



## **COLLEGE OF VETERINARY SCIENCE, AAU: AT A GLANCE**



### **PRESENT STATUS OF THE INSTITUTION**

The College of Veterinary Science was established in year 1948 at Nagaon as the erstwhile *Assam Veterinary College*. The Assam Veterinary College offered 3-year diploma course leading to Graduate in Veterinary Science (GVSc). The number of students admitted in the first batch was 33. Soon after independence, with just 33 students admitted in the first batch of the three years' Diploma course (GVSc), the college poised for a long march to grow as a premier institute. The increased realization of the importance of the veterinary profession coupled with the man power need to handle the veterinary and animal husbandry activities of the region was the driving force in the growth and development of this institution that was to follow in the coming decades. Since then the institute has grown leaps and bound in the past. The

*Compiled by Dr. P. Borah, Coordinator, BIF*

College became a constituent college of Assam Agricultural University in 1969. The college under the Assam Agricultural University introduced Trimester System of education and started Postgraduate courses in five disciplines. Intake capacity to B.V.Sc. & A.H. course was also raised from 65 to 90. In 1977, Semester System of education replaced the Trimester System and in the year 1982, the intake capacity to B.V.Sc. & A.H. course was again increased to 130 from 90, and subsequently to 150 in 1985. Out of the total of 14 departments existing at that stage, 12 departments started Ph.D. degree programme by the year 1985. Academic Regulations and syllabus as prescribed by the Veterinary Council of India for the B.V.Sc. & A.H. degree programme were adopted by AAU in 1995. Presently, the number of students enrolled in the first year B.V.Sc. & A.H. degree each year is 100 and enrolment capacity of each department in M.V.Sc. and Ph.D. degree programme is 10 and 4, respectively.

Besides imparting teaching, the institute carries out field oriented researches in animal husbandry and veterinary, and also provides extension services to the farmers with the aim of technology transfer. The college also provides expert services to the state govt. departments of the entire North Eastern region of the country, primarily in formulation of developmental plans and policies in animal husbandry sector. It also provides expert services in management and healthcare of wildlife in state zoos, sanctuaries and national parks of the region. The institute strives for human resource development to cater to the needs of the farmers and breeders for bringing about sustainable improvement in the livestock and poultry production through improved breeding, feeding, management and health care.



*A view of Instructional Livestock (Cattle) Farm*



*A crossbred sow with its litter*



*Fodder cultivation*

Presently, the college has 18 departments, one library and a number of instructional as well as research farms (cattle, buffalo, pig, goat and poultry). There are 5 boys' hostels and 2 girls' hostels, a multipurpose sports complex and a medical unit catering to the residential needs of the students and the faculty. Another girls' hostel is under construction. As on January 2007, the strength of teachers (excluding those under Directorates of Research, Extension Education and Students' Welfare) is 139 and the total number of UG students is 602.



*A view of the Instructional Poultry Farm*



*A view of the Goat Farm*

The college has a Directorate of Clinics with a full-fledged Veterinary Hospital (Teaching Veterinary Hospital). Besides providing yeoman services to the farmers by way of treating their animals, it also provides hands-on practical training to the students on clinical disciplines. Under the Dean's establishment, the college also has an ARIS (Agricultural Research Information System) Cell, which provides the teachers and the students an easy access to information through 24-hr Internet connectivity. Under the ARIS cell, there is a central server and a faculty LAN connecting computers of different departments. A Bioinformatics Infrastructure Facility (BIF) is in the process of establishment in the faculty with the financial assistance from Department of Biotechnology (DBT), Govt. of India. The National Bureau of Animal Genetic Resources, ICAR has also offered a Core Laboratory for genetic characterisation of livestock biodiversity of the North-East.



*PG students at work in the lab*



*UG students in the Examination Hall*

There are also two outstations under the Director of Research (Vety.), viz. Livestock Research Station, Mandira and Goat Research Station, Burnihat. Presently, there are 21 ongoing research projects funded by outside agencies.

## NOTABLE ACCOMPLISHMENTS

As per the mandate of Assam Agricultural University, the accomplishments of the faculty may be summarised under the following three headings:

### 1. *Teaching:*

The Faculty of Veterinary Science, Assam Agricultural University, over the years, has catered to the manpower needs of the different states of the entire North-Eastern Region of India, in general and the State of Assam, in particular in the field of Animal Husbandry & Veterinary. The contributions made by the faculty in this aspect could be judged on the basis of the number of graduates and post-graduates produced by the faculty during the last 6 years alone (Table 1).

