

NATIONAL AGRICULTURE EDUCATION ACCREDITATION COUNCIL

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

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**Department of Entomology
KPK Agriculture University,
Peshawar**

ACKNOWLEDGMENT

The assessment Team is grateful to the Worthy Vice Chancellor, Dean Faculty of Crop Protection Sciences, Chairman and staff members of Department of Entomology, KPK Agriculture University, Peshawar, for providing cooperation and facilitation.

We are also thankful to the NAEAC for their assistance guidelines and logistic support during the assessment process. The support provided by Mr. Naseer Alam Khan (Secretary), and Malik Muhammad Kashif Anwar (IT Coordinator), NAEAC Secretariat is highly acknowledged.

Accreditation Inspection Committee (AIC)

NAEAC

Section -1 General

NAEAC Inspection Team

The Chairman NAEAC nominated an Accreditation Inspection Committee (AIC) for the evaluation of Department of Entomology, Khyber Pakhtunkhwa Agricultural University, Peshawar for accreditation. The committee comprises of the following members who undertook a visit to the said institute on December 3-4, 2011.

- 1. Dr. Ghulam Jilani** **(Convener)**
Chief Scientific Officer (Rtd.),
NARC, Islamabad

- 2. Prof. Dr. Muhammad Naeem** **(Member)**
Chairman,
Department of Entomology,
PMAS-Arid Agriculture University,
Rawalpindi

The Terms of Reference of the Committee

The committee members officially visited the KPK Agricultural University on December 3-4, 2011 with the following objectives.

- I. To evaluate the Self-Assessment Report (SAR) and Peer Team Report of the Department of Entomology.
- II. To assess the external evaluation of the academic programs for rating and accreditation.
- III. To prepare and compile the consolidated report in the light of the interaction with Dean, Chairman, Faculty Members and students as well as examining the infrastructure and facilities.
- IV. To submit recommendations regarding inspection to NAEAC Chairman.

The Department of Entomology, KPK Agriculture University

The Accreditation Committee was given a detailed briefing by Prof. Dr. Mian Inayatullah, Chairman of the Department regarding its history, mandate/vision, mission statement, Program goals and objectives, faculty, students, research projects and future plans. He also mentioned major achievements of the Department and its role in the national economy.

Institutional Mission

The basic mission of the department is provision of quality education with the aim of producing trained and skilled human resources, in various fields of Entomological sciences through class teaching, research and outreach activities.

Program Mission

To provide quality education in the field of entomology, to enable the graduates to guide the farmers in solving their pest related problems and to address the fundamental questions of crop damages by pests.

Objectives

- a) To enable Entomology graduates to gain and apply relevant knowledge and skills for the improvement of plant health, rearing of valuable insects for producing valuable products.
- b) To build the capacity of graduates for solution of farmers' problems related to crop damages by insect pests and rearing of high value insects.
- c) To enable the graduates to gain knowledge of the subject as per international standards to pursue their careers.

The AIC was briefed by the Chairman that Department of Entomology was established in 1962 in Islamia College Peshawar. It became a part of Agriculture Faculty/Agri. College established in 1974 in the University of Peshawar; finally in 1981 Agri. Faculty was up-graded as Agriculture University in 1981.

Regarding the academic achievements, the Department has produced 2 Ph.D's, 220 M.Sc. (Hons) and 380 B.Sc. (Hons) Agriculture. Currently 15 students are enrolled in Ph.D. degree, 14 students in 2nd & 4th semester in M. Sc (Hons) and 21 in B. Sc (Hons.)

Academic Programmes:

The Chairman briefed that the Department is presently offering three degree programs viz;
B.Sc. (Hons.) Entomology,
M. Sc (Hons.) Entomology and
PhD in Entomology

Academic Program Mission:

The main objective is to produce highly skilled and technically sound person to tackle the problems relating to insect pests and diseases both in field crops, horticultural crops and stored commodities.

Program Objectives

1. To produce latest education to the graduates and post-graduates having both theoretical and practical knowledge regarding Integrated Pest Management (IPM) with least damage to environment.
2. To impart training to workers in research and development sector in a more systematic way to minimize crop losses and the cost of production with particular focus on plant protection.
3. To arrange seminars, conferences and workshops relating to plant protection measures to help timely legislation and policy making process at provincial and national level.
4. To impart knowledge to graduates and farming community regarding identification and rearing of useful insects for their products and eco-services.

