



**National Agriculture Education Accreditation Council**

**22**

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

**on**

**Department of Plant Pathology**  
**University of Agriculture**  
**Faisalabad**

**April 2011**

## **Acknowledgments**

The Accreditation Inspection Committee (AIC) gratefully acknowledges the excellent support provided by the Dean and Chairman, Faculty, staff and students of the Department of Plant Pathology, University of Agriculture, Faisalabad. The AIC also acknowledges with thanks to Chairman, NAEAC and his team especially Mr. Naseer Alam Khan, Secretary, National Agriculture Education Accreditation Council (NAEAC), for the excellent arrangements made for conducting the visit to the Department and their valuable contributions during the preparation of the report.

**Accreditation Inspection Committee (AIC) of NAEAC**

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## *Report of the Accreditation Inspection Committee*

### **1. General:**

#### **1.1 Constitution of Accreditation Inspection Committee (AIC)**

The Chairman, National Agriculture Education Accreditation Council (NAEAC), in pursuance to its mandate given by the HEC under clause 10 subsections (d) and (1) of the byelaws of NAEAC, constituted an Accreditation Inspection Committee (AIC) for the external review of the Degree Programs (B. Sc (Hons) and M. Sc (Hons) of the Department of Plant Pathology, University of Agriculture, Faisalabad (UAF). The AIC consists of the following members who visited the UAF on March 28-29, 2011 for the inspection and in-depth review of the degree programs of the Department.

- |     |   |          |
|-----|---|----------|
| i)  | Prof. Dr. Muhammad Arif<br>Chairman,<br>Department of Plant Pathology,<br>Khyber Pakhtunkhwa Agricultural University,<br>Peshawar | Convener |
| ii) | Dr. Ghulam Mohy-ud-Din<br>Plant Pathologist,<br>Plant Pathology Research Institute,<br>Jhang Road, Faisalabad                     | Member   |

#### **1.2 Term of Reference of AIC**

The main terms of reference (TOR) of the committee were as follows:

- To validate the Self-Assessment Reports (SARs) of the degree programs (B. Sc and M. Sc (Hons)) prepared by the Department/discipline
- To carry out an external evaluation of the degree programs in a degree program in a transparent, neutral, holistic and participatory manner for accreditation and rating of degree programs based on evaluation criteria given in the Evaluation Manual.
- To submit synthesized and concise analytical report (4-5 pages) consisting of SWOT Analysis and actionable recommendations based on interactions with the Dean, Chairman, Faculty members, students and support staff and alumni as well as detail visit of physical infrastructure, facilities and other teaching-learning resources available for the degree programs.
- To submit clear, specific and justified degree programs accreditation and rating recommendations in the AIC report along with completed scored and duly signed Evaluation Manual to Chairman-NAEAC Chairman within two weeks of the on-site visit.

The itinerary of the AIC visit schedule is given at Annex-I.

### **1.3 The University and the Department**

Department of plant pathology came into existence in 1906 within the discipline of botany and as an independent department in 1947. Since then this department is striving for the awareness and reduction of crop losses through proper diagnosis of various factors responsible for plant diseases and then applying economical, feasible and effective strategies. This department has well defined research groups with their well defined objective. These research groups are Plant mycology, bacteriology, nematology, virology, epidemiology, seed pathology and mushroom cultivation. This department has produced eminent Plant Pathologists, who have been serving the country in different capacities. The objectives of these research groups are achieved through teaching and research by the students and staff members.

The program of Plant Pathology is designed to provide necessary skills in understanding pathological problems. Its curriculum highlights the emerging issues of new and economically important plant diseases. Moreover, disease management has been given substantial importance in curriculum. Additionally, new and modern tools have been introduced to conduct advanced research and the department is committed to quality teaching, research and development of trained manpower in the discipline of Plant Pathology.

Department has 14 faculty members out of which 12 are PhD and only two are M. Sc (Hons), they have also submitted their PhD thesis. Most of the staff members are well skilled with local and foreign trainings in form of Post doctorate and short trainings. This department has strength of 12 support staff in various laboratories and field that are assisting students and faculty in teaching and research activities in the Department.

Since its inception, the Department has produced 41 PhDs, 624 and 1004 M. Sc (Hons) and B. Sc (Hons) graduates, respectively. The Plant pathology graduates of the Department are serving in public and private research and development organizations both inland and abroad. At present, the Department has enrolled 190, 140 and 34 students of B. Sc (H), M. Sc (H) and Ph. D, respectively.

This department has contributed significantly in terms of quality research publication and published 674 research articles in journals of national and international repute. Out of 674, 54 research articles were published in referred journals of international repute whereas 59 research articles were published in national journals having impact factor and 561 research articles were published in HEC recognized journals. Furthermore, the faculty of the Department has published four text books, various additions and practical manuals. This department has published and distributed 67 popular articles in national and local languages as part of technology transfer to farmers. The department has conducted numerous seminars, symposia, training workshops and field days including four conferences of national and International levels.

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To keep the latest development in the field of Plant Pathology, the department constantly incorporating molecular approaches in teaching and research to enable graduates to get career opportunities at national and international levels.

### **1.4 Program Mission and Objectives**

#### **Mission Statement**

To maximize agriculture produce by reducing crop losses through proper disease diagnosis, effective, economical and feasible management strategies while conserving and exploiting the natural resources

#### **Program Objectives**

- To develop the department on modern and innovative lines for teaching and research for graduates and post-graduate students.
- To impart basic and applied education through high quality knowledge and skills in the field of plant pathology advanced analytical techniques for disease diagnosis, pathogen detection and characterization, diseases epidemiology and management.
- To guide the students and conduct research on diseases of economic and national importance.
- To strengthen the discipline with incorporation and integration of advanced knowledge and approach of related subjects such as Molecular Biology, Genetics Engineering, Biotechnology, Host parasite interaction and vector involvement.
- To address new and emerging disease problems.
- To inculcate culture of research in teaching faculty and students.

### **1.5 Academic Programs**

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

1. B. Sc (Hons) Agriculture specializing in Plant Pathology
2. M. Sc (Hons) Agriculture specializing in Plant Pathology
3. Ph. D in Plant Pathology

## **2. Criterion-wise Program Evaluation and Analysis**

### **2.1 Criteria-I Strength and quality of faculty**

The AIC met individually or in groups with almost all of the faculty members in the Department during the visit to the University. The AIC members discussed various issues with faculty members as per TOR of AIC such as academic and professional background, areas of their research and recorded their views on opportunities, professional input, strength and weakness of the degree programs of the Department. Presently there are 14 faculty members; among them, one is HEC sponsored Foreign Faculty working in the Department and his contract will expire on March 31, 2011. Out of 13, there are eight faculty members were recently appointed as Assistant Professors on tenure track system (TTS). Among 14, 12 faculty members are holding Ph. D degrees. Out of 14 faculty members, three each are of the cadre of Professor, no Associate Professor, nine Assistant professors, one each of lecturer and foreign faculty, respectively. A summary of the faculty strength, qualification, status, teaching experience and publications is given in Annex-II-IV.

Four faculty members are over 15 years of teaching and research experience and other are young with minimum one to eight years of teaching and research experience. The work load shown for Professors, Assistant Professors and a Lecturer is behind the scope of quality education and not as per HEC guidelines. It is interesting to mention that junior faculty has less teaching workload as compared to the seniors (Annex-IX). It is interesting for the AIC that a professor in the Department is teaching nine courses, conducting research of two externally funded projects, supervising 18 M. Sc (Hons) and 12 Ph. D students and also taking care of the Department as Chairman. Similarly, other faculty members teaching four to nine courses, supervising six to 16 post graduate students and some have one to two externally funded research projects. Existing workload of the faculty is not only against the norms of the higher education but a serious question on quality education. The workload of the faculty of the Department is against HEC guidelines on workload for Professors, Assistant Professors and Lecturers.

