

NATIONAL AGRICULTURE EDUCATION ACCREDITATION COUNCIL

11

**Report of the
Accreditation Inspection Committee
(AIC)**

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**Department of Agri. Entomology
University of Agriculture,
Faisalabad**

ACKNOWLEDGMENT

The Evaluation Team heartily grateful for the collaboration of Worthy Vice Chancellor, Dean Faculty of Agriculture, Chairman and Faculty / Staff members of the Department of Agri. Entomology, University of Agriculture, Faisalabad, Pakistan.

The Evaluation Team would also like to thank immense help, guidance and logistic support from the initial to the final level. In this regard, efforts of Mr. Naseer Alam Khan (Secretary), Raja Mehtab Yasin (Admin/Finance Officer) and Malik Muhammad Kashif Anwar (Admin Assistant), NAEAC Secretariat highly appreciated.

Accreditation Inspection Committee (AIC)
NAEAC

The Terms of Reference of the Committee

The team visited the university from May 12-13, 2010 with the following objectives.

- a) To validate the Self-Assessment Report (SAR) and Peer Team Report of the Department of Agri. Entomology
- b) To determine the external evaluation of the academic programs for rating and accreditation.
- c) To synthesize and submit consolidated report on the basis of interaction with Dean, Chairman, Faculty Members and students as well as detailed visits of infrastructure and facilities.
- d) To submit recommendations to NAEAC Chairman.

The Agri. Entomology Department

The Accreditation Committee was briefed by Prof. Dr. Anjum Suhail, Chairman Department of Agri. Entomology, University of Agriculture, Faisalabad pertaining to the history, Mandate/Vision, Mission statement, Program goals and objectives, faculty, students, research projects and future plans of the department. He also elaborated the contribution of the entomologists towards Department of Entomology and its impact on the economy of Pakistan.

Mission Statement

Strengthening and implementation of a solid teaching and research system in the field of Agri. Entomology based on the knowledge, expertise and vision for the award of Bachelor, Master and Ph.D. degree.

Objectives

1. To build up highly talented human resources in the discipline of Entomology
2. To carry out research to protect horticultural and field crops from insect pests
3. Undertake research to enhance the impact of natural enemies in pest management.
4. To promote pesticide risk reduction through various activities

The group was briefed that the Department was established in 1909 in the Punjab Agricultural College, Layalpur. The Department started its B.Sc. (Hons.) degree programme in 1916 and M.Sc. (Hons) in 1923, whereas, Ph.D. degree programme was started in 1942. As far as, the Academic achievements are concerned, the Department of Entomology has produced 60 Ph.D's, 950 M.Sc. (Hons) and 1120 B.Sc. (Hons) Agriculture. Currently 35 students are enrolled in Ph.D. degree, (72+98)170 **students of 2nd & 4th semester in M.Sc (Hons) and (79+45)123+960=6th+8th & 2nd semester in B.Sc.(Hons.)**

Academic Programmes:

As briefed by the Chairman, the Department is presently offering three degree programs viz;

B.Sc. (Hons) Agriculture Entomology,
M.Sc (Hons) Agriculture Entomology and
PhD in Entomology.

Academic Program Mission:

The main mission is to produce highly skilled entomologists to tackle the problems relating to insect pests both in field crops and stored commodities.

Program Objectives

1. To educate and prepare graduates both in the field of theoretical and practical knowledge associated with the latest techniques of Integrated Pest Management (IPM) with least damage to environment.
2. To train the alumnae to work in Research and Development sector in a systematic way to reduce crop losses and the cost incurred on plant protection especially the pesticides.
3. To organize forums and events to facilitate legislation and policy making process at provincial and national level

Section -2 Criterion wise Analyses

Curriculum Design and Development

➤ **Does the curriculum of degree Programs meet HEC requirements?**

Yes, the syllabus for degree Programs are those approved by Higher Education Commission (HEC).

➤ **Numbers of courses and credit hours for each program of B.Sc. (Hons.) & M.Sc (Hons.)**

Academic Programes: Department is presently offering three degree programs
i) B.Sc (Hons) Agriculture Entomology, ii) M.Sc (Hons) Agriculture Entomology and
iii) PhD in Entomology.

The B.Sc. (Hons) Agriculture Entomology Degree is of four years that is spread over eight semesters. Degree requirement is (146+15*) 161 credit hours, including 15* credit hours internship in the eighth semester..

