

Confidential



National Agriculture Education Accreditation Council

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

Prof. Dr. Muhammad Naeem

Prof. Dr. Muhammad Faheem Malik

Dr. Muhammad Ather Rafi

**Entomology Department
Pir Mehr Ali Shah Arid Agriculture University,
Rawalpindi (PMAS AAUR)**

NAEAC Secretariat, Room # B-022, Crop Sciences Institute, NARC, Chak Shahzad Islamabad
Ph # 051-9255746, 051-9255012-20, ext 3522, Fax # 051-9255746
Website: www.naeac.org, Email: infonaeac@yahoo.com

ACKNOWLEDGMENT

The Evaluation Team acknowledges the support and cooperation of the honorable Vice Chancellor, Dean Faculty of Agriculture, Chairman Department and Faculty / Staff members of the Department of Entomology, PMAS Arid Agriculture University, Rawalpindi, Pakistan.

The immense help, guidance and logistic support of Mr. Naseer Alam Khan (Secretary), Raja Mehtab Yasin (Admin/Finance Officer) and Malik Muhammad Kashif Anwar (Admin Assistant), NAEAC Secretariat is highly appreciated.

Accreditation Inspection Committee (AIC), NAEAC

Table of Contents

Acknowledgment

Section-1 General

1.1	NAEAC Inspection Team	3
1.2	Terms of Reference of the Committee	3
1.3	The Entomology Department	4
1.4	Academic Programs	4

Section-2 Criterion wise Analysis

2.1	Criterion-I. Curriculum Design and Development	6
2.2	Criterion-II. Strength and Quality of Faculty	7
2.3	Criterion-III. Students Support and Progression	9
2.4	Criterion-IV. Infrastructure and Learning Resources	10
2.5	Criterion-V. Research and Consultancy Activities	12
2.6	Criterion-VI. Governance and Leadership	12
2.7	Criterion-VII. Innovative Practices	13

Section-3 SWOC Analysis

3.1	Major Strengths of Academic Programs	14
3.2	Major Weaknesses of Academic Programs	14
3.3	Major Opportunities for Academic Programs	14
3.4	Major Challenges of Academic Programs	15
3.5	Stakeholders view point	15

Section-4 Salient Findings and Recommendations

4.1	Salient Findings	16
4.2	General Recommendations	16
4.3	Final Recommendation	17
4.4	Signatures of AIC Members	18
4.5	Comments and Signatures of Chairman	18

Section-5 Annexes

5.1	Itinerary of Accreditation Visit	(Annex-I)	19
5.2	Strength and Quality of Entomology Faculty & Support Staff	(Annex-II)	22
5.3	Major Courses M.Sc (Hons) – Entomology	(Annex-III)	23
	Major Courses B.Sc (Hons) - Agric. Major Entomology		

Section -1 General

1.1 NAEAC Inspection Team

As per clause 10 subsections (d) and (l) of the byelaws of National Agriculture Education Accreditation Council (NAEAC), the Chairman NAEAC constituted an Accreditation Inspection Committee (AIC) for the inspection of the Degree Programs of Entomology Department, Pir Mehr Ali Shah Arid Agriculture University, Rawalpindi (PMAS AAUR) for external evaluation rating and accreditation. The committee consists of the following members who visited the said university on April 13-14, 2009.

- | | |
|--|----------|
| i) Prof. Dr. Muhammad Naeem
Dean, Faculty of Plant Protection
NWFP Agricultural University
Peshawar. | Convener |
| ii) Dr. Muhammad Faheem Malik
Associate Professor & Former Dean
Faculty of Crop & Plant science
Lasbela University of Agriculture
Water & Marine Sciences, Uthal, Balochistan. | Member |
| iii) Dr. Muhammad Athar Rafi
Program Leader, National Insect Museum
National Agricultural Research Center (NARC)
Islamabad. | Member |

1.2: Terms of Reference of the Committee

The team visited the university from April 13-14, 2009 as per itinerary at annexure-I.

- To validate the Self-Assessment Report and Peer Team Report of the Institute.
- To carryout external evaluation of the academic programs for rating and accreditation.
- 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.
- To submit recommendations to NAEAC Chairman.

1.3 The Entomology Department

The Accreditation Committee was briefed by Chairman Department of Entomology, Pir Mehr Ali Shah Arid Agriculture University, Rawalpindi (PMAS AAUR), about the history, faculty, students, research projects and future plans of the department. He also elaborated the contribution of the entomologists produced by the department, to the economy of Pakistan since 1986. Now-a-days, the department is a respected seat of learning and is honored as one of the top ranking departments of the University. The department pursues specific mission and objectives given as under.