Existing teaching load: Professor = 121:1, 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= 121:1, Associate Professor= 364:0, Assistant Professor= 45.5:1, Lecturer=182:1 and overall 28:1

Student:-Teacher ratio in B. Sc (Hons ) program=15:1

Student:-Teacher ratio in M. Sc (Hons) program=11:1

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The faculty members are well qualified and possess adequate teaching experience in their respective disciplines. The Department has reasonable number of faculty representing two major areas of specialization such Bacteriology and Nematology. However, the Department is deficient with experienced faculty in major area such as Mycology (Fungal Systematic and Fungal Pathology) and Plant Virology. The committee felt that the faculty staff was inadequate in commensurate with the current needs. However, the number of students and their choice for various sub-disciplines is also on the increase which necessitates considering addition to the faculty staff. The faculty strength in Phyto-bacteriology is adequate. The faculty strength of Nematology is reasonable due the presence of one foreign faculty in addition to the regular faculty in the Department.

Training of faculty is inadequate as there is hardly any established system. There is an urgent need to establish such a system on regular basis. Most of the young faculty urged for training aboard such post-doctorate and short term trainings in their respective disciplines. AIC noticed that only a few faculty members earned Ph. D degree from technologically advanced countries and most of the faculty obtained their degrees locally, therefore, local Ph. D are involved to produce more Ph. Ds. The University must plan for faculty development and career planning as a policy measure. The welfare and the up-gradation of teachers both in their competence and career should be close to the heart of the management if the long term goals of higher education are to be achieved.

It was satisfying to note that the Department has organized conferences, symposia and training courses regularly. These events provided a good opportunity to the young faculty and the students to widen their knowledge base and open vistas of both teachers and the taught about the prospects and problems of plant health.

Majority of faculty members are satisfied with their job, however, some are only partially satisfied. Job satisfaction is a function of both internal working atmosphere in the department as well as in the university besides the financial benefits and freedom of professional activity. The faculty members appointed on TTS has shown serious concern on future of TTS scheme, if the could not sustained with one or another reason, the faculty need to absorbed the Department on basic scale in same cadre. The Committee diagnosed a serious concern and it was also reported by the senior faculty that some of the senior faculty members were not giving due time for research particularly in the field to provide required guidance to the students. Due to this negligence, the students cook their data for their thesis research. The committee feels that the situation may be reviewed critically for improvements. Most of the faculty members were satisfied with their salaries but have a consistent complaint for ever increasing living costs and non payment of house requisition.

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### **2.2 Criteria-II. Curriculum design and development**

The curriculum for the degree programs under accreditation of the Department of Plant Pathology was approved by HEC (Annex-XI). The presently offering following three degree programs

1. B. Sc (Hons) Agriculture (Plant Pathology), eight semesters degree requirement is 151 credit hours, including 15 credit hour internship in the eighth semester.
2. M. Sc (Hons) Agriculture (Plant Pathology), four semesters with 45 credit hour's course work and research thesis.

There are a definite number of credit hours for each course. Internship is an essential pre-requisite and the student has to complete it successfully before the award of the degree. Discussion with the teachers and students revealed that all the rules and conditions are being properly fulfilled.

The AIC observed that the curriculum was designed in line with the mission statement and the HEC guidelines. The courses reflect the needs of the society and cater for the latest trends in Plant Pathology. Necessary amendments or additions in the curriculum were also made by the Board of Studies, with final approval by the Dean of the faculty and the university academic council. The curriculum is almost uniform with other Departments in Agricultural Universities and revised by the National Curriculum Revision Committee under auspices of HEC.

Feedback from stakeholders is occasional. The students strongly commented for more emphasis on practical/laboratory work. The students further emphasized that they must have opportunity to attend lectures from scholars in different areas of Plant Pathology in term of lectures, symposia, workshops, national conferences, etc. in order to learn recent trends in Plant pathology. However, the curriculum of the programs is sufficiently flexible to accommodate any changes arising out of the latest trends in the subject.

The committee had gone through the course contents and found that objectives of all the courses for B. Sc, M. Sc. and Ph. D were not defined and according to the HEC guidelines. The courses were revised and some new courses were developed during the year 2005. The courses and credit hours are designed in such a way that all the contents are be covered in a stipulated time period (16 to 18 weeks/ Semester). It has been observed that in certain courses, books of old editions are still recommended as text books which need to be reviewed to add new books so as to update the knowledge of students with new trends and technologies. It was suggested by the AIC that Plant Pathology curriculum recently revised (Revised Curriculum-2010) should be implemented in letter and spirit to improve the quality of degree programs. While interviewing the faculty, it was noted that all the faculty members maintain their course files and provide lecture wise course detail, time of mid-test, assignments,

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quizzes and final test to the students in their first meeting at the beginning of a semester. Evaluation system of each course is in place and effective.

### **2.3 Criteria-IV. Infrastructure and learning resources**

**2.3.1 Research and Teaching Laboratories:** The Department has adequate number (nine) of teaching and research laboratories (Annex-V). Laboratories are spacious but without air-conditioning facilities, safety arrangements and security plans.

**2.3.2 Laboratory Equipment:** Two laboratories (Phytobacteriology and Nematology) out of nine were found adequately equipped. Major equipment such as incubators, refrigerators, autoclave, microscopes, laminar flow unit, colony counter, homogenizer, Walk-in Plant growth chamber, water distillation unit, etc. were in place to cater the need of under-and postgraduate students. Other laboratories were spacious but not adequately equipped. The limited chemicals were available and some cases out dated chemicals were on displays/use. Equipment regarding molecular approaches is lacking such as stereoscope, centrifuge (low and ultra), PAGE electrophoresis apparatus, PCR-machine, Spectrophotometer, relevant software, chemicals and bio-chemicals. AIC further recorded that the supply of laboratories chemicals and diagnostics were inadequate and insufficient to fulfill the requirement of quality teaching and research activities at degree programs under accreditation. Most of the subjects, the laboratory manuals were available. Student's views about practical learning were not encouraging and reported that most of the practical were limited to laboratory demonstration.

The availability and qualification of laboratory staff is given in Annex-III. The AIC noticed that there is adequate number of support staff available in the Department but technical competency of the staff was not relevant. The support staff was satisfied with the department management and the students. However, they were dissatisfied with the existing promotion and career opportunities in the Department/Faculty. In service training of support staff was not in place.

#### **2.3.3 Safety arrangements**

There is no proper safety arrangement and no security plan is in place in case of emergency. No fire extinguishers have been installed in any laboratory. No first aid kits/facilities provided in the laboratories/department.

#### **2.3.4 Greenhouses and Experimental Fields**

The facility of one each of screen house and glass house was available to the Department. More environmentally controlled glass house facility is required to cater research activities especially when out side environment is not conducive. Sufficient well irrigated field area is available at the campus for experimentation with adequate farm machinery.

### **2.3.5 Departmental and Main Library**

**Departmental Library:** Department Library exists but required relevant departmental books, journals, etc were not adequate. There is no budget for the purchase of books at Department level.

