to the State farmers for enhancement of their income and livelihood. These may also be applicable to the other regions of the country after going through proper refinement, thus in turn benefiting the vast farming community of the nation. The technologies developed during the research works carried out in 2015-16 are as follows :

1. Development of live attenuated thermostable lentogenic Newcastle disease vaccine from local isolate for chicken by Dr. Chanchal Guha, Dr. Ujjwal Biswas and Dr. Partha Sarathi Jana from Dept. of Veterinary Epidemiology and Preventive Medicine, Faculty of Veterinary & Animal Sciences.

EXTENSION ACTIVITIES (Contd...)

2. Development of supportive therapy (herbal extract of *Ocimum sanctum* leaf) for treatment of chronic mastitis by Dept. of Vety. Pharmacology & Toxicology, Faculty of Veterinary & Animal Sciences.
3. A process for preparing animal choncal cartilage for transplantation" developed by Dr. Samit Kumar Nandi, Dr. S. N. Joardar, Dr. B. K. Biswas, Dr. S. Batabyal of WBUAFS and Dr. R. N. Bhattacharya, R. G. Kar Medical College and Hospital, Kolkata. Indian Patent has been filed vide No. 249/kol/2015 from WBUAFS.
4. Fabrication of silk protein film from Indian tropical tasar silk *Antheraea mylitta* for use as corneal scaffold" developed by Dr Sarbani Hazra, Dept. of Vety. Surgery & Radiology, Faculty of Veterinary & Animal Sciences, WBUAFS, and Prof SC Kundu. Indian Patent has been filed vide No 365/KOL/2015.
5. Development of Yoghurt from non fat dry milk by Dr. T.K.Maity, Dept. of Dairy Micobiology, Faculty of Dairy Technology, WBUAFS during 2015-2016.
6. Development of fermented milk from mint by Dr. T.K.Maity, Dept. of Dairy Micobiology, Faculty of Dairy Technology, WBUAFS during 2015-2016.
7. Development of probiotic lassi from soy milk by Dr. T.K.Maity, Dept. of Dairy Micobiology, Faculty of Dairy Technology, WBUAFS during 2015-2016.
8. Development of therapeutic evaluation of Chhana based herbal balushahi by Dr. T.K.Maity, Dept. of Dairy Micobiology, Faculty of Dairy Technology, WBUAFS during 2015-2016.
9. Development of Diabetic Rasogolla by Indranil Choudhury, Student, Dept. of Dairy Technology, Faculty of Dairy Technology, WBUAFS during 2015-2016.
10. Formulation of Milk based snack food by Rajabendra Sarkar, Student, Dept. of Dairy Technology, Faculty of Dairy Technology, WBUAFS during 2015-2016.
11. Technology of application of *Pseudomonas aeruginosa* P72 as biocontrol agent, probiotic and immunomodulator developed by Prof. T J Abraham and his team, Dept. of Aquatic Animal Health, Faculty of Fishery Sciences, WBUAFS.
12. Technology of performing Dot ELISA for the detection of *Edwardsiella tarda* and *Aeromonas hydrophila* developed by Prof. T J Abraham and his team, Dept. of Aquatic Animal Health, Faculty of Fishery Sciences, WBUAFS.
13. Application of Outer membrane protein (OMP) vaccine for *Edwardsiella tarda* developed by Prof. T J Abraham and his team, Dept. of Aquatic Animal Health, Faculty of Fishery Sciences, WBUAFS



PUBLICATION ON RESEARCH FINDINGS



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

G.1.1. Department of Animal Genetics and Breeding

Sl. No.	Scientific Research Publication in Journals
1.	Ahlawat S, Sharma R, Roy M, Tantia MS and Prakash V (2015): Association analysis of novel SNPs in BMP1B, BMP15 and GDF9 genes with reproductive traits in Black Bengal goats. <i>Small Ruminant Research</i> 132(2015): 92-98. NAAS Rating : 7.13
2.	Sikder SK, Chatterjee JK, Nandi D, Roy M, Roy S (2015): Studies on body growth pattern of Black Bengal goat according to agro-climatic zones and rearing practices in West Bengal, India. <i>Explor Anim Med Res</i> 5(1): 86-95. NAAS Rating : 3.30
3.	Sharma R, Ahlawat S, Maitra A, Roy M, Mandakmale S & Tantia MS (2015): First -time characterization of JY-1-like sequence in goats. <i>S. Afr. J. of Anim. Sci.</i> Vol. 45: 198-205. NAAS Rating : 6.50
4.	Sharma R, Ahlawat S, Roy M, Prakash V & Tantia MS (2015): Polymorphism of JY-1 gene is not associated with reproductive traits in goats. <i>Mol. Biol. Report</i> DOI 10.1007/s11033-015-3918-2. NAAS Rating : 8.02
5.	Mondal K, Chakravarti S, Ghosh AK, Kumar S, Nayak B, Nandi S, Sarkar U, Deb R, De A, Biswas J. (2016). Novel identification of Factor XI deficiency in Indian Sahiwal (<i>Bos indicus</i>) cattle. <i>Mol Biol Rep.</i> doi: 10.1007/s11033-016-3955-5. Epub 2016 Feb 18. NAAS Rating : 8.02
6.	B. Sarkar, K. Ray and U. Sarkar (2016). Prevalence of uterine infection in relation to certain haematological and biochemical changes of blood serum in dairy cows. <i>Indian Journal of Animal Research.</i> doi: 10.18805/ijar.9419. NAAS Rating : 6.04
7.	Raj Kumar, S. Taraphder, A.K. Sahoo, P.K. Senapati, R. Paul, M. Roy, U. Sarkar, D. Raja, I., Samanta and S. Baidya. (2016). Polymorphism and Nucleotide sequencing of BMP-15 gene in an organized herd of Garole sheep (<i>Ovis aries</i>), <i>Indian J. Anim. Hlth.</i> :55(1): 77-86. NAAS Rating : 2.08

G.1.2. Department of Animal Nutrition

Sl. No.	Scientific Research Publication in Journals
1.	Abhay Kumar Singh, Tapan Kumar Ghosh, Sudipto Halder (2015) Effect of ethionine chelate or yeast Proteinase-Based Supplement of Copper, Iron, Manganese and Zinc on Broiler Growth Performance, Their Distribution in the Tibia and Excretion into the Environment: <i>Biol Trace Elem Res.</i> DOI 10.1007/s12011-014-0222-2.
2.	Abhay Kumar Ghosh, Tapan Kumar Ghosh, David C Creswell, Sudipto Halder (2015) : Effects of supplementation of betaine hydrochloride on physiological performances of broilers exposed to thermal stress : <i>Open Access Animal Physiology</i> 2015:7 111-120
3.	Toshi Wati, Tapan Kumar K Ghosh, Basharat Syed. Sudipto Halder (2015) : Comparative efficacy of a phytogenic feed additive and an antibiotic growth promoter on production performance, caecal microbial population and humoral immune response of broiler chickens inoculated with enteric pathogens: <i>Animal Nutrition</i> XXX (2015)1-7, doi.org/10.1016/j.anianu.2015.08.2003.
4.	Patra, A.K., 2015. Bioactive phytochemicals as modifiers of rumen fermentation. In: <i>Advances in Feed Additive and Supplements for Livestock</i> , Singh, P. (editor), New Delhi, pp. 217-250.

PUBLICATION ON RESEARCH FINDINGS (Contd...)

5.	Patra, A.K., 2015. Urea/ Ammonia Metabolism in the Rumen and Toxicity in Ruminants. In: Rumen Microbiology: from Evolution to Revolution, Puniya, A.K., Singh, R., Kamra, D.N. (editors), Springer, India, pp. 329-341.
6.	Patra, A.K. 2016. Recent advances in measurement and dietary mitigation of enteric methane emissions in ruminants. <i>Frontiers in Veterinary Science</i> , doi: 10.3389/fvets.2016.00039.
7.	Patra, A.K., 2015. Exploring the benefits of feeding tannin containing diets for enhancing the nutritional values of milk and meat of ruminants. <i>Journal of Animal Health</i> 53: 63-76.
8.	Pathak, M., G.P. Mandal, A.K. Patra, I. Samanta, S. Pradhan, 2016. Effects of dietary supplementation of cinnamaldehyde and formic acid on growth performance, intestinal microbiota and immune response in broiler chickens. <i>Animal Production Science</i> , (online).
9.	Pal, K., A.K. Patra, A.B. Sahoo and N.M. Soren, 2015. Effects of nitrate and fumarate in a tree leaves-based diet on nutrient utilization, rumen fermentation, microbial protein supply and blood profiles in sheep. <i>Livestock Science</i> , 172: 5-15.
10.	Kar, I., S.K. Mukhopadhyay, A.K. Patra, S. Pradhan, 2015. Heavy metals concentrations and histopathological changes in goats (<i>Capra hircus</i>) reared near an industrial area of West Bengal, India. <i>Archives of Environmental Contamination and Toxicology</i> 69: 32-43.
11.	Patra, A.K., and Z. Yu, 2015. Effects of garlic oil, nitrate, saponin and their combinations supplemented to different substrates on in vitro fermentation, ruminal methanogenesis, and abundance and diversity of microbial populations. <i>Journal of Applied Microbiology</i> 119: 127-139.
12.	Sangpuii, A.K. Patra, G. Samanta and K. Pal, 2015. Inclusion of an emulsifier to the diets containing different sources of fats on performances of Khaki Campbell ducks. <i>Iranian Journal of Veterinary Research</i> 16: 156-160.
13.	Kar, I., S.K. Mukhopadhyay, A.K. Patra, S. Pradhan, 2015. Heavy metals concentrations and histopathological changes in goats (<i>Capra hircus</i>) reared near an industrial area of West Bengal, India. <i>Archives of Environmental Contamination and Toxicology</i> , DOI 10.1007/s00244-015-0130-2.
14.	Patra, A.K. and Z. Yu, 2015. Essential oils affect populations of some rumen bacteria in vitro as revealed by microarray (RumenBactArray) analysis. <i>Frontiers in Microbiology</i> , 6:297. doi: 10.3389/fmicb.2015.00297
15.	Patra, A.K., and Z. Yu, 2015. Effects of garlic oil, nitrate, saponin and their combinations supplemented to different substrates on in vitro fermentation, ruminal methanogenesis, and abundance and diversity of microbial populations. <i>Journal of Applied Microbiology</i> , doi: 10.1111/jam.12819
16.	Patra, A.K., and M. Lalhriatpuii, 2016. Predicting enteric methane emission in sheep using linear and non-linear statistical models from dietary variables. <i>Animal Production Science</i> 56: 574-584.
17.	Pal, K., A.K. Patra and A. Sahoo, 2015. Evaluation of tropical feeds for in vitro methane production potential and rumen fermentation in vitro. <i>Spanish Journal of Agricultural Research</i> 13 (3), DOI: 10.5424/sjar/2015133-7467 Patra, A.K., 2015. Prediction of enteric methane emission from cattle using linear and non-linear statistical models in tropical farming systems. <i>Mitigation and Adaptation Strategies for Global Change</i> DOI: 10.1007/s11027-015-9691-7
18.	Pal, K., A.K. Patra, A. Sahoo, P.K. Kumawat, 2015. Evaluation of several tropical tree foliages for methane production potential, degradability and rumen fermentation in vitro. <i>Livestock Science</i> 180: 98-105.
19.	Patra, A.K., and M. Lalhriatpuii, 2016. Development of statistical models for prediction of enteric methane emission from goats using nutrient composition and intake variables. <i>Agriculture Ecosystems and Environment</i> 215: 89-99.



PUBLICATION ON RESEARCH FINDINGS (Contd...)

20.	Patra, A.K., and Z. Yu, 2015. Effects of adaptation of in vitro rumen culture to garlic oil, nitrate and saponin and their combinations on methanogenesis, fermentation, and abundances and diversity of microbial populations. <i>Frontiers in Microbiology</i> doi: 10.3389/fmicb.2015.01434
21.	Patra, A.K., M. Lalhriatpuii, B. Debnath, 2016. Predicting enteric methane emission in sheep using linear and non-linear statistical models from dietary variables. <i>Animal Production Science</i> 56: 574-584.
22.	Chatterjee, P.N., D.N. Kamra, N. Agrawal and A.K. Patra, 2016. Influence of urea on in vitro methanogenesis and fermentation of feed. <i>Asian-Australian J. of Animal Science</i> (accepted),
23.	S.Biswas, P. N. Chatterjee, C. Mukherjee and P. K. Pal. 2015. Awareness of farmers regarding hygienic handling of their cattle to prevent zoonotic diseases. <i>Exploratory Animal and Medical Research</i> , 5, 207-212.

G.1.3. Department of Instructional Livestock Farm Complex

Sl. No.	Scientific Research Publication in Journals
1.	Roy, D. C.; Ray, M.; Sarkar, U. and Patra, B. C. 2015. Bio-energy, Productivity and Economics of rice (<i>Oryza sativa</i>)-based Cropping Systems in Coastal Flood Plain of West Bengal, India. <i>International Journal of Bio-resource and Stress Management</i> , 6(1):001-006; NAAS Rating : 4.46
2.	Roy D.C., Ray M., Tudu N. K. and Kundu C.K.. 2015. Impact of phosphate solubilizing bacteria and phosphorus application on forage yield and quality of berseem in West Bengal <i>Int. J of Agri. Environment and Biotechnology</i> 8(2):315-321 ; NAAS Rating : 4.10
3.	Roy D. C., Pakhira M.C. and Bera S. 2016. A Review on Biology, Cultivation and Utilization of Azolla. <i>Advances in Life Sciences</i> 5(1):11-15; NAAS Rating : 3.56
4.	Roy D. C. and Jana K. 2016. Biomass Production and Quality of Berseem Fodder (<i>Trifolium alexandrinum</i> L.) as Influenced by application of Phosphorus and Phosphate Solubilizing Bacteria. <i>Advances in Life Sciences</i> 5(4):1225-1229 ; NAAS Rating : 3.56
5.	Roy D. C., Pakhira M.C. and Roy M. 2016. Estimation of Amino Acids, Minerals and Other Chemical Compositions of Azolla. <i>Advances in Life Sciences</i> 5(7): 2692-2696, NAAS Rating : 3.56
6.	N. Pradhan, J. Mukherjee, U. Biswas, P.S. Jana, M. Pakhira and C. Guha (2015). Infradian rhythm in hematology, cell mediated immunity and serum micronutrient concentration around peripartum peripartum periods in high yielding cross bred cows before and after micronutrient supplementation. <i>Biological Rhythm Research</i> . http://dx.doi.org/10.1080 /09291026.2015.1116739
7.	Pal A .et al., 2016. "Molecular characterization of Birbhum sheep based on mitochondrial gene", In Proceedings of National Symposium on Policy planning for livelihood security for domestic animal Biodiversity on 11-12 Feb, held at SKUAST, Jammu. (Awarded Best Oral Presentation)
8.	Pal A .et al., 2016. "Molecular characterization of Haringhata Black chicken of West Bengal", In Proceedings of National Symposium on Policy planning for livelihood security for domestic animal Biodiversity on 11-12 Feb, held at SKUAST, Jammu.
9.	Pal A .et al., 2016. "Molecular characterization of indigenous ducks in different agroclimatic regions of West Bengal", In Proceedings of National Symposium on Policy planning for livelihood security for domestic animal Biodiversity on 11-12 Feb, held at SKUAST, Jammu.

PUBLICATION ON RESEARCH FINDINGS (Contd...)

10.	Pal A. <i>et al.</i> , 2016. "Molecular characterization and SNP identification of indigenous sheep (<i>Ovis aries</i>) RIG1 and others conferring anti-viral resistance ", in the Proceedings of Annual Convention and National Symposium by Society for Veterinary Biochemists and Biotechnologists of India at 11 th -12 th March, 2016, OUAT, Bhubaneswar
11.	Pal A. <i>et al.</i> , 2016. "Biodiversity analysis among Indian buffalo breeds based on mitochondrial gene as Cytochrome B, D-loop and cytochrome c oxidase I (COI) and functional genes (growth hormone and CD14) " in the Proceedings of Annual Convention and National Symposium by Society for Veterinary Biochemists and Biotechnologists of India at 11 th -12 th March, 2016, OUAT, Bhubaneswar

G.1.4. Department of Livestock Production Management

Sl. No.	Scientific Research Publication in Journals
1.	Brahma A, Kumar D, Bordoloi G, Pandit S, Bera, S. Ghosh J D and Jas R (2015) Prevalence of Gastrointestinal parasites in Black Bengal Goats of Sundarban delta in West Bengal. <i>International Journal of Parasitology Research</i> 7(1), 156-159
2.	Behera D, Samanta R, Bera S, Debbarma N and Das B C (2015) Profitability of Commercial Broiler Chicken under different light regime. <i>Indian Journal of Animal Production and Management</i> 31(3-4), 49-51 ; NAAS Rating : 3.1
3.	Manna T K, Samanta A K, Pal A, Debbarma N, Behera D, Bera S, Biswas A and Das B C (2015) Socio-economic status of Goat farmers in Alluvial and Coastal region of West Bengal. <i>Indian Journal of Animal Production and Management</i> 31(3-4), 76-79; NAAS Rating : 3.1
4.	Roy, D. C.; Pakhira, M. C. and Bera, S. (2016) A Review on Biology, Cultivation and Utilization of Azola. <i>Advances in Life Sciences</i> 5(1), 11-15; NAAS Rating : 3.56

G.1.5. Department of Livestock Products Technology

Sl. No.	Scientific Research Publication in Journals
1.	S. K. Das, P. Prabhakaran, V. K. Tanwar, and S. Biswas (2015) Effect of some plant starches and carrageenan as fat substitutes in chicken patties <i>J. Anim. Sci.</i> 93:3704–3712 ; NAAS Rating : 8.11
2.	Arun K Das, V Rajkumar, A K verma, G Patra, S Pradhan and S Biswas (2015) Quality and acceptability of Meat nuggets with fresh Aloe vera gel. <i>Asian Australas. J. Anim. Sci.</i> ; NAAS Rating : 6.54
3.	S Karmakar, S Biswas, R Bera, S Mondal, A Kundu, MA Ali, T Sen (2015) Beverage-induced enhanced bioavailability of carbamazepine and its consequent effect on antiepileptic activity and toxicity. <i>Journal of food and drug analysis</i> 23 (2), 327-334; NAAS Rating : 6.62
4.	SK Verma, PN Zanjad, S Biswas, P Kumar, B Kumari (2015) Effect of addition of sodium caseinate, whole egg powder on the quality of chicken sausage made with poultry by-products. <i>Journal of Animal Research</i> 2 (3) ; NAAS Rating : 4.49
5.	K C Dhara, N. Ray, P.K Bandopadhyay, S. Biswas, A. Goswami (2016) Influence of Gastrointestinal Parasites on Productive and Reproductive Performances of Black Bengal Goat under Farm Condition. <i>Int. J. Livest. Res.</i> 6(2): 25-36.



PUBLICATION ON RESEARCH FINDINGS (Contd...)

6.	Arun K. Das, Vincent Rajkumar , , Pramod K. Nanda Pranav Chauhan, Soubhagya R. Pradhan and Subhasish Biswas(2016) Antioxidant Efficacy of Litchi (Litchi chinensis Sonn.) Pericarp Extract in Sheep Meat Nuggets. Antioxidants 5, 16 Antioxidants 2016, 5, 16; doi:10.3390/antiox5020016 www.mdpi.com/journal/antioxidants
7.	S. K. Sikder, J.K. Chatterjee, S.K. Das, S. Biwas (2015) Effect of agro-climatic zones on keeping quality and sensory attributes of Black Bengal goat meat Indian Journal of Animal Health 54(1),43-54; NAAS Rating : 2.08
6.	P.K.Das, P.R.Ghosh, S.Biswas, A.Goswami, D.Mazumder. (2014). Market Potentiality of Backyard poultry rearing system in West Bengal. Int.J.Agricult.Stat.Sci. Vol. 10 Supplement 1 pp 53-58. NAASrating : 5.00
7.	A.Chakraborty, S. Biswas, R. Chakraborty, A. Dhargupta (Chakraborty), D. Majumder.(2014). Carcass Characteristics and Physiological Status of Nutrients Including Heavy Metal and Pesticide Residues in Selected Beef Cut-Up Parts Of Indian Zebu Cattle. Journal of Meat science, JMS (2014) 9(2): 44-51. NAAS rating : 3.53.

G.1.6. Department of Veterinary Anatomy & Histology

Sl. No.	Scientific Research Publication in Journals
1	P.Das and M. Maeda (2015),Effect of capsaicin microinjection in the cardiovascular related region of the nucleus tractus solitaries.Journal Plos one
2	A.P.Minj and Partha Das.(2015),Effect of light and dark shift on post natal development of ovary in rabbit (Oryctolagus cuniculus); Indian Journal of Animal Research
3	Rajesh Ranjan and Partha Das,(2015).Gross Morphology and Histo-Architecture of Rabbit Esophagus.Indian Journal of Indian Journal of Animal Science.