Mission statement

“Strengthening and implementation of a solid teaching and research system in the field of Entomological Sciences based on the knowledge, expertise and vision for the award of Bachelor, Master and Ph.D degrees.”

Objectives

- Develop high caliber human resources in the discipline of Entomology
- Undertake research to protect our food and fiber from insect pests with special reference to barani ecology.
- Undertake research to augment the services and value of beneficial insects.

The committee was briefed that the Department was established in 1980 in the Barani Agriculture College, Rawalpindi. In the beginning, department used to offer minor courses of Entomology for the students of B.Sc. (Hons.) Agriculture specializing in disciplines other than Entomology. The college was upgraded as University of Arid Agriculture in 1994. The Department started its B.Sc. (Hons.) degree program in 1986. M.Sc. (Hons) and Ph.D degree programs were initiated in 1997 and 1998 respectively. The Department of Entomology has produced 5 Ph.D's, 58 M.Sc (Hons) and 151 BSc (Hons). Currently 28 students in BSc (Hons), 24 students in M.Sc (Hons) and 13 in Ph.D are enrolled.

1.4 Academic Programs

The Department is presently offering three degree programs as per following details.

- i) BSc (Hons) Agriculture Entomology
- ii) M.Sc (Hons) Agriculture Entomology
- iii) PhD in Entomology.

Program Mission

To produce professionally skilled and academically sound entomologists to resolve the challenges relating to the insect pests infesting field crop, stored commodities which ensure to crop production as well as improved plant health, thereby help developed agricultural and industrial economy, and producing useful products directly and to improve quality of the human life and economy of the country indirectly.

Program Objectives

- To equip the graduates with necessary theoretical and practical knowledge relating to the field of Entomology and to enable them to apply this knowledge of degree program professionally and productively.
- To train and prepare the students about application of the latest techniques of IPM (Integrated Pest Management) program, so that they may contribute in reduction of environmental pollution and uplifting of human health.
- To ensure application of entomological knowledge in a systematic way to reduce cost incurred on plant protection techniques especially on pesticides.
- To prepare the graduates to work in an R&D environment effectively.
- To prepare higher studies in any international university of high repute.
- To enable the graduates to be a good human and an efficient, job oriented and dedicated worker with a reasonable earning to lead a prosper life.

Section -2 Criterion wise Analysis

2.1 Criterion-I. Curriculum Design and Development

Curriculum design of any degree program plays a key role in the expected learning outcomes. It must be an index of the aspiration and needs of a society. Curriculum design and development continues is gradual but continues and dynamic process. Also, it should be supportive and consistent with program goals and objectives. The curriculum of the degree awarding academic programs is reviewed by HEC through a Curriculum Review Committee representing various Higher Education Institutions (HEIs) in Pakistan. There exists a system of review at the department, faculty and university levels through Board of Studies, Board of Faculty and Academic Council respectively. The objective is to ensure the representation of all stakeholders.

The curriculum for degree Programs of Entomology department are those approved by Higher Education Commission (HEC).

Academic Programs: Department is presently offering three degree programs

- i) B.Sc (Hons) Agriculture Entomology, Eight semesters degree requirement is 161 credit hours, including 15 credit hours internship in the eighth semester.
- ii) M.Sc (Hons) Agriculture Entomology and four semesters with 36 credit hour's course work and research thesis.
- iii) PhD in Entomology, Details are at annexure-III.

The academic curriculum is supportive of program objectives. At post-graduate level, the flexibility (option of courses) exists. Curriculum is revised when needed minimum after five years as per HEC guidelines by the faculty board. The Curriculum is need based and revised in the light of national, HEC and international requirements and is market oriented.

Majority of the students were satisfied with the academic programs and contents of the curricula. Maximum effort has been made to make it outcome oriented. The curriculum helps promote teaching – learning process. The curricula have been developed in such a way that these develop generic as well as professional skills among the graduate students. The curricula also broaden faculties of mind and hands in the students. The teachers were found committed and passionate in designing curricula and its teaching

2.2 Criterion-II. Strength and Quality of Faculty

The evaluation committee met individually all faculty members (professors, associate professors, assistant professors and lecturers) in the department to discuss their academic and professional background, areas of research interest, opinion about the academic programs & students and peers, opportunities for professional growth besides research opportunities, facilities available, teacher-student relationship, teaching load and strengths and weaknesses of the degree program.