**Central library:** There is a central library having covered area 45,000 sq. ft, centrally air-conditioned and containing adequate learning resource facilities. It contains a total of 156796 books on various agricultural disciplines and allied sciences. About 1500 books directly or indirectly related to Plant Pathology and allied subjects. The library is linked with digital library developed by the HEC, 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. Although, the main library having seating capacity of 1500 and 48 internet connected computers, keeping in view the large number of under- and post-graduate students, more seating arrangement and computers with printers and internet facilities are required. There are eight local and foreign journals available of discipline. However, more international journals in Plant Pathology are urgently required.

**2.3.6 Computer Laboratory:** The Department has a mini-lab for computers. The students have access to main computer laboratory of the University.

**2.3.7 Classrooms and teaching aids:** There are only three classrooms for under and post graduate students each with 3312 sq. ft of size. There is shortage of classrooms. Increasing number of students results in the congestion of classrooms which affects adversely the quality of teaching. Teaching aids such as multimedia, overhead projectors, etc were available in laboratories and class rooms of the department (Annex-VII). There is need to have at least two more class rooms. The facilitation of class rooms with multimedia, and other teaching aids are required.

**2.3.8 Faculty Offices:** Only 14 faculty offices are available. Senior faculty members are sitting in rooms adjacent to the laboratories and have their computer purchased by them or in project grants.

### **2.4 Criteria-III. Students support and progression**

The number of students enrolled various semesters of under- and postgraduate programs shows an overwhelming response (Annex-VIII). HEC guidelines were followed for admissions both at B. Sc (Hons) and M. Sc (Hons) degree programs. The students support such as hostel, sport, medical, transport facilities and financial aid and academic counseling support was in place and available to the students. Financial support is available at University as different need and merit based scholarships but the number of such scholarships not at par the requirement and need to increase so that maximum students can avail scholarships opportunities.

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Student interaction with teachers was excellent and their attitude toward studies was found encouraging. The student's attendance record was well managed and student perception about degree programs was positive. The AIC 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 such as Ayub Agricultural Research Institute (AARI), National Institute of Biotechnology and Genetic Engineering (NIBGE), etc for internship throughout the province where they acquire practical training and submit a formal report. Students were questioned to judge their knowledge in different areas of Plant Pathology 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; the students of plant pathology have also an association of young phyto doctors. 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/Placement Bureau. This directorate is actively guiding and introducing the graduates of the university to different job opportunities.

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.

- 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.
- □The department has developed full harmony among the faculty members and students. The students were quite appreciative in connection with student –teacher interactions
- 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.

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### **2.5 Criteria-V. Research and consultancy activities**

The research and consultancy activities at the Department were adequate as reflected by the research projects completed and ongoing (Annex-VI). It is noted that the faculty of the Department is actively engaged in research work and is contributing significantly for finding solution to major disease problems of the province. A significant number of research publications have been made through the research conducted by the faculty members as is evident from the publications made. The department has developed a reasonable research culture and the staff is motivated to contribute to research journals. However, more encouragement should be provided to faculty staff to carry forward the spirit and implementation of research programs. The Department has completed 18 research projects so far and six research projects are on-going. The detail of faculty research is given in Annex-IV(C).

The faculty of the Department has contributed significantly in term of research publications other than student's theses. Faculty published 674 research articles in journal of national and international repute. Out of 674, 54 research articles were published in referred journals of international repute, 59 research articles were published in national journal having impact factor and 561 research articles were published in HEC recognized journals. Further more, the faculty of the Department has published four text books, various additions of practical manuals. This department has published and distributed 67 popular articles in national and local languages as part of technology transfer to farmers. The department has conducted numerous seminars, symposia, training workshops and field days including four national and International conferences. Farmers' awareness campaigns are executed to educate the farmers about disease problem in the province. Participation of the faculty in the farmers Melas, exhibitions and field days was obligatory. A significant number of popular articles, leaflets, bulletins and flyers were produced and distributed among farming community and displayed for the information to the public at large. Funds available to the Department for research and solution of farmer's problems were found inadequate and insufficient. Departmental research activities mainly based on externally funded research projects.

### **2.6 Criteria-VI. Governance and leadership**

University of Agriculture Faisalabad (UAF) 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 Advanced Studies and Director Quality Control. There are four faculties and Faculty of Agriculture is of the major faculty of the University. The faculty headed by a competent and experienced scientist as Dean and Department by the Chairman.

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 and Planning Unit, and directorates of

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Student Affairs, Quality Control and 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. The budget allocation for operational expenses and research are extremely low as compared to the requirement and expectations.

At present, Punjab Agriculture Research Board (PARB) is seems main contributor for research funds. However, faculty has earned reasonable amount of research grants from UAF resources or other organization such as HEC and Pakistan Science Foundation (PSF). AIC recommends that young faculty must be encouraged to earn competitive grants for research activities in the Department and postgraduate students should be involved as research associates to get practical experience and knowledge. The students must be encouraged to become members of professional and scientific bodies to have interactions 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. AIC was satisfied about the departmental activities for the development of data base of Alumni and their feed back in future planning of the Department. Support staff was quite appreciative for their involvement in the various activities of the Department.

### **2.7 Criteria-VII. Adoption of Best Practices**

The AIC confirm that mechanism for ensuring quality exists. However, improvement is required needed in various areas of conduct. Some innovative practices adopted by Department of Plant Pathology and short fall are highlighted as under:

- Teacher and student assessment system has been implemented which has created sense of responsibility and all time attentiveness.
- Assessment of individual courses based on feed back from students also deserves appreciation.
- Evaluation of students is based on mid term examination, assignments and final examination which requires a student to be attentive and responsive through out the semester and improve his abilities.
- Permission is given to the students to check their answer books and resolve anomalies if any for their satisfaction which is a good sign for confidence of both student and teacher.
- Introduction of comprehensive exam/ paper covering major subjects is an important tool for revision of important topics before award of degree.
- Work load of faculty members in the Department such as a faculty is teaching nine courses, conducting research of two externally funded projects, supervising 18 M. Sc (H) and 12 Ph. D students in addition the responsibility of Chairman

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Office is behind the scope of quality assurance and not in line with HEC guidelines. Similarly, other faculty members teaching four to nine courses, supervising six to 16 post graduate students and some have one to two externally funded research projects.

- The Department is in violation of HEC guidelines in connection with credit hours requirement of B. Sc (H) and M. Sc (H) program. The requirement of major courses for the degree of B. Sc (H) in agriculture specialization in Plant Pathology 18-20 courses with total 56-60 credit hours. At present, the Department offer B. Sc (H) degree program with 87 credit hours. Similarly, total major courses requirement for M. Sc (H) in agriculture specialization in Plant Pathology is 24 credit hours and the Department offering 71 credit hours.
- Existing workload of the faculty is not only against the norms of the higher education but a serious question on quality education. The workload of the faculty of the Department is against HEC guidelines on workload for Professors, Assistant Professors and Lecturers.

### **3. Overall Analysis of the Degree Programs based on Strength, Weakness, Opportunities and Threats (SWOT)**

#### **3.1 Major strengths**

- The faculty is highly qualified (85% PhDs) and experienced with vision and capacity to impart quality education. Four faculty members are HEC approved supervisors
- The Department have necessary infrastructure with five functional laboratories, three class rooms, 14 faculty offices, departmental library and computing facility. The Department is further facilitated with an experimental farm, screen-and glasshouse facility and main library with sufficient learning resources for undergraduate and post-graduate teaching and research activities.
- The faculty has been active to hunt externally funded research grants. So far 18 research projects have been completed and six research projects in hand from various donor agencies.
- The Department has produced 41 PhDs, 624 M. Sc (Hons) and 1004 B. Sc (Hons) graduates. The current enrollment of the Department; 190, 140 and 34 students of B. Sc (H), M. Sc (H) and Ph. D, respectively.
- The faculty of the department published 674 research articles in journal of national and international repute. Out of 674, 54 research articles were published in referred journals of international repute whereas 59 research articles were published in national journal having impact factor and 561 research articles were published in HEC recognized journals. Further more, the faculty of the Department has published four text books, various additions practical manuals. This department has published and distributed 67 popular articles in national and local languages as part of technology transfer to farmers.
- The department has conducted numerous seminars, symposia, training workshops and field days including four conferences at national and International levels.
- The Department holds the office of Permanent Secretary of Pakistan Phytopathological Society (PPS) and publishes HEC recognized journal-Pakistan Journal of Phytopayhology.