<b>Degree programmes</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>Total</b>
BVSc & AH	82	74	84	66	98	52	456
MVSc	32	18	10	37	46	18	161
Ph.D.	8	6	2	1	3	3	23

The total number of graduates and post-graduates produced by the Faculty of Veterinary Science, AAU so far is mentioned below:

<b>Degree programme</b>	<b>Number</b>
BVSc & AH	3300
MVSc	607
Ph.D.	121

The faculty has been successful in producing qualified and specialized veterinarians in various fields of Veterinary & Animal Husbandry. Besides placement of a sizable number of graduates and post-graduates of the college in various professional as well as administrative positions at the national and international levels, the faculty has also provided special training for the candidates appearing for JRF/SRF/NET examinations etc. and a number of alumni of the college have successfully cleared these examinations.



*UG students appearing in examination*



*UG Practical class in progress*

## **2. Research:**

The College of Veterinary Science, AAU, Khanapara conducts research activities under postgraduate research programmes and research projects like All India Coordinated Research Projects (AICRP), ad-hoc research projects and Network projects sponsored by funded by various outside funding agencies such as ICAR, DBT, DST etc.

Some of the salient research contributions of the college are noted as under:

- ✎ The college has contributed a lot in research in animal husbandry and veterinary science, which is reflected through publication of about 360 nos. of research articles during the last four years alone in various national and international journals of repute. Moreover, the faculty has so far produced 728 (607 MVSc + 121 Ph.D.) numbers of postgraduates through successful conduct of research programmes in various disciplines.

- ✂ Using 50% Beetal x 50% Assam local goats, crossbred variety of goats have been developed which are well-adapted to the regional climate with higher body weight gain, better feed conversion ratio and superior reproductive performances.
- ✂ Two improved genetic groups of pigs were developed using 50% Hampshire x 50% indigenous and 75% Hampshire x 25% indigenous germplasm. These crossbred pigs excelled over the indigenous pigs in respect of their productive and reproductive performances and at the same time possess better adaptability to the agro-climatic condition of the NE Region as compared to the exotic breeds.
- ✂ On the basis of a number of research works conducted in the faculty, productive and reproductive performances of crossbred cattle (Jersey x local) have been evaluated and the results have indicated that 50% Jersey X 50% local crossbreds have higher productive and reproductive potential in terms of milk yield, inter-calving period, disease resistance, adaptability etc. It is worthwhile to note that the Cattle Breeding Policy of Assam, 2003, which has already got the ascent of the Governor of Assam, has been formulated primarily with the aim of generating the above-mentioned genetic group of cattle.
- ✂ Developed value-added meat products (sausages) and technology for production of salami *tikka* for school children, food for pet dogs, etc. utilizing slaughterhouse by-products.
- ✂ Technology for improvement of nutritional quality of paddy straw by urea treatment and by ensiling with poultry litter, maize, grass and molasses was developed and standardized.
- ✂ Use of non-conventional food sources like water hyacinth, millets, agro-industrial by-products (tea-waste, decaffeinated tea-waste, extracted *Nahar* seed and *Ajar* seed kernel) and *Muga* silkworm pupae meal etc. as quality feed for livestock and poultry (partial replacements) have been studied and recommended.
- ✂ Standardization of hormonal doses for synchronization of oestrus and superovulation, embryo collection and transfer (both surgical and non-surgical).
- ✂ Cryopreservation of embryos through conventional and vitrification methods.
- ✂ Production of kids and calves by Embryo Transfer Technology (on transfer of fresh and cryopreserved embryos).
- ✂ Prediction of superovulatory performance and embryo production through serum progesterone estimation by RIA.
- ✂ Oestrus synchronization, superovulation, collection and transfer of embryos in yak and production of first yak calf of the world through embryo transfer (in collaboration with National Research Centre on Yak, Dirang, Arunachal Pradesh).
- ✂ Enzymatic assay developed to predict early pregnancy in goat.
- ✂ A Mineral mixture formulation has been developed for livestock and poultry population of Assam according to locality specific requirements.
- ✂ Standardized the safe dose of anaesthetic drugs like Xylonite, Ketamine, Medetomidine, yohimbin etc. to restrain wild/domestic elephants.