Presently there are 8 members, including one professor, one associate professor, three assistant professor and three lecturers. Three members are abroad for higher studies (PhD level). Among assistant professor and lecturer positions, one assistant professor and one lecturer are working on regular basis while rest of 3 positions are project positions/leave vacancies. Faculty qualification, status and teaching experience is given at annexure-III.

Area of specialization of Faculty

Specialization	Faculty with Specialization	Faculty with Ph.D. Degree	Faculty Status	
			Regular	Contract
IPM	05	01	03	02
Bio-ecology	01	01	00	01
Taxonomy	02	02	01	01
Total	08	04	04	04

Considering future needs of the faculty with regard to gradual increase in enrollments at graduate and post-graduate levels and the number of students per teacher basis following the HEC standards, 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 induct the faculty members working on project positions in the department as regular staff members which would bring a dual advantage, as strengthening the faculty through provision of better human resource and enhancing the sense of job security in these teachers.

Existing teaching load: Professor = 14:1, Associate Professor = 14:1, Others = 16:1
Existing teaching load is as per HEC requirement. However, if there is a consideration of research, teachers are overloaded.

Student-Teaching ratio is as per following detail
Professor= 14:1, Associate Professor= 14:1, Others= 16:1

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

Overall teachers are satisfied with their job. However, the faculty members already working on project positions in the department are worried about their job security.

The team was briefed that it was mandatory for the teaching faculty to devote 80 per cent time to teaching and 20 per cent to research.

Department conducts seminars on regular basis. In other activities department arrange Kisan Mela, lectures on Pesticides, Pollution and on the Cottage Industries of Pakistan etc.

The Professor is supervising about 5 Ph.D. and 8 M.Sc. (Hons) students, the Associate Professor about 5 Ph.D. and 6 M.Sc. (Hons) students, and other teachers are supervising at least 4 /master level students on an average.

A lot of useful research has been carried out under research projects completed in the department. The findings of these research studies/projects were printed in the form of research papers leaflets and brochures in Urdu as well in English for the use of researcher, community and extension workers in the Barani areas by arranging Kisan Mela and field days etc.

The faculty has been duly recognized and has earned different national awards on account of its performance. Graduate students of the department have secured top positions in the university.

Faculty Distribution by Program Areas in Entomology

Program area of Specialization	Courses in the area & Average number of students per year	Number of faculty member in each area	Faculty with Ph.D Degree
General Entomology	18	03	-
Stored product Entomology	07	01	01
Insect Biosystematics	05	01	01
Applied Entomology	02	02	01
Total	32	07	03

Faculty members are provided with different academic, research and training facilities as per availability in the university system. Research supervisors are offered incentives for implementing different laboratory and filed experiments to promote high standard research activities.

Motivation and encouragement are among the main tools for the better performance of the faculty team members. Faculty members are contented with the initiatives undertaken by the management in this regard. Formal and informal coaching by the senior faculty members, different entertainment events, field visits and excursions etc. play a vital role in motivating the young faculty members.

2.3 Criterion-III. Students Support and Progression

The Evaluation committee was informed that students were provided lecture material in the class containing topics wise data and for the given class and semester. The curricula are properly presented in the form of handbooks for Bachelor, M.Sc and Ph.D programs. Courses were mainly those approved by Higher Education Commission (HEC).

Students from B.Sc. (Hons) are sent to various research institutes for internship throughout the province where they acquire practical training and submit a formal report. A few internship reports were checked and found of good quality. Students were questioned to judge their knowledge in different disciplines of entomology and were found knowledgeable.

To resolve students' issues regarding provision of guidance and information in various social and educational matters, Directorate of Students Affairs provides an effective support. University organizes various cultural activities and study tours/visits to broaden the students knowledge and experience to be utilized in their practical life. The university has also established a directorate of student's employment. This directorate is actively guiding and introducing the graduates of the university to different job opportunities.

The committee was also informed by the students that department is without library, Computer lab, common room facility. However, gymnasium at university level for indoor games such as table tennis, badminton, basketball is available without any swimming facility. Medical facility, Hostel facility and student transport but need improvement is available. Financial support is only available semester wise in some cases to needy student if they have extra ordinary performance.

All of the courses are designed/ tailored to address the teaching needs in an effective way. In this regard teaching staff and students are consulted periodically to get the feedback for further improvement. Along with theoretical aspects of the courses, practical work is also done in field/laboratories while students are also oriented to tackle their professional needs through different assignments and submission of reports. They are coupled with various institutions/organization to get updated knowledge and insight addressing their future needs.