#### **3.2 Major weaknesses**

- Over 60% of the faculty members are on TTS with no job security and deficient of quality teaching and research experience
- Department needs to improve in capacity building by inducting quality faculty in Plant Virology, and Mycology and Fungal Pathology and Physiological Plant

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Pathology. Most of the regular/TTS faculty of the Department (85%) has local Ph. D degrees; therefore, to broaden their exposure need short term trainings and post-doctorate from technological advanced countries.

- Most of the laboratories are deficient with quality and updated equipment, no or least quantity of chemicals, unsatisfactory safety arrangement, fume hoods and security system. Laboratories are deficient with modern equipment such as ultracentrifuge, Polymerase Chain Reaction (PCR) equipment, HPLC, GC, spectrophotometers, Gel electrophoresis and documentation related equipment, insufficient -20 and -80C refrigeration storage of specimen and kits, etc.
- Prescribed rules, procedures and standards were not properly followed for selection of supervisors and faculty workload. The work load shown for Professors, Assistant Professors and a Lecturer is behind the scope of quality education and not as per HEC guidelines. The student: teacher ratio for both under-and post graduate programs is not as per HEC guidelines
- Laboratories with inadequate and un-trained or irrelevantly trained supporting staff with no back up service for the equipment from supplier or from the University.
- No financial back up for internship programs at B. Sc (H) degree program. Similarly, no finances allocated to the Department for conduction of postgraduate research.
- Limited grant or extremely insufficient financial resources for operational expenses and no grant for the improvement of efficiency of the faculty and the supporting staff.
- Un-satisfactory career and no in-service training opportunities for support staff.
- Lack of interest in research work by the students and poor linkage with international research institutions and universities.
- Serious shortages of power supply during working hours and no power back up system for laboratories

### **3.3. Major opportunities**

- Due to the existence of Punjab Agricultural Research Board (PARB) at provincial level, the faculty may have better opportunities to hunt funds their research and development programs
- The Department is located in major cotton growing areas of the Punjab, therefore, international donors could be attracted for funding to solve cotton leaf curl and other diseases of cotton. This will further improve the opportunities for research and development activities of the Department.
- Due to over 50 years of its establishment, a long list Alumni of the Plant Pathology graduates may exists; therefore, this opportunity could be streamlined to enhance curricular and extra-curricular activities of the Department. The

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association may assist the Department in up gradation of its physical, human and financial resources

- Strong linkages exist with various research and developmental organizations province and rest of the country. These linkages needs to be further improved to provide better opportunities for the undergraduate and post-graduates students in their academic degrees and provision of employment
- Inter universities knowledge exchange/sharing and invitations of international scholars for short visits managed for knowledge exchange and capacity building of local instructors needs to provide better opportunities for professional growth and the post-graduates students in their academic degrees and improvement

### **3.4. Potential threats**

- Retaining the TTS faculty (if the facility been withdrawn by HEC) is a challenge which can be met by gradual absorption of the faculty on BS system, providing attractive salary packages, better atmosphere and adequate research facilities to the faculty staff.
- Laboratories with inadequate and un-trained or irrelevantly trained supporting staff with no back up service for the equipment from supplier or from the University is also a potential threat to the degree programs of the Department.
- Shortages of power supply during working hours and no power back up system for laboratories could spoil the research materials, cultures and diagnostic kits. Such power shortage curtails the working hours for teaching and research, and could be a potential threat.
- Serious efforts are required to enhance the operational budget of the Department and also mobilize the faculty to hunt research grants from national and international donor agencies

### **Stakeholders feed back**

- A system should be involved which should provide all stakeholders' feed back on the performance of the graduates of this university.
- Computer and analytical skills of the graduates should be improved to enable them to match market demands and face technological advancements.
- Communication and presentation skills with leadership qualities of graduates to be improved.
- Problem solving and field oriented research should be encouraged

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### **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. Most of the parents are satisfied with education and job opportunities in Plant Pathology.

### **Students**

Most of the students at post-graduates level suggested availability of scholarships, funds for their degree research and conceptual teaching with appropriate teaching methods. 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 equipments. Internship and practical training should be a regular feature for all students with a view to develop a strong and effective program

### **Employers Feedback**

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

### **Alumni Survey**

Survey showed that old students possess sound knowledge, good communication skill and some of them good management and leadership qualities.

## **4. Recommendations**

### **4.1. General recommendations**

#### **General Recommendations**

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

- Over 60% of the faculty members are on TTS with no job security and deficient of quality teaching and research experience. The TTS faculty gradually appointed on regular basis for their job security. This will improve faculty strength in the Department.
- The Department should appoint regular faculty in two core areas of Plant Pathology such as Plant Virology and Fungal Pathology (and Taxonomy) as in Molecular Plant Pathology and Physiological Plant Pathology on priority basis.

### *Report of the Accreditation Inspection Committee*

- Most of the regular/TTS faculty of the Department (85%) has local Ph. D degrees; therefore, to broaden their exposure need short term trainings and post-doctorate from technological advanced countries.
- The laboratories have basic equipment but quality and updated equipment are deficient, no or least quantity of chemicals, unsatisfactory safety arrangement, fume hoods and security system. Laboratories are deficient with modern equipment such as ultracentrifuge, Polymerase Chain Reaction (PCR) equipment, HPLC, GC, spectrophotometers, Gel electrophoresis and documentation related equipment, insufficient -20 and -80C refrigeration storage of specimen and kits, etc. The quality research work and quality out come/findings is the major thirst. The laboratories should be improved through installation of new and updated equipment and chemical, etc.
- To maintain quality of the degree programs of the Department, prescribed rules, procedures and standards must be adopted in letter and spirit. Improvement in internal monitoring and evaluation system for teaching and research should be adopted. The work load shown for Professors, Assistant Professors and a Lecturer is behind the scope of quality education and not as per HEC guidelines. The student: teacher ratio for both under-and post graduate programs is not as per HEC guidelines
- Laboratory staff should be replaced with adequate and trained supporting staff. The capacity of existing supporting staff could be improve through short-term trainings in land and abroad.
- Financial assistance should be provided to the internship programs at B. Sc (H) degree program and finances assistance should be allocated to the Department for conduction of postgraduate research.
- Sufficient financial resources should be provided to the Department for operational expenses and financial grant should be provided for the improvement of efficiency of the faculty and the supporting staff.
- Serious effort is required for fulfilling the power shortages both in offices and the laboratories.
- Professional cooperation and trust among senior faculty should be improved.
- The capacity of young faculty members may be enhanced through short-term and long-term (doctoral and post-doctoral) training abroad.
- The department library should be enriched with induction of books, local and international journals, literature and computers on continuous basis.
- Safety arrangements and security plans are not in place. Emergency exits may be arranged. The laboratories should also be well equipped in first aid kits/facilities.