G.1.7. Department of Veterinary Biochemistry

Sl. No.	Scientific Research Publication in Journals
1.	Kujur K, Ghosh Sarbaswarup, Batabyal S and Mukherjee J. (2016). Effect of micronutrient supplementation on hormonal profile of local goat and sheep breeds of West Bengal. <i>Indian Journal of Animal Sciences</i> . 86(2): 224-225. NAAS Rating : 6.16
2.	Ahmed T, Maji AK, Samanta I, Batabyal S and Ghosh D. (2015). Antibacterial Selection for complete bacterial cure after surgical management of canine pyometra. <i>Intas Polyvet</i> . vol16 (II) :238-243. NAAS Rating : 4.69
3.	Gain S, Mukherjee J, Chatterjee S, Batabyal S and Guha C. (2015). Alteration in the activity of blood and milk leukocytes together with the serum enzyme profile during sub-clinical mastitis in cross-bred cows. <i>Indian Journal of Animal Sciences</i> . 85(8):856-860. NAAS Rating : 6.16
4.	Brahmachari AK, Batabyal S, Pandey AK and Sinha BP. (2016). Evaluation of antioxidant activity of different parts of <i>Bauhinia Purpurea</i> L. in STZ-induced diabetic rat. <i>Journal of Pharma Research</i> . 5(2):11-14.
5.	Ghosh R, Chowdhury S, Mitra J, Sarkar SN and Batabyal S. (2015). Prevalence of bovine viral diarrhoea virus in West Bengal, India. <i>Exploratory Animal and Medical Research</i> . 5(2):152-159. NAAS Rating : 3.30
6.	Brahmachari AK, Mandal T, Bandyopadhyay, Brahmachari G, De A, Das AK and Batabyal S.(2015). Evaluation of hypoglycaemic and antioxidant potential of different parts of <i>Cassia Fistula</i> L. in STZ-induced diabetic rat. <i>Journal of Pharma Research</i> . 4(11):347-354.

PUBLICATION ON RESEARCH FINDINGS (Contd...)

G.1.8. Department of Veterinary Epidemiology & Preventive Medicine

Sl. No.	Scientific Research Publication in Journals
1.	Pradhan N, Mukherjee J, Biswas U, Jana P S, Pakira M and Guha C (2015): Infradian rhythm in hematology, cell mediated immunity and serum micronutrient concentration around peripartum periods in high yielding crossbred cows before and after micronutrient supplementation. <i>Biological Rhythm Research</i> (2015): 1-12.

G.1.9. Department of Veterinary Gynaecology & Obstetrics

Sl. No.	Scientific Research Publication in Journals
1.	Amit Kumar Nath, Siddhartha Basu, Uttam Datta Coenzyme Q10 and soyphosphatidylcholine in EK extender on preservation of Rhode Island Red poultry semen. <i>J Adv Vet Anim Res.</i> (2015); 2(2): 134-140
2.	Ray K, Singh LG, Sarkar B (2015). Cryopreservation of Black Bengal buck semen by Tris-based extenders containing different levels of egg-yolk. <i>Annals of Veterinary and Animal Science</i> , 2(3): 47-54.
3.	L. Gojen Singh; K. Ray; B. Sarkar (2016). Effect of Different Levels of Egg Yolk on Cryopreservation of Black Bengal Buck Semen in Tris Egg yolk Citrate Fructose Glycerol Extender. <i>Iranian J. Appl. Anim. Sci.</i> 6(1), 101-106.
4.	B. Sarkar, K. Ray and U. Sarkar (2016). Prevalence of uterine infection in relation to certain haematological and biochemical changes of blood serum in dairy cows. <i>Indian J. Anim. Res.</i> , Print ISSN: 0367-6722/Online ISSN: 0976-0555; DOI: 10.18805/ijar.9419. NAAS Rating : 6.03

G.1.10. Department of Veterinary Medicine, Ethics & Jurisprudence

Sl. No.	Scientific Research Publication in Journals
1.	Tigga .P, Joarder .S.N., Halder, A., Lodh, C., Samanta, I., Devi, P.I., Batabyal, K., and Dey, Samir, (2015) Seroprevalence of bluetongue in ruminants of Jharkhand. <i>Veterinary world</i> 8(3):346-349
2.	Dhara, K.C., Roy, N., Lodh, C., Bandopadhyay, P.K., Goswami, A., (2015). Frequency of Gastrointestinal Parasites and Egg per gram faeces count of Nematodes in Black Bengal Goat under field condition in West Bengal, India. <i>International Journal of Veterinary Sciences Research</i> 1 (1):5-11
3.	Joarder, S.N., Mukherjee, S., Lodh, C., Halder, A., Mukherjee, A., (2015) Seroprevalence of Bluetongue in Free-range Mithuns (<i>Bos frontalis</i>) <i>Advances in Animal & Veterinary Sciences</i> 3 (9)500
4.	Maji, C., Sarkar, S., Biswas, S., Patra, P.H., Dutta, B.K., Bandyopadhyay, S., Biswas, T.K., Jana, C., Manda, T.K., (2016) Experimental assessment of arsenic toxicity in garole sheep in India. <i>Emerging contaminants</i> . 1-7
5.	Chakraborty, S. and Pradhan, N.R., (2015) Canine Demodicosis and its herbal and non-herbal treatments. <i>Indian Journal of Canine Practice</i> 7(2):115-119.
6.	Biswas, S., Chatterjee, P.N., Mukherjee, C., Pal, P.K., and Pradhan, N.R. Awareness of Farmers regarding hygienic handling of their Cattle to prevent zoonotic diseases.



PUBLICATION ON RESEARCH FINDINGS (Contd...)

G.1.11. Department of Veterinary Microbiology

Sl. No.	Scientific Research Publication in Journals
1.	Samanta, I., Joardar, S.N., Mahanti, A., Bandyopadhyay, S., Sar, T.K., Dutta, T.K. (2015). Approaches to characterize extended spectrum beta-lactamase / beta-lactamase producing <i>Escherichia coli</i> in healthy organized <i>vis-a-vis</i> backyard farmed pigs in India. <i>Infection, Genetics and Evolution</i> 36: 224-230 ; NAAS Rating : 9.26
2.	Kar, D., Bandyopadhyay, S., Bhattacharya, D., Samanta, I., Mahanti, A., Nanda, P.K., Mondal, B., Dandapat, P., Das, A. K., Dutta, T. K., Bandyopadhyay, S., Singh, R. K. (2015). Molecular and phylogenetic characterization of multidrug resistant extended spectrum beta-lactamase producing <i>Escherichia coli</i> isolated from poultry and cattle in Odisha, India. <i>Infection, Genetics and Evolution</i> 29: 82-90; NAAS Rating : 9.26
3.	Samanta, I., Joardar, S. N., Das, P.K., Sar, T.K. (2015). Comparative possession of shiga toxin, intimin, enterohaemolysin and major extended spectrum beta lactamase genes in <i>E. coli</i> isolated from backyard and farmed poultry in West Bengal, India. <i>Iranian Journal of Veterinary Research</i> 16(1): 90-93; NAAS Rating : 6.22
4.	Mandakini, R., Dutta, T.K., Chingtham, S., Roychoudhury, P., Samanta, I., Joardar, S.N., Pachauau, A.R., Chandra, R. (2015). ESBL-producing Shiga-toxigenic <i>E. coli</i> (STEC) associated with piglet diarrhoea in India. <i>Tropical Animal Health and Production</i> 47 (2): 377-381; NAAS Rating: 6.97
5.	Mahanti, A., Samanta, I., Bandyopadhyay, S., Joardar, S. N. (2015). Molecular characterization and antibiotic resistance pattern of caprine Shiga toxin producing- <i>Escherichia coli</i> (STEC) isolates from India. <i>Iranian Journal of Veterinary Research</i> 16(1): 31-35; NAAS Rating : 6.22
6.	Roy, B., Joardar, S. N., Samanta, I., Das, P.K., Alam, S., Nandi, S. (2015). Detection of T- and B-cell target antigens of Fowlpox virus isolated from backyard chickens in India. <i>Avian Diseases</i> 59(2):249-254; NAAS Rating : 7.11
7.	Bandyopadhyay, S., Mahanti, A., Lodh, C., Samanta, I., Biswas, T.K., Dutta, T. K., Baruah, K.K., Bhattacharya, D. (2015). The prevalence and drug resistance profile of Shiga-toxin producing (STEC), Enteropathogenic (EPEC) and Enterotoxigenic (ETEC) <i>Escherichia coli</i> in free ranging diarrheic and non-diarrheic yaks of West Kameng, Arunachal Pradesh, India. <i>Veterinaski Arhiv</i> 85 (5): 501-510; NAAS Rating : 6.30
8.	Debnath, C., Mitra, T., Kumar, A., Samanta, I. (2016). Occurrence of Dermatophytosis in healthy companion cats and dogs in Eastern India. <i>Iranian Journal of Veterinary Research</i> 17 (1): 20-24; NAAS Rating: 6.22
9.	Dash, J.R., Sar, T.K., Samanta, I., Mandal, T.K. (2016). Effects of herbal extract of <i>Ocimum sanctum</i> as supportive therapy with intravenous ceftriaxone in experimentally induced staphylococcal chronic mastitis in goat. <i>Small Ruminant Research</i> 137: 1-8; NAAS Rating : 7.1
10.	Tigga, P., Joardar, S. N., Halder, A., Lodh, C., Samanta, I., Isore, D.P., Batabyal, K., Dey, S. (2015). Seroprevalence of bluetongue in ruminants of Jharkhand, <i>Veterinary World</i> 8 (3):346-349; NAAS Rating : 5.1
11.	Sar, T.K., Mandal, T.K., Samanta, I. (2014). Milk level of ceftizoxime following single intramuscular dosing of ceftriaxone without and with oral administration of Fibrosin® and its effect on milk enzyme activity in goat. <i>Exploratory Animal and Medical Research</i> 4(2): 188-193; NAAS Rating : 3.3

PUBLICATION ON RESEARCH FINDINGS (Contd...)

12.	Das, M., Isore, D.P., Joardar, S. N., Samanta, I., Mukhopadhyay, S.K. (2015). Immunomodulatory effect of levamisole on PPR vaccine in goats and change in haematological profile. <i>Indian Journal of Animal Research</i> (in-press) NAAS Rating : 6.03
13.	Dey, S., Batabyal, K., Isore, D.P., Samanta, I. (2015). Ocular infection by multi drug resistant <i>Pseudomonas aeruginosa</i> in rabbit. <i>Indian Journal of Animal Health</i> 53(1): 54 NAAS Rating : 2.08
14.	Ahamed, T., Maji, A.K., Samanta, I., Batabyal, S., Ghosh, D. (2015). Antibacterial Selection for Complete Bacterial Cure after Surgical Management of Canine Pyometra. <i>Intas Polivet</i> 16 (II): 238-243; NAAS Rating : 4.69
15.	Mahanti, A., Gopi, M., Samanta, I., Isore, D.P., Joardar, S.N. (2015). Isolation of <i>Staphylococcus aureus</i> and PCR based detection of Staphylococcal enterotoxin A (SEA) from environment. <i>Indian Journal of Animal Health</i> 54(1): 67-69; NAAS Rating : 2.08
16.	Tigga, P., Joardar, S.N., Banerjee, D., Samanta, I., Isore, D.P., Batabyal, K., Dey, S. (2015). Detection of Bluetongue virus vector and its characteristics in Jharkhand. <i>Indian Journal of Animal Health</i> 54(1): 9-16. NAAS Rating : 2.08
17.	Sar, T.K., Patra, A.K., Samanta, I., Mandal, T.K. (2015). Protective effect of a potentially polyherbal drug on mammary tissue damage caused by intramammary administration of antibiotic by producing antioxidant action. <i>Indian Journal of Animal Health</i> 54(1): 35-42. NAAS Rating : 2.08
18.	Samanta, I., Chattopadhyay, S., Sar, T.K., Bandyopadhyay, S., Joardar, S.N. (2015). Livestock as a reservoir of extended spectrum beta lactamase producing gram negative organisms. <i>Indian Journal of Animal Health</i> 54(1): 1-8. NAAS RATING : 2.08
19.	Banerjee, S., Patra, A., Adikesavalu, H., Joardar, S.N., Abraham, T.J. (2015). Molecular and phylogenetic characterization of <i>Thelohanellus quadrii</i> (Myxozoa, Myxosporea, Bivalvulia) infecting the secondary gill epithelium of Indian major carp, <i>Catla catla</i> (Hamilton, 1822). <i>Molecular Biology Research Communications</i> 4(2): 83-91.
20.	Joardar, S.N., Mukherjee, S., Lodh, C., Halder, A. and Mukherjee, A. (2015). Seroprevalence of bluetongue in free range mithuns (<i>Bos frontalis</i>). <i>Advances in Veterinary and Animal Sciences</i> 3(9): 200-202.
21.	Joardar, S.N., Abraham, T.J. and Mandal, N. (2015). Indian major carp <i>Cirrhinus mrigala</i> (Hamilton, 1822) inoculated with live <i>Aeromonas hydrophila</i> shows dynamic changes in specific immune-cellular activities. <i>Journal of Immunology and Immunopathology</i> 17 (1): 25-30.
22.	Mondal, A. and Joardar, S.N. (2015). Detection of Genogroup I Picornavirus diarrhoeic faecal samples of calves from West Bengal, India. <i>Journal of Immunology and Immunopathology</i> 17 (1&2): 40-43.
23.	Mondal, A., Joardar, S.N. and Malik, Y.P.S. (2015). Molecular genotyping of porcine and human group A rotaviruses from eastern India, evidence of interspecies transmission. <i>Journal of Immunology and Immunopathology</i> 17 (1&2): 44-53.
24.	Aich, R., Batabyal, S. and Joardar, S.N. (2015). Isolation and purification of beta- lactoglobulin from cow milk. <i>Veterinary World</i> Vol. 8 (5): 621-624. NAAS Rating : 5.1
25.	Halder A, Joardar SN, Isore DP, Samanta I, Parui P, Banerjee D, Lodh C (2016) Seroepidemiology of bluetongue in South Bengal. <i>Veterinary World</i> 9(1): 1-5. NAAS Rating : 5.01
26.	Kumar, R., Sar, T.K., Patra, P.H., Samanta, I., Mishra, A., Mandal, T.K. (2016). Disposition kinetics of ceftizoxime in acute mastitis in Murrah buffaloes. <i>Indian Journal of Animal Science</i> 86(2): 140-142. NAAS Rating: 6.00



PUBLICATION ON RESEARCH FINDINGS (Contd...)

27.	Nandi, S., Joardar, S.N., Samanta, I., Roy, B., Das, P.K., Sar, T.K. and Alam, S.S. (2016). Haringhata Black chicken shows resistance to pathogenic <i>E. coli</i> by high immune-effector activities. <i>Journal of Experimental Biology and Agricultural Sciences</i> 4(2): 150-155.
28.	Banerjee, S., Patra, A., Mondal, A., Adikesavalu, H., Ramudu, K.R., Das G., Joardar, S.N., Abraham, T.J. (2016). Molecular characterization of <i>Myxobolus catmrigalae</i> (Myxosporaea: Myxobolidae) infecting the gill lamellae of carp <i>Cirrhinus mrigala</i> (Hamilton). <i>Journal of Parasitology</i> . Doi 10.1007/s 1269-016-0750-0 NAAS Rating : 7.23
29.	Banik, A., Isore, D.P., Joardar, S.N., Batabyal K. and Dey, S. (2015). Characterization and AntibioGram of Enteropathogenic <i>Escherichia coli</i> isolated from Diarrhoeic and Non-diarrhoeic Dogs in South Bengal. <i>Indian Journal of Animal Research</i> DOI:10.18805/ijar.5713; NAAS Rating : 6.04
30.	Mukherjee, P., Chakrabarti, A., Batabyal, K., Das, B. and Banik, A. (2015). Characterization and AntibioGram of Uropathogenic <i>Escherichia coli</i> (UPEC) detected from Urinary tract infections of Canine. <i>Indian Journal of Veterinary Medicine</i> 35(2): 126-128; NAAS Rating : 3.63
31.	Murmu, S., Debnath, C., Pramanik, A.K., Mitra, T., Jana, S., Dey, S., Banerjee, S. and Batabyal, K. (2015). Detection and Characterization of Zoonotic Dermatophytes from Dogs and Cats in and around Kolkata. <i>Veterinary World</i> 8(9): 1078-1082; NAAS Rating : 5.1
32.	Sarkar, M., Roy, J.P. and Batabyal, K. (2015). Detection, Characterization and AntibioGram of Enteropathogenic <i>Escherichia coli</i> isolated from Piglets and Goats of South Bengal. <i>Indian Veterinary Journal</i> 92(5): 65 – 69; NAAS Rating : 4.33

G.1.12. Department of Veterinary Parasitology

Sl. No.	Scientific Research Publication in Journals
1.	Das MK, Baidya S, Mahato A, Pandit S, Ghosh JD, Chaudhuri S, Das M. (2015). Incidence of canine babesiosis in and Around Kolkata, West Bengal, India. <i>Explor Anim Med Res</i> , 5(1): 102-107; NAAS Rating : 3.30
2.	Tewari AK, Kurup SP, Baidya S, Barta JR, Sharma, B. (2015). Protective antibody and cytokine responses in mice following immunization with recombinant beta-tubulin and subsequent <i>Trypanosoma evansi</i> challenge. <i>Parasites & Vectors</i> , 8:580. (International Journal, Impact Factor:3.430)
3.	Brahma, A., Das, S., Kumar, D., Bordoloi, G., Pandit, S., Bera, S., Ghosh, J.D. and Jas, R. (2016): Prevalence of gastrointestinal parasites in black Bengal goats of Sundarban delta in West Bengal, <i>International Journal of Parasitology Research</i> , 7(1):156-159; NAAS Rating : 4.08
4.	Brahma, A., Jas, R. and Bordoloi, G. (2015): <i>In vivo</i> efficacy of albendazole in garole sheep and Black Bengal goat of Sundarban delta of West Bengal. <i>International Journal of Agricultural Science and Research</i> . 5(3): 239-242; NAAS Rating : 3.53
5.	Das, S., Brahma, A., Baidya, S., Ghosh, J.D. and Jas, R. (2016): Characterization of crude somatic antigens of <i>Haemonchus contortus</i> and <i>Bunostomum trigonocephalum</i> of sheep. <i>International Journal of Parasitology Research</i> , 8(2):184-186; NAAS Rating : 4.08
6.	Brahma, A., Pandit, S., Kumar, D., Ghosh, J.D. and Jas, R. (2015): Prevalence of gastrointestinal helminthoses in Black Bengal goats of organised farm in West Bengal. <i>Indian Journal Animal Health</i> , 54(1): 27-34; NAAS Rating : 2.08.

PUBLICATION ON RESEARCH FINDINGS (Contd...)

G.1.13. Department of Veterinary Pathology

Sl. No.	Scientific Research Publication in Journals
1.	Das, M., Isore, D.P., Joardar, S.N. , Samanta, I. and Mukhopadhyay S.K. (2015) Immunomodulatory effect of levamisole on PPR vaccine in goats and change in haematological profile. <i>Indian J. Anim. Res.</i> , DOI:10.5958/0976-0555.2015.00093.X; NAAS Rating: 6.4
2.	Kar, I., Mukhopadhyay, S.K., Patra, A.K. and Pradhan S. Metal Concentrations and Histopathological Changes in Goats (<i>Capra hircus</i>) Reared Near an Industrial Area of West Bengal, India (2015) <i>Archives of environmental contamination and toxicology</i> , 1-12 (NAAS Rate: 7.6)
3.	Chudamani Sharma and Mukhopadhyay, S.K (2015) Studies on different pathological conditions of yak (<i>Pheophagus grunions</i>) in Sikkim <i>Indian J. Vet. Pathol.</i> , 39(2) : 233. NAAS Rating: 5.03
4.	Yasmine Begum and Mukhopadhyay, S.K (2015) Clinicopathological and pathomorphological studies on benalaxyl (fungicide) induced toxicity in mice. <i>Indian J. Vet. Pathol.</i> , 39(1) : 233; NAAS Rating: 5.03
5.	S.Dey, D.P.Isore, S.N. Joardar, U.Biswas, A .Mahanti, S.Pandit, R.N.Hansda, K.Batabyal and I. Samanta. Isolation, Molecular Identification And Antigram Of <i>Pasteurella multocida</i> In Haemorrhagic Septicaemia Outbreak Of Buffalos In West Bengal. <i>Indian j. Comp. Microbial infect. Dis.</i> Vol 35(2): 90-92. NAAS Rating: 3.61

G.1.14. Department of Veterinary Pharmacology & Toxicology

Sl. No.	Scientific Research Publication in Journals
1.	Rakesh Kumar, T K Sar, P H Patra, I Samanta, Akhilesh Mishra and T K Mandal (2016). Disposition kinetics of ceftizoxime in acute mastitis in Murrah buffaloes. <i>Indian Journal of Animal Sciences</i> . 86(2) : 140-142; NAAS rating : 6.16
2.	Jeevan R. Dash, Tapas K. Sar, Indranil Samanta, Tapan K. Mandal (2016). Effects of herbal extract of <i>Ocimum sanctum</i> as supportive therapy with intravenous ceftriaxone in experimentally induced staphylococcal chronic mastitis in goat. <i>Small Ruminant Research</i> . 137 : 1-8; NAAS rating : 7.13
3.	Pabitra Hriday Patra, Samiran Bandyopadhyay, Manik Chandra Bandyopadhyay, Tapan Kumar Mandal (2015). Immunotoxic and Genotoxic Potential of Arsenic and its Chemical Species in Goats. <i>Toxicology International</i> . Vol.20: Issue-1; NAAS rating : 4.56
4.	T.K. Sar, A.K. Patra, I. Samanta and T.K. Mandal (2015). Protective effect of a potential polyherbal drug on mammary tissue damage caused by intramammary administration of antibiotic by producing antioxidant action. <i>Indian J. Anim. Hlth</i> . 54(1) : 35-42; NAAS rating : 2.08
5.	S. Pattanayak, T.K. Mandal, P.K. Debnath, A.K. Das and S.K. Bandyopadhyay (2015). Comparative haemostatic efficacy of succulent leaf extracts and latex of some wound healing plants on fresh wound of rabbits. <i>Explor. Anim. Med. Res.</i> Vol.5(1), p.20-26; NAAS rating : 3.30
6.	S. Pattanayak, T.K. Mandal, P.K. Debnath, and S.K. Bandyopadhyay (2015). Plants used to cure problems of flatulence and constipation in three southern districts of West Bengal, India. <i>Explor. Anim. Med. Res.</i> Vol.5(2), p.142-151; NAAS rating : 3.30
7.	A De, S.K. Bandyopadhyay, T.K. Mandal, A.K. Das and A. Mishra (2016). Ameliorative potential of <i>Glycosmis pentaphylla</i> (Retz.) DC in induced arsenicosis in rats. <i>International Journal of Pharma and Biosciences</i> . 7(1), P.222-228; Impact factor - 5.12



PUBLICATION ON RESEARCH FINDINGS (Contd...)