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 absolutely approved by the Higher Education Commission (HEC).

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

Academic Programmes: Department is presently offering three degree programs

(i) B.Sc. (Hons.) Entomology (ii) M.Sc. (Hons) Entomology and (iii) PhD in Entomology

The B.Sc. (Hons) Entomology Degree is of four years that is spread over eight semesters. Degree requirement is 130-140 credit hours, including 4 credit hours internship in the eighth semester.

The M. Sc. (Hons.) Entomology Degree is of two years that is spread over four semesters with (24Major + 12 Minor + 10 thesis and 1 thesis defense) credit hour's course work and research thesis.

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

The curriculum is thoroughly revised according to the needs and requirement with the approval of department board of studies, faculty board of studies, academic council and syndicate, after five years as per guidelines by HEC.

- **Meeting current market demands and global challenges**

The Curriculum is regularly revised with due consideration of the national and international requirements and also in line with the local and foreign market demand.

- **Feedback from all stakeholders (parents, peer faculty, students, alumni, graduating students, employers)**

Parents Viewpoint

The parents generally visit the department to get information regarding education and job opportunities. They are mainly satisfied with the quality of education and job opportunities in the relevant field.

Employers Feedback

The survey conducted to know the competence of students indicated that graduate produced by the department had brought good name to the program by rendering commendable services in enhancing agricultural economy of the country.

Alumni Survey

Survey revealed that old students were well equipped with current knowledge and skills. Alumni association of the department is also actually involved in serving the nation in various fields.

- **Curricula should be outcome oriented**

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

Strength and Quality of Faculty

The Assessment team held separate meetings with each faculty members to have their views and suggestions with regard to the 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 10 members, including four Professor, two Associate Professor, and four Lecturers. Among the faculty, five are having PhD degrees while one of the members also have completed its post doc fellowships from abroad.

- **Area of specialization and sections/labs in the department**
- Table: 1. Area of specialization

Specialization	Faculty with Specialization	Faculty with Ph.D. Degree	Status	
			Regular	Contract
Insect Physiology, IPM, Ecology, population Biology	Dr. Mohammad Naeem.	Ph. D (USA)	Regular	
Insect Taxonomy, Apiculture	Dr. Mian Inayatullah.	Ph.D (USA)	Regular	
Taxonomy, Economic Entomology	Dr. Sajjad Ahmad,	Ph. D (Pakistan)	Regular	
IPM, Biological control, Host Plant Resistance	Dr. Imtiaz Ali Khan,	Ph. D (Germany) Post Doc (China)	Regular	
Acarology, IPM	Dr. Maqsood Shah.	Dr. Maqsood Shah (Ph. D) Japan	Regular	
Insect Ecology, General Entomology	Mr. Salim Jan,	M.Sc. (Hons) Peshawar	Regular	
IPM, Insect Morphology, Physiology	Mr. Amjad Usman,	M.Sc. (Hons) Peshawar	Regular	
Taxonomy, General Entomology	Mr. Toheed Iqbal,	M.Sc. (Hons) Peshawar	Regular	
IPM, Medical Entomology	Mr. Kamran Sohail	M.Sc. (Hons) Peshawar		Contract
IPM, Taxonomy	Mr. S. Fahad Shah	M.Sc. (Hons) Peshawar		Contract
Total	10		08	02

- **Laboratory division in the department**

Table: 2. Sections/labs. in the department with their staff position: In fact in the department total Lab Assistants & Junior Lab Assistants, so from field staffs (Field Assistants and Junior Field Assistants) are taken in the labs.

S.#	Laboratory	Laboratory Assistant	Laboratory Attendant	Required
1	Entomology Research Lab	Mr. Tasim Jan, Lab. supervisor Mr. Haseenullah, Lab. assistant	Mr. Salim Shah	OK
2	Entomology Undergrad Lab.	Mr. Gohar Ali, Lab. Supervisor Mr. Saifullah, Lab. assistant	Mr. Faridullah (Mali). He works as Lab. attendant when needed	One Lab. needed
3	Entomology, Post Grad. Lab	Mr. Tahirullah, Lab. assistant Mr. Izhar Ahmad, Lab. assistant	Mr. Mohammad Ismail	OK
4	Insect rearing lab.	Mr. Imzaullah, Lab. assistant	Ashraf Khan (Naib Qasid). He works as lab. Attendant when needed.	Lab. attendant needed

Faculty needs as per HEC requirements

According to HEC requirements, at least two Assistant Professor and four lecturers should be appointed on permanent basis to fulfill academic and research needs of the program.