## ***Report of the Accreditation Inspection Committee***

- Provision of appropriate funds for the purchase of glass ware, chemicals, diagnostic kits and other day-to day laboratory supplies to the faculty for their teaching and research activities.
- To broaden the view of the students and teachers, more linkages should be developed with institutions of higher learning both at national and international levels.
- Participation of faculty members in conferences, seminars and workshops may be encouraged to improve exposure and interaction with peer groups worldwide.

### **4.2 Final Recommendation**

The academic Programs of the Department of Plant Pathology are well-strengthen in major areas such as Phyto-bacteriology and Plant Nematology. At present, the department has infrastructure to cater the need of present enrolment of graduate and postgraduate levels of the above mentioned plant pathological disciplines. The department needs to address major 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 Plant Pathology [(B. Sc (Hons) and M. Sc. (Hons)], University of Agriculture, Faisalabad in the “X” category of National Agriculture Education Accreditation Council/Higher Education Commission with scope for up-gradation to category “W” after appropriate improvements in due course of time.

### **4.3 Comments and signature of the Chairman:**

I agree with the observations and recommendations made by the Accreditation Inspection Committee (AIC) in this report which is based on the discussions and visit to different facilities of this Department.



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Chairman  
Department of Plant Pathology,  
University of Agriculture,  
Faisalabad

**Dated: April 23, 2011**

*Report of the Accreditation Inspection Committee*

**4.4 Name, Designation and signatures of the AIC Members**

**Prof. Dr Muhammad Arif**  
Chairman,  
Department of Plant Pathology,  
KPK Agricultural University,  
Peshawar

**(Convener)**



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Dr. Ghulam Mohy-ud-Din  
Plant Pathologist,  
Plant Pathology Research  
Institute,  
Jhang Road, Faisalabad

**(Member)**



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**Dated: April 25, 2011**

## Report of the Accreditation Inspection Committee

### ANNEXURE-I

### Itinerary of Accreditation Visit

**Host Institution:** University of Agriculture, Faisalabad  
**Department/ Program:** Department of Plant Pathology  
 B. Sc (Hons) & M. Sc (Hons)

**Review Team:**

1. **Prof. Dr. Muhammad Arif** (Convener)  
 Chairman,  
 Department of Plant Pathology  
 Khyber Pakhtunkhwa Agricultural University,  
 Peshawar
2. **Dr. Ghulam Mohy-ud-Din**  
 Plant Pathologist,  
 Plant Pathology Research Institute,  
 Jhang Road, Faisalabad

**Plant Pathology Department  
 Coordinator:**  
**NAEAC Resource Person:** Mr. Naseer Alam Khan, Secretary NAEAC

#### Schedule of Visit: March 28-29, 2011

Day 01	Time	Activity	Remarks
	09:00-10:30	<b>Presentation: Chairman, Department of Plant Pathology</b> <ul style="list-style-type: none"> <li>• History of department / academic programs</li> <li>• Mission statement</li> <li>• Program goals and objectives</li> <li>• Annual operational budget (10-11) &amp; human resources (Total)</li> <li>• Curricula summary, revision/update</li> <li>• Admission and withdrawal policy</li> <li>• Faculty summary, qualification/ experience, supporting staff</li> <li>• Students' feed back</li> <li>• Grading system</li> <li>• Infrastructure summary, labs, greenhouse, library</li> <li>• Employer's feed back</li> <li>• Alumni survey</li> <li>• Parent viewpoint</li> <li>• Question/answer session</li> </ul>	All AIC Members
	10:30-12:00	<b>Curriculum Review: Department of Plant Pathology Coordinator</b> <ul style="list-style-type: none"> <li>• Course files maintenance</li> <li>• Attendance requirements</li> <li>• Examination record</li> <li>• Session / semester record</li> <li>• Evaluation instruments</li> <li>• Research projects by faculty / students</li> </ul>	All AIC Members
	12:00-13:00	<b>Infrastructure Visit: Department Resource Person</b> <ul style="list-style-type: none"> <li>• Research &amp; teaching labs</li> </ul> Greenhouses & experimental facilities	
	13:00-14:30	<b>Zohar prayer and Lunch</b>	
	14:30-16:00	<ul style="list-style-type: none"> <li>• Departmental and main library</li> </ul>	

**Report of the Accreditation Inspection Committee**

		<ul style="list-style-type: none"> <li>• Computer labs, internet and multimedia facilities</li> <li>• Classrooms number &amp; size with multimedia</li> <li>• Faculty offices &amp; facilities</li> </ul>	All AIC Members
	16:00-17:00	<b>Meeting of AIC for review and synthesis</b>	
<b>Day 02</b>	<b>Time</b>	<b>Activity</b>	<b>Remarks</b>
	09:30-11:30	<b>Faculty Meetings: 10-15 minutes per faculty member</b> <ul style="list-style-type: none"> <li>• Graduation and higher studies</li> <li>• Personal background</li> <li>• Area of interest vs teaching –learning environment</li> <li>• Perception about the academic programs, students and peers</li> <li>• Opportunities for professional growth</li> <li>• Research opportunities</li> <li>• Salary perception and other incentives</li> <li>• Teaching load, student- teacher ratio</li> <li>• Meeting with supporting staff</li> </ul>	Individual AIC members
	11:30-13:00	<b>Classroom Visit: Two classrooms with 45 min. each</b> <ul style="list-style-type: none"> <li>• Students interviews (B. Sc Hons final &amp; M. Sc Hons)</li> <li>• Students assessment (Department coordinator)</li> <li>• Senior students view and suggestions to improve teaching-learning environment and facilities</li> </ul> <p><b>* In case of no class, meeting of AIC members with two groups of undergraduate and graduate (M. Sc Hons) students</b></p>	All AIC Members
	13:00-14:30	<b>Prayers and Lunch</b>	
	14:30-16:00	<b>SWOT Analysis: faculty /students point view</b> <ul style="list-style-type: none"> <li>• Major strengths of academic programs</li> <li>• Major weaknesses of academic programs</li> <li>• Major opportunities for academic programs</li> <li>• Major threats for academic programs</li> </ul>	All AIC Members
	16:00-16:30	<b>Concluding meeting with Chairman of the Department</b>	
	14:30-15:30		
	15:30-16:30	<b>Detailed discussions among the Evaluation Team</b>	
	16:30-17:30	<b>Concluding /Exit meeting with Dean</b> <ul style="list-style-type: none"> <li>• Salient findings of the review</li> <li>• Formulation of recommendations</li> <li>• Next procedure</li> </ul>	All AIC Members

**Report of the Accreditation Inspection Committee**

**ANNEXURE-II**

**List of Faculty members indicating name, designation, highest qualification and In-line experience**

<b>S. No.</b>	<b>Name of Faculty</b>	<b>Designation</b>	<b>Highest Qualification</b>	<b>Teaching Experience (years)</b>
1	Dr. Nazir Javed	Professor	PhD	22.4
2	Dr.M. Aslam Khan	Professor	PhD	21
3	Dr. S. T. Sahi	Professor	PhD	22
4	Dr. Safdar Ali Anwar	Professor	PhD	16
4	Dr. Aftab Ali Bokhari	Assistant Professor	PhD	20
5	Dr. Abdul Rehman	Assistant Professor	PhD	8.7
6	Dr. Nasir Ahmad Khan	Assistant Professor	PhD	4.10
7	Dr. Imran-ul-Haq	Assistant Professor	PhD	1.5
8	Dr. Sajid Aleem	Assistant Professor	PhD	1.5
9	Mr. Safdar Ali	Lecturer	M.Sc. (Hons)	6.6
10	Mr. Amer Habib	Assistant Professor	M.Sc. (Hons)	6.6
11	Dr. Muhammad Atiq	Assistant Professor	PhD	3.5
12	Dr. Abdul Hannan	Assistant Professor	PhD	1.5
13	Dr. Luqman Amrao	Assistant Professor	PhD	Recently appointed