- Keeping in view the feedback from students and teachers, courses are structured and updated in the board of study meeting.
- It is common and general practice to maintain an effective interaction between students and faculty and inter and intra classes of the students.

Students are guided properly in relation to their on-going educational programs at university and also focusing their future needs.

- Entomology department has developed full harmony among the faculty members and students especially the pos-graduate ones. Management has made all sorts of efforts to update their knowledge and information source.
- Students are informed about the program requirement through the office of the head of the department.
- Their information records related to their studies are regularly updated through teacher-students interaction.
- Directorate of Placement bureau also helps in communication and exploring jobs for the university students.

2.4 Criterion-IV. Infrastructure and Learning Resources

- **Research and Teaching Labs.**

There are five laboratories, four in the Department of Entomology and one at the Kount farm Rawat. Laboratories are not spacious and are without Ac facilities, safety arrangements and security plan.

Table: 1 Staff wise position of Laboratories

S.#	Laboratory	Laboratory Assistant	Laboratory Attendant	Required
1.	Bio-systematics	01	01	-
2.	Stored Grain Research Lab.	01	01	-
3.	Biological Control	-	-	Lab. Assit.= 01 Lab. Atten.=01
4.	Insect Toxicology	-	-	Lab. Assit.= 01 Lab. Atten.=01
5	Apiculture	-	-	Lab. Assit.= 01 Lab. Atten.=01

Laboratory Equipment: Equipment like incubator, stereoscopes, camera fixed stereoscopes, slide microscopes, digital camera for capturing insect images, digital balance, insect rearing cages, desiccators, HPLC and GLC to cater the need of present level of enrolment of postgraduate and Ph.D levels.

More spacious and well equipped laboratories to fulfill the contemporary level of research/ education are necessitated for better output.

Laboratory manuals are not available. The department library has not all the relevant books. However, individual teachers have their books. The laboratories are not spacious and inadequate. The equipment are out date and out of order. Equipment regards molecular approaches are lacking e.g Stereoscope, centrifuge (slow and ultr), PAG-Electrophoresis apparatus, PCR Spectrophotometer, NPLC, relevant software, chemicals and bio-chemicals.

Laboratories are maintained by only one laboratory assistant (equipment, glassware, chemicals, material etc). Three laboratories attendant assist the students in practical, cleaning and washing.

- To upgrade the prevailing education facilities, separate class rooms are needed as presently classes (lectures) are taken in laboratories.
- Space limitation is a major constraint as department could not initiated some of the major subjects like apiculture, sericulture, host plant resistance and biological control research activities.
- Computing facilities support not available to all faculty members and the post graduate students.
- Shortcoming in computing infrastructure: computers with internet facilities should be available to all faculty members and post-graduate students.
- Safety arrangements: There is not proper safety arrangement and no security plans are in place in case of emergency. The department is located on the 2nd floor; there is no emergency exit for the labs. No fire extinguishers have been installed in any laboratory. No first aid kits/facilities provided in the laboratories/department.

Greenhouses and Experimental Fields

Greenhouse: There is no such facility in the Department.

Experimental field: The department was provided with an experimental area allotted by the university at its Kount farms at Chakwal road. At this farm, construction work on Apiculture Lab. of the department is in progress.

- **Departmental and Main Library**

Departmental Library: Department Library does not exist. There are only 122 books in the department which were inadequate. There is no budget for the purchase of books.

Central library: There is a central library which is centrally air-conditioned and contains 1212 books 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 up-gradation to meet growing requirements of a university.

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 Lab: Department is without any computer lab. Well equipped computer lab for post-graduate students is essential.

Classrooms: There are only three classrooms for under and post graduate students each with 3312 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 in the department.

Faculty Offices: Only four (04) faculty offices are available. Faculty offices were with out computer and telephone facilities.

2.5 Criterion-V. Research and Consultancy Activities

Adequate facilities are available to conduct research in various areas of Entomology such as Biosystematics, Insecticide resistance, stored grain pests, IPM in rain-fed areas, Bio-ecology etc. Faculty has published more than 200 research papers besides conference proceedings and popular articles. Almost 50% of the publications are in HEC' approved journals and about 24 and 12 papers are published in the international and impact factor journals respectively. Senior faculty is supervising post-graduate research. Presently, five projects are on-going whereas a few are in the pipeline.