The M.Sc. (Hons) Agriculture Entomology Degree is of two years that is spread over four semesters with (20 Major+10 Minor+6 Deficiency) 36 credit hour's course work and research thesis.

➤ **Revision and update of curricula (how often)**

Curriculum is revised when needed through department board of studies, faculty board of studies, academic council and syndicate, minimum after five years as per guide lines by HEC.

➤ **Current, meets market demand and global challenges**

The Curriculum is revised in the light of national and international requirements to market demand.

➤ **En-bodies feedback from all stakeholders (parents, peer faculty, students, alumni, graduating students, employers)**

Parents Viewpoint

Generally parents visit the department to acquire the information in relation to education/job opportunities and also get the information as higher education. Majority of parents are satisfied with education and job opportunities in relevant subject.

Employers Feedback

Employer survey for the determination of student skills was conducted. Survey showed that Entomologists produced by the department were mostly employed and their employers are satisfied by their technical and communication skills. However, they also need more training to use modern laboratory equipment.

Alumni Survey

Survey showed that old students are sound knowledge wise, have very good communication skill and some of them with good management and leadership qualities. Alumni association at the department level is also functional.

➤ **Curricula should be outcome oriented**

Majority of the students were satisfied with the academic programs and contents of the curricula.

Strength and Quality of Faculty

The evaluation team met most of the faculty members (professors, associate professors, assistant professors and lecturers) in the department of Agri. Entomology to discuss their academic program, professional background, areas of research interest and students and peers, opportunities for professional growth besides research opportunities, facilities available, teacher-student relationship, teaching load and strengths and weaknesses of the program.

➤ **Size of Faculty, categorization by qualification, position and teaching experience**

Presently there are 19 members, in addition 3 abroad on leave, including two Professor, five Associate Professor, nine Assistant Professor and three Lecturers. Three members are abroad for higher studies (Post Doctorate) and sixteen teaching staffs are Ph.D. from the home Universities. Among Assistant Professor and Lecturer positions, three teaching staffs are post doctorate from the abroad.

➤ **Area of specialization and sections/labs in the department**

Table: 1 Area of specilization

Specialization	Faculty with Specialization	Faculty with Ph.D. Degree	Status	
			Regular	Contract
Integrated Pest Management	6	5	6	0
Eco-Toxicology	3	3	3	0
Insect Biodiversity & Biosystematics	5	4	5	0
Stored Grain Pest Management	3	3	3	0
Acarology	2	2	2	0
Total	19	17	19	

➤ **Laboratory division in the department**

Table: 2 Sections/labs. in the department with their staff position:

In fact in the department total 04 Lab Assistants & 02 Junior Lab Assistants, so from field staffs (07 Field Assistants and 02 Junior Field Assistants) are taken in the labs.

S.#	Laboratory	Laboratory Assistant	Laboratory Attendant	Required
1.	Integrated Pest Management of Crops	1	0	2
1a	Integrated Pest Management of Vegetables & Fruits	1	0	2
1b	Biological Control (<i>Chrysopa</i>) Lab	1	0	1
1c	Biological Control (<i>Bracon</i>) Lab	1	0	1
2.	Eco-Toxicology	1	0	1
2a	Eco-Biology	1	0	1
3.	Insect Biodiversity & Biosystematics	1	0	1
3a	Mosquito Management Lab	0	1	1
4.	Stored Grain Pest Management	1	0	1
5	Acarology	1	1	1
6	Apiculture	1	0	2
7	Sericulture	1	0	2

➤ **Faculty needs as per HEC requirements**

Taking into consideration the future needs of faculty with observe to regular increase in enrollments at graduate and post-graduate level, and the number of students per teacher basis increasing associated with subsequent the HEC standards, it becomes necessary to induct more faculty members in the department on permanent basis.

➤ **Teaching load existing and recommended for each category of faculty member**

Existing teaching load: teacher student ratio 1:68

Professor = 1:40 with additional assignments and postgraduate research
Associate Professor = 1:70 with additional assignments and postgraduate research
Others = 1:60 with postgraduate research

Existing teaching load is as per HEC requirement = 16:1, However, if there is consideration in research teaches are overloaded.

➤ **Salary and other incentives**

Most of the faculty members were of the opinion that salary package is reasonable but looking forward for relatively better financial benefits.

➤ **Reward and punishment system**

This work is done by disciplinary action committee of the University.