**ANNEXURE-III**

**List of supporting staff indicating name, designation, highest qualification and In-line experience**

<b>S. No</b>	<b>Name of supporting staff</b>	<b>Designation</b>	<b>High Qualification</b>	<b>In-line experience (Years)</b>
1	Muhammad Anwar	Assistant	F.A.	23
2	Muhammad Latif	Farm Supervisor	Matric	25
3	Liquat Ali Hashmi	Lab. Supervisor	S.S. C	26
4	Abdul Sattar	Stenographer	M.A.	20
5	Shoukat Ali Shafqat	Lab. Technician	F.A.	22
6	Ishtiaq Ahmad Hashmi	Lab. Technician	F.A.	22
7	Muhammad Yousaf Zahid	Lab. Assistant	B.A.	18
8	Anwar Iqbal	Lab. Assistant	B.A.	9
9	Muhammad Sohail Irfan	Jr. Lab. Asstt.	B.A.	7
10	Abdul Muaeed	Jr. Lab. Asstt.	F.A.	6
11	Aleem Ahmad	Beldar	Middle	3
12	Aziz Masi	Head Sweeper	Primary	27
13	Ijaz Ahmad	Chaukidar	Primary	5
14	Akbar Ali	Naib Qasid	Middle	9

**Report of the Accreditation Inspection Committee**

**ANNEXURE-IV (A-C)**

**Faculty Information for Degree Program of Department of Plant Pathology, UAF**

A. Faculty Information

Employment Nature	Professor		Associate Professor		Assistant Professor		Lecturers		Total
	PhD	MS	PhD	MS	PhD	MS	PhD	MS	
Full Time	3		-		01		-	02	06
Foreign faculty	1*	-	-	-	-	-	-	-	01
Contractual	-	-	-	-	07	-	-	-	07
Part Time	-	-	-	-	-	-	-	-	-
Total	4	-	-	-	08	-	-	02	14

\*HEC sponsored foreign faculty

B. Full Time Faculty Stability

End of Year	Total Faculty	Resigned	Retired	Terminated	New Induction during the year
2005-2006	14	-	2	-	-
2006-2007	12	-	-	-	-
2007-2008	12	1	--	-	-
2008-09	11	2	-	-	-
2009-10	11	-	-	-	2
2010-11	14	-	-	-	3

**Report of the Accreditation Inspection Committee**

**C. Faculty Profile**

Name	Academic Degree		Major Area	Teaching Experience (years)		Publication Record							
	Degree	Awarding Institute		Graduate	Undergraduate	Journal publications		Conference Publications		Books		Patents	Tech. Reports
						Intl	Local	Intl	Local	Books	Books Chap.		
Dr. Nazir Javed	PhD	Uni. of Reading U.K	Botanical Nematicides against plant parasitic nematodes	22.4	22.4	6	63	-	13	-	1-	-	03
Dr. M. Aslam Khan	PhD	Mississippi State Uni. (USA)	Plant Disease Epidemiology	21	21	11	213	30	44	04	-	-	04
Dr. S. T. Sahi	PhD	UAF	Bacteriology	22	22	2	71	2	4	-	-	-	4
Dr. Safdar Ali Anwar	PhD	University of California	Plant Nematology	16	16	30	130			-	1		8
Dr. Aftab Ali Bokhari	PhD	UAF	Mycology	20	20	-	11	-	-	-	-	-	-
Dr. Abdul Rehman	PhD	UAF	Forest Pathology	8.7	8.7	-	10	-	-	-	-	-	-
Dr. Nasir Ahmad Khan	PhD	UAF	Mushroomology	4.10	4.10	1	12	-	1	1	-	-	-
Dr. Imran-ul-Haq	PhD	UAF	Mycology	1.5	1.5	-	7	-	-	-	-	-	-
Dr. Sajid Aleem	PhD	UAF	Nematology	1.5	1.5	-	15	-	-	-	-	-	-
Mr. Safdar Ali	M.Sc. (Hons)	UAF	Plant Virology	6.6	6.6	-	8	-	-	-	--	-	-
Mr. Amer Habib	M.Sc. (Hons)	UAF	Seed Pathology	6.6	6.6	-	7	-	-	-	-	-	-
Dr. M. Atiq	PhD	UAF	Plant disease epidemiology	3.5	3.5	-	4	-	-	-	-	-	-
Dr. Abdul Hannan	PhD	P.U.	Fungal Biotech.	1.5	1.5	-	4	2	2	-	-	-	-
Dr. Luqman Amrao	PhD	UAF	Molecular Virology	Newly appointed	-	6	-	-	-	-	-	-	-

**Report of the Accreditation Inspection Committee**

**ANNEXURE-V**

**List of major laboratories, equipments/instruments**

<b>S. No</b>	<b>NAME OF LAB.</b>	<b>LOCATION</b>	<b>NAME OF EQUIPMENTS/ITEM</b>
1	Pyto-bacteriology Lab.	D-174	Incubators, Refrigerators, Magnetic stirrer, Autoclave digital, Binocular microscope, Stereo binocular microscope, Analytical balance, Laminar flow units, Hot Plat unit, pH meters, Work station, Micropipettes, Colony counter, Tissues homogenizer Spore sampler
2	Undergraduate Lab.	D-173	Binocular microscope, Monocular microscope, Stereo binocular microscope, Analytical balance, Photographic microscope with TV display , Slide Projector, Multimedia Projector with screen, Work station, Refrigerator, Flex charts of different types for demonstration
3	Plant Virology Lab.	D-170	ELISA Kits, Centrifuge high speed, Micropipettes, Stereo binocular microscope, Multi slide stainer, Water bath apparatus, Work station, Analytical balance, Deep Freezers, pH meters, Buffers, Hot plate and magnetic stirrers, Thermocycler
4	Plant Disease Diagnostic Lab.	D-169	Incubators, Refrigerators, Magnetic stirrer, Autoclave, Binocular microscope, Stereo binocular microscope, Analytical balance, Laminar flame hood chamber, Hot Plate stirrer, pH meters, Work station, Steam bath, Dry oven, Micropipettes, Sieve Shaker with sieves, Spore sampler
5	Mushroomology Lab.	D-168	Incubator, Refrigerator, Autoclave, Binocular microscope, Stereo binocular microscope, Analytical balance, Laminar flow units, Hot Plat unit, pH meters, Work station, Colony counter, Spore sampler
6	Plant Nematology	D-178	Digital Autoclave, Incubators, Refrigerators, Teaching microscope with capacity of 10 students, Stereo binocular microscope, Analytical balance, Laminar flow chamber, Walk-in Plant growth chamber, Water distillation unit, Hot Plat unit, Magnetic stirrer, pH meters, Work station, Sieve sets apparatus, Colony counter, Insect rearing cage for EPNs.
7	Plant Disease Epidemiology Lab.	D-177	Autoclave, Incubators, Refrigerators, Compound Microscope with camera and TV display Stereo binocular microscope, Analytical balance, Laminar flow chamber, Cool Water circulator unit, Water distillation unit, Hot Plate unit, pH meters, Work station, Spore Trap Apparatus
8	Seed Health Testing Lab.	D-176	Autoclave, Incubator, Refrigerator, Compound Microscope with camera Stereo Binocular microscope, Stereoscope, Analytical balance, Laminar flow chamber, Seed germination Plates, Plant growth chamber, Hot Plate unit, Magnetic stirrer, Work station
9	Mycology and Biocontrol Lab.	D-175	Refrigerator, Autoclaves, Incubator, Plant growth chamber, Compound Microscope with camera and TV display Stereo binocular microscope, Analytical balance, Laminar flow chamber, Work station