Consultancy services are offered to various clients both in the private and public sector. Farmers' awareness campaigns are executed to educate the farmers about insect-pest problem. Participation in the Farmers Melas, exhibitions and field days is obligatory. Leaflets, Bulletins and flyers are distributed and displayed for the information of farming community.

2.6 Criterion-VI. Governance and Leadership

Pir Mehr Ali Shah Arid Agriculture University, Rawalpindi (PMAS AAUR) is an autonomous body having its own charter of functions as per University Ordinance 1979. The highest governance authority is the Vice Chancellor assisted by the Registrar, Treasurer, and Controller of Examinations, Director of Board of Studies and Director Quality Control. There are four faculties of Agricultural sciences/ subjects and a competent / experienced scientist is the Dean of each faculty. There are various departments in each faculty headed by a senior professor and assisted by a number of teaching staff.

Vice Chancellor is the overall controlling authority of the University. He performs his functions through bodies including the Syndicate, the Senate, Academic Council, Advance Studies & Research Board, Finance & Planning Unit, and directorates of Student Affairs, Quality Control & Placement Bureau. All these bodies function within the frame work of rules & regulations and guidance defined by HEC. Funds are provided by HEC for regular activities and specific research & special programs. There is a good working relationship between faculty members and the management; however, some operational constraints have been experienced. This is attributed to the governance system prevailing in the country. The budget allocation for operational expenses and research are very low as compared to the expectations. Efforts are also underway for generating finances which may ease out problems for operating expenses.

There is a useful exchange of knowledge and experiences with related institutions like Pakistan Agriculture Research Council (PARC), Barani Agricultural Research Institute (BARI), University of Agriculture, Faisalabad (UAF), etc through periodical seminars, workshops and field visits. The team observed that good leadership has emerged at university level which shall improve / up-grade the status of the University. Contacts are also maintained with senior Alumni to benefit from their experience. The students are encouraged to become members of professional and scientific bodies to have interaction with the senior members and benefit from their experiences.

The university has a placement bureau which is operational – exploring employment opportunities for the students to guide them in their career buildings.

2.7 Criterion-VII. Innovative Practices

- The department has established linkages with leading pesticides companies and fertilizer firms. Collaborative field studies are carried out to evolve strategies to eliminate resistance in pests. Seminars, field days and Farmers moots are organized for dissemination of research findings. Farmers' queries are responded as and when received from the field.
- Alumni of this department working in various companies remain in contact with department and arrange financial support for organization of exhibitions and training workshops etc.

Section -3 SWOC Analysis

3.1 Major Strengths of Academic Programs

- Highly qualified and competent faculty for Degree Programs
- Sophisticated lab. equipment are available for post-graduate research.
- HEC approved Ph.D supervisors.
- Faculty as well as students have earned national and international awards and recognition.
- Collaboration with R&D as well as Educational institutions.

3.2 Major Weaknesses of Academic Programs

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, library room and green house facility
- *Equipment:* Lack of lab. equipment i.e., Stereomicroscope, Microtome, Growth chambers, Stereoscope, Centrifuges, Electrophoresis, PCR, Spectrophotometer, relevant software, chemicals and glass wares, books, national and international journals in different disciplines of entomology
- *Manpower:* with the passage of time, the department would need more factuality and trained supporting staff i.e. laboratory technician/assistants, instrument and networking engineer.

3.3 Major Opportunities for Academic Programs

- Sizeable sophisticated equipment is needed to initiate post-graduate research in other important disciplines.
- Increased allocations of operational budget.
- Adequate teaching facilities for the faculty.
- System of reward and incentives for extra-work.

3.4 Major Challenges for Academic Programs

- More opportunities for participation in seminars and conferences.
- Expansion and development of Departmental library for faculty and senior students.
- Establishment of state-of –the art computer lab for post-graduate students and young faculty.
- The faculty needs advance training in techniques such as molecular techniques.

3.5 Stakeholders View Point

Parents Viewpoint

Mostly parents visit the department to get the information for their son/ daughter in relation to their education/job opportunities and for further higher education. Some parents are satisfied with education and job opportunities in the relevant subject.

Students

Students felt that the computer knowledge of under and post-graduates students was inadequate, the communication and presentation skills were weak. They also need more training to use modern laboratory equipment. Internship and practical training should be a regular feature for all students with a view to developing a strong and effective program

Employers Feedback

Employers' 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 possess sound knowledge wise, very good communication skill and some of them good management and leadership qualities. Alumni association at the department level is also functional and need to be organized and strengthened.

