



Report of the Accreditation Inspection Committee (AIC)

**Prof. Dr. Muhammad Ashraf
Prof. Dr. Muhammad Bismillah Khan**

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University of Agriculture, Faisalabad.**

Acknowledgment

The evaluation team acknowledges the support and cooperation of the honourable Dean Faculty of Agriculture, Chairman and faculty/staff members of the Department of Agronomy, University of Agriculture, Faisalabad, Pakistan. The immense help, guidance and logistic support of Mr. Naseer Alam Khan (Secretary) and other staff of NAEAC Secretariat is highly appreciated.

Accreditation Inspection Committee (AIC), NAEAC

Prologue

The Accreditation Inspection Committee (AIC) constituted by the National Agriculture Education Accreditation Council (NAEAC) for the external assessment of the degree programs of B. Sc. (Hons), M. Sc. (Hons) and Ph. D. offered by the Department of Agronomy, University of