G.1.15. Department of Veterinary Physiology

Sl. No.	Scientific Research Publication in Journals
1.	S J Gogoi, P K Das, S Maity, G D V Pandiyan, J Mukherjee, D Banerjee, K Das and P R Ghosh. (2016). Effect of Summer Stress on some Physiological, Enzymatic and Hormonal Parameters of Rhode Island Red Birds Reared at Backyard in Different Agro-climatic Zones of West Bengal. Accepted in Indian Journal of Animal Health;; NAAS rating : 2.08
2.	S. Maity, P. K. Das, P. R. Ghosh, D. Banerjee and J. Mukherjee. (2016). Infradian rhythmicity in egg production features in relation to anti oxidant profiles of Rhode Island Red (RIR) birds reared at backyard in different agroclimatic zones of West Bengal during summer stress. Accepted in Biological Rhythm Research; NAAS rating : 7.22
3	Mohanned Alhussien, P. Manjari, Seid M. Seman, Joydip Mukherjee, Ajay K. Dang. (2016). Immunological attributes of blood and milk neutrophils isolated from crossbred cows during different physiological conditions. Accepted in Czech Journal of Animal Science; NAAS rating : 7.183
4	M.K. Tripathi , S. Sanyal , P.K. Das , P.R. Ghosh , J. Devi , G.S. Chutia and J. Mukherjee. (2015). Effect of progesterone implant on plasma T ₃ And T ₄ level in relation to some blood metabolites during oestrus cycle in repeat breeder Sahiwal (<i>Bos indicus</i>) cows. Veterinary Practitioner. 16 (1): 107-109; NAAS rating : 3.78
5	Tripti Sharma(Buragohain) , Pradip Kumar Das , Probal Ranjan Ghosh , Dipak Banerjee , Bikash Chandra Das and Joydip Mukherjee. (2016). Alteration in the in vitro activity of milk leukocytes during different parity in high yielding cross-bred cows. Biological Rhythm Research. http://dx.doi.org/10.1080/09291016.2016.1153713 ; NAAS rating : 7.22
6	Nevidita Pradhan, Joydip Mukherjee, Ujjwal Biswas, Partha Sarathi Jana, Manik Pakira, Chanchal Guha. (2016). Infradian rhythm in hematology, cell mediated immunity and serum micronutrient concentration around peripartum periods in high yielding crossbred cows before and after micronutrient supplementation. Biological Rhythm Research. 46 (2):315-327; NAAS rating : 7.22
7	Joydip Mukherjee, Pradip Kumar Das, Prabal Ranjan Ghosh, Dipak Banerjee, Tripti Sharma, Debananda Basak and Sagar Sanyal. (2015). ECG Pattern Of Some Exotic Breeds Of Trained Dogs: A Variation Study. Veterinary World. 8(11): 1317-1320; NAAS rating : 5.10
8	Joydip Mukherjee and Sujata Pandita. (2015). Effect Of Nitric Oxide On In Vitro Lymphocyte Proliferation Response In Buffaloes (<i>Bubalus Bubalis</i>) Exposed To Acute Heat Stress. Indian Journal of Animal Health. 53(2):77-82; NAAS rating : 2.08
9	Kalyan De, Shashi Pal, Joydip Mukherjee, Shiv Prasad, Ajay Kumar Dang. (2015). Effect of In Vitro Copper and Zinc Supplementation on Neutrophil Phagocytic Activity and Lymphocyte Proliferation Response of Transition Dairy Cows. Agricultural Research. DOI 10.1007/s40003-015-0181-7; NAAS rating : 5.88
10	Joydip Mukherjee, Smrutirekha Mallick, Mandira Chaudhury, B.S. Prakash and A.K. Dang. (2015). Infradian rhythmicity in milk leukocyte activity together with plasma cortisol and prolactin levels throughout the lactation period in high-yielding crossbred cows. Biological Rhythm Research. 46 (6): 909-917 http://dx.doi.org/10.1080/09291016.2015.1066544 ; NAAS rating : 7.22

PUBLICATION ON RESEARCH FINDINGS (Contd...)

11	Samanta I., Joardar S. N., Ganguli D., Das P. K. and Sarkar U. (2015). Evaluation of egg production after adoption of biosecurity strategies by backyard poultry farmers in West Bengal, <i>Veterinary World</i> , 8(2):177-182. doi: 10.14202/vetworld.2015.177-182; NAAS rating : 5.10
12	Samanta I., Joardar S. N., Das P. K. and Sarkar T.K. (2015). Comparative possession of Shiga toxin, intimin, enterohaemolysin and major extended spectrum beta lactamase (ESBL) genes in <i>Escherichia coli</i> isolated from backyard and farmed poultry, <i>Iranian Journal of Veterinary Research</i> , 16(1):90-93; NAAS rating : 6.25

G.1.16. Department of Veterinary Public Health

Sl. No.	Scientific Research Publication in Journals
1.	Murmu S, Debnath C, Pramanik AK, Mitra T, Jana S, Dey S, Banerjee S, Batabyal K (2015) Detection and characterization of zoonotic dermatophytes from dogs and cats in and around Kolkata. <i>Veterinary World</i> . 8(9): 1078-1082; NAAS rating : 5.10
2.	M. Saha, C. Debnath, A. K. Pramanik, D. Murmu, R. Kumar and T. Mitra (2015) Studies on the Prevalence of <i>Listeria Monocytogenes</i> in Unpasteurized Raw Milk Intended for Human Consumption in and Around Kolkata, India. <i>International Journal of Current Microbiology and Applied Sciences</i> . 4(8): 288-298; Calculated Impact factor 2.937
3.	M. Saha, C. Debnath, M. K. Biswas, A. K. Pramanik and D. Murmu (2016) Studies on the Prevalence of <i>Salmonella</i> spp. in meat shop premises intended to sale meat for human consumption in North Kolkata, India. <i>International Journal of Current Microbiology and Applied Sciences</i> . 5 (4): 297-302 ; Calculated Impact factor 2.937
4.	Debnath, C. ; Mitra, T.; Kumar, A. and Samanta, I. (2016) Detection of dermatophytes in healthy companion dogs and cats in eastern India. <i>Iranian Journal of Veterinary Research</i> . 17(1)- 54: 20-24; NAAS rating : 6.25
5.	Praveen PK, Debnath C, Shekhar S, Dalai N, Ganguly S (2016) Incidence of <i>Aeromonas</i> spp. infection in fish and chicken meat and its related public health hazards: A review, <i>Veterinary World</i> , 9(1): 6-11. A ; NAAS rating : 5.10

G.1.17. Department of Veterinary Surgery & Radiology

Sl. No.	Scientific Research Publication in Journals
1.	Sarbani Hazra, Sudip Nandi, Deboki Naskar, Rajdeep Guha, Sushovan Chowdhury, Nirparaj Pradhan, Subhas C. Kundu, Aditya Konar (2016). Non-mulberry Silk Fibroin Biomaterial for Corneal Regeneration. <i>Scientific reports</i> . DOI: 10.1038/srep21840; IF 5.678; NAAS rating : 11.58
2.	S. Konar, R. Guha, B. Kundu, S. Nandi, T. K. Ghosh, S. C. Kundu, A. Konar, S. Hazra. (2016). Silk fibroin hydrogel as physical barrier for prevention of post hernia adhesion. <i>Hernia</i> . DOI 10.1007/s10029-016-1484-8; IF 2.05; NAAS Rating : 8.05
3.	Hazra S, Konar S, Kumar V, Konar A (2015) Surgical Outcome and Histopathological Findings of Feline Corneal Sequestrum.. <i>SOJ Vet Sci</i> 1(3): 1-3.



PUBLICATION ON RESEARCH FINDINGS (Contd...)

4.	H. Malik , V. Sharma , S. Saini , S. K. Guha and D. Malakar .(2015). Autologus Transplantation of Mesenchymal Stem Cells derived from Adipose Tissue in Animal. <i>Reproduction, Fertility and Development</i> . 28(2): 244-244. (Imp. fact-2.583). http://dx.doi.org/10.1071/RDv28n2Ab225 ; Imp.Fact. : 2.583
5.	Samit K. Nandi, Biswanath Kundu, Arnab Mahato, Narsinh L. Thakur, Siddhartha N. Joardar and Biman B. Mandal. (2015). <i>In vitro</i> and <i>in vivo</i> evaluation of marine sponge skeleton as a bone mimicking biomaterial. <i>Integrative Biology</i> . 7, 250--262 ; NAAS rating : 9.756
6.	Samit Kumar Nandi, Biswanath Kundu, Jayanta Mukherjee, Someswar Datta and Vamsi Krishna Balla. (2015). Converted coralline hydroxyapatite implants with growth factors: In vivo bone regeneration. <i>Material Science and Engineering C</i> 49: 816-823; NAAS rating : 9.088
7.	Sahar Vahabzadeh, Amit Bandyopadhyay, Susmita Bose, Rakesh Mandal and Samit Kumar Nandi. (2015). IGF-Loaded Silicon and Zinc Doped Brushite Cement: Physico-Mechanical Characterization and In Vivo Osteogenesis Evaluation. <i>Integrative Biology</i> . 7: 1561 - 1573 ; NAAS rating : 9.756
8.	Susmita Mukherjee, Samit Kumar Nandi, Biswanath Kundu, Abhijit Chanda and Swarnendu Sen. (2016). Enhanced bone regeneration with carbon nanotube reinforced hydroxyapatite in animal model. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> 60:243-255; NAAS rating : 9.417
9.	Promita Bhattacharjee, Deboki Naskar, Tapas K. Maiti, Debasis Bhattacharya, Piyali Das, Samit Kumar Nandi and Subhas C. Kundu. (2016). Potential of non-mulberry silk protein fibroin blended and grafted poly (ε-caprolactone) nanofibrous matrices for in vivo bone regeneration. <i>Colloids and Surfaces B: Biointerfaces</i> . 143:431-439; NAAS rating: 10.15
10.	Toufique Ahmed, Asit Kr.Maji , Indranil Samanta, S.Batabyal and Debaki Ghosh ; Selection of antibiotics for surgical treatment of pyometra in bitches. <i>INTAS POLIVET</i> (2015) Vol.16(II),238-243; NAAS rating: 4.69
11.	A.K. Maji, D. Basak, P. Das and J. Mukherjee: Epulis and its surgical treatment in a spitz bitch ; <i>Exploratory Animal and Medical research</i> , Volume 5, Issue 2, (2015), 230-232; NAAS rating: 3.30

G.1.18. Department of Veterinary & Animal Husbandry Extension Education

Sl. No.	Scientific Research Publication in Journals
1.	K. C. Dhara, N. Ray, P. K. Bandopadhyay, S. Biswas and A. Goswami (2016). Influence of Gastrointestinal Parasites on Productive and Reproductive Performances of Black Bengal Goat under Farm Condition, <i>International Journal of Livestock Research</i> , ISSN 2277 – 1964 ONLINE, Vol 6(2) Feb'16.
2.	Bara, Shilpi Priya Sunita and Ganguli, Debasis (2015). Socio – economic Profile of disaster affected livestock farmers: The case of phailin in Odisha. <i>Journal of Interacademia</i> , 19(2) : 307 – 311; NAAS Rating : 2.34

PUBLICATION ON RESEARCH FINDINGS (Contd...)

G.2. RESEARCH PUBLICATIONS FACULTY OF FISHERY SCIENCES

G.2.1. Department of Aquaculture

Sl. No.	Scientific Research Publication in Journals
1.	Ch. Bhanu Prakash, Ghosh T.K, Koteswar.B, Rajak Alok and Kumar Sanjeev (2015). Studies on the effect of different dietary protein levels of soyabean meal on growth, survival and carcass composition of <i>Litopenaeus vanamei</i> (Boone, 1931). <i>International Journal of Food and Nutritional Sciences</i> . 4(1): 107-113.
2.	Patra Samiran and Ghosh T.K (2015). Larval rearing of freshwater angelfish (<i>Pterophyllum scalare</i>) fed on different diets. <i>International Organization of Scientific Research</i> . 8 (6) :6-11.
3.	Ch.Bhanu Prakash, Reddy C. Prabhanjan Kumar, Ghosh T. K, Ramalingaiah D. and Kanudan S. Charan (2016). Effect of different dietary protein sources on growth, survival and carcass composition of <i>Litopenaeus vannamei</i> (Boone, 1931). <i>J. Exp. Zool. India</i> Vol. 19 (1) : 205-213.

G.2.2. Department of Aquatic Animal Health

Sl. No.	Scientific Research Publication in Journals
1.	Abraham, T.J., Paul, P., Adikesavalu, H., Patra, A. and Banerjee, S., (2016). <i>Stenotrophomonas maltophilia</i> as an opportunistic pathogen in cultured African catfish, <i>Clarias gariepinus</i> (Burchell, 1822). <i>Aquaculture</i> , 450: 168–172. Impact Factor : 1.88; NAAS Rating : 7.83
2.	Kumar, P. Adikesavalu, H. and Abraham, T.J., (2016). Prevalence of <i>Edwardsiella tarda</i> in commercially important finfish and shellfish of Bihar and West Bengal, India. <i>Journal of Coastal Life Medicine</i> , 4(1): 30-35
3.	Joardar, S.N., Abraham, T.J. and Mandal, N. (2015) Indian major carp <i>Cirrhinus mrigala</i> (Hamilton, 1822) inoculated with live <i>Aeromonas hydrophila</i> shows dynamic changes in specific immune-cellular activities. <i>J. Immunol. Immunopathol.</i> 17(1): 25-30.
4.	Paul, P., Adikesavalu, H., Banerjee, S., and Abraham, T.J. (2015). Antibiotic resistant motile aeromonads induced septicemia in Philippine catfish <i>Clarias batrachus</i> (L) fingerlings. <i>Croatian Journal of Fisheries</i> , 73(4): 170-175.
5.	Abraham, T.J., Mallick, P.K., Adikesavalu, H., Banerjee, S. (2015). Pathology of <i>Edwardsiella tarda</i> infection in African catfish <i>Clarias gariepinus</i> (Burchell 1822) fingerlings. <i>Archives of Polish Fisheries</i> , 23: 141-148.
6.	Mukherjee, I. and Abraham, T.J. (2015). Diseases and therapeutics of cultured ornamental fish in selected districts of West Bengal. <i>Aquaculture Times</i> , 1(2): 15-20.
7.	Banerjee, S., Dash, G. and Abraham, T.J. (2015). Histopathology of gill myxosporean infection in cultured Indian major and minor carps, West Bengal, India. <i>Journal of Applied Ichthyology</i> , 31(6): 1137-1141; Impact Factor : 0.90 ; NAAS Rating : 6.90.
8.	Abraham, T.J. and Ritu, R., (2015). Effects of dietary supplementation of garlic (<i>Allium sativum</i>) extract on the resistance of <i>Clarias gariepinus</i> against <i>Edwardsiella tarda</i> infection. <i>Iranian Journal of Fisheries Sciences</i> , 14(3): 719-733; Impact Factor : 0.372.



PUBLICATION ON RESEARCH FINDINGS (Contd...)

9.	Chitra-Pakhira, Nagesh, T.S., Abraham, T.J., Dash, G. and Behera, S. (2015). Stress responses in rohu, <i>Labeo rohita</i> transported at different densities. <i>Aquaculture Reports</i> , 2: 39-45.
10.	Abraham, T.J., Ghosh, S. and Sasmal, D., (2015). Assessment of nitrogen and sulphur cycle bacteria and shrimp production in ponds treated with biological products. <i>Journal of Coastal Life Medicine</i> , 3(6): 466-470
11.	Banerjee, S., Patra, A., Adikesavalu, H., Mondal, A. and Abraham, T.J., (2015). The phylogenetic position of <i>Myxobolus carnaticus</i> (Myxozoa, Myxosporea, Bivalvulida) infecting gill lamellae of <i>Cirrhinus mrigala</i> (Hamilton, 1822) based on 18S rRNA sequence analysis. <i>Mol. Biol. Res. Commun.</i> , 4(3): 125-132.
12.	Banerjee, S., Patra, A., Adikesavalu, H., Joardar, S.N. and Abraham, T.J., (2015). Molecular and phylogenetic characterization of <i>Thelohanellus qadrii</i> (Myxozoa, Myxosporea: Bivalvulida) infecting the secondary gill epithelium of Indian major carp <i>Catla catla</i> (Hamilton, 1822). <i>Mol. Biol. Res. Commun.</i> , 4(2): 83-91.
13.	Adikesavalu, H., Patra, A., Banerjee, S., Sarkar, A. and Abraham, T.J., (2015). Phenotypic and molecular characterization and pathology of <i>Flectobacillus roseus</i> causing flectobacillosis in captive held carp <i>Labeo rohita</i> (Ham.) fingerlings. <i>Aquaculture</i> , 439: 60-65. Impact Factor : 1.88; NAAS Rating :7.83
14.	Bharathkumar, G. and Abraham, T. J., (2015). Oxytetracycline resistance bacteria in <i>Clarias gariepinus</i> and <i>Clarias batrachus</i> larvae and the environment. <i>J. Fish.</i> 3(1): 217-220.
15.	Abraham, T.J., Banerjee, S., Patra, A., Sarkar, A., Adikesavalu, H. and Dash, G., (2015). Molecular phylogeny of <i>Myxobolus orissae</i> (Myxosporea: Myxobolidae) infecting the gill lamellae of mrigal carp <i>Cirrhinus mrigala</i> (Actinopterygii: Cyprinidae). <i>Mol. Biol. Res. Commun.</i> , 4(1): 15-24.
16.	Abraham, T.J. and Banerjee, S., (2015). Gill myxoboliasis in Indian carps. <i>Aqua Star</i> , May (2015): 48 and 51.
17.	Adikesavalu, H., Kumar, P., Abraham, T.J., and Uma, A., (2015). Minimal bactericidal concentration of sanitizers against <i>Edwardsiella tarda</i> strains isolated from African catfish <i>Clarias gariepinus</i> . <i>Journal of Marine Biosciences</i> , 1(1): 5-10.
18.	Mukherjee, D., Bhattacharya Sanyal, K., Chakraborty, D., Patra, A., and Dash, G., (2016). Prevalence of Parasitic Diseases in four blocks of Bankura District, West Bengal. <i>Int. J. Res. Agr. Sci.</i> 3(2): 64-69
19.	Mandal, B., Dubey, S.K. Ghosh, S.K. and Dash, G., (2015). Parasitic occurrence in the giant freshwater prawn <i>Macrobrachium rosenbergii</i> from coastal West Bengal, India. <i>J. Parasitol. Vector Biol.</i> 7(6): 115-119
20.	Dash, G., Sharma, B., Chakraborty, D., and Mukherjee, D., (2015). Parasitic study of Indian Major Carp <i>Catla catla</i> (Hamilton, 1822) in selected districts of West Bengal, India, <i>Int. J. Adv. Sci. Tech. Res.</i> , 5 (1): 79-83
21.	Ramudu, K.R. and Dash, G., (2015). Histopathological alterations in the vital organs of Indian Major Carps with parasitic Infestations in Fish Farms of West Bengal, India. <i>Drug Dev. Therapeutics</i> , 6(1): 38-41

PUBLICATION ON RESEARCH FINDINGS (Contd...)