Section -4 Salient Findings and Recommendations

4.1 Salient Findings

- The department at the moment has the required qualified faculty although only a few have higher qualification from abroad. Some of the faculty members, however are still abroad for higher education (Ph. D) who will join the department with a short span of time. The main strength of the department was found to be its ability to undertake research in the fields of insect biosystematics, stored grain insect pests, biological control, insect toxicology and apiculture. At present, the department has laboratories/ equipment to cater the need of present level of enrolment of postgraduate and Ph.D levels in the above mentioned entomological disciplines.
- A substantial amount of useful research was carried through research projects and by the post-graduate students in the department. The findings of these research studies/projects were printed in the form of research papers, leaflets and brochures in Urdu as well in English for the use of researchers' extension specialists and farmers in the Barani areas.
- Large number of students showed interest in entomology as their major subject which is an indicator of preference of the department. With the execution of on-going project "Strengthening of Department of Entomology" funded by HEC, the department should be able to enroll double the number of under-graduate and post-graduate students.

4.2 General Recommendations

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

- The department needs additional working space; one laboratory & three class rooms for graduate and undergraduate classes and 5 faculty offices.
- Presently, department has very useful and valuable equipment like incubator, stereoscopes, camera fixed stereoscopes, slide microscopes, digital camera for capturing insect images, digital balance, insect rearing cages, desicators, HPLC and GLC which needs to be maintained and utilized to the fullest extent for which allocation of funds should be available on recurrent basis.
- For Post-graduate level research/ experiment, at least a medium size glasshouse (30x20 ft) and a plastic tunnel (40x25 ft) is needed.
- An insect rearing facility is required for bio-ecological and toxicological studies.
- The faculty would need some training in techniques such as molecular techniques.

- The capacity of young faculty members may be enhanced through short-term and long-term (doctoral and post-doctoral) training abroad.
- A capacity building project may follow the project “Strengthening of Department of Entomology” which will culminate on 30th June, 2009.
- The department library should be enriched with induction of books, local & international journals, literature and computers on continuous basis.
- Considering future needs of the faculty with regard to gradual increase in enrollment 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 plans are not in place. The department is located on the 2nd floor. Emergency exits may be arranged. The laboratories should also be well equipped in first aid kits/facilities.
- Two multimedia are strongly recommended for classrooms.
- Two Photostat machines are strongly recommended; one for departmental library and one for office and post-graduate students.
- To broaden the view of the students and teachers, more linkages should be developed with school and institutions of higher learning both at national and international level.
- Participation of faculty members in conferences, seminars and workshops may be encouraged to improve exposure and interaction with peer groups worldwide.

4.3 Final Recommendation

The main strength of the academic Programs of the department was found to be insect biosystematics, stored grain insect pests, biological control, insect toxicology and apiculture. At present, the department has laboratories/ equipment to cater the need of present level of enrolment of postgraduate and Ph.D levels of the above mentioned entomological disciplines. The department needs to focus on some weaknesses discussed in this report. Obviously, it would require more funding for providing the requisite facilities

On the basis of the inspection / evaluation, the team unanimously recommends Accreditation of the Degree Programs of Department of Entomology, Pir Mehr Ali Shah Arid Agriculture University, Rawalpindi (PMAS AAUR) in the “X” category of National Agriculture Education Accreditation Council/HEC with scope for up-gradation to category “W” after appropriate improvements in due course of time.

4.4 Signatures of AIC Members

<u>Name and Designation</u>		<u>Signatures</u>
Prof. Dr. Muhammad Naeem Dean, Faculty of Plant Protection, NWFP Agricultural University, Peshawar.	(Convener)	_____
Dr. Muhammad Faheem Malik Associate Professor & Former Dean, Faculty of Crop & Plant science Lasbela University of Agriculture, Water & Marine Sciences, Uthal, Balochistan.	(Member)	_____
Dr. Muhammad Athar Rafi Incharge Insect Museum, NARC, Islamabad.	(Member)	_____

Dated: 14th April, 2009

4.5 Comments and Signatures of Chairman

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

Chairman
Department of Entomology
PMAS Arid Agriculture University,
Rawalpindi

5.1 Itinerary of Accreditation Visit

Host Institution: PMAS Arid Agriculture University, Rawalpindi

Department/ Program: Entomology, (B.Sc (Hons) Agric. & M.Sc (Hons)

Review Team:

1. Prof. Dr. Muhammad Naeem (Convener)
NWFP Agriculture University, Peshawar
2. Prof. Dr. Muhammad Faheem Malik
Lasbela University of Agric. Lasbela
3. Dr. Muhammad Athar Rafi
Incharge Insect Museum, NARC