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### **ANNEXURE-VI (A-B)**

Detail of funded research projects completed; and ongoing with P.I. and funding source

A: Externally funded research projects-Completed:

<b>S#</b>	<b>Project title</b>	<b>Principal Investigator</b>	<b>Funding source</b>
1.	Forecasting of leaf rust epidemics of wheat and their control	Dr. M. Aslam Khan	Promotion of Research Funds, UAF
2	Biological control of root-knot nematodes with the bacterium, <i>Pasteuria penetrans</i> .	Dr. Riaz A. Chohan	Promotion of Research Funds, UAF
3	Characterization of epidemiological factors conducive for cotton bacterial blight disease and its management	Dr. M. Aslam Khan	Promotion of Research Funds, UAF
4	Identification of resistant sources of germplasm against major potato viruses, their vectors, and their diagnosis based on serological tests.	Dr. M. Aslam Khan	Pakistan Science Foundation, Islamabad
5	Biological control of Root-knot nematodes of tomato.	Dr. Riaz A. Chohan	Promotion of Research Funds, UAF
6	Biological control of chickpea wilt by the use of plant growth promoting <i>rhizobacteria</i> .	Dr. Riaz A. Chohan	Promotion of Research Funds, UAF
7	Evaluation and development of antagonistic organism against plant parasitic nematodes.	Dr. Nazir Javed	Promotion of Research Funds, UAF
8	Analysis of samples of Shisham die-back	Dr. S. M. Khan	Promotion of Research Funds, UAF
9	Studies on maintenance and preservation fungal culture.	Dr.S. M. Khan	Promotion of Research Funds, UAF
10	Screening of mungbean-advanced lines derived from crosses between local and exotic germplasm for resistance to disease particularly mungbean yellow mosaic virus, Plant Type and yield potential	Dr. S. M. Khan	Promotion of Research Funds, UAF
11	Studies on morphology, physiology and molecular characterization of <i>Pleurotus</i> spp. And their cultivation through recycling; on agricultural wastes.	Dr. Nazir Javed	Promotion of Research Funds, UAF
12	Studies on incidence, epidemiology and chemotherapy of Citrus canker caused by <i>Xanthomonas campestris</i> p.v. <i>citri</i> .	Dr. S.T. Sahi	Promotion of Research Funds, UAF
13	Investigation on Shisham ( <i>Dalbergia sissoo</i> ) decline in relation to symptomology, intensity, etiology and management.	Dr. S.T.Sahi	Promotion of Research Funds, UAF
14	Utilization of plant growth promoting and nodule forming <i>rhizobacteria</i> in the integrated control of root infecting fungi of sunflower and soybean.	Dr. M. Inam-ul-Haq	Higher Education Commission, Islamabad
15	Survey, biology and; integrated control measures of citrus slow decline and spreading decline of litchi in the Punjab.	Dr. Nazir Javed	Pakistan Science Foundation, Islamabad
16	Monitoring; of <i>Erwinia</i> causing blackleg of potato and screening of potato germplasm.	Dr. S. T. Sahi	Higher Education Commission, Islamabad
17	Determination of incidence and species of root knot nematode ( <i>Meloidogyne spp</i> ) associated with crops.	Dr. Safdar A. Anwar	Higher Education Commission, Islamabad
18	Screening of citrus cultivars against citrus canker and its management	Dr. S.T. Sahi	Agricultural Linkages Programme, Pakistan Agricultural Research Council, Islamabad.

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**B: Externally funded research projects - on-going**

<b>S.#</b>	<b>Project title</b>	<b>Principal Investigator</b>	<b>Funding source</b>
1	Nematodes of tunnel crops and their integrated management	Dr. Safdar Ali Anwar	Higher Education Commission, Islamabad
2	Biological control of root knot nematode on vegetable in Punjab	Dr. Nazir Javed	Punjab Agricultural Research Board, Lahore.
3	Control of Bacterial blight on Rice through management and resistant varieties	Dr. Nazir Javed	Punjab Agricultural Research Board, Lahore.
4	Demonstration of Plant Pathological Techniques at U-Road, UAF Campus	Dr. Nazir Javed	Endowment Fund Secretariat, UAF
5	Characterization of native and potential mango varieties in relation to Ceratocystis manginecans and other economic traits	Dr. Abdul Rehman	Punjab Agricultural Research Board, Lahore.
6	Exploiting controlled atmosphere technology potential for extended storage and shipping of fresh produce to international market.	Dr. Abdul Rehman	Punjab Agricultural Research Board, Lahore.

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**ANNEXURE-VII**

Number of class rooms and faculty offices

<b>S. No</b>	<b>Class Room/Faculty Offices</b>	<b>No. of Class Rooms/ Faculty Offices/ Detail</b>	<b>Location</b>
1	Class Rooms	Three well equipped lecture rooms for under and postgraduate students, while faculty lecture rooms are also used for junior classes.	Department of Plant Pathology, University of Agriculture, Faisalabad.
2	Faculty Offices	14 faculty offices are currently in use by each of faculty member and a Chairman office is also there.	Department of Plant Pathology, University of Agriculture, Faisalabad.

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**ANNEXURE-VIII**

Detail of current enrollment of under- and Post-graduate students in different semesters

<b>Detail of Current Enrolment of Students in Department of Plant Pathology</b>						
<b>Year</b>	<b>Undergraduate Program</b>				<b>Post-graduate Programs</b>	
	<b>B. Sc (H)</b>				<b>M. Sc (Hons)</b>	<b>Ph. D</b>
	<b>Semesters</b>					
	<b>V</b>	<b>VI</b>	<b>VII</b>	<b>VIII</b>		
<b>2008</b>	-	77	-	48	26	09
<b>2009</b>	-	69	-	77	37	11
<b>2010</b>	-	89	-	69	48	19
<b>2011</b>	Nil	82	Nil	108	140	33

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**ANNEXURE-IX  
Assessment of Faculty Work load**

S. No	Name of Faculty	Designation	Work Load														
			Teaching			Research			Out-reach	Administration							
			Theory	Practical	Seminar	Research Project	Research for Academic degree			Dean	Chairman	Warden	Asst. Warden	Other	Total Work Load		
				Ph. D	M. Sc (H)	B. Sc (H)											
1	Dr. Nazir Javed	Prof	8	Nil		2	10	18				1					<b>118</b>
2	Dr. M. Aslam Khan	Prof	9	Nil		1											
3	Dr. S. T. Sahi	Prof	8	Nil		Nil	6	16									<b>74</b>
4	Dr. Safdar A. Anwar	Foreign faculty				1											<b>6</b>
5	Dr. Abdul Rehman	Asst. Prof				1											
6	Dr. M. Atiq	Asst. Prof	2	4			1	6									<b>31</b>
7	Dr. Nasir Ahmed Khan	Asst. Prof	8	1			1	10									<b>43</b>
8	Dr. Imran Ul Haq	Asst. Prof	4	4			1	8									<b>39</b>
9	Dr. Sajid Aleem	Asst. Prof	3	7			1	8									44
10	Dr. Abdul Hannan	Asst. Prof	4	4				6									30
11	Dr. Aftab Ali Bukhari	Asst. Prof	5	1			1	12									46
12	Dr. Luqman	Asst. Prof	Nil	2													2
13	Mr. Safdar Ali	Lecturer	5	5				8									39
14	Mr. Amir Habib	Lecturer	6	3				9									39