22.	Chattopadhyaya, N., Sur, S.K. Dash, G. and Mahapatra, T.K., (2015). Prevalence of Carp diseases in relation to water Quality parameters in the culture areas of West Bengal, India. <i>Int. J. Current Res.</i> 7(1): 11869-11872
23.	Dash, G., Majumder, D., Ramudu, K.V., (2015). Seasonal distribution of parasites in fresh water exotic carps of West Bengal, India. <i>Ind. J. Anim. Res.</i> 49(1): 95-102 ; NAAS Rating :6.03
24.	Sharma, B.B. and Dash, G., (2015). New Dimensional Approaches of Nanotechnology in the diversified field of Fisheries and Aquaculture. <i>Aquatech</i> , Jan.78-80

G.2.3. Department of Aquatic Environment Management

Sl. No.	Scientific Research Publication in Journals
1.	Mishra. R.P., Kumar. N, Rout. S.K, Das. U.K, Rath. P.K., Mishra. J.P. (2015) Immunological Responses in <i>Labeo rohita</i> Exposed to Fish Processing Plant Effluents. <i>Environment & Ecology</i> . 33 (2A): 860-862. NAAS Rating. 4.09
2.	Jana. Debasmita, Rout. S.K, Trivedi. R.K, Das. B.K and Behera. Lopamudra. (2015). Growth Performance of <i>Labeo rohita</i> (Hamilton) Fingerlings Exposed in Different Concentration of Sewage Water. <i>Environment & Ecology</i> . 34 (3A): 1053-1056. NAAS Rating. 4.09
3.	Mishra. R.P, Kumar. N, Rout. S.K, Mishra. J.P, Panigrahi. A, Mishra. C.K (2015). Effect of Sub Lethal Concentrations of Processing Waste on Blood Parameters of <i>Labeo rohita</i> Fingerlings. <i>Environment & Ecology</i> . 34 (2A): 804-806. NAAS Rating. 4.09
4.	Das. U.K, Rout. S.K, Kumar. N, Mishra. R.P, Bhattacharya. B.K, Gagoi. Pranab. (2015). Limnochemistry of River Pagladia (a Major Tributary of the Brahmaputra River), Assam. <i>Environment & Ecology</i> . 33 (2A): 863-866. NAAS Rating. 4.09
5.	Dubey. Sourav Kumar, Trivedi. Raman Kumar, Chand. Bimal Kinkar, Rout. Sangram Keshari and Mandal. Basudev. (2015). Response of <i>Anabas testudineus</i> (Bloch, 1792) to Salinity for Assessing their culture potential in Brackish water inundation prone areas of Indian Sundarbans. <i>Journal of Inland Fishery Society of India</i> . 47 (2): 59-69; NAAS Rating. 4.15

G.2.4. Department of Fishery Economics & Statistics

Sl. No.	Scientific Research Publication in Journals
1.	S. Sahu, A..Aziz, A. Mondal. (2015). Bio-Economics of Bheri Fisheries nearby Dhapa Canal of East Kolkata Region in West Bengal during 2014-'15. <i>International Journal of Innovative Research in Science, Engineering and Technology</i> , (IJIRSET), Vol:4, Issue: 10. Impact Factor:5.442; Equivalent NAAS: 8.3; ISSN: 2319-8753
2.	S. Sahu, A.Majhi, A. Mondal, A. Aziz ⁴ , D. Saikia. (2015). Econometrics of Pisciculture under Tribal Sub-plan Programme among the Tribal Fisher folk at Arsha Development Block of Purulia District: <i>International Journal of Innovative Research in Science, Engineering and Technology</i> , (IJIRSET), Vol:4, Issue: 10. Impact Factor:5.442; Equivalent NAAS: 8.3; ISSN: 2319-8753
3.	S. Sahu, B. Arefin, A. Aziz. (2015). Selected Beel Fishery at Kandi Block in Murshidabad District, adjacent to Bhagirathi River (W.B): <i>International Journal of Innovative Research in Science, Engineering and Technology</i> , (IJIRSET), Vol:4, Issue: 10. Impact Factor:5.442; Equivalent NAAS: 8.3; ISSN: 2319-8753



PUBLICATION ON RESEARCH FINDINGS (Contd...)

4.	S. Sahu, V. Kumar, A. Aziz. (2015). Prediction Modeling for Fish Farming of some Selected Farms during 2014-'15 at Darbhanga District of Bihar International Journal of Innovative Research in Science, Engineering and Technology, (IJIRSET), Vol:4, Issue: 10. Impact Factor:5.442; Equivalent NAAS: 8.3; ISSN: 2319-8753
5.	S. Sahu. (2015). Economic Analysis of Scampi (<i>Macrobrachium rosenbergii</i>) Polyculture in Selected Ponds at Contai Subdivision in PurbaMedinipur District of Coastal West Bengal during 2014 International Journal of Innovative Research in Science, Engineering and Technology, (IJIRSET), Vol:4, Issue: 10. Impact Factor:5.442; Equivalent NAAS: 8.3; ISSN: 2319-8753
6.	S. Sahu. (2015). Econometrics of Traditional Pisciculture among the Tribal Fisherfolk at Arsha Development Block of Purulia District during 2014: International Journal of Science and Research (IJSR), Vol:4, Issue: 10, October, 2015. Impact Factor: 5.611: Equivalent NAAS: 8.4; ISSN: 2319-7064
7.	S. Sahu. (2015). Prediction Modeling on Some Selected Beel Fishery at Berhampore Block in Murshidabad District, W.B International Journal of Science and Research (IJSR), Vol:4, Issue: 10, October, 2015. Impact Factor: 5.611: Equivalent NAAS: 8.4; ISSN: 2319-7064
8.	S. Sahu. (2015). Bio-Economics of Scampi (<i>Macrobrachium rosenbergii</i>) Polyculture in Selected Ponds at Namkhana Block in South 24 Parganas District of Coastal West Bengal over the year 2014 International Journal of Science and Research (IJSR), Vol:4, Issue: 10, October, 2015. Impact Factor: 5.611: Equivalent NAAS: 8.4; ISSN: 2319-7064
9.	S. Sahu. (2015). Comparative Econometrics of Tiger Shrimp (<i>Penaeus monodon</i> , Fabricius) Monoculture against Polyculture at selected regions of Coastal PurbaMedinipur of West Bengal during, 2014 International Journal of Science and Research (IJSR), Vol:4, Issue: 10, October, 2015. Impact Factor: 5.611: Equivalent NAAS: 8.4; ISSN: 2319-7064
10.	S. Sahu. (2015). Econometrics of Scampi (<i>Macrobrachium rosenbergii</i>) Polyculture in Selected Ponds at Sandeshkhali-I Development Block in South 24 Parganas District of Coastal West Bengal over the year 2014 International Journal of Latest Technology in Engineering, Management and Applied Sciences (IJLTEMAS) Vol-IV, Issue: X. Impact Factor:2.115; Equivalent NAAS: 7.7; ISSN: 2278-2540
11.	S.Sahu ,A.Mondal, A Aziz, B,K Das, S. Chowdhury. (2015). Bio-Economics Analysis of Bheri Fisheries in and Around Topsia Canal of East Kolkata Region in West Bengal 2014-2015. International Journal of Latest Technology in Engineering, Management and Applied Sciences (IJLTEMAS) Vol-IV, Issue: X. Impact Factor:2.115; Equivalent NAAS: 7.7; ISSN: 2278-2540

G.2.5. Department of Fishery Engineering

Sl. No.	Scientific Research Publication in Journals
1.	Fishing Trials with Modified Two-seam overhang trawl (2015). <i>Intra specific seleceivity studies. International Journal of sciences, Engineering & Technology</i> :3(3), pp528-534
2.	Length Weight Relationships and condition actors of big eye Hilisa, <i>Ilisha megalptera</i> from estuarine region of Diamond harbour, West Bengal. (2015) <i>International Journal of Innovative science, Engineering & Technology</i> :2(5), pp217-228
3.	Growth, Mortality and Exploitation level of Bombay duck, <i>Harpodon nehereus</i> from Estuarine region of Kakdwip, (2015) West Bengal, <i>Journal of Environment and Ecology</i> :34(3), (2015), pp971-975

PUBLICATION ON RESEARCH FINDINGS (Contd...)

G.2.6. Department of Fishery Extension

Sl. No.	Scientific Research Publication in Journals
1.	Dana S S, KaulP N, Bandhopadhyay U K and Ghosh A (2015): Goat production practices of SantalTribal for Improving their Socio-economics condition and household. <i>Indian Journal of Animal Sciences</i> . 85(10): 1123-1125. NAASrating : 6.16.
2.	Ghosh A, Sharma A and Dana SS (2015): A study on Effectiveness of Fisheries Based Programmes Telecast by Public and Private Television Channels in West Bengal. <i>International Journal of Extension Education</i> . Accepted for publication on 09.10.2015: NASS rating : 4.15.
3.	Dana S S, Ghosh A and Bandhopadhyay U K (2015): Socio-economics profile and problems of Mud-Crab farmers of South 24 Paraganas, West Bengal,an explorative study. <i>Journal of Crop and Weed Science</i> . 11(1): 120-123. NASSrating : 3.59.
4.	Dana S S, Bandhopadhyay UK and Ghosh A (2015): Epidemiological Survey on Morbidity and Mortality Pattern in Black Bengal Goats Reared by the tribal people of West Bengal. <i>Journal of Crop and Weed Sciences</i> . 11(2): 151-153. NAASrating : 3.59.

G.2.7. Department of Fish Processing Technology

Sl. No.	Scientific Research Publication in Journals
1.	Ahmed S, Dora K C, Sarkar S, Chowdhury S and Ganguly S (2015). Isolation and Molecular Characterization of <i>Bacillus</i> species from Shidal- A fermented fish product from Assam. <i>International Journal of Tropical Agriculture</i> © Serials Publications, ISSN: 0254-8755, Vol. 33, No. 2: 1-4. NAAS rating: 3.03.
2.	Kumar P, Dora K C, Sarkar S, Chowdhury S and Ganguly S (2015). Vacuum Packaging and Quality Analysis of Silver Pomfret (<i>Pampus argenteus</i>) under refrigerated condition (4±1oC). <i>International Journal of Tropical Agriculture</i> © Serials Publications, ISSN: 0254-8755, Vol. 33, No. 2: 1-8. NAASrating: 3.03.
3.	Ahmed S, Dora K C, Sarkar S, Chowdhury S and Ganguly S (2015). Isolation and characterisation of bacteriocin producing <i>Lactobacillus plantarum</i> from shidal-A traditional fermented fish product of Assam. <i>The Asian Journal of Animal Science</i> , ISSN: 0973-4791, Vol.10(2): 115-123. NAAS rating: 3.4.
4.	Nath S, Dora KC, Sarkar S and Chowdhury S (2015). Detection and characterisation of antimicrobial peptide produced by <i>Bacillus subtilis</i> FPTB23 isolated from curd. <i>The Asian Journal of Animal Science</i> , ISSN: 0973-4791, Vol.10(2):159-165. NAAS rating: 3.4.
5.	Murmu P, Chowdhury S, Sarkar S, Dora KC, Nath S and Pal D (2015). Utilisation of filleting wastes in improving yield of Asian Sea Bass fillet. <i>Environment and Ecology</i> , ISSN: 0970-0420, Vol.34(4C): 2404-2408. NAAS rating: 4.09.
6.	Chowdhury S, Raychaudhuri U, Nath S and Dora K.C (2015). Shelf life of lactic acid bacteria inoculated vacuum packed <i>Tenuulosa ilisha</i> (Hamilton, 1822) at low temperature. <i>Indian Journal of Fisheries</i> , ISSN: 0970-60141, Vol. 63(1):156-161. NAASrating: 6.2.



PUBLICATION ON RESEARCH FINDINGS (Contd....)

G.2.8. Department of Fishery Resources Management

Sl. No.	Scientific Research Publication in Journals
1.	Das S K (2015): Knowledge sharing on innovative approaches for promotion of watersheds under MGNREGA programme for integrated aquafarming and rainbow revolution. 10 th all India People's Technology Congress (6-7 Feb.,2015), Agriculture & Biotechnology Sub Congress Kolkata.Ref.: FOSET/AIPTC-10-INV/GNC(AGB-16, 046): 1-6. NAASrating : NA.
2.	Singh N R, Das S K, Kumar S, Behera, S and Nagesh T S (2015): Length-weight relationship and relative condition factor of mrigal <i>Cirrhinus mrigala</i> (Hamilton) reared in bheries of 24- South Praganas district in West Bengal. <i>J. Environ. & Sociobiol.</i> 12 (2): 201-208. NAASrating : NA.
3.	Mondal S, Behera S, Kumar S, Nagesh TS, Talwar N A, Gogoi R, Das A and Sarkar S (2015): Length-weight relationships and condition factors of big eye hilsa, <i>Ilisha megaloptera</i> from estuarine region of diamond Harbour, West Bengal. <i>Journal of Innovative Science, Engineering and Technology</i> 2(5): 217-228. NAASrating : NA.
4.	Behera S, Khan I, Kumar S, Gogoi R, Jomang O and Bakshi S (2015): Secondary sexual characteristics and determination of sex of <i>Trichogaster fasciatus</i> (Bloch and Schneider) during breeding and non breeding season. <i>International Journal of Science, Engineering and Technology</i> 3(3): 520-522. NAAS rating : NA.
5.	Behera S, Iangari B, Kumar S, Gogoi R, Jomang O, Bakshi S and Aziz A (2015): Bioindices and ecology of mrigal <i>Cirrhinus mrigala</i> (Hamilton) of Panchasayar Water body of West Bengal. <i>International Journal of Science, Engineering and Technology</i> 3(3): 515-519. NAASrating : NA.
6.	Ziauddin G, Behera S, Kumar S, Gogoi R, Jomang O and Bakshi S (2015): Studies on changes of Gonadal materials of <i>Anabas testudineus</i> on the basis of histology during non breeding season. <i>National Journal of Life Sciences</i> 12(2): 61-64. NAASrating : 4.01.
7.	Behera S, Chaudhury S R, Kumar S and Gogoi R (2015): To Study The Relationship Between The Gonado Somatic Index and The Gasto Somatic Index During Breeding Season of <i>Labeo Bata</i> (Hamilton,1822). <i>Indian Journal of Biology</i> 2(1): 81-85. NAASrating : NA.
8.	Behera S, Iangari B, Kumar S, Gogoi R, and Sengar P S (2015): Length-weight relationship and relative condition factor of mrigal <i>Cirrhinus mrigala</i> (Hamilton) of Panchasayar Water body of West Bengal. <i>International Journal of sciences and Nature</i> 6(2): 201-204. NAASrating : 3.60.
9.	Behera S, Devi L M, Kumar S, Gogoi R, Samanta P, Jomang O and Bakshi S (2015): External morphology and sexual dimorphism of <i>Anabas testudineus</i> in natural environment. <i>International Journal of sciences and Nature</i> 6(2): 288-292. NAASrating : 3.60.
10.	Behera S, Biswas B K, Nagesh TS, Kumar S, Talwar N A and Gogoi R (2015): Growth, mortality and exploitation level of Bombay duck, <i>Harpodon nehereus</i> from estuarine region of Kakdwip, West Bengal, India. <i>Environment and Ecology</i> 34(3): 971-975. NAASrating : 4.09.
11.	Ziauddin G, Behera S, Kumar S, Gogoi R, Jomang O and Bakshi S (2015): Sex determination of <i>Anabas testudineus</i> during non-breeding season on the basis of external morphological characters. <i>International Journal of Current Research</i> . 7(07): 18057-18059. NAASrating : NA.
12.	Behera S, Iangari B, Kumar S and Gogoi R (2015): Morphometry and meristic counts of mrigal <i>Cirrhinus Mrigala</i> of (Hamilton, 1822) along Panchasayar region of West Bengal, India. <i>Journal of Experimental Zoology India</i> 18(2): 609-613. NAASrating : 4.63.

PUBLICATION ON RESEARCH FINDINGS (Contd...)

13.	Behera S, Khan I, Kumar S and Gogoi R (2015): The maturation stages of gonads (testes and ovary) and breeding cycle of an indigenous ornamental fish <i>Trichogaster fasciatus</i> (Bloch and Schneider). <i>Journal of Experimental Zoology India</i> 18(2): 691-694. NAAS rating : 4.63.
14.	Sutradhar D, Behera S, Kumar S and Gogoi R (2015): Histological observation of female gonads during breeding and non breeding season of an indigenous ornamental fish <i>Trichogaster lalius</i> (Hamilton, 1822). <i>Journal of Experimental Zoology India</i> 18(2): 723-729. NAAS rating : 4.63.
15.	Singh N R, Das S K, Kumar S, Behera S and Nagesh T S (2015): Length-weight relationship and condition factor of <i>Cyprinus carpio</i> var. <i>communis</i> (Linnaeus) reared in bheries of 24- South Parganas district in West Bengal. <i>International Journal of Fisheries and Aquatic Studies</i> 6(2): 239-242. NAAS rating : NA.
16.	Behera S, Devi L M, Kumar S, Gogoi R, Sengar P S, Samanta P, Jomang O and Baksi S (2015): Determination of Seasonal Cyclicity of Gonad by Studying Its Histology during Pre-Spawning and Spawning Period of <i>Anabas testudineus</i> (Bloch) In Natural Environment. <i>International Journal of Fisheries and Aquatic Studies</i> 6(2): 391-394. NAAS rating : NA.
17.	Pakhira C, Nagesh T S, Abraham T J, Dash G and Behera S (2015): Stress responses in Rohu, <i>Labeo rohita</i> transported at different density. <i>Aquaculture Reports</i> 2:39-45. NAAS rating : NA
18.	Behera S, Devi L M, Kumar S, Gogoi R, Samanta P, Jomang O and Baksi S (2015): Study of external sexual characteristics and gonado-somatic Index for determining the breeding season of <i>Anabas testudineus</i> . <i>Uttar Pradesh journal of Zoology</i> 35(1): 15-20. NAAS rating : 3.3.
19.	Behera S, Sutradhar D, Kumar S and Gogoi R (2015): Testicular cyclicity of <i>Trichogaster lalius</i> during breeding and non breeding season. <i>International Journal of sciences and Nature</i> 6(3): 426-43. NAAS rating : 3.60.
20.	Singh R N, Das S K, Kumar S, Behera S and Nagesh T S (2015): Length-weight relationship and relative condition factor of mrigal <i>Cirrhinus mrigala</i> (Hamilton) reared in bheries of 24- South Paraganas district in West Bengal. <i>Journal of environment and socio-biology</i> 12(2): 201-208. NAAS rating : NA.
21.	Biwsas A, Behera S and Kumar S (2015): Effect of Male Hormone (17 α -Methyl Testosterone) on the Histological Changes of Male Dwarf Gourami <i>Trichogaster lalia</i> (Hamilton, 1822). <i>Indian Journal of Biology</i> 2(2):171-177. NAAS rating : NA.
22.	Behera S, Ahmed A S, Kumar S, Gogoi R, Jomang O and Baksi S (2016): Courtship behavior and breeding success of climbing perch, <i>Anabas testudineus</i> (Bloch) in three different breeding sets with the application of a synthetic hormone (WOVA-FH). <i>International Journal of Fisheries and Aquaculture Sciences</i> . 6(1): 1-6. NAAS rating : NA.
23.	Ziauddin G, Behera S, Kumar S, Gogoi R, Jomang O and Baksi S (2016): Morphometrical and Gonadal Studies of A Threatened Fish, <i>Anabas testudineus</i> with Respect to Seasonal Cycle. <i>International Journal of Fisheries and Aquaculture Sciences</i> 6(1): 7-14. NAAS rating : NA
24.	Kumar S, Behera S, Nagesh T S, Gogoi R and Prakash B C (2016): Effect of 17 α Methyl Testosterone on the Growth Performance of a Fighting fish (<i>Betta splendens</i>) <i>Journal of Experimental Zoology India</i> 19(1): 89-93. NAAS rating : 4.63.
25.	Behera S, Ahmed A S, Kumar S, Gogoi R, Jomang O and Baksi S (2016): De-growth of <i>Anabas testudineus</i> fry reared in a captive condition with respect to seasonal temperature. <i>International Journal of Food and Nutritional Sciences</i> 5(1): 46-49. NAAS rating : NA.



PUBLICATION ON RESEARCH FINDINGS (Contd...)

G.3. RESEARCH PUBLICATIONS OF FACULTY OF DAIRY TECHNOLOGY

G.3.1. Department of Dairy Chemistry

Sl. No.	Scientific Research Publication in Journals
1.	Ray P R, Ghatak P K and Bandyopadhyay A K (2015). Effect of addition of Banana Pseudostem Juice on Fatty acid profile of Cow and Buffalo milk during storage. <i>Indian J. Anim Hlth.</i> 54(1): 17-26. , NAASrating 2.08
2.	Chakraborty C, Ghatak P K and Bandyopadhyay A K (2015). A comparative study on the textural quality of herbal Sandesh made in laboratory and collected from local market of Kolkata . <i>Indian J. Anim. Hlth.</i> 54(1): 55-62. NAASrating 2.08
3.	Ray P R and Maji S (2016). Dairy Products: A potential ingredients for food industry. <i>Processed Food Industry</i> . 19(4): 20-25. ISSN 09721649

G.3.1. Department of Dairy Technology

Sl. No.	Scientific Research Publication in Journals
1.	Sen, D.C.(2015). Usage of solar energy in the Dairy Industry, <i>Bigyan Bannhi</i> . 2 (1) : 32-38. ISSN : 2348-6562
2.	Sen, D.C and Singh, B.K.(2015). Uses of rice bran oil in milk foods for better health. <i>Beverage & Food World</i> . 42(12) : 40-43
3.	Chowdhury, I and Sen, D.C.(2016) Applications of stevia in milk foods. <i>Beverage & Food World</i> . 43(1) : 49-50
4.	Swain, N. K. and Sen, D.C.(2016) Uses of organogels in the dairy industry, <i>Souvenir</i> , National Seminar on Dairying : Innovative Technology Initiatives in production and processing . March 12, 2016. Organized by Indian Dairy Association (East Zone), Kolkata, pp. 63-68
5.	Saha, P. Hazra, T., Ray, P.R., Ghatak, P.K. and Sen D.C.(2016) Trend in non-thermal technology use in dairy and food industry. <i>Souvenir</i> , National Seminary on Dairying: Innovative Technology Initiatives in Production and processing. March 12, 2016. Organized by Indian Dairy Association (East Zone) Kolkata, pp. 69-72.

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

Sl. No.	Scientific Research Publication in Journals
1.	Dubey. Sourav Kumar, Trivedi. Raman Kumar, Chand. Bimal Kinkar, Rout. Sangram Keshari and Mandal. Basudev. (2015). Response of <i>Anabas testudineus</i> (Bloch, 1792) to Salinity for Assessing their culture potential in Brackish water inundation prone areas of Indian Sundarbans. <i>Journal of Inland Fishery Society of India</i> . 47 (2): 59-69; NAAS Rating. 4.15

H HUMAN RESOURCE DEVELOPMENT (HRD)

The West Bengal University of Animal & Fishery Sciences always encourages its faculty members and scientists for interaction and collaboration with the scientists from other institutes within the State, Country and other countries to strengthen its basic, applied and strategic researched in the fields of Veterinary and Animal Sciences, Dairy Technology and Fishery Sciences. The faculty members and scientists of the University participate in different conferences, training programmes, summer school, short courses on various aspects, seminars, symposiums, workshops etc to be updated with the latest scientific knowledge and technologies. This effort of the University in the Human Resource Development is briefly depicted below :

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

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

H.1.A.1. Department of Animal Nutrition

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Dr. A. K. Patra Dr. G. P. Mandal Dr. P. N. Chatterjee	XVI Biennial Animal Nutrition Conference of Animal Nutrition Society of India	Karnal, Haryana, India.	3 days 6 th to 8 th February, 2016
Dr. Paresh Nath Chatterjee, Assistant Professor	57 th Orientation Programme	UGC – Human Resource Development Centre, Jadavpur University	28 days 15 th June to 11 th July, 2015.