Deptt. Resource Person: Dr. Muhammad Naeem

NAEAC Resource Person: Mr. Naseer Alam Khan

Schedule of Visit: April 13-14, 2009 (Two Days)

Day 1	Time	Activity	Remarks
	09:00-09:30	Meeting with Dean of the Faculty <ul style="list-style-type: none"> • Explain purpose of the visit • Describe the Program review process 	Convener of AIC
	09:30-10:00	Meet Chairman of the Department	All AIC Members
	10:00-11:30	Presentation: Chairman of Entomology Department <ul style="list-style-type: none"> • History of Department / Academic Programs • Mission Statement • Program Goals and Objectives • Annual operational budget (08-09) & Human Resources (Total) • Curricula Summary, Revision/Update • Admission and withdrawal policy • Faculty Summary, Qualification/ Experience • Students Feed back • Grading System • Infrastructure Summary, Labs, Greenhouse, Library • Employers Feedback • Alumni Survey • Parents Viewpoint • Question/Answer Session 	All AIC Members
	11:30-13:00	Curriculum Review: Department Resource Person <ul style="list-style-type: none"> • Course files maintenance • Attendance requirements • Examination Record • Session/Semester Record • Evaluation Instruments • Research Projects by faculty / students 	All AIC Members

	13:00-14:00	Zohar Prayers & Lunch	
	14:00-16:00	Infrastructure Visit: Department Resource Person <ul style="list-style-type: none"> • Research & Teaching Labs • Greenhouses & Experimental fields • Departmental and main Library • Computer Labs, Internet and multimedia facilities • Classrooms number & size with multimedia • Faculty Offices & facilities 	All AIC Members
	16:00-17:00	Forms Filling and meeting of AIC	

Day 2	Time	Activity	Remarks
	09:00-09:30	Meeting with Dean of the Faculty <ul style="list-style-type: none"> • Briefing on yesterday's activities of the visit • Seek guidance/help if required 	All AIC Members
	09:30-11:30	Faculty Meetings: 10-15 minutes per faculty member <ul style="list-style-type: none"> • Graduation and Higher studies • Personal Background • Area of Interest Vs teaching –learning environment • Perception about the academic programs, Students and peers • Opportunities for professional growth • Research Opportunities • Salary Perception and other incentives ▪ Teaching Load, student- teacher ratio 	Individual AIC members
	11:30-12:30	Classroom Visit: Two classrooms with 30 min. each <ul style="list-style-type: none"> • Students Interviews (B.Sc Hons final & M.Sc Hons) • Students Assessment (Department Resource Person) • Students Perception • Students Feedback ▪ Senior students views and suggestions to improve teaching-learning environment and facilities 	All AIC Members
	12:30-13:30	SWOC Analysis: faculty /students point of view <ul style="list-style-type: none"> • Major Strengths of Academic Programs • Major Weaknesses of Academic Programs • Major Opportunities for Academic Programs • Major Challenges for Academic Programs 	All AIC Members
	13:30-14:00	Concluding Meeting with Chairman of the Department	
	14:00-15:00	Prayers and Lunch	
	15:00-16:00	Detailed discussions among the Evaluation Team	
	16:00-16:30	Concluding Meeting with Dean/Exit Meeting <ul style="list-style-type: none"> ▪ Salient Findings of the visit ▪ Formulation of Recommendations ▪ Next Procedure 	All AIC Members
	16:30	End of Review Visit	

5.2 Strength and Quality of the Entomology Faculty

S.No	Name	Designation	Ph.D& Post Doc. Experience (yrs)	Res. Papers in HEC Approved Journals
1.	Dr. Muhammad Aslam	Prof./Chairman	U.S.A. Gold Medalist (36)	51
2.	Dr. Muhammad Naeem	Assoc. Prof.	U.K & U.K (10)	18
3.	Mr. Humayun Javed	Assit. Prof.	Arid Agri. Uni. Rwp (Ph. D in Progress) (22)	12
4.	Mr. Mobushir Riaz Khan	Assit. Prof.	Netherlands for Ph.D (In Progress) (05)	03
5.	Dr. Ata-ul-Mohsin	Assit. Prof.	Univ. Ankara, Turkey (18)	06
6.	Dr. M. Farooq Nasir	Assit. Prof.	Ph.D. Humboldt Univ. Berlin Germany (06)	02
7.	Mr. Muhammad Tariq	Lecturer	U.K for Ph.D. (In Progress) (03)	02
8.	Mr. Asim Gulzar	Assis. Dir/ Lecturer	U.K for Ph.D (In Progress) (03)	01
9.	Mr. Munir Ahmed	Lecturer	Ph. D from Uni. College of Agri. BZU, Multan (In Progress) (0.5)	09
10.	Mr. M. Asif Aziz	Lecturer	Ph.D from Uni. of Agri. Faisalabad (In Progress) (1.3)	-
11.	Mr. Imran Bodlah	Lecturer	Arid Agri. Uni. Rwp. (Ph. D in Progress) (01)	-

Figure in Parenthesis is experience in years

Contd...