Teaching load existing and recommended for each category of faculty member

Teaching load Major student of B.Sc.(Hons.) 1:4

Teaching load M.Sc.(Hons.) 1:3

The above ratio is only for Specialization students.

Teachers of the department also teach General Entomology courses to B.Sc. (Hons) Pt. I and Part II. There are 500 students in Part I and 500 students in Part II. If this number (1000) is included then the ratio comes to more than 1:90

Existing teaching load: teacher student ratio

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

- **Salary and other incentives**

Most of the faculty members agreed that salary package is fair and reasonable but still they are looking for relatively better financial package.

- **Reward and punishment system**

This work is being done by Disciplinary Action Committee of the University.

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

Majority of the students expressed their overall satisfaction with quality of Lecturer and practical's happy with the guidance and supervision.

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

Seminars regarding the advancements made in the field of Entomology are regularly held in the department. For this purpose, eminent scientists from

different research organizations are invited as guest speakers share current knowledge and skill.

- **Job satisfaction**

Overall teachers are satisfied with their job. The faculty has diverse research skills with expertise in the fields of insect taxonomy, population biology, biological control, ecology and integrated pest management.

- **National and International awards and recognitions.**

The entire faculty is having membership of various national and international professional societies.

Infrastructure-Learning Resources

Research and Teaching Labs

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

Laboratories are spacious and equipped with safety arrangements, having Equipments such as Stereomicroscope, Microtome, Growth chambers, Binocular microscope, Monocular microscope, Stereobinocular microscope, Analytical balance, Projection microscope, Photographic microscope with digital cameras, Sieves, Colony counter, Refrigerator, Vacuum pump Autoclaves, Incubators, Pesticides Application equipment, Steel cabinets for housing insect collection boxes /showcases, Split units (Air conditioners), Insect rearing chambers, Bath tub, Photocopier, Computer, Insect relaxing jars, Beekeeping equipment, Insect collection tools, Insect charts, Insect slides, Berlese funnel, Insect collection boxes, Cabinets for insect boxes showcases, Light traps, Stop watches, Bee artificial insemination, Equipment, Pollen trap, Overhead projector, Student microscopes, Compound microscopes, Insect models, Small Dissecting Microscope, Insect showcases, Insect housing cabinets, Insect collection.

However, budget is very low to meet the requirement of chemicals solvent, reagents etc.

Greenhouses and Experimental Fields

Greenhouse: There is no such facility in the Department but insect rearing lab and Chambers are available.

Experimental field: The total experimental area of the university research form is 500 acre. As per requirement on seasonal basis, the space is allotted to various departments for their research work.

Departmental and Main Library

Departmental Library: Presently there is no departmental library However, Thesis and Dissertation of its qualified students are present. Also the library is having very few text books. Faculty and students use the Central Library of the University. The departmental library needs to be established and strengthened.

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

The library is linked with digital library developed by 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 equipment including internet, multimedia, and other facilities. At present 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: The University is having two mega computer labs, where internet facility is available for all the university students all the time. Some computers along with the internet facility are also available for all the university students in the main library.

Classrooms number and size with Multimedia

Classrooms: There are only two classrooms for under-and-post graduate students having appropriate 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,

Faculty Offices and Facilities

Faculty Offices: Most of faculty's offices are having separate offices with ACs and telephone facilities as per statutory provision.

SWOC Analysis: Faculty/Student Point of View

Major Strength of Academic Programs

- Foreign and competent qualified faculty with Ph.Ds in different fields of entomology (Insect taxonomy, Physiology, Apiculture and IPM) are present.
- Laboratory facilities (four teaching/research laboratories) are present.
- Availability of land for on-farm research.
- Insect museum having 10,000 insect and mite specimens has been established in the department.
- Necessary equipment for research and teaching is available.
- Controlled temperature and humidity room is available for research.