- ✕ A number of effective vaccines developed for diseases of livestock and poultry. These include cell-culture adapted duck plague vaccine, *Pasteurella multocida* KSCN extract vaccine, *Salmonella* toxoid vaccine. Strategies for immunotherapy against diseases like infectious bursal disease (IBD), Newcastle disease (ND) etc. have been recommended.
- ✕ Type characterization of indigenous buffaloes of Assam, indigenous *Miri* fowl and *Nageswari* duck has been done.
- ✕ An efficient test was developed to detect bovine subclinical mastitis in the laboratory, which can be easily used in the field for effective treatment.
- ✕ Adulthood vaccination of infected cows and heifers with *Brucella* strain 19 vaccine could give 90% protection from Brucellosis.
- ✕ Locally isolated duck Plague virus strain was adapted and attenuated in cell culture system for vaccine production.
- ✕ Ferrous Sulphate 1.8% syrup was recommended as a cheap iron supplement as effective therapeutic measure for prevention of piglet anaemia
- ✕ An ELISA based diagnostic technique has been standardized for rapid diagnosis of economically important diseases on N.E. Region.
- ✕ Typing and Epidemiological study of FMD virus in N.E. States for different domestic as well as wildlife have been carried out.
- ✕ Development of molecular and immunological tools for characterization of *Salmonella* enterotoxigenicity and development of a toxoid vaccine for poultry salmonellosis.
- ✕ Standardization and application of ELISA for diagnosis of diseases of animals and birds.
- ✕ Application of PCR for molecular characterization of various infectious agents and their identification.
- ✕ Molecular characterization of locally isolated strains of Swine fever virus and development of a cell culture adapted swine fever vaccine.
- ✕ Development and evaluation of *Pasteurella multocida* and *P. haemolytica* subunit vaccines for goat, cattle and pigs.
- ✕ Application of RNA-PAGE for characterization of rotaviruses of pigs
- ✕ Identification of protein marker (genetic marker) to study production potential, milk adulteration and genotype study of Mithun, the large domestic bovine of North-East India.

## EXTENSION ACTIVITIES

The faculty members and students of the college have been engaged regularly with various extension activities in the following area:

- Organisation of farmers' training programmes/extension camps in collaboration with different organizations, government agencies, NGOs and other societies.

- Village level exhibitions
- Participation in National level agricultural meets.
- Extension publications like leaflets, bulletins, folders posters, banners etc.
- Presentations by the faculties in different seminars/meetings organised at various levels.
- Village level demonstration programmes
- Free vaccination and treatment of animals in flood affected areas.
- Radio talks and T.V. documentaries
- Door to door visit to farmers' house and field to take stock of the socio-economic conditions of the farmers.
- Farm visits for providing technical advice and assistance
- Establishment of linkages between farmers, and development and financial institutions.



*A goat house made of locally available materials for farmers' demonstration*

A summary of the extension activities of the faculty during the period from 1999 to 2006 are shown in the following table:

Sl. No.	Nature of programmes	Duration (Days)	No. of programmes	Total no. of participants
1.	Refreshers' training	6-8	15	279
2.	Training of farmers and educated youths	2-7	81	2595
3.	Collaborative training with others	6	26	660
4.	Technical support to UGC sponsored training	3	8	740
5.	Farm advisory service		744	2286
6.	Awareness/orientation programme		69	4730
7.	Field demonstration		342	3334
8.	Treatment and vaccination camps			3213
9.	On farm trials conducted		26	118
10.	Exhibitions	2-11		6277
8.	Minikit programmes <ul style="list-style-type: none"> <li>• Distribution of livestock &amp; poultry</li> <li>• Distribution of animal feed/fodder to flood affected areas</li> <li>• Distribution of grass roots/slips to dairy farmers</li> <li>• Distribution of drugs/vaccines against poultry &amp; livestock diseases</li> </ul>			
7.	Other extension activities like Radio/TV talks, helpline programmes, phone-in programmes		88	

## FACULTY AND OTHER HUMAN RESOURCES

### Teachers:

As on January 2007, The faculty has a total strength of 139 teachers in the ranks of assistant Professors (22), Associate Professors (70) and Professors (47). The average age of the teachers is above 40 years. This is due non-recruitment of teachers for about a decade. The teachers are highly motivated and diligent in pursuing their objectives of catering high quality of education to the students.

### Non-teaching staff:

The faculty is ably supported a strength of 261 non-teaching staff. The non-teaching staff comprises of Category I (3), Category II (30), Category III (106) and Category IV (149) officers and employees.