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**KEY FOR THE ASSESSMENT OF FACULTY WORK LOAD**

<b>S. No</b>	<b>Major components of work load</b>	<b>Activities assigned</b>	<b>Weightage</b>	<b>Work load/Week/Activity</b>	<b>Total</b>
1	<b>Teaching</b>	4 Credit Course (3 lectures/week) plus 2 hours laboratory	1 Hr- Lecture x3 Lectures plus 2 Hrs for Lab/ week	5 Cr. Hr. x No. of courses	
		Seminar (Internship Seminars, M. Sc & Ph. D synopsis & Thesis Seminar)	1 Hr x week	1 Cr. Hr	
2	<b>Research</b>	Research project (Externally funded research project as Principal Investigator)	6 Hr x week	6 Cr. Hr x No. of Research Project as P.I	
		Research supervision for academic degree: Ph. D x No. of students	3 Hr x week	3 Cr. Hr x No. of students	
		Research supervision for academic degree: M. Sc(H) x No. of students	3 Hr x week	3 Cr. Hr x No. of students	
		Internship: B. Sc (H) 8 <sup>th</sup> Semester x No. of students	1 Hr x week	1 Cr. Hr. x No. of students	
3	<b>Out-reach</b>	Publications, preparations of best practice guides & extension bulletins, diagnostic service, etc	3 Hr x week	3 Cr. Hr	
4	<b>Administration</b>	Dean/Chairman/Provost/ Chief Proctor/Warden	12 Hr x week	12 Cr. Hr.	
		Assistant Warden/ Assistant Provost/ Staff Proctor /Editors	6 Hr x week	6 Cr. Hr	
5	<b>Other Activities-Meetings</b>	Departmental Meetings/inter group discussions/staff interactions	1 Hr x week	1 Cr. Hr.	
		Meeting of Chairmen, Dean, and various committees	1 Hr x week	1 Cr. Hr.	

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**ANNEXURE-X:  
Student teacher Ratio**

S. No	Year	B. Sc (Hons)	M. Sc (Hons)
1	2009	146/11= 13.27	37/11= 3.33
2	2010	158/11= 14.36	48/11= 4.4
3	2011	190/14= 13.5	140/14= 10
a) Student/Faculty Ratio in B. Sc (Hons) Program		190/14= 13.5	

- a) Student/Faculty Ratio in B. Sc (Hons) Program  
190/14= 13.5
- b) Student/Faculty Ratio for M. Sc (Hons) Program  
140/14= 10

## *Report of the Accreditation Inspection Committee*

### ANNEXURE- XI (A)

**Semester-wise scheme of studies for B. Sc (H) degree program of Department of Plant Pathology at AUF**

#### SEMESTER-IV

Course No.	Title of the Course	Credit Hours	Course Type
PP-202	Introductory Plant Pathology	3(2-1)	FC
PP-202	Introduction to Plant Pathogens	2(1-1)	Elective

#### SEMESTER-V

Course No.	Title of the Course	Credit Hours	Course Type
PP-301	Introductory Mycology	4(3-1)	Major
PP-303	Introductory Plant Nematology	3(2-1)	Major
PP-305	Introduction to Prokaryotes	3(2-1)	Major
PP-307	Introduction to Plant Viruses	3(2-1)	Major
PP-309	Abiotic Diseases of Plants	2(1-1)	Major
	Sub-Total	15	
PP-311	Microbial Culture, Identification & Preservation	3(1-2)	Elective
PP-313	Biological Control of Plant Pathogens	3(2-1)	Elective
PP-315	Genesis of Phytopathological Concepts	2(2-0)	Elective
PP-317	Economic Epiphytotics & their Management	2(1-1)	Elective

#### SEMESTER-VI

Course No.	Title of the Course	Credit Hours	Course Type
PP-304	Diseases of Field Crops	4(3-1)	Major
PP-306	Diseases of Horticultural Crops	3(2-1)	Major
PP-308	Range & Forest Pathology	2(1-1)	Major
PP-3010	Plant Disease Epidemiology	3(2-1)	Major
Chem-502	Chemistry and Fundamental Biochemistry	3(2-1)	Supporting
PP-312	Biology & Cultivation of Edible Fungi	3(1-2)	Elective
PP-314	Histopathology of Diseased Plants	3(2-1)	Elective
PP-316	Air pollutants, Sewage Effluents & Crop Health	2(1-1)	Elective
PP-318	Fungal Biotechnology	2(1-1)	Elective

#### SEMESTER-VII

Course No.	Title of the Course	Credit Hours	Course Type
PP-401	Plant Disease Management	3(2-1)	Major
PP-403	Diagnostic Plant Pathology	4(2-2)	Major
PP-405	Post-harvest Pathology	3(2-1)	Major
PP-407	Plant Resistance to Diseases	3(2-1)	Major
PP-409	Molecular Plant Pathology	3(2-1)	Major
PP-4011	Preparation of Research Project and Scientific Writing	2(1-1)	
PP-413	Use of Various Equipments in Plant Pathology	2(1-1)	Elective
PP-415	Physiological Plant Pathology	2(1-1)	Elective

#### SEMESTER-VIII

Course No.	Title of the Course	Credit Hours	Course Type
PP-412	Internship and External Evaluation	10(0-10)	Major

Total Credit Hours: 87  
Total Credit Hours Required: 60

## *Report of the Accreditation Inspection Committee*

### ANNEXURE-XII (B)

#### Semester-wise scheme of studies for M. Sc (H) degree program of Department of Plant Pathology at AUF

##### WINTER SEMESTER

Course No.	Title of the Course	Credit Hours	Course Type
PP-702	Mycology (Ascomycetes and Fungi Imperfecti)	3(2-1)	Major
PP-703	Mycology (Basidiomycetes)	3(2-1)	Major
PP-704	Methods and Research Techniques in Plant Pathology	3(2-1)	Major
PP-706	General Plant Pathology	4(3-1)	Major
PP-708	Bacterial and Virus Diseases of Plants	3(2-1)	Major
PP-711	History of Plant Pathology	3(3-0)	Major
PP-713	Ecology of Plant Pathogens	3(2-1)	Major
PP-715	Principles of Plant Pathology	4(3-1)	Major
PP-717	Advances in Plant Pathology	4(3-1)	Major
PP-719	Special Problem	1(1-0)	Major
PP-720	Seminar	1(1-0)	Major
PP-721	Seed Pathology	3(2-1)	Major
PP-722	Plant Virology	4(2-2)	Major

##### SPRING SEMESTER

Course No.	Title of the Course	Credit Hours	Course Type
PP-701	Mycology (Lower Fungi)	3(2-1)	Major
PP-705	Physiology of Fungi	3(2-1)	Major
PP-707	Plant Nematology	4(2-2)	Major
PP-709	Weeds and Their Control	3(2-1)	Major
PP-710	Insects in Relation to Plant Diseases	3(2-1)	Major
PP-712	Fungicides, Their Action and Application	4(3-1)	Major
PP-714	Advanced Mycology	4(3-1)	Major
PP-716	Genetics of Plant Pathogens	4(3-1)	Major
PP-718	Forest and Shade Tree Pathology	4(2-2)	Major
PP-719	Special Problem	1(1-0)	Major
PP-720	Seminar	1(1-0)	Major

Total Credit Hours: 71  
Total Credit Hours Required: 24

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