H.1.A.2. Department of Instructional Livestock Farm Complex

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Dr. M.C. Pakhira	Workshop on "Some issues in current research & publication"	WBUAFS, Kolkata	1 day 18 th July, 2015
	UGC Sponsored 59 th Orientation Programme, conducted by Jadavpur University.	UGC-HRDC, Salt lake, Kolkata	28 days 26 th Nov. to 23 rd Dec. 2015.
	National Symposium on "Role of Veterinarian in Sustainable Livestock and Poultry Development to Boost up Rural Economy" by Scientific Sub-committee 46 th Re-Union of Student of Bengal Veterinary College, F/O-VAS, BCKV & WBUAFS	Belgachia, Kolkata	2 days 10 th January - 11 th January, 2016



HUMAN RESOURCE DEVELOPMENT (HRD) (Contd....)

Dr. Aruna Pal	National Symposium on Policy Planning for Livelihood security through Domestic Animal Biodiversity, 2016 by Society for Domestic Animal Biodiversity	SKUAST, Jammu	2 days 11 th February- 12 th February, 2016
	Orientation programme for 28 days organized by Jadavpur University, 2015	UGC-HRDC, Salt lake, Kolkata	28 days 7 th September to 5 th October, 2015
	Annual Convention and National Symposium by Society for Veterinary Biochemists and Biotechnologists of India	OUAT, Bhubaneswar, Orissa	2 days 11 th March- 12 th March, 2016
Mr. D.C.Roy	Seminar on 'World Environmental Day' organized by Foundation for Science and Environment, Kolkata; Scientific and Environmental Research Institute, Kolkata and Confederation of Indian Universities, New Delhi	Kolkata	1 day 5 th June, 2015
	Workshop on 'Some Issues in Current Research and Publication' organized by WBUAFS, Kolkata & Indian Pharmacological Society	WBUAFS, Kolkata	1 day 18 th July, 2015
	National Symposium on 'Role of veterinarians in sustainable livestock and poultry development to boost up rural economy' organized by Scientific Sub-committee, 46 th Re-union of students' of Bengal Veterinary College, F/VAS, BCKV & WBUAFS	WBUAFS, Kolkata	2 days 10 th January - 11 th January, 2016
	23 rd W.B.State Science & Technology Congress organized by Presidency University, Kolkata and W.B. State Council of Science & Technology, Govt. of West Bengal	Presidency University Kolkata	2 days 28 th February - 29 th Feb., 2016
	National Seminar on 'Recent Advances in Statistical Tools for Agriculture and Allied Sciences' organized by Society for Application of Statistics in Agriculture and Allied Sciences (SASAA), B.C.K.V. and IISER, Kolkata	FACC, BCKV, Kalyani	3 days 3 rd March- 5 th March, 2016
	UGC sponsored 57 th 'Orientation Programme' conducted by Jadavpur University	UGC-HRDC, Salt lake, Kolkata	28 days 15 th June to 11 th July, 2015

HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)

H.1.A.3. Department of Livestock Production Management

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Dr S Bera Asst. Professor	Orientation Programme	Jadavpur University	28 days 15 th June to 11 th July, 2015
	Workshop on "Some issues in current research and publication"	WBUAFS	1 day 18 th July, 2015
	Organic Poultry Farming (As expert) - Live Phone in Programme	Prasar Bharti, Doordarshan Kendra, Kolkata	1 day 29 th September, 2015
	XXX Convention Of Indian Association Of Veterinary Anatomists And National Symposium On "Recent Advancement In Veterinary Anatomy And Their Application in the field of Animal Health, Production"	WBUAFS, Kolkata	3 days 16 th December – 18 th Dec., 2015
	National Symposium on 'Role of veterinarians in sustainable livestock and poultry development to boost up rural economy' organized by Scientific Sub-committee, 46 th Re-union of students' of Bengal Veterinary College, F/VAS, BCKV & WBUAFS	WBUAFS, Kolkata	2 days 10 th January - 11 th January, 2016
	4 th Paschim Banga Poultry Mela, Organized by WBPF, ARD, Govt. of West Bengal	Milan Mela Kolkata	3 days, 17.02.16 -19.02.16 Attended on 18 th February, 2016
	Training Programme on " Data recording, Record keeping & Analysis of Goat production System"	CIRG, Makhdoom	5 days 1 st March- 5 th March, 2016



HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)

H.1.A.4. Department of Livestock Products Technology

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Dr. Gopal Patra, Assistant Professor	XXX Annual Convention of Indian Association of Veterinary Anatomists & National Symposium	WBUAFS, Kolkata, W.B.	3days 16 th -18 th December, 2015
	National Veterinary Physiology Quiz Institute Level Competition	WBUAFS, W.B.	1day 14 th October, 2015
	6 th East Zonal and 24 th Annual State Conference of Indian Pharmacological Society, West Bengal Branch, "Newer Avenues in Pharmacological Research	WBUAFS, Kolkata, W.B.	2 days 5 th - 6 th February, 2015
	UGC sponsored Orientation Programme, UGC-HRDC 57 th Orientation Programme	Jadavpur University	28 days 15 th June to 11 th July, 2015
	National Symposium on " Role of veterinarians for sustainable Livestock and Poultry Production to boost up rural economy"	WBUAFS, Kolkata, W.B.	2 days 10 th January - 11 th January, 2016
	Attending the NSS Camp cum Animal Health & Vaccination Camp	3 rd Year B. V. Sc. & A. H. students at Chandanpiri, Namkhana, South 24 Parganas district"	3 days 9 th - 11 th April, 2016
Debashis Bhattacharyya, Assistant Professor	UGC-Academic Staff College The University of Burdwan 2 nd RC in Disaster Management	UGC-Academic Staff College The University of Burdwan 2 nd RC in Disaster Management	21 days 10 th March- 30 th March, 2016

H.1.A.5. Department of Teaching Veterinary Clinical Complex

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Dr. D. Ghosh Associate Professor	XXXVIII Annual congress of ISVS and International Symposium on New horizons of Camel surgery and Large ruminant surgery.	RAJUVAS, Bikaner, Rajasthan	3 days 15/10/2014 to 17/10/2014

HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)

	XI Annual convention of Indian society for advancement of canine practice.	Bihar veterinary College, Patna	3 days 10/02/2014 to 12/02/2014
Dr. S. S. Kesh Asst. Prof.	Workshop on " Role of CPCSEA in Animal Welfare"	Pharmacology deptt. WBUAFS, Belgachia.	1 day 02/08/2014
Dr. S. Chaudhuri Asst. Prof.	Annual State conference on "Newer Avenues in Pharmacological Research"	Pharmacology deptt. WBUAFS, Belgachia.	1 day 06/02/2015
	Workshop on " Role of CPCSEA in Animal Welfare"	Pharmacology deptt. WBUAFS, Belgachia.	1 day 02/08/2014
	Pre-conference workshop in the 6 th East zonal and 24 th Annual Conference on Indian Pharmacological Society, West Bengal branch on Xneobiotic in biological matrix	Pharmacology deptt. WBUAFS, Belgachia.	1 day 05/02/2015
Dr. P. Mukherjee Asst. Prof.	Workshop on " Role of CPCSEA in Animal Welfare"	Pharmacology deptt. WBUAFS, Belgachia.	1 day 02/08/2014
	Pre-conference workshop in the 6 th East zonal and 24 th Annual Conference on Indian Pharmacological Society, West Bengal branch on X Dr. D neobiotic in biological matrix	Pharmacology deptt. WBUAFS, Belgachia.	1 day 05/02/2015

H.1.A.6. Department of Veterinary Anatomy & Histology

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Dr. Partha Das Associate Professor and Prof S. Ray Professor	Recent Advances in Veterinary Anatomy & Their Application in the Field of Animal Health, Production & Biotechnology	Department of Anatomy, W.B. University of Animal & Fishery Sciences	3 Days 16 th -18 th December, 2015
Dr Partha Das Associate Professor	Recent Advances in Anatomical Research Techniques	Department of Anatomy, National Homeopathy Medical College	1 Day 18 th January, 2016
		Department of Biochemistry, Odisha University of Agriculture & Technology	2 Days 11 th March- 12 th March, 2016



HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)

H.1.A.7. Department of Veterinary Biochemistry

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Dr. Subhasis Batabyal, Associate Professor	Programme on " Agricultural Technology "	WBUAFS, Kolkata -37	1 day 24 th June, 2015
	Workshop on " Some issues in current research and publication"	Department of Veterinary Pharmacology & Toxicology, WBUAFS, Kolkata	1day 18 th July, 2015
	14 th FAOBMB Congress & 84 th Annual Meeting of SBC (I) " Current Excitements in Biochemistry and Molecular Biology for Agriculture and Medicine"	CCMB, Hyderabad, India	4 days 27 th -30 th November, 2015
	XXX Annual Convention of Indian Association of Veterinary Anatomists & National Symposium on " Recent Advances in Veterinary Anatomy & Their Application in the field of Animal Health, Production and Biotechnology"	Department of Veterinary Anatomy, WBUAFS, Kolkata	3 Days 16 th -18 th December, 2015
	" Vivek Samhati Utsab -2016" (State Level National Integration Programme)	Jadavpur University	1day 4 th February, 2016
Dr. Subhasis Batabyal, Associate Professor Dr. Saibal Chattopadhyay, Reader (Re- employed)	National Symposium on "Role of Veterinarians for sustainable livestock and poultry production to boost up rural economy"	WBUAFS, Kolkata -37	2 days 10 th January – 11 th January, 2016
Dr. Subhasis Batabyal, Associate Professor Dr. Saibal Chattopadhyay, Reader (Re- employed) Dr. Sumit Chowdhury, Guest Teacher	Annual Convention of Society of Veterinary Biochemists and Biotechnologists of India (SVBBI) and National Symposium on " Use of Advanced Technologies of Biochemistry and Biotechnology in Livestock Health, Production and Reproduction"	Department of Veterinary Biochemistry, College of Veterinary Sciences & Animal Husbandry, Orissa University of Agriculture & Technology, Bhubaneswar	2 days 11 th March - 12 th March, 2016

HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)

H.1.A.8. Department of Veterinary Epidemiology & Preventive Medicine

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Dr. U. Biswas, Assoc. Professor Dr. P. S. Jana Asstt. Professor	XXXIV Annual Convention of Indian Society for Veterinary Medicine and National Symposium on Newer Approaches in Diagnosis and Management of Animal Diseases for Sustainable Health and Production cum Conference Workshop on Clinical Procedures	Deptt. of Veterinary Medicine, College of Veterinary Sc., GADVASU, Ludhiana	3 days 17 th February - 19 th February, 2016

H.1.A.9. Department of Veterinary Gynaecology & Obstetrics

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Dr. Siddhartha Basu, Professor Dr.(Mrs.) Kalyani Ray, Associate Professor	National symposium on Recent Advances in Veterinary Anatomy & Their Application in the Field of Animal Health, Production and Biotechnology.	WBUAFS, F/VAS, Kolkata	3 days 16 th December – 18 th Dec., 2015
Dr. Uttam Datta, Reader, Re-employed	National Symposium on “Role of veterinarians in sustainable livestock and poultry development to boost up rural economy” organized by Scientific Sub- Committee, 46 th Re-Union of students of Bengal Veterinary College, Faculty of Veterinary and Animal Sciences, B.C.K.V. & W.B.U.A.F.S.	WBUAFS, F/VAS, Kolkata	2 days 10 th January - 11 th January, 2016
Dr. Pramode Ranjan Nandi, Assistant Professor	National Symposium & XXXI Annual Convention of ISSAR.	Bengaluru	3 days 3 rd December – 5 th December, 2015
	International Symposium organized by Association of Indian Zoo & Wildlife Veterinarians.	NASC Complex, New Delhi	2 days 19 th November – 20 th Nov., 2015
	Orientation programme at U.G.C. Academic Staff College.	University of Calcutta, Kolkata	30 days 30 th March – 28 th April, 2015



HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)

H.1.A.10. Department of Veterinary Medicine, Ethics & Jurisprudence

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Prof.N.R.Pradhan Dr. Chandan Lodh	Challenges in Diagnosis and Management of Emerging Diseases of Canine.	Allahabad	3 days 17 th June – 19 th June, 2015
Dr. Chandan Lodh	Autonomy of Educational Institutions: Legacy of Heritage and the Present Times	Kolkata	1 day 26 th September, 2015
	New Education Policy	Kolkata	2 days 7 th November – 8 th Nov., 2015
	Role of Veterinarians in Sustainable Livestock and Poultry Development to Boost up Rural Economy	Kolkata	2 days 10 th January – 11 th January, 2016
	Intellectual Property Rights	Kolkata	1 day 25 th Feb., 2016

H.1.A.11. Department of Veterinary Microbiology

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Dr. D. P. Isore, Assistant Professor & Head	Orientation Programme	Human Resource Development Centre, Jadavpur University	28 days 17 th February – 15 th March, 2016
Dr. Indranil Samanta, Assistant Professor University	UGC-HRDC-Refresher Course (Life Science)	Human Resource Development Centre, Calcutta	23 days 8 th December – 30 th Dec., 2015
	Presented an invited lead paper and acted as session chairman in 'International Conference on Advances in Food Science & Technology'	International and Inter University Centre for Nanoscience and Nanotechnology, School of Chemical Sciences, Mahatma Gandhi University, Kottayam, Kerala, India.	2 days 20 th November – 22 nd Nov., 2015

HUMAN RESOURCE DEVELOPMENT (HRD) (Contd....)

	Invited lecture in panel discussion of NAAS associates on 'Research challenge in backyard poultry sector under climate change scenario'	National Academy of Agricultural Sciences, NASC Complex, New Delhi	1 day 4 th June, 2015
	Invited lecture on 'Antibiotic resistance: a challenge to field veterinarians'	Veterinary Officer training programme (ASCAD) organized by Deputy Director, ARD & PO, Burdwan, Government of West Bengal	1 day 8 th October, 2015
	Invited lecture on 'Antibiotic resistance: a challenge to field veterinarians'	Veterinary Officer training programme (ASCAD) organized by Deputy Director, ARD & PO, Hooghly, Government of West Bengal	1 day 4 th December, 2015
	Workshop on 'Culture of responsibility, Pathogen Inventory Management and Fundamentals of working with biosafety cabinets'	National Institute of High security Animal Diseases, Bhopal	2 days 13 th March – 14 th March, 2015
Dr. S. N. Joardar, Associate Professor	Invited lecture on Advances in Microbial immunity & Sero-diagnostic approaches	Veterinary Officer training programme (ASCAD) organized by Deputy Director, ARD & PO, Hooghly, Government of West Bengal	1 day 5 th December, 2015
	Invited lecture on control of zoonotic diseases org. by Shristi Foundation	Nabin Manua village, Daspur, Medinipur (West)	1 day 29 th December, 2015
	Invited lecture on Cellular diagnostic techniques in animal diseases	ERS, IVRI, Kolkata	1 day 2 nd Sept., 2015
	Workshop on 'Antibiotic resistance: A threat to livestock and public health'	ERS, IVRI, Kolkata	1 day 5 th Sept., 2015
	Invited talk on control strategies for zoonotic diseases in the National Science Day, 2016 programme.	Malancha High School, Halisahar, 24 Pgs (N)	1 day 27 th February, 2016
	23 rd WB State Science and Technology Congress. Org. by DST, Govt. of WB	Presidency University, Kolkata	2 days 28 th February – 29 th February, 2016



HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)

Dr. Samir Dey, Assistant Professor	Orientation Programme	Human Resource Development Centre, Jadavpur University	28 days 7 th September – 7 th October, 2015
	Presented research paper (Poster) in 29 th Annual Convention of IAVMI and Global Symposium on 'Animal Health: Newer technologies and their applications'	College of Veterinary Science, AAU, Khanapara, Guwahati	3 days 12 th February – 14 th Feb., 2016
Dr. Kunal Batabyal, Assistant Professor	XXIX th Annual Convention of IAVMI and Global Symposium on "Animal Health: Newer Technologies and Their Applications"	CVS, AAU, Khanapara and ICAR-NRC on Pig, Rani, Kamrup	3 days 12 th February – 14 th Feb., 2016
	Winter School on "Analysis of High Throughput Sequencing and Microarray Data to Unravel Host-pathogen Interactions"	Indian Veterinary Research Institute, Izatnagar, Bareilly	21 days 17 th November – 7 th Dec., 2015

H.1.A.12. Department of Veterinary Parasitology

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Prof. J. D. Ghosh, Professor	25 th National Congress of Veterinary Parasitology & National Symposium on "One Health Approach – Plausible Solution for Sustainable Parasite Control"	Madras Veterinary College, TANUVAS, Chennai	3 days 17 th February – 19 th Feb., 2016
Dr. S. Baidya, Asstt. Professor	Attended as resource person as well as Co-PI in the farmers training programme on Goat, Pig and Poultry Rearing and Health Management under the RKVY project on "Livelihood improvement of poor and tribal people through livestock based enterprises under selected villages of Jhargram block of West Bengal".	Lodhasuli, Paschim Midnapore	2days 10 th October – 11 th Oct., 2015
	Attended as a resource person for Campus Training Programme WBUAFS	North 24 Parganas KVK, Ashokenagar,	1 day 11 th Dec., 2015
	Annual Convention and National Symposium of Society of Veterinary Biochemists & Biotechnologists of India (SVBBI) on "Use of Advanced Technology of Biochemistry and Biotechnology in Livestock Health, Production and Reproduction".	OUAT, Bhubaneswar	2days 11 th March – 12 th March, 2016

HUMAN RESOURCE DEVELOPMENT (HRD) (Contd....)

	4 th Paschim Banga Poultry Mela, Organized by WBPF, ARD, Govt.	Milan Mela, Kolkata	3 days 17 th – 19 th February, 2016. Attended on 19 th Feb., 2016
Dr. S. Pandit, Asstt. Professor	57 th Orientation Programme	Jadavpur University	28 Days 15 th June – 11 th July, 2015
	“23 rd West Bengal State Science & Technology Congress-2016” Organized by Presidency University, Kolkata and West Bengal Science & Technology Department, Govt. of West Bengal.	Presidency University, Kolkata	2 days 28 th February – 29 th Feb., 2016.
	4 th Paschim Banga Poultry Mela, Organized by WBPF, ARD, Govt.	Milan Mela, Kolkata	3 days 17 th – 19 th February, 2016. Attended on 18 th Feb., 2016
Dr. S. Pandit, Asstt. Professor & Dr. R. Jas, Asstt. Professor	XXX Convention Of Indian Association of Veterinary Anatomists And National Symposium On “Recent Advancement In Veterinary Anatomy And Their Application in the field of Animal Health, Production”	WBUAFS, Kolkata	3 days 16 th December – 18 th Dec., 2015
Dr. S. Pandit Dr. S. Baidya Dr. R. Jas Prof. J. D. Ghosh Prof. S. C. Mandal	National Symposium on “Role of veterinarians for sustainable Livestock and Poultry Production to boost up rural economy”	WBUAFS, Kolkata	2 days 10 th January - 11 th January, 2016



HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)

H.1.A.13. Department of Veterinary Pathology

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Dr. R.N. Hansda, Assistant Professor	Summer School on "Heavy metal pollutants in environment, effects on animal and mitigation"	Division of Medicine, ICAR-IVRI, U.P.	21 days 3 rd June – 23 rd June, 2015
Dr. S. K. Mukhopadhyay, Associate Professor Dr.R.N.Hansda, Assistant Professor	Inter-sectoral meeting on Rabies Prevention	Auditorium of School of Tropical Medicine, APCRI & CSTM, Kolkata	1 day 3 rd October, 2015
Dr.S. K. Mukhopadhyay, Associate Professor	Veterinary Pathology Congress 2015 VI th Annual meet of Indian College of Veterinary Pathologist National symposium on "Challenges And Advances In Disease Diagnosis Of Livestock, Poultry And Fish: Redefining The Role Of Veterinary Pathologist"	Deptt. of Pathology, NTR College of Veterinary Science & IAVP, Gannavaram, A.P	3 days 3 rd December – 5 th December, 2015
Dr. S. Pradhan, Assistant Professor	XXX Annual Convention of IAVA & National Symposium on "Recent Advances in Veterinary Anatomy & their Application in the Field of Animal Health, Production & Biotechnology"	Deptt. of Veterinary Anatomy & Histology, F/o-VAS,WBUAFS, Kolkata	3 days 16 th December – 18 th December, 2015
Dr R. N. Hansda Dr. S. Pradhan Dr. S. K. Mukhopadhyay, Dr N. C. Patra	Seminar on " Present Scenario of Tuberculosis and its Control Measures"	W.B.U.A.F.S. Kolkata-37	1 day 22 nd December, 2015

H.1.A.14. Department of Veterinary Pharmacology & Toxicology

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Dr. T.K. Sar, Assistant Professor (Senior)	Heavy metal pollutants in environment, effects on animal and mitigation	Division of Medicine, ICAR-IVRI, Izatnagar	21 days
	Integrated approaches for promotion and development of herbal medicine	Society for Ethnopharmacology, Jadavpur, Kolkata	2 days 5 th December – 6 th Dec., 2015

HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)