➤ **Student-Teacher interaction, counseling etc.**

Most of the students expressed satisfaction over the cooperation and assistance provided to them by the teachers. Students were also of the view that there was a good interaction with the teachers.

➤ **Department seminars, exhibitions and other curricular activities**

Department conducts seminars on regular basis. In other activities department arrange Kissan Mela, Transfer of technology in apiculture, food supplement for silkworm rearing, bio-control agent, stored grain management etc. and in general University arrange two Kissan conventions, 1st in the month of March and 2nd in the month of November where department play an important role to exhibit entomological technologies for the public and end-users.

➤ **Job satisfaction**

Overall teachers are satisfied with their job.

➤ **Faculty research skilled**

A lot of useful research has been carried out under research projects completed in the department. There are ten research project completed from 2005-09. The findings of these research studies/projects were printed in the form of leaflets and brochures in Urdu as well in English for the use of researcher, community and extension workers.

➤ **National and International rewards and recognitions.**

The faculty has been duly recognized and has earned different national awards on account of its performance. A Faculty member, *Prof. Dr. Muhammad Ashfaq* has been awarded *Tamgha-i-Imtiaz*, Zoologist of the Year Award, 19th Bolan Excellence Award, Asian peace seminar, Best University Teacher Award, Star Man Award etc., Prof. Dr. Anjum Suhail and Dr. Sohail Ahmad has been awarded Star Awards, 2001 & 2008 respectively

Infrastructure Learning Resources

Research and Teaching Labs.

There are 12 specific research labs (detail given above), one postgraduate and two undergraduate teaching laboratories.

Laboratories are not spacious and some are without Ac facilities and safety arrangements. Equipments like Stereomicroscope, Microtome, Growth chambers, Stereoscope, are available while other Lab. equipments i.e., HPLC and GLC, Centrifuges, Electrophoresis, PCR, Spectrophotometer, relevant software, whereas chemicals and glass wares budget is very low to meet the requirement.

Greenhouses and Experimental Fields

Greenhouse: There is no such facility in the Department but two rearing cages are available.

Experimental field: The department was provided with an experimental area allotted by the University farm, PARS = 24 acres.

Departmental and Main Library

Departmental Library: Departmental library exist. There are only 190 books in the department which were inadequate. There is a meager amount of budget for the purchase of books.

Central library: There is a central library which is centrally air-conditioned and contains many entomological books most of them very old editions, in addition to the journals, relating to the various disciplines in agriculture including entomology and allied subjects. However, the central library needs further development and fresh arrivals of journals and books.

The library is linked with digital library developed by the Higher Education Commission of Pakistan, where, over 15000 full text journals and 25000 abstracted journals are available free of cost. The library also has good electronic media equipment including internet, multimedia, and other facilities. At present only one computer is available for 11 students. Keeping in view the large number of post graduate students, more computers with printers and internet facilities are required.

Computer Labs, Internet and Multimedia Facilities

Computer Lab: Department is without any computer lab. But all teachers have their own PC connected with internet where some postgraduate students have the access to work..

Classrooms number and size with Multimedia

Classrooms: There are only two classrooms for under and post graduate students each with 48 x 24 sq.ft of size. There is serious shortage of classrooms. Increasing number of students results in the congestion of classrooms which affects adversely the quality of teaching.

Multimedia: There is only one multimedia, 2nd one is out of order in the department.

Faculty Offices and Facilities

Faculty Offices: Mostly faculties sit in their respective labs most of them are without telephone facilities and ACs. Chairman and administrative staff office exist.

SWOC Analysis: Faculty/Student Point of View

Major Strength

- Out of total faculty strength of 22 members, 17 are PhD while three are pursuing PhD students abroad indicating strong and qualified teaching staff.
- Besides teaching and training, the main strength of the department is capacity of conducting research in diversified areas of Agri. Entomology.
- Well established lab system comprising 13 research and teaching labs.

Major Weaknesses

There are certain areas in terms of Infrastructure, Equipment and Manpower which needs improvement.

- *Infrastructure:* The department lacks; spacious and controlled conditioned laboratories with safety arrangements and security plan, class rooms, common room, and green house facility
- *Equipment:* Lack of lab. equipment i.e., Stereomicroscope, HPLC, Growth chambers, Centrifuges, Electrophoresis, PCR, Spectrophotometer, relevant software, chemicals and glass wares, books, national and international journals in different disciplines of entomology
- *Manpower:* The department would need more factuality and trained supporting staff i.e. laboratory technician/assistants, instrument and networking engineer.
- No faculty development and training plan is in place.