Profile of Support Staff of Entomology Department

S.No	Name & Designation	Qualification & Experience	Major Duties
1.	Sajjad Ullah Abbasi Computer Assistance	B.A (06)	Accounts, Procurement, Progress Report, Departmental record Maintenance
2.	Attiq ur Rehman Computer Assistance (Project)	B.A (01)	Accounts, Procurement, Progress Report, Departmental record Maintenance
3.	Waqas Hussain Shah Laboratory Assistant	F.A (02)	Look after Laboratory Equipment and helping in conducting experiments
4.	Saber Hussain Laboratory Assistant (Project)	F.A (01)	Look after Laboratory Equipment and helping in conducting experiments
5.	Shahid Mehmood Khan Laboratory Attendant	Matric (12)	To help the Laboratory research staff and helping in conducting experiments
6.	Sulyan Waheed Laboratory Attendant	B.A (01)	-do-
7.	Muhammad Ashraf Naib Qasid	Middle (12)	To help the office and teaching Staff
8.	Muhammad Abrar Driver (Project)	Middle (01)	To help the office and teaching Staff

Figure in Parenthesis is experience in years

5.3 Major Courses M.Sc (Hons) - Major Entomology

Course Code	Course Title	Credit Hours
ENT-701	Research Methods in Entomology	4(1-6)
ENT-702	Environmental Entomology	2(2-0)
ENT-703	Advanced Insect Physiology	3(2-2)
ENT-704	Micro Anatomy and Histology of Insects	2(0-4)
ENT-705	Advanced Forest Entomology	3(2-2)
ENT-706	Insects of Man and Animals	3(2-2)
ENT-707	Classification of Immature Insects	4(2-4)
ENT-708	Insects Pests Management Systems	3(2-2)
ENT-709	Advances in Host Plant Resistance	3(2-2)
ENT-710	Insect Toxicology	3(2-2)
ENT-7 11	Insects in Relation to Plant Diseases	3(2-2)
ENT-7 12	Insect Cytogenesis	3(2-2)
ENT-7 13	Insect Pathology	3(2-2)
ENT-7 14	Insect Bio-chemistry	3(2-2)
ENT-7 15	Comparative Insect Embryology	3(2-2)
ENT-716	Biological Control of Insect Pests	3(2-2)
ENT-7 19	Special Problem	1(1-0)
ENT-720	Seminar-I	1(1-0)
	Thesis Research	
	Total	50

Contd...

Major Courses B.Sc (Hons) - Agric. Major Entomology

Course Code	Course Title	Credit Hours
ENT-501	Insect Morphology	4(3-2)
ENT-502	Insect Physiology	3(2-2)
ENT-503	Insect Taxonomy	4(2-4)
ENT-504	Agriculture Pests	4(2-4)
ENT-505	Plant Resistance to Insect	3(2-2)
ENT-506	Classification of Adult Insects	3(2-2)
ENT-5 07	Beneficial Insects	3(2-2)
ENT-508	Stored Product Entomology	2(1-2)
ENT-510	Range and Forest Entomology	2(1-2)
ENT-601	Pest Forecasting and Management	4(2-4)
ENT-603	Insect Ecology and Behaviour	4(3-2)
ENT-605	Insecticides and their application	3(2-2)
ENT-607	Insect Natural History	3(2-2)
ENT-609	Project Planning and Presentation	2(1-2)
ENT-61 1	Agriculture and environmental Pollution	3(2-2)
ENT-602	Internship	20(0-40)
Total		67

Curriculum Summary: (Separate for each Program)

Course Category	B.Sc (Hons)		M.Sc (Hons)	
	No. of Courses	Credit Hours	No. of Courses	Credit Hours
Core Courses	2	8	-	-
Major Courses	17	49	18	50
Support Courses	-	-	-	-
Other Courses	-	-	-	-
Total	19	57	18	50