	National Symposium on "Role of Veterinarians in Sustainable Livestock and Poultry Development to Boost up Rural Economy"	Bengal Veterinary College	2 days 10 th January – 11 th January, 2016
	XV Annual Convention of ISVPT	ICAR-National Dairy Research Institute, Karnal	3 days 14 th January – 16 th January, 2016
	25 th Annual State Conference of Indian Pharmacological Society, West Bengal Branch, Kolkata	R.G. Kar Medical College, Kolkata	1 day 20 th February, 2016
Prof. T.K. Mandal, Professor	Integrated approaches for promotion and development of herbal medicine	Society for Ethnopharmacology, Jadavpur, Kolkata	2 days 5 th December – 6 th Dec., 2015
	Cutting-Edge Pharmacology: Contemporary Issues and Future Challenges	Saurashtra University, Rajkot, Gujrat	3 days 18 th December – 20 th Dec., 2016
	25 th Annual State Conference of Indian Pharmacological Society, West Bengal Branch, Kolkata	R.G. Kar Medical College, Kolkata	1 day 20 th February, 2016
	5 th Annual Review Meet on "Outreach programme on Monitoring of Drug residue and environmental	NAASC, New Delhi.	1 day 8 th March, 2016
	pollutants" (MDREP) Invited as speaker of the training programmes for Veterinary Officer	ASCAD, Dept. of ARD, Birbhum, Bankura, South 24 Parganas	2015 – 2016

H.1.A.15. Department of Veterinary Physiology

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Dr. Pradip Kumar Das, Associate Professor Dr. Prabal Ranjan Ghosh, Assistant Professor Dr. Dipak Banerjee, Assistant Professor Dr. J. Mukherjee, Assistant Professor	National Symposium on 'Physiological Approaches for Climate Resilient Livestock	AAU, Guwahati, Assam	2 days 21 st January – 22 January, 2016
Dr. Pradip Kr. Das, Associate Professor Dr. D. Banerjee, Assistant Professor	Annual Convention And National Symposium Of SVBBI, 2016	OUAT, Bhubaneswar, Orissa	2 days 11 th March – 12 March, 2016



HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)

H.1.A.16. Department of Veterinary Surgery & Radiology

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Dr Sarbani Hazra, Associate Professor	Annual meeting of Indian Eye Research Group-ARVO	LVPEI Hyderabad	2 days 25 th July – 26 th July 2015
	Invited Faculty at UGC sponsored work shop on scanning electron microscopy, Burdwan University. 2015	Burdwan University	1 day October 2015
	Workshop on corneal procedures LVPEI	LVPEI, Bhubaneswar	2 days 15 th January – 16 th January, 2016
	Invited Lecture in Indian Association of Cultivation of Sciences	IACS, Jadavpur	1 day 10 th February, 2016
Dr. S.K.Guha, Associate Professor	Poster presentation in International Conference on "Promotion of Animal Research, Welfare and Harmonization of Laboratory animal Science"	Laboratory Animal Scientist's Association (LASA), India and Advanced Centre for Treatment, Research and Education in Cancer, Navi Mumbai, India	2 days 15 th October – 16 th October, 2015
	Oral presentation in national seminar on "Recent advances in Veterinary Anatomy and their Application in the Field of animal Health, Production and Biotechnology"	Indian Association of Veterinary Anatomists in Deptt. Of Veterinary Anatomy and Histology, WBUAFS, Kolkata	3 days 16 th December – 18 th Dec., 2015
Dr Samit Kumar Nandi, Associate Professor	Invited lecture on "Metallic ion doped calcium phosphate based scaffolds, bioactive glass and cements in bone regeneration" at the 6th "World Congress on Biotechnology"	OMICS Publishing Group, USA and the Editors of Journal of Biotechnology & Biomaterials, Journal of Bioremediation & Biodegradation and Journal of Bioprocessing & Biotechniques, New Delhi	3days 5 th October – 7 th October, 2015
	Lead talk on "Engineered silk based wound dressing patch in diabetic foot ulcers" in National Conference on Natural Bioresources, Diversity and Sustainable Development	Department of Zoology, University of North Bengal, Siliguri, India	2 days 11 th December – 12 th Dec., 2015
	Oral presentation in National Symposium of Veterinary anatomist	WBUAFS, Kolkata	3 days 16 th December – 18 th Dec., 2015

HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)

Dr. Debaki Ghosh, Associate Professor	Presented lead Paper on Jaw fracture and acted as Co Chairman in Canine Surgery Session	Indian Society of adv. Canine Praticce. Conference National and Symposium, Allahabad	3 days 17 th June – 19 th June, 2015
	Presented Paper in Indian society of Vety. Surgery National Symposium and Conference	Sher-e-Kashmir Agril. University, Srinagar, J & K	3 days 15 th September – 17 th Sept., 2015
Dr. Asit Kumar Maji, Assistant Professor	Presented lead Paper on Fracture and Soft Tissue Surgery in Canine Surgery Session	Indian Society of adv. Canine Praticce. Conference National and Symposium, Allahabad	3 days 17 th June – 19 th June, 2015
	Presented Paper on Animal Birth Control Surgery in Rabies and Control Session	APCRI, AVASA Hotel, Hyderabad	2 days 6 th July – 7 th July, 2015
	Presented Paper in Indian society of Vety. Surgery National Symposium and Conference and acted as Co- Chairman of Orthopaedic Surgery Session.	Sher-e-Kashmir Agril. University, Srinagar, J & K	3 days 15 th September – 17 th Sept., 2015
	Invited as speaker for the Field Vets'	ASCAD, Dept. of ARD, Murshidabad, 24 Pgs. (South) and Hooghly	January – February, 2016
Dr. Samar Halder, Associate Professor	Oral presentation in National Symposium of Veterinary anatomist	Indian Association of Veterinary Anatomists in Deptt. of Veterinary Anatomy and Histology, WBUAFS, Kolkata	3 days 16 th December – 18 th Dec., 2015

H.1.A.17. Department of Veterinary & Animal Husbandry Extension

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Prof. A. Goswami, Professor	National symposium on "Role of veterinarians in sustainable livestock & poultry development to boost up rural economy".	WBUAFS, Kolkata	2 days 10 th January – 11 th January, 2016
	Delivered speech on biodiversity in relation to livestock production.	Administrative Training Institute. Govt. of West Bengal	1 day 15 th January, 2016



HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)

	Delivered speech on "Adult Learning Principles (Pedagogy and Andragogy - difference between adult learning and child learning, Knowles' 6 Principles of Adult Learning)".	DREF, WBUAFS, Kolkata	1 day 28 th September, 2015.
Dr. Debasis Ganguli, Assistant Professor	"Programme on Agricultural Technology" organized by AIR, Kolkata in Collaboration with WBUAFS.	W. B. Veterinary Council, Belgachia, Kolkata	1 day 24 th June, 2015
	19 th National Pranisampad Bikash Week, 2015.	Hatgobindapur, Burdwan	1 day 20 th Nov., 2015
	National symposium on "Role of Veterinarians in sustainable livestock and Poultry Development to boost up rural economy"	WBUAFS, Kolkata	2 days 10 th January – 11 th January, 2016
	4 th Paschim Banga Poultry Mela.	Milan Mela Campus, Kolkata	1 day 18 th Feb., 2016
	Institutional Seminar of ARS trainees.	KVK, Ashoke nagar	1 day 26 th Feb., 2016

H.1.B. FACULTY OF FISHERY SCIENCES

H.1.B.1. Department of Aquaculture

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Dr. T. K. Ghosh, Associate Professor	NABARD sponsored Training Programme on "Duck cum fish farming and paddy cum fish farming." as expert	KVK, Murshidabad	1 day 27 th November, 2015
Dr. Shib Kinkar Das, Associate Professor	Expert in NFDB Training/Skill development Module on Disease Issues and health management in Aquaculture Systems	Faculty of Fishery Sciences, WBUAFS	1 day 19 th February, 2015
	Expert in Technology Week	KVK, Asoke Nagar , 24 Parganas (North)	1 day 14 th October, 2015
	Expert in Preventive health Management in Freshwater Aquaculture	KVK, Asoke Nagar, 24 Parganas (North)	1 day 14 th October, 2015

HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)

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

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Prof. T. J. Abraham, Professor	National Seminar on Fisheries and Aquaculture: Livelihood Security, Sustainability and Conservation	College of Fisheries, CAU, Lembuchera, Tripura	2 days 21 st January – 22 nd January, 2016
	International Conference on Aquatic Resources and Sustainable Management	Science City, Kolkata, by Central Calcutta Science and Culture Organization for Youth and University of Calcutta, Kolkata	3 days 17 th February – 19 th Feb., 2016
	Workshop on Intellectual Property Rights	Directorate Research, Extension and Farms, WBUAFS and Patent Information Centre, DST-Govt. of WB	1 day 25 th February, 2016
	Bengal Fish Fest	Dept. of Fisheries & Indian Chamber of Commerce	3 days 18 th December – 20 th Dec., 2015
	FAO Re-echo Seminar on Acute Hepato-pancreatic Necrosis Disease (AHPND)	NBFG, Lucknow	2 days 14 th September – 15 th Sept., 2015
Dr Gadadhar Dash, Associate Professor	Workshop on Intellectual Property Rights	Directorate Research, Extension and Farms, WBUAFS and Patent Information Centre, DST-Govt. of WB	1 day 25 th February, 2016
	26th All India Congress of Zoology and International Symposium on Innovation in Animal Sciences for Food Security, Health Security and Livelihood	Babasaheb Bhimrao Ambedkar University, Lucknow	3 days 29 th October – 31 st Oct., 2015
	Bengal Fish Fest	Dept. of Fisheries & Indian Chamber of Commerce	3 days 18 th December – 20 th Dec., 2015
	FAO Re-echo Seminar on Acute Hepato-pancreatic Necrosis Disease (AHPND)	NBFG, Lucknow	2 days 14 th September – 15 th Sept., 2015



HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)

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

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Prof. B.K. Das Professor & Dean	Fifth International Symposium on Cage Aquaculture in Asia (CAA5)	CMFRI, Kochi, Kerala, India	4 days 25 th November – 28 th Nov., 2015
	Advance Practices in Fish/Shrimp Health Management for Sustainable Aquaculture	P.K.College, Contai, Purba Medinipur	3 days 14 th December– 16 th Dec., 2015.
	Bengal Global Business Summit	Helipad Ground, Salt Lake Stadium, Kolkata	2 days 7 th January – 8 th January, 2015
	Cage Culture Technology Demonstration	Karwar Reseach Centre, CMFRI, Karnataka	6 days 8 th February – 19 th Feb., 2016.
	Marine Acts and Rules	FFRTC, Kulia, Kalyani	1 day 1 March, 2016
Dr R K Trivedi Professor	4 th Annual Workshop of National Initiative on Climate Resilient Agriculture (NICRA)	ICAR-CMFRI, Kochi, Kerala, India	2days 13 th August – 14 th Aug., 2015
	National Convention on Challenges in Indian Agriculture Future Strategies for Sustainability	Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur, M.P.	2 days 13 th February – 14 th February, 2016.
	International Conference on Aquatic Resources & Sustainable Management	Science City, Kolkata	3 days 17 th February– 19 th Feb., 2016.
Prof. B.K.Das Professor & Dean Dr R K Trivedi Professor	Trends and Future Strategies of Fisheries Research and Extension: Bangladesh and West Bengal, India	Faculty of Fishery Sciences, WBUAFS, Chakgaria, Kolkata	1 day 26 th December, 2015
Prof. B.K.Das Professor & Dean Dr R K Trivedi Professor Dr. S.K Rout, Associate Professor	Bengal Fish Festival 2015	Nalban Food Park, Salt Lake, Kolkata	3 days 18 th December – 20 th Dec., 2015
	Advance Practices in Fish/Shrimp Health Management for Sustainable Aquaculture	Faculty of Fishery Sciences, WBUAFS, Chakgaria, Kolkata	1 day 22 nd March, 2016

HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)

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

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Dr. Somen Sahu, Associate Professor	Advance Practices in Fish/Shrimp Health Management for Sustainable Aquaculture Medinipur	P.K.College, Contai, Purba	3 days 14 th December – 16 th Dec., 2015
	Advance Practices in Fish/Shrimp Health Management for Sustainable Aquaculture	Faculty of Fishery Sciences, WBUAFS, Chakgaria, Kolkata	1 day 22 nd March, 2016
Dr. Somen Sahu, Associate Professor	Bengal Fish Festival 2015	Nalban Food Park, Salt Lake, Kolkata	3 days 18 th December – 20 th Dec., 2015
Dr. Anandamoy Mondal, Associate Professor	Trends and Future Strategies of Fisheries Research and Extension: Bangladesh and West Bengal, India	Faculty of Fishery Sciences, WBUAFS, Chakgaria, Kolkata	1 day 26 th Dec., 2015

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

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Dr. N.A. Talwar, Associate Professor	International Conference on Aquatic Resources & Sustainable Management organized by Central Calcutta Sciences & culture Organisation for Youth	Science City, Kolkata	3 days 17 th February – 19 th February, 2016

H.1.C. FACULTY OF DAIRY TECHNOLOGY

H.1.C.1. Department of Dairy Chemistry

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Dr. P. R. Ray Associate Professor	International seminar on “ Safe Milk for Healthy Nation” organized by Bangladesh Animal Husbandry Association	Dhaka , Bangladesh	2 days 10 th -11 th December, 2015
Prof. P.K. Ghatak, Re-employed Professor	Workshop cum scientists' dairy industry partners meet on “Commercialization of dairying through production and traditional processing” organized by ICAR – National Dairy Research Institute – ERS, Kalyani and Faculty of Dairy Technology, WBUAFS, Mohanpur	ICAR- NDRI ,ERS , Kalyani	1 day 12 th December, 2015



HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)

Dr. P.R. Ray Associate Professor & Prof. P.K. Ghatak, Re-employed Professor	National seminar on "Dairying: Innovative Technology Initiatives in Production and Processing" organized by Indian Dairy Association (EZ)	Kolkata	1 day 12 th March, 2016
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H.1.C.2. Department of Dairy Engineering

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Prof. Prasun Maiti Professor Dr. Subrata Kr. Bag Associate Professor Dr. Pradip Kr. Roy Lecturer (Sr. Scale)	Workshop cum scientists' dairy industry partners meet on "Commercialization of dairying through production and traditional processing" organized by ICAR – National Dairy Research Institute –ERS, Kalyani and Faculty of Dairy Technology, WBUAFS, Mohanpur	ICAR- NDRI ,ERS , Kalyani	1 day 12 th December, 2015
Dr. Subrata Kr. Bag Associate Professor Dr. Pradip Kr. Roy Lecturer (Sr. Scale)	National seminar on "Dairying: Innovative Technology Initiatives in Production and Processing" organized by Indian Dairy Association (EZ)	Kolkata	1 day 12 th March, 2016

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

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Dr. T. K. Maity, Professor & Dean Dr. S.P. Sarkar, Professor	Organized a seminar on 'food safety regulations in dairy industry'		1 day 7 th October, 2015
	Workshop on 'Commercialization of Dairying through production and traditional processing'	ICAR- NDRI ,ERS , Kalyani	1 day 12 th Dec., 2015
	National Seminar on 'Dairying: Innovative Technology initiatives in production and processing'	Kolkata	1 day 12 th March, 2016

HUMAN RESOURCE DEVELOPMENT (HRD) (Contd....)

Dr. T.K. Maity Professor & Dean	9 th International conference on 'Yeast Biology'		4 days, 9 th -12 th December, 2015
	Presented paper on 'Application of Innovative Technology in Probiotic Dairy Foods Production' organizes by IDA (EZ)		1 day 12 th March, 2016
	Attended 'National seminar on Rebooting libraries for 21 st Centuries to Recreate the Future'		2 days 3 th -4 th March, 2016

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

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Dr. M. K. Sanyal, Professor (Re-employed)	Dairying for Nutritional and Livelihood Security	International Convention Centre, Rajgir, Nalanda, Bihar	3 days, 2 nd – 5 th April, 2015
	Food Safety regulations in Dairy Industry	WBUAFS, Mohanpur, Nadia	1 day, 17 th Oct., 2015
Dr. D. C. Sen, Professor (Re-employed)	UGC Sponsored National Seminar & Workshop on solar Photo- Voltaic Installation. There Orally presented a paper on Usage of Solar Energy in the Dairy Industry	Prabhat Kumar College, Contai, Purba Medinipur, West Bengal	2 days 17 th -18 th June, 2015
	70 th Annual Convention of Oil Technologist' Association of India & National Conference on the process and Products Development for Better Economy Benefits of the Fats and Oil Industry. There Orally presented a paper on Uniqueness of Milk Fat. Further, Acted as an Adjudicator for the Scientific Poster session.	CSRI –Central Glass and Ceramic Research Institute, Jadavpur, Kolkata	3 days 20 th – 22 nd November, 2015
	44 th Dairy Industry Conference on Make in India : Dairying 2030. There acted as a panelist in Dairy B-2-B Meet on showcasing of New Technologies by Dairy Industry, In addition, acted as a judge for the poster session.	ICAR-NDRI, Karnal, Haryana	3 days 18 th February – 20 th February, 2016
	Food Safety regulations in Dairy Industry	WBUAFS, Mohanpur, Nadia	1 day, 17 th October, 2016



HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)

Prof. M. K. Sanyal, (Re-employed) Prof. S.C. Pal, (Re-employed) Prof. S.K. Gangopadhyay, (Re-employed) Prof. D.C.Sen, (Re-employed)	Workshop on 'Commercialization of Dairying through production and traditional processing'	ICAR- NDRI ,ERS , Kalyani	1 day 2 nd December, 2015
Prof. M.K. Sanyal, (Re-employed) Prof. S.C. Pal, (Re-employed) Prof. D. C. Sen, (Re-employed)	National Seminar on Dairying : Innovative Technology Initiatives in production and processing. Prof. D. C. Sen was the Organizing Secretary	W.B. Veterinary Council Bhawan Auditorium, Belgachia, Kolkata	1 day, 12 th March, 2016

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

Name of the faculty member with Designation	Title of Seminar, Symposium, Workshop, Training attended	Venue	Duration (Dates)
Dr. B K Biswas, Scientist	Member of Assessment Committee for assessment of the post of Programme Coordinator (Kalyan KVK, Purulia)	RKM, Narendrapur	1 day 5 th May, 2015
	Annual Zonal Workshop of KVKs of Zone - II	CIFRI, Barrackpore	2 days 26 th - 27 th May, 2015
	As evaluator in ASCI Sponsored Training Programme on Dairy Farming	Farmers' Hostel, Belgachia	1 day 1 st October, 2015
	Participation in "Mera Gaon Mera Gourav" Programme	ICAR – ATARI, Kolkata	1 day 1 st November, 2015
	Participated in celebration of 19 th National Animal Resource Development (Pranisampad Bikash) Week, 2015	Hatgobindapur, Burdwan	3 days 19 th – 20 th November, 2015
	Speaker in the training programme on "Role of Backyard Poultry Birds in rural economy"	KVK, North 24 Parganas	1 day 8 th December, 2015

HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)

	International "Lok-Sanskriti Krishi Mela"	Srirampur, Burdwan	7 days 12 th – 18 th January, 2016
	Speaker in the National Seminar on "Dairying : Innovative Technology initiative in production and processing" organized by IDA	State Vety. Council Bhawan, Belgachia	1 day 12 th March, 2016
	Radio Talk on "Integrated Farming"	AIR, Kolkata	1 day 28 th March, 2016
Dr. B K Biswas, Scientist Dr. S. Das, Scientist Dr. K.C. Dhara, Asst. Director-Farms	Workshop on Intellectual Property Rights	Farmer's Hostel, Belgachia	1 day 25 th February, 2016
Dr. B K Biswas, Scientist Dr. S. Das, Scientist Mrs. Aparajita Biswas, Computer Programmer Dr. K. C. Dhara, Asst. Director-Farms	Confederation of Indian Industry (CII) – "Food Processing Conclave : Make in Bengal"	ITC Sonar Bangla, Kolkata	1 day 5 th February, 2016

H.2. ABROAD VISIT OF SCIENTISTS

H.2. 1 Dr. P. R. Ray, Associate Professor, Department of Dairy Chemistry

Sl. No.	Period of Visit		Institute/ Country visited	Purpose of Visit
	From	To		
1	09.12.2015	12.12.2015	Bangladesh Animal Husbandry Association, Dhaka, Bangladesh	To deliver invited lecture in the International seminar on "Safe milk for healthy nation"



HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)

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

Sl. No.	Name of the recipient	Name of the honour/ award/ fellowship/ scholarship etc.	Offering organization	Field of remarkable activity
1	Dr. P.N. Chatterjee, Assistant Professor, Deptt of Animal Nutrition	Best Oral Award	Animal Nutrition Society of India.	Synthesis of dietary nano-calcium phosphate and its Bio-potency assay
2	Dr. A. K. Patra, Assistant Professor, Deptt of Animal Nutrition	Selected as a member of the "Nutrient Cycles Accounting and Impact Assessment Technical Advisory Group (TAG)"	Food and Agricultural Organization (FAO) of the United Nations	Livestock Environmental Assessment and Performance (LEAP) Partnership
		Reviewed 3 international research project proposals	Fodazione Cariplo, Italy -2015	Animal Nutrition
3	Dr. Aruna Pal, Assistant Professor, Deptt of Instructional Livestock Farm Complex	Best Oral presentation Award 2016 by SOCDAB in National Symposium on "Policy Planning for Livelihood security through Domestic Animal Biodiversity"	SOCDAB (Society for Conservation of Domestic Animal Biodiversity) Head Quarter: NBAGR, Karnal	
		Nominated as Executive member for the Society for Conservation of Domestic Animal Biodiversity, Karnal (SOCDAB)		
4	Aruna Pal, P.N. Chatterjee, S. Banerjee, S. Batabyal, P. Biswas and A. Sharma	Certificate of Recognition - First Prize on technical session I (Oral Presentation) on Molecular characterization of Birbhum sheep based on mitochondrial gene held on 11 th – 12 th February, 2016.	SOCDAB (Society for Conservation of Domestic Animal Biodiversity) - 2016	Molecular characterization of Birbhum sheep based on mitochondrial gene

HUMAN RESOURCE DEVELOPMENT (HRD) (Contd....)