Major Opportunities

At present the department has laboratories of IPM, insect biodiversity and biosystematics, stored grain insect pests, insect toxicology, acarology equipments like, high magnification camera fixed stereoscopes, slide microscopes, desiccators, Growth chamber, HPLC, GC, PCR, Electrophoresis, Atomic absorption, centrifuges etc to cater the need of present level of enrolment of postgraduate and Ph.D levels on the above mentioned entomological disciplines.

- Short-term training programs may be initiated for different target groups including agri. Extension and agro-industry.
- The faculty may avail the opportunity of Research funding for National and international resources.
- Participation in national and international conferences and seminars may be encouraged.
- A regular roster of faculty seminars may be organized.

Major Challenges

There are certain areas in terms of Infrastructure, Equipment and Manpower which needs improvement, considering future needs of the faculty with regard to gradual increase in enrollments at under graduate and graduate level.

The Annual operational budget for 2009 is Rs. 22.21 million out of which larger share is of salary and remains is inadequate in which research fund is Rs. 0.20 million to meet the genuine needs of teaching and research. University should consider increasing the annual grant of the department and allocating appropriate amount for repair and maintenance, and operational activities of the department.

- More than 90% teachers possess local PhD. There is a need to discourage inbreeding.
- Local PhD must be provided an opportunity for exposure with Post Doc facility abroad.
- Presently, lab system requires a strong backup system and financial resources.

Recommendations

There are certain areas in terms of furnishing the Infrastructure and laboratory Equipments which needs improvement both in term of education and practical.

- Presently, department has very useful and valuable equipments like Stereomicroscope, Microtome, Growth chambers, Stereoscope, drying cabinet, ovens, cool incubators, digital electronic balance, digital cameras, humidifier, etc whereas high magnification stereoscopes, camera fixed stereoscopes, slide microscopes, digital camera for capturing insect images, digital balance, insect rearing cages, desiccators, Growth chamber, HPLC, GC, PCR, Electrophoresis, Atomic absorption, centrifuges etc to which needs to be maintained if the proper funds are available.
- The additional working space is required for both laboratories & class rooms.
- The additional budget is required for the purchase of chemicals and glassware for students in laboratories.
- Faculty members need to be particularly trained in digital teaching methods. For some faculty members require to be working space in terms of office.
- The faculty would need some training such as molecular techniques.
- Development of a large green house for Post-graduate level research/ experiments is needed.
- Insect rearing facilities are required for bio-ecological and toxicological studies.
- The capacity of young faculty members may be enhanced through short-term and long-term (doctoral and post-doctoral) training abroad.
- Project “Strengthening of Department of Agri. Entomology” should be commenced as soon as possible.

- The department library should be improved with advanced books, local & international journals, literature and computers on continuous basis.
- Considering future needs of the faculty with regard to gradual increase in enrollments at graduate and post-graduate level, it becomes imperative to induct more faculty members in the department on permanent basis. In the prevailing setup, it would be an enormous opportunity to utilize both the distinctive and professional knowledge/skills of the faculty members and staff already working on project positions in the department may be regularized to enhance the faculty.
- Safety arrangements and security plan are not in place. The laboratories should also be well equipped in first aid kits/facilities.
- Five multimedia are strongly recommended for classrooms.
- Two Photostat machines are strongly recommended; one for departmental library and one for office.
- Participation of faculty members in conferences, seminars and workshops may be encouraged to improve exposure and interactions with peer groups worldwide.
- A linkage should be developed with National and International Universities.

Signature: _____

Name: _____

Designation: _____

Department: _____

Final Recommendation

Obviously, the key strength of the department of Agri. Entomology is IPM, insect biodiversity and biosystematics, stored grain insect pests, insect toxicology and acarology. Currently, the department has laboratories/ equipments to provide the facility of undergraduate, postgraduate and Ph.D. students on the above mentioned entomological disciplines. Observably, it requires additional funding for providing the mandatory facilities.

On the basis of the inspection/evaluation, the AIC team unanimously declared the degree program of the Department of Agri. Entomology, University of Agriculture, Faisalabad, Pakistan in the “X” category of National Agriculture Education Accreditation Council.

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I agree with the observations and recommendations made by the peer team in this report.

Chairman, Department of Entomology