## PROFILE OF STUDENTS' BODY INCLUDING THEIR DOMICILE STATUS

A total of 570 students were admitted into undergraduate programme of the faculty since year 2001, out of which 389 (68%) were from the state of Assam. The rest 181 (32%) included students from the other states of the NE Region, nominees of the Veterinary Council of India and wards of Central Government employees working in the region. During this period, a total of 456 students successfully completed their courses and qualified for the B.V.Sc. and A.H. Degree.



*Girl students in the Common Room of Girls' Hostel*



*A view of reading room of College Library*

A total of 284 students were admitted into postgraduate programme of the faculty leading to Master's and Doctorate degree since the year 2001. Out of these, 228 (77%) students belonged to the state of Assam. Rest 56 (23%) students belonged to the other states of the NE Region and rest of the country. During this period, a total of 161 students successfully completed their courses and qualified for the M.V.Sc. Degree. During the same period, Ph. D Degree was awarded to a total of 23 students.



The alumni of the faculty have brought laurels and glory to their *alma mater* through their excellence in various fields. The faculty feels proud that some of the alumni of the faculty even reached the level of being public representatives as Member of Parliament, public administrators as members of Assam Civil Services, scientists of national and international repute, high-ranking officers in the Indian Council of Agricultural Research, Defence Services, Banking and Insurance services, pharmaceuticals etc.

Notwithstanding the above accomplishments, majority of the alumni of the faculty have been offering yeoman's service in the field of animal husbandry and veterinary under the State Departments of Animal Husbandry & Veterinary, Rural Development and Dairy Development of the Government of Assam and other North-Eastern States as well as in the State Agricultural Universities, besides working in various capacities in Govt. of India, ICAR, DRDO etc.

It is worth mentioning that a few of the alumni of the faculty have also excelled in the fields of journalism and mass communication, both in print and electronic media. A number of alumni have also brought laurels to the faculty by obtaining various awards and recognitions of national and international standing.

### **Development of facilities**

A Central Instrumentation Facility is being established in the faculty with the financial support from ICAR, which is expected to alleviate the education and research activities in the faculty enormously. Further it will facilitate proper maintenance of the precision instruments and will make their services easily accessible to the users. The procurement of modern, state of the art equipments for the facility will help in undertaking research works of international standard. The creation of facilities like Thermocycler, Refrigerated Centrifuge, Vertical and horizontal electrophoresis, trans-blotter, Ultra Pure Water facility and Gel Documentation will facilitate the research at molecular level for disease diagnosis and disease prophylaxis.



*Inside the Bioinformatics Centre*



*A training session in progress*

A Bioinformatics Infrastructure Facility (BIF) has been set up in the faculty this year with the financial support from Department of Biotechnology, Govt. of India. Establishment of this facility would certainly boost the teaching and research activities in the field of Biotechnology and related disciplines in the faculty as well as other neighboring institutions.

During the Tenth Plan period, the Indian Council of Agricultural Research has, under the enlarged mandate of the All India Coordinated Research Project on Post Harvest Technology, established a Sub-centre in the Department of Livestock Products Technology of the faculty. The Sub-centre started functioning since 2004 with a sanctioned amount of approximately Rs. 90.00 lakh for the plan period. The Sub-centre has a mandate to prepare a status paper on meat and meat products, survey and documentation of the traditional meat products, propose slaughterhouse facilities and assess the post harvest losses of meat, egg and poultry products in Assam and the North Eastern Region. Once accomplished, the project will enable the meat and meat product processing industry to reach a new height in the state and the region.

The teaching facilities in the Faculty have been considerably upgraded with installation of audio-visual facilities in classrooms and laboratories. Several departments have also procured computer-aided instructional materials.

The National Bureau of Animal Genetic Resources, ICAR has recently offered a core laboratory for genetic characterization of livestock biodiversity of the North-East.

### **Vision for the future:**

- ☞ Opening of postgraduate courses in Animal Biotechnology and Bioinformatics
- ☞ Establishment of a separate full-fledged Central Instruments Facility
- ☞ Launching of Continued Veterinary Education (CVI) programmes to update the technical expertise of the field veterinarians
- ☞ Formal and non-formal training programmes for the entrepreneurs, educated unemployed youths and farmers
- ☞ Empowerment of rural women folk by involving in economic activities in backyard farming
- ☞ Establishment of a Regional Disease Monitoring and Surveillance Centre
- ☞ Augmentation of the Experiential Learning facilities for students and entrepreneurs
- ☞ Development and strengthening of e-Learning facilities for students and the farming community.