5	Prof. S. Biswas, Professor, Deptt. of Livestock Products Technology	Member, Board of Director	West Bengal Livestock Development Corporation Ltd. Govt. Of W.B	
		Member, VCI accreditation committee for establishment of new colleges	Nominated by VCI, New Delhi	
		Member of APEDA Accreditation team for Licensing Slaughter House	Ministry of Commerce, Govt. of India.	
		Member, State level Committee of Slaughter House	Dept. Of Urban Development, Govt. Of W.B	
		Member, Academic Council	School of Agriculture, IGNOU, New Delhi	
6	Dr. Gopal Patra, Assistant Professor, Deptt of Livestock Products Technology	Expert Committee Member,	APEDA, Min. of Comm., GOI	Slaughter house licensing and Registration
7	Dr. Subhasis Batabyal, Associate Professor, Deptt of Veterinary Bio-Chemistry	Felicitation for Outstanding Contribution in the field of Biochemistry and Biotechnology	Society of Veterinary Biochemists and Biotechnologists of India	Veterinary Biochemistry and Biotechnology
8	Dr. Saibal Chattopadhyay, Associate Professor, Deptt of Veterinary Bio-Chemistry	Felicitation for Outstanding Contribution in the field of Biochemistry and Biotechnology	Society of Veterinary Biochemists and Biotechnologists of India	Veterinary Biochemistry and Biotechnology
9	Dr. Indranil Samanta, Assistant Professor, Deptt. of Vety. Microbiology	American society of Microbiology (ASM, 2015) travel grant to attend ASM-ICAR-SBS Biosafety workshop at National Institute of High Security Animal Diseases, Bhopal, India	American society of Microbiology	Veterinary Bacteriology



HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)

10	Dr. S. N. Joardar, Associate Professor, Deptt. of Vety. Microbiology	Best Paper award in 23 rd State Science and Technology Congress in Agriculture, Veterinary Science and Aquaculture-Technical Session-II, 28-29 th February, 2016	DST, Govt. of W.B. and Presidency University	Veterinary Science
11	Dr. Kunal Batabyal, Assistant Professor, Deptt. of Vety. Microbiology	"Best Trainee Award" in Group in the Winter School on "Analysis of High Throughput Sequencing and Microarray Data to Unravel Host-pathogen Interactions" at IVRI, Izatnagar, Bareilly	Indian Veterinary Research Institute	Veterinary Biotechnology
12	Dr. S. K. Mukhopadhyay, Associate Professor, Deptt of Veterinary Pathology	Lifetime achievement award of 'Best Laboratory Animal Pathologist'	Indian Association of Veterinary Pathologist (IAVP)	Vety. Pathology
13	Prof. T.K. Mandal, Professor, Deptt of Veterinary Pharmacology & Toxicology	Prof. B.N. Ghosh Oration	Indian Pharmacological Society	Xenobiotic residue in animal substrate
		Fellow Indian Society of Veterinary Pharmacology and Toxicology	Indian Society of Veterinary Pharmacology and Toxicology	Life time achievement
		Expert member as toxicologist	Tea Board	
14	Dr. Pradip Kumar Das, Associate Professor, Deptt. of Veterinary Physiology	Excellence in Research, 2015	Education expo.	Avian Physiology and Poultry development
		Re-elected as General Secretary	Society of Animal Physiologists of India (SAPI)	
15	Dr. J Mukherjee, Assistant Professor, Deptt. of Veterinary Physiology	Young Scientist Award	Society of Animal Physiologists of India (SAPI)	Lactation Physiology
16	Dr Sarbani Hazra, Associate Professor, Deptt. of Vet. Surg. & Radiology	Editorial Board member	Journal SOJ Veterinary Science, USA	Ophthalmology

HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)

17	Samit Kumar Nandi, Associate Professor, Deptt. of Vet. Surg. & Radiology	Science excellence Award 2015	Foundation for Science and Environment, Kolkata, West Bengal	In recognition of outstanding contribution in the areas of Science research and teaching
		'Certificate of Reviewing' Award	The Editors of Acta Biomaterialia, Elsevier, Amsterdam, The Netherlands	In recognition of reviewing made for the journal of Acta Biomaterialia
		Expert Reviewer	The Wellcome Trust/DBT India Alliance (India Alliance)	Reviewing of project proposal on "Research Training Fellowship for Clinicians",
		"Certificate of Recognition"	OMICS International, USA	For invited speech at the "6 th World Congress on
				Biotechnology" held on October 05-07, 2015 in New Delhi, India
		Fellowship	Society of Biochemists and Biotechnologists of India	
18	Asit Kumar Maji, Associate Professor, Deptt. of Vet. Surg. & Radiology	International Reviewer	Elsevier Intl. Jr. Vety. Sc. and Med.	
19	Dr. T. J. Abraham, Professor, Deptt. of Aquatic Animal Health	Best Research Paper Award - 2015	Aquaculture Times Journal	Best Research Paper in aquaculture: published in Journal
20	Dr. G. Dash, Associate Professor, Deptt. of Aquatic Animal Health	Dr. S.P. Gupta Gold Medal Award - 2015	Zoological Society of India	Contribution in Fisheries
		Best Performer Award	Dept. of Fisheries and Indian Chamber of Commerce in Bengal Fish Fest - 2015	Contribution in Fisheries
21	Prof. Shyam Sundar Dana, Deptt. of Fishery Extension	Chairman in the Technical Session "Fishery Extension and Innovative Indigenous Technology in Aquaculture"	International Conference on Aquatic Resources and Sustainable Management during 17- 19 th February 2016, Kolkata, WB	



HUMAN RESOURCE DEVELOPMENT (HRD) (Contd...)

H.4. PATENTS FILED BY THE TEACHERS/ SCIENTISTS OF THE UNIVERSITY

Sl. No.	Patent on	Name of the Technology Developer	Application No.	Application Date
1	A process for preparing Animal choncal cartilage for transplantation	Dr. Samit Kumar Nandi Dr. S. N. Joardar Dr. B. K. Biswas Dr. S. Batabyal Dr. R. N. Bhattacharya (from collaborating inst.)	249/KOL/2015 (Indian Patent filed)	9.3.2015
2	"Fabrication of silk protein film from Indian tropical tasar silk <i>Antheraea mylitta</i> for use as corneal scaffold"	Dr Sarbani Hazra Prof SC Kundu (from collaborating inst.)	Patent No 365/KOL/2015 (Indian Patent filed)	March 2015
3	Detection kit for <i>Aeromonas hydrophila</i> infection in fish and method of detecting the same	Vety. Microbiology, VAS	1175/KOL/2015 A (Indian Patent filed)	19.11.2015



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

I.1. FACULTY OF VETERINARY & ANIMAL SCIENCES

I.1.1. Department of Instructional Livestock Farm Complex

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
Instructional Livestock Farm Practice Diary (LFP-211 & 221)	Practical manual	Dr. M.C.Pakhira Dr. A.Pal, Sri. D.C.Roy	-

I.1.2. 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
Manuals for UG students			
Practical Manual on General veterinary Biochemistry	Manual	Subhasis Batabyal	September, 2015
Practical Manual on Intermediary Metabolism	Manual		February, 2016
Practical Manual on Animal Biotechnology	Manual		Februray, 2016
Manual for Trainees			
Manual on Immun-biochemical Techniques	Manual		May, 2015

I.1.3. Department of Veterinary Gynaecology & Obstetrics

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
Practical manual on Veterinary Gynaecology & Obstetrics - (Course No VOG-411)	Manual	S. Basu, Mrs. K. Ray, P.R. Nandi, U. Datta	
Practical manual on Veterinary Obstetrics (Course No VOG-421)	Manual	S. Basu, , Mrs. K. Ray, P.R. Nandi, U. Datta	
Practical manual on Veterinary Andrology and AI (Course No VOG- 511)	Manual	S. Basu, , Mrs. K. Ray, P.R. Nandi, U. Datta	
"ESBL producing E. coli and antimicrobial resistance in Cattle", LAP LAMBERT Academic Publishing.	Book	Bidhan Sarkar & Kalyani Ray (As Co-Author)	2015



DETAILS OF PUBLICATION (Contd....)

I.1.4. 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
Veterinary Mycology	Textbook	Dr. Indranil Samanta	2015, Publisher-Springer, ISBN: 978-81-322-2279-8
A guide to Veterinary Microbiology for examinees and aspirants	Guide book/question bank	Dr. S. N. Joardar	2015, Publisher-Kalyani Publisher, ISBN: 978-93-272-4741-1
Genbank nucleotide sequences (5)	Nucleotide sequences	Dr. Indranil Samanta	April 2015-January 2016

I.1.5. Vety. Medicine, Ethics & Jurisprudence

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
Practical Manual(Revised) VMD-411	Manual	Dr. Chandan Lodh Prof. Samar Sarkar Prof.N.R.Pradhan	21.09.2015
Practical Manual – VMD-512	Manual	Dr. Chandan Lodh Prof. Samar Sarkar	19.08.2015
Practical Manual – VMD-513	Manual	Dr. Chandan Lodh	08.06.2015

I.1.6. 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
Manual of General Veterinary Parasitology & Helminthology (VPA- 211) (Course – B.V.Sc.&A.H.)	Laboratory Manual	Dr. S. Baidya; Dr. S. Pandit; Dr. R. Jas; Prof. J. D. Ghosh; Prof. S. C. Mandal	
Manual of Veterinary Entomology & Acarology (VPA- 221) (Course – B.V.Sc.&A.H.)	Laboratory Manual	Dr. S. Baidya; Dr. S. Pandit; Dr. R. Jas; Prof. J. D. Ghosh; Prof. S. C. Mandal	
Manual of Veterinary Protozoology (VPA- 222) (Course – B.V.Sc.&A.H.)	Laboratory Manual	Dr. S. Baidya; Dr. S. Pandit; Dr. R. Jas; Prof. J. D. Ghosh; Prof. S. C. Mandal	

DETAILS OF PUBLICATION (Contd...)

I.1.7. Department of Veterinary Physiology

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 Veterinary Physiology (Veterinary Physiology – I)	Practical Note Book for the Course No. VPB-111	Dr. Pradip Kumar Das, Dr. Probal Ranjan Ghosh, Dr. Kinsuk Das, Dr. Dipak Banerjee and Dr. Joydip Mukherjee	August, 2015; Fifth Edition (Reprint), 50 pages
Laboratory Manual on Veterinary Physiology (Veterinary Physiology – II)	Practical Note Book for the Course No. VPB-121	Dr. Pradip Kumar Das, Dr. Probal Ranjan Ghosh, Dr. Kinsuk Das, Dr. Dipak Banerjee and Dr. Joydip Mukherjee	August, 2015; Fourth Edition (Reprint), 36 pages
Laboratory Manual on Veterinary Physiology (Veterinary Physiology – III)	Practical Note Book for the Course No. VPB-221	Dr. Pradip Kumar Das, Dr. Probal Ranjan Ghosh, Dr. Kinsuk Das, Dr. Dipak Banerjee and Dr. Joydip Mukherjee	August, 2015; Second Edition (Reprint), 44 pages

I.1.8. Department of Veterinary Surgery & Radiology

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
Eye Diseases and Disorders - A Complete Guide. Book chapter Fibrotic Diseases of the Eye: Potential Therapeutic Targets	Chapter of Book	Dr Sarbani Hazra Dr Aditya Konar	2015
Practical manuals for UG students. (VSR-411 and VSR-421 courses)	Manual	Dr. S. K. Guha with all Departmental teachers	2014
Application of stem cells in canine osteoarthritis	Book (M.V.Sc Thesis published as book)	Dr. S. K. Guha, Tarani Naskar	LAP LAMBERT Academic Publishing. ISBN: 978-3-659-69561-2
Role of $\alpha 2$ Agonists in Isoflurane Anesthesia in Canine	Book (M.V.Sc Thesis published as book)	Dr. Sudhangshu S. Singh and Dr. S.K. Guha	LAP LAMBERT Academic Publishing. Germany. ISBN: 978-3-659-68185-7. (Jan – 2016)
Bone Regeneration, InTech Open Access Publisher, Austria	Book Chapter. "Doped bioactive glass materials in bone regeneration	"Samit Kumar Nandi, Arnab Mahato, Biswanath Kundu and Preasenjit Mukherjee.	2016 [Accepted for publication]



DETAILS OF PUBLICATION (Contd...)

I.1.9. Department of Veterinary & AH Extension Education

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
Text book of Veterinary and Animal Husbandry Extension Education	Book	A. Goswami & S. Biswas	2015 Kalyani Publishers.
Adoption behavior of Livestock owners in various ACZ of West Bengal, India.	Book	A. Goswami & S. Biswas	2016 Lambert Academic Publishing.

I.2. FACULTY OF FISHERY SCIENCES

I.2.1. Department of Aquaculture

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
A general view on crab life cycle with special reference to mating and spawning. <i>Aqua International</i> .	Academic publication	Bhanu Prakash.Ch and T.K.Ghosh	Page: 48 – 50, 2015
Cobia (<i>Rachycentron canadum</i>) farming with special reference to breeding and seed production. <i>Aqua Tech</i> . (14)	Extension literature	Bhanu Prakash. Ch and T. K. Ghosh	Page: 75- 80, 2015
Sammanwita maach chase machher rog-badhy – o- paricharyya. In: NFDB Training/Skill development Module on Disease Issues and health management in Aquaculture Systems. Published by : Department of Aquatic Animal Health. Faculty of Fishery Sciences, WBUAFS.	Extension literature	T. K. Ghosh	Page: 27-30, 2015
Role of live feed in fish farming (Bengali). In: NFDB Training/Skill development Module on Disease Issues and health management in Aquaculture Systems. Published by : Department of Aquatic Animal Health. Faculty of Fishery Sciences, WBUAFS.	Extension literature	S. K. Das	Page: 53-54, 2015

DETAILS OF PUBLICATION (Contd...)

I.2.2.Department of Aquatic Animal Health

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
Manual on Aquatic animal diseases and their management	Extension Manual	Dash, G. and Abraham, T.J.	2015
Manual on Fish diseases and their management (Bengali)	Extension Manual	Abraham, T.J. and Others	2015
Folder on How to identify diseased fish (in Bengali)	Folder	Abraham, T.J.	2015
Folder on How to identify diseased fish (in English)	Folder	Abraham, T.J.	2015
Disease Issues and Health Management in Aquaculture systems	Manual		2015
Training Manual (Bengali) on Workshop Manual (Bengali) on "Advance Practices on Fish and Shrimp Health Management for sustainable Aquaculture	Manual		2015
Leaflet on Fish Health Management	Leaflet	G. Dash	2015
Leaflet on Shrimp Health Management	Leaflet	G. Dash	2015
Leaflet on Aqua Essentials	Leaflet	G. Dash	2016
Leaflet on National Surveillance Programme on Aquatic Animal Diseases (Bengali)	Leaflet	G. Dash	2016

I.2.3. Department of Aquatic Environment Management

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
Zoology and Ecology (Talyor and Francis)	Dose optimisation of the synthetic reproductive hormone WOVA-FH for induced breeding of <i>Clarias batrachus</i> (Linnaeus, 1758).	Chand BK, Dubey SK, Trivedi RK, Beg MM Das UK and Ghosh SK	25 (4): 365-372. 2015.



DETAILS OF PUBLICATION (Contd...)

Aquaculture Reports (Elsevier)	Effect of salinity on survival and growth of giant freshwater prawn <i>Macrobrachium rosenbergii</i> (de Man).	Chand BK, Trivedi RK, Dubey SK, Rout SK, Beg MM and Das UK	2: 26-33. 2015.
Environment & Ecology	Growth Performance of <i>Labeo rohita</i> (Hamilton) Fingerlings Exposed in Different Concentration of Sewage Water	Debasmita Jana, S.K.Rout, R.K.Trivedi, B.K.Das and Lopamudra Behera	4 (3A) : 31053-1056. 2015.
International J. latest Technol. Eng. Mangt. Appl. Science (IJLTEMAS)	Bio-economic analysis of Bheri Fisheries in and around Topsia canal of East Kolkata Region in West Bengal during 2014-15	Sahu S., Mondal A., Aziz A., Das B. K., and Chowdhury S	4(10): 22-26 (2015).
International research Journal of Biological Sciences	Assessment of suitability of Processing Effluent discharged from Quality Indian Seafood Exporters: Shimpo Exports, West Bengal India	Mishra Rashmi Prabha, Rout Sangram Keshari, Kumar Navin, Panigrahi Akhaya, Mishra Chandrakanta and Mishra Jyoti Prabha	Vol. 4(5), 55-58, May (2015).
International research Journal of Biological Sciences	Impact of Sewage on Certain Biochemical Profiles of Indian Major carp, <i>Labeo rohita</i> (Hamilton)	Behera Lopamudra, Rout Sangram Keshari, Trivedi Raman Kumar, Das Bipul Kumar and Jana Debasmita	Vol.4(8), 33-39, August (2015).
Narendra Publishing House, Delhi, India	Public Private Partnership is Essential for Developing Climate Adaptive Aquaculture in Sundarban, West Bengal.	R.K.Trivedi	Narendra Publishing House, Delhi, India. Page number: 203-214.

DETAILS OF PUBLICATION (Contd...)

Environment & Ecology	Effect of Sub Lethal Concentrations of Processing Waste on Blood Parameters of <i>Labeo rohita</i> Fingerlings	R.P.Mishra, N.Kumar, S.K.Rout, J.P.Mishra, A.Panigrahi, C.K.Mishra	34 (2A) : 804-806. 2015
Environment & Ecology	Immunological Responses in <i>Labeo rohita</i> Exposed to Fish Processing Plant Effluents	R.P.Mishra, N.Kumar, S.K.Rout, U.K.Das, P.K.Rath, J.P.Mishra	33 (2A) : 860-862. 2015
Environment & Ecology	Limnochemistry of River Pagladia (a Major Tributary of the Brahmaputra River), Assam	U.K.Das, S.K.Rout, N.Kumar, R.P.Mishra, B.K.Bhattacharya, Pranab Gagoi	33 (2A) : 863-866. 2015
NeBIO	Assessment of the Ecological Status of Mathura Beel, a Flood Plain Wetland in Nadia, West Bengal, India by Using Benthic Macro-invertebrates	Samir Molla and S.K.Rout	Vol.6 No. 3, September 2015, 32-38.
Journal of Inland Fishery Society of India	Response of <i>Anabas testudineus</i> (Bloch, 1792) to Salinity for Assessing their culture potential in Brackish water inundation prone areas of Indian Sundarbans	Sourav Kumar Dubey, Raman Kumar Trivedi, Bimal Kinkar Chand, Sangram Keshari Rout and Basudev Mandal	47 (2) : 59-69, 2015.
Faculty of Fishery Sciences, WBUAFS, Chakgaria, Kolkata	Faculty At a Glance, Faculty of Fishery Sciences	Das, B. K. and Nagesh T. S.	Faculty of Fishery Sciences, WBUAFS, Chakgaria, Kolkata (2015).



DETAILS OF PUBLICATION (Contd...)

<i>All India Network Project on Mariculture (AINP), Faculty of Fishery Sciences, WBUAFS, Kolkata</i>	Cage Culture of Sea bass: A New Farming Opportunity in West Bengal (Leaflet)	Das B. K. , Chowdhury S., Sahu S., Sarkar S. and Debnath R	<i>All India Network Project on Mariculture (AINP), Faculty of Fishery Sciences, WBUAFS, Kolkata. (2016).</i>
<i>All India Network Project on Mariculture (AINP), Faculty of Fishery Sciences, WBUAFS, Kolkata</i>	Khachai Samudrik Machh Chasher Prathamik Prasikshan (Preliminary Training on Sea Cage Culture).	Das B. K., Chowdhury S., Sahu S., Sarkar S. and Debnath R.	<i>All India Network Project on Mariculture (AINP), Faculty of Fishery Sciences, WBUAFS, Kolkata. (2016).</i>

I.3. FACULTY OF DAIRY TECHNOLOGY

I.3.1. Department of Dairy Chemistry

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
Textbook on Analysis of Milk Products	Book	A.K. Bandyopadhyay, P.K.Ghatak and P.R.Ray	2016, Published by Kalyani Publishers, ISBN: 978-93-272-5801-1 Page no. 174

I.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
Manual on Microbiology of Dairy Products	Manual	Dr. T.K.Maity	2015
Manual on Microbiology of fundamental of Microbiology	Manual	Dr. T.K.Maity	2015
Manual on Microbiology of Starter culture and fermented milk	Manual	Dr. T.K.Maity	2016

I.3.3. Department of Dairy Technology

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
Souvenir, 13 th Re-union, past & present students of BCKV & WBUAFS,	Pulse electric field technology for processing of safe food	M. K. Sanyal	17 th Oct'2015
Souvenir, Workshop cum scientists' Dairy Industry Partners'	Modernization of traditional milk based sweetmeat industry in India	M. K. Sanyal	12 th Dec'2015, P19-21.

DETAILS OF PUBLICATION (Contd...)

I.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
University Newsletter	Newsletter	Directorate of Research, Extension & Farms	December, 2015
Annual Report	Annual Report	Directorate of Research, Extension & Farms	March, 2016

I.5.KRISHI VIGYAN KENDRA

I.5.1. Murshidabad KVK, Murshidabad

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
1. Goat Rearing 2. Poultry Rearing 3. Duck Rearing 4. Cattla Rearing 5. Susanghata Upaye Matir Urbarata Babosthapon 6. Kencho Sar Utpadan o Baboharer Nirdesika 7. Rongin Machher projonon o baccha utpadon. 8. Susonhoto upaye mach chas 9. Unnata prathai Tailabizar ChasPadhayati 10. Unnata prathai Dal Sasya Chas Padhayati 11. Moumache Palon 12. Mushroom er Chas 13. Vigyan Sammato Upaya chara toire	Book	Dr. A. Roy <i>et al.</i> Dr. A. Roy <i>et al.</i> Dr. A. Roy <i>et al.</i> Dr. A. Roy <i>et al.</i> Mr. A. Taleb, Dr. M. Saha, Dr. U. Roy Mr. A. Taleb, Dr. U. Roy Patra S., <i>et al.</i> Patra S., <i>et al.</i> Mr. A. Taleb, Dr. U. Roy Mr. A. Taleb, Dr. U. Roy Pathak. P.K, <i>et al.</i> Pathak. P.K, <i>et al.</i> Pathak. P.K, <i>et al.</i>	2015-16
News letter	News letter	KVK, Murshidabad	
Vasoman khachai matso chas podhoti	Popular Articles	Partha Sarathi Roy, Samiran patra	2015-16



DETAILS OF PUBLICATION (Contd...)

1. Goat Rearing 2. Poultry Rearing (specially Broiler) 3. Duck Rearing (specially Khaki Campbell) 4. Cultivation of Fodder 5. Pronodito Projanan 6. Misti jaler machher rog o protikar 7. Machher khado protute o proog podhote 8. SRI Adhik Falan Adhik Lav	Extension Pamphlets/ literature	Dr. A. Roy Dr. A. Roy Dr. A. Roy Dr. A. Roy Mr. S. Patra Mr. S. Patra Mr. S. Patra Mr. A. Taleb	2015-16
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I.5.2. Ramsai KVK, Jalpaiguri

Name of book, booklets, Handout, report, manuals etc.	Category of Item published	Author / Co-Author (s)	Date/Year of publication with details
Utilizing Urea Treated Straw for increasing the production of lactating	Extension Pamphlets / Literature	Dr. Manas Kumar Das, Dr. Soma Banerjee, Dr. Biplab Das	2015-16
Cultivation of Azolla as alternative green Fodder		Dr. Manas Kumar Das, Dr. Soma Banerjee, Dr. Biplab Das	
Urea Molasses Mineral Block (UMMB) for better nutrient supplementation of Ruminants		Dr. Manas Kumar Das, Dr. Soma Banerjee, Dr. Biplab Das	
Healthy soil for healthy life		Dr. Biplab Das, Dr. Manas Kumar Das & Dr. Soma Banerjee	
Integrated approach for controlling horticultural pests		Dr. Biplab Das, Dr. Manas Kumar Das & Dr. Soma Banerjee	
Training Calendar		Dr. Biplab Das, Dr. Manas Kumar Das & Dr. Soma Banerjee	
Pradhan Mantri Fasal Bima Yojana			

J CENTRAL INSTRUMENTATION FACILITIES

During XIth five year plan University had received a fund from the Indian Council of Agricultural Research (ICAR), New Delhi under 'Establishment of Central Instrumentation Facility'. Utilizing that fund it has strengthened its Central Instrumentation facilities for the three faculties. Valuable scientific equipments costing Rs. 1 lakh and above have been procured out of the fund received from 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
15	Fluorescence Spectrophotometer
16	HPLC Unit (Vety. Biochemistry)
17	Rotary Microtome (Vety. Pathology)
18	Trinocular Research Microscope (Vety. Anatomy)

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

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

CENTRAL LIBRARY AND INFORMATION NETWORK SERVICES (CLINS)



After inception of the University in the year 1995, a need was felt to set up a Library system accessible by all the faculties of the University. This gave rise to the establishment of Central Library and Information Network Service (CLINS) at its Head quarter at Belgachia, Kolkata.

Initially it started functioning with the books, journals and other materials, transferred from BCKV. Subsequently, funds were received from ICAR under **"Strengthening of Library Information System"** and Development Grants with the help of which infrastructural facilities has been developed for the benefit of the students, scholars and academicians of the University. At present, the Central Library has three units, two at Mohanpur and one at Chakgaria Campus of the University.



Central Library, WBIAFS, Kolkata



*Unit of Central Library
Faculty of Dairy Technology, Mohanpur*



*Unit of Central Library
Faculty of Fishery Sciences, Chakgaria*



*Unit of Central Library
Faculty of Veterinary & Animal Sciences,
Mohanpur*

CENTRAL LIBRARY AND INFORMATION (Contd...)

Library Hours:

Faculty of Veterinary Sciences, Kolkata & Mohanpur	Faculty of Dairy Technology, Mohanpur & Faculty of Fishery Sciences, Chakgaria
Monday to Friday: 10:00 AM to 7:00 PM	Monday to Friday: 10:00 AM to 5:30 PM

On working days, the services of the following sections of the Libraries at different campuses remain open, as the schedule given below :

Sl.No.	Section of the Library	Timings
i.	Reading Room	10:00 AM to 7:00 PM
ii.	Reference Section	10:00 AM to 7:00 PM
iii.	Journal and Career Guidance	10:00 AM to 7:00 PM
iv.	Internet Section	11:00 AM to 7:00 PM
v.	Lending Section	11:00 AM to 4:30 PM
vi.	Photocopying Service	11:00 AM to 5:30 PM
vii.	Membership Section	11:00 AM to 5:30 PM
viii.	Library Office	10:00 AM to 5:30 PM

Financial Support:

ICAR provided separate grant for strengthening of Library since 2008-09, utilizing which the central library undertook various developmental jobs especially development in the electronic services, viz., Library automation and LAN/WAN Networking etc. for the benefit of the students, scholars and academicians of the University

Books/Periodicals purchased during 2015:

Text and Reference books:

Periodicals :

PERIODICALS (2010-2015):

National: 23 nos. each year

International: 13 nos. (avg.) each year

Users of the Library:

- UG/PG Students
- Research Scholars
- Faculty members
- Outside readers(Prior permission)
- Ex-Faculty members.



CENTRAL LIBRARY AND INFORMATION (Contd...)

Library Holding:

- ✓ Databases of Total Number of Books(including transferred from BCKV):
22852 up to March 2015 (Computerized)
- ✓ Databases of Total number of volumes of Journals (Computerized): **7000**
- ✓ Total number of current Journals:
 - ✓ Foreign Journals : 13
 - ✓ Indian Journals : 23
- ✓ Databases Total number of annual reports, pamphlets, bulletin, indexes and research highlights and news letter: **5000**
- ✓ Total number of thesis / Dissertation including Ph.D : **1600 (CD form 300)**
- ✓ Total number of records in data base **35000**
- ✓ No. of books issued to the users (per day) **300 (average)**
- ✓ No of books returned (per day): **90 (average)**
- ✓ Reference consultants(per day): **150**



Services:

- ✓ Internet Browsing privileges to the users: Extended to Post graduate and Research level users with **1 gbps at main Campus through NKN (National Knowledge Network) funded by MHRD, Govt of India. 2 mbps for each campus library through cable network.**
- ✓ Online Abstracting Services: Extended to Post graduate and Research level users
- ✓ CDROM
- ✓ CAS
- ✓ Photocopying services(Private agency)
- ✓ Information Services file
- ✓ Resource Sharing
- ✓ Services to career guidance tools
- ✓ Wi-fi service
- ✓ Information Hub
- ✓ University Bookshop



CENTRAL LIBRARY AND INFORMATION (Contd...)

✓ On line journals

✓ Access from CeRA (Regularly maintaining (Document Delivery Request (DDR) and Document Delivery Services(DDS)

▪ Elsevier	–	358 Journals
▪ Taylor & Francis	–	1079
▪ Indian Journals Com	–	131
▪ Annual Review Inc.	–	22
▪ CSIR	–	8
▪ Springer Verlag	–	70

Book Bank:

The Central Library extends the book bank facilities for the students. The facility is at present provided only to the Veterinary Faculty students, under-graduate studies.

Competitive Examination Books:

A collection of different books of competitive examinations like ICAR-JRF / ToEFL / GRE etc. are being provided to the students for preparation and appearance in the examinations.

Digital Library:

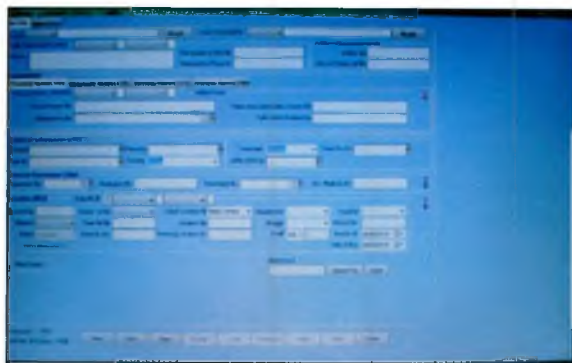
An information hub has been developed where the students, Researchers and Scientists can access the internet/ CeRA/ on-line national/ international journals/ Vety.Sc./ Beast abstracts etc. OPAC facility through web is under development. The faculty members of different campuses access internet surfing through LANs which is being monitored by the Central Library.

Wi-Fi:

The Wi-Fi facility has also been introduced in all the Departments /Administrative offices at University Headquarters. The Faculty members and administrative wings avail the LAN facility to expedite the circulation of official documents, letter/ notification etc, thus reducing the use of papers upto an extent. The Central Library has also extended the Wi-Fi facility at libraries in two other campuses also.

Campus e-Learning facility (Kolkata):

The Central Library also provides the internal e-Learning facilities at Kolkata Campus from where the lectures/seminars/ symposiums can be transmitted through LAN for their Department/Offices. At present there is no scope for both way communication i.e., no facility exists for interaction.





IMPORTANT PROGRAMS OF THE HONOURABLE VICE CHANCELLOR OF THE UNIVERSITY DURING THE YEAR



Sl. No.	Hon'ble Vice Chancellor's Programs	Venue	Duration / Dates
1.	Annual Vice-Chancellors' Conference	NASC Complex, ICAR, New Delhi	13 th – 15 th May, 2015
2.	Symposium on Application of Innovative Agri-Technology in India organized by DREF, WBUAFS in collaboration with AIR, Kolkata	VCI Auditorium, University Headquarters	24 th June, 2015
3.	Briksharopan Utsav organized by WBUAFS in collaboration with Dept. of Forest, Govt. of West Bengal	University Headquarters, Belgachia Campus	July, 2015
4.	National Seminar organized by DDG (Animal Science) on Go-Sampad in collaboration with Go-Sambardhana Samity	New Delhi	8 th August, 2015
5.	Visit to National Training Centre for Dogs to establish a similar centre at WBUAFS	Tekanpur, Gwalior	9 th August, 2015
6.	Inauguration of the "Mobile Veterinary Clinical Service" Project under WBUAFS with assistance of ARD, Govt. of West Bengal	Office campus of Deputy Director & PO, ARD, Paschim Medinipur	21 st August, 2015
7.	National Symposium on Sustainable and Profitable Growth of the Annual Agriculture organized by CLFMA 2015	Jaipur	10 th – 11 th September, 2015
8.	Inauguration of ASCI sponsored "Train the trainers" programme	Kishan Abas, University Headquarters	28 th September, 2015
9.	Inauguration of University Guest House "Mohini"	University Guest House, Mohanpur Campus	6 th October, 2015
10.	Seminar on "Food Safety Regulation in Dairy Industry"	Faculty Seminar Hall, DT, Mohanpur Campus, WBUAFS	17 th October, 2015
11.	Pre-Congress workshop on "Arid grassland resources, production and utilization" organized by ICAR- Indian Grassland and Fodder Research Institute, Ministry of Agriculture, New Delhi	New Delhi	19 th – 23 rd November, 2015

IMPORTANT PROGRAMS (contd...)

12.	Vice-Chancellors' Conference organized by IAUA	Tirupati	1 st – 3 rd December, 2015
13.	Workshop cum Scientists' Dairy Industry Partners' Meet on "Commercialization of Dairying through production and Traditional Processing" jointly organized by ERS, NDRI and Faculty of DT, WBUAFS	ERS, NDRI	12 th December, 2015
14.	Reunion of Veterinary Faculty	WBUAFS, Kolkata	10 th January, 2016
15.	SAC Meeting	Murshidabad KVK	25 th January, 2016
16.	XVI Biennial conference of ANSI – NDRI (Chief Guest at the Valedictory fuction)	NDRI , Karnal	7 th – 8 th February, 2016
17.	15 th SAC Meeting Jalpaiguri KVK, Ramsai and visit at Panbari site (site for new Veterinary and Animal Science College and new Fishery College)	Jalpaiguri KVK and Panbari	19 th – 20 th February, 2016
18.	Tenth convocation of WBUAFS	University Headquarters, Belgachia Campus	17 th March, 2016

IMPORTANT EVENTS, EMINENT VISITORS, ACTIVITIES & ACHIEVEMENTS



West Bengal University of Animal & Fishery Sciences passed through an eventful year during 2015-16. Some of the important activities that took place in the University are as follows :

M.1. IMPORTANT EVENTS/ACHIEVEMENTS

M.1.1. TENTH CONVOCATION



The magnificent ceremony of Tenth Convocation of the University took place on 17th March, 2016 at University Headquarters, Belgachia, Kolkata. His Excellency, the Governor of West Bengal and Chancellor of the University Hon'ble Sri Keshari Nath Tripathi was present during inauguration of the convocation and presided over the ceremony. Padma Bhusan Dr. Ram Badan Singh, Chancellor, Central Agricultural University, Imphal and an eminent Agricultural Scientist was the Chief Guest and delivered the convocation address on this occasion. The University conferred the Degree of Doctor of Science (Honoris Causa) on Prof. D.N. Maitra, Distinguished Retired Professor of the Dept. of Livestock Production Management, WBUAFS, for his

immense contribution in the fields of Veterinary & Animal Sciences. The degree was also conferred upon Prof. Amalendu Chakrabarty, Professor of the Dept. of Veterinary Medicine, Ethics & Jurisprudence, WBUAFS for his contribution towards Veterinary Medicine.

Sri Swapan Debnath, Hon'ble Minister of State (Independent Charge), Deptt. of Animal Resource Development and Sri Chandranath Sinha, Hon'ble Minister Incharge, Deptt. of Fisheries graced the occasion as Guests of Honour.

Hon'ble Chancellor, in his speech, encouraged the degree recipients and expressed his desire for them to act as pivots for successful and energetic participation in future towards realizing the dreams of shining India and prosperous West Bengal. Chief Guest expressed his buoyant views in studies under this University and thereby immense employment opportunities during forthcoming days. Hon'ble MOS (Independent Charge), ARD Deptt., Govt. of West Bengal wished the out-going students a bright future. Hon'ble Vice-Chancellor presented the status of the state grants released for the purpose of infrastructural development of the University campuses. He also discussed about the achievements of the students and teachers of the faculty in several programs throughout the year. All the dignitaries expressed their contentment about the performances of the University in the different fields.

M.1.2. INAUGURATION OF MOBILE VETERINARY CLINIC SERVICE IN 11 BLOCKS OF PASHCHIM MEDINIPUR ON 21ST AUGUST, 2015 IN THE OFFICE CAMPUS OF DEPUTY DIRECTOR & PO, ARD, PASHCHIM MEDINIPUR

The Mobile Veterinary Clinical service was inaugurated by Hon'ble MOS (IC), ARD, in presence of Sabhadhipati, Vice-Chancellor, WBUAFS, Secretary, ARD, MLAs, members of the Zilla Parishad and other local bodies of the district. The programme was also attended by Secretary, West Bengal Poultry Federation and Member of the Executive Council, WBUAFS, the BLDOs of the concerned Blocks and other officials of the University and ARD.

IMPORTANT EVENTS, EMINENT VISITORS (Contd...)

The mobile Veterinary Clinical Service is one of the flagship projects under the University with assistance of ARD, Govt. of West Bengal and inclined to extend veterinary services at the doorsteps of the poor, livestock raisers of remotest areas of *Jungle Mahal* to optimize livestock productivity and sustainable livelihood development.



M.1.3. INAUGURATION OF THE RENOVATED UNIVERSITY GUEST HOUSE "MOHINI" AT MOHANPUR CAMPUS

University has renovated a Guest House "Mohini" at Mohanpur Campus to extend residential facility of the guests at Mohanpur. Inauguration of the renovated Guest House took place on 6th October, 2015 by the MOS (IC), ARD Mr Swapan Debnath. Sri Ujjwal Biswas, Minister of Technical Education, Sri Bani Singh Roy, Sabhadhipati, Nadia, Sri Rajesh Sinha, Secretary, ARD and other dignitaries were present to grace the occasion. Registrar, Prof. A.K. Samanta, other University officials, faculty members, staff and students were also present in the inaugural ceremony.



Inauguration of University Guest House "Mohini" at Mohanpur Campus by Hon'ble MOS(IC), ARD



Hon'ble Vice-Chancellor at the Inauguration Ceremony

Registrar, Prof. A.K. Samanta, other University officials, faculty members, staff and students were also present in the inaugural ceremony.

M.1.4. WORKSHOP CUM MEET OF SCIENTISTS' AND DAIRY INDUSTRY PARTNERS'

A workshop cum Scientists' Dairy Industry Partners' Meet was organized jointly by Eastern Regional Station of National Dairy Research Institute, and Faculty of Dairy Technology, West Bengal University of Animal & Fishery Sciences at ERS of NDRI on Commercialization of Dairying through Production and Traditional Processing" on 12th December, 2015. Prof. P. Biswas, Hon'ble Vice Chancellor, WBUAFS presided over the function. Prof. A.K. Chakravarty, Hon'ble Vice Chancellor, BCKV was present as Chief Guest on the





IMPORTANT EVENTS, EMINENT VISITORS (Contd...)

occasion. Dr. R.K.Malik, Joint Director, NDRI, Karnal, Dr. A.K.Bandopadhyay, Chairman, IDA(EZ), Dr.T.K.Dutta, Head, ERS of NDRI and Dr. T.K.Maity, Dean, Faculty of Dairy Technology were also present in the meet and delivered their valuable speech on various aspect of milk production and processing.

M.1.5. SEMINAR ON “FOOD SAFETY REGULATION IN DAIRY INDUSTRY”

Faculty of Dairy Technology, West Bengal University of Animal & Fishery Sciences organized one day Seminar on 'Food Safety Regulation in Dairy Industry' at Mohanpur Campus on 17th October, 2015 at the Seminar hall of the Faculty. A large number of scientists from various Dairy Science Institutes, faculty members, students, entrepreneurs and others associated with the Dairy Processing activities from industry and institutions attended the seminar. Discussions were held on different ways and means to expand the horizon of food safety of milk and milk products in India. **Prof. P.Biswas, Hon'ble Vice Chancellor, WBUAFS** presided over the function. The seminar was inaugurated by the Chief Guest, Sri Parash Dutta, Hon'ble Chairman, West Bengal Co-operative Milk Producers' Federation Limited.



M.1.6. SYMPOSIUM ON AGRI-TECHNOLOGY

A symposium was organized by the Directorate of Research, Extension & Farms, WBUAFS in collaboration with All India Radio, Kolkata on 24th June, 2015 at VCI auditorium. The event was inaugurated by Hon'ble Vice-Chancellor Prof. P. Biswas. In presence of Smt. S. Mondal, DDG (Programme), AIR, Kolkata. A panel discussion, led by Prof. S. Biswas, DREF, WBUAFS, Dr. A. Paul, reputed Agriculturist and Prof. A. Goswami, Professor, Dept. of VA&HEE, was held on judicial interactions of Scientists and Farmers in favour of accelerated food production. Students from different colleges and Universities participated in a debate on the topic “Application of Innovative Agri-Technology in India”.



Hon'ble Vice-Chancellor, inaugurating the programme



A student participating in the debate

IMPORTANT EVENTS, EMINENT VISITORS (Contd...)

M.1.7. NSS PROGRAMS

National Service Scheme (NSS) is one of the biggest team of voluntary workers comprising of students and teachers throughout the country. They play a very important role in the society through sustained community interactions and programmes on various aspects of community development. The scheme is run by the Ministry of Youth Affairs and Sports, Govt. of India with a motto to combine knowledge and action required for community development. WBUAFS had received sanction of State NSS back in the year 2006-07 and is working since then alongwith its volunteers. In due course of time, the strength of NSS volunteers have increased and the allotted fund for NSS Activity has also been enhanced.



Glimpses from NSS Camps

M.2. DISTINGUISHED VISITORS IN THE UNIVERSITY

1. Sri Keshari Nath Tripathi, His Excellency, Governor of West Bengal and Chancellor of the University.
2. Padmabhusan Dr. Ram Badan Singh, Chancellor, Central Agricultural University, Imphal
3. Sri Swapan Debnath, Hon'ble Minister of State (Independent Charge), Department of Animal Resource Development, Govt. of West Bengal.
4. Sri Ujjwal Biswas, Hon'ble Minister in Charge, Department of Technical Education and Training
5. Sri Satish Chandra Tewary, IAS, Addl. Chief Secretary to the Governor of West Bengal
6. Sri Rajesh Sinha, Secretary, Department of Animal Resource Development, Govt. of West Bengal.
7. Dr. J. K. Jena, DDG (Fishery) visited the University a number of times.
8. Smt Mala Saha, MLA, visited the University on several occasions.
9. Smt. Malobika Jha, Director of Fisheries, Govt. of West Bengal on various occasions.
10. Dr. Umesh Chandra Sharma, President of Veterinary Council of India
11. Dr. Ravinder Kumar Sherawat, representative of VCI
12. Prof. A. K. Chakravarty, Hon'ble Vice Chancellor, BCKV
13. Dr. R. K. Malik, Joint Director, NDRI, Karnal
14. Dr. A. K. Bandopadhyay, Chairman, IDA(EZ),
15. Dr. T. K. Dutta, Head, ERS, NDRI



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