Major Weaknesses of Academic Programs

There are certain areas regarding the infrastructure, equipment and manpower which needs further improvements.

- There is no departmental library.
- Some of the staff members (Lecturers) needs to be appointed on permanent basis.
- There is no departmental computer laboratory.
- Course files are not maintained.
- Inadequate support staff , Technician, networking engineering etc.
- Lack of greenhouse facility.
- Lack of classrooms.
- Lack of lab. Equipments i.e., HPLC, centrifuges, electrophoresis, PCR, spectrophotometer, relevant software, books, national and international journals in different areas of entomology.
- Lack of research funds.

Opportunities:

- Graduates of this department compete well for Government and private jobs.
- Many students have availed national and international competitive grants for higher studies.

Threats:

- Lack of coordination with department of Plant Protection for course work and research.
- Intake of students is very low.

Major Challenges for Academic Programs

Certain important areas regarding infrastructure, equipment and manpower needs extensive improvement for future needs of the faculty to gradual increase in enrollments at under graduate and graduate levels.

The Annual operational budget for 2010 is Rs. 10.75 million only out of which larger share is of salary and remaining is inadequate in which research fund is Rs. 0.23 million only to meet the genuine needs of teaching and research. University should seriously consider for increasing the annual grant of the department and allocating appropriate funds for repair and maintenance, and operational activities of the department.

Conclusion

The department has just sufficiently qualified faculty members. Out of ten faculty members four are Ph.D. degree holders. Moreover one faculty has also completed Post-doc fellowship from China. The main strength of the programme is well qualified teaching staff and their ability to do research in the fields of insect taxonomy, ecology, biological control, population biology, apiculture and IPM. At present the programme has sufficient number of laboratories/equipments to fulfill the needs of present level of enrolment in entomology. A significant research was carried out through research projects and post graduate students financed by HEC, PSF ICIMOD and PARC. They have developed bee-keeping syllabus for universities, new strategy for pest control in tomato borer and wax moth, declared aphid as a non-pest of wheat if proper nutrition is applied and discovered eleven new species of insect pest, thirty one species of mite, three of brachonid and two of spiders. The findings from this research were transferred in the form of research papers, leaflets and brochures in Urdu for extension workers and farmers.

The students showed interest in the programme as their major subject which is a reasonable sign for enrolment. However, the programme should have a project on strengthening of the department for having necessary equipments, books, chemicals and other infrastructure for lecture and practical work.

Recommendations

- The required staff should be appointed on permanent basis especially four lecturers and two assistant professors.
- There is an immediate need to build a departmental library and computer laboratory.
- The department needs equipments like camera-fixed stereomicroscope, high magnification stereomicroscope, drying cabinets, ovens, cool incubators, desiccators, electrophoresis and high speed centrifuges.
- Additional space is required for classrooms.
- Additional budget is required for purchase of chemicals and glassware for students for laboratory work.
- Faculty members need to be trained in digital teaching methods.

- A green house is required for research at post graduate level.
- The faculty needs training in modern molecular and biotechnological areas.
- Insect draining facilities are required for various types of experiments. The capacity of young faculty members may be enhanced through short term and long term training abroad.
- Departmental library should be established.
- The present computer lab. Facilities need to be strengthened.
- Funds should be arranged for faculty members to regularly participate in conferences, seminars and workshops.
- Linkages with national and international universities should be further strengthened.

Signature: _____

Name: Ghulam Jilani

Designation: Ex-Sr. Director, PARC/CSO, NARC.

Department: IPEP, NARC, Islamabad.

Final Recommendation

On the basis of the inspection/evaluation, the team recommends accreditation/rating of the degree programs of Department of Entomology, KPK Agricultural University, Peshawar, Pakistan in the Middle band (70%) of “X” category of National Agriculture Education Accreditation Council/HEC.

- **Agriculture Education Accreditation Council.**

1. **Dr. Ghulam Jilani** (Convener) _____

Chief Scientific Officer (Rtd.),
NARC, Islamabad

2. **Prof. Dr. Muhammad Naeem** (Member) _____

Chairman,
Department of Entomology,
PMAS-Arid Agriculture University,

I agree with the observations and recommendations made by the peer team in this report.
Chairman Department of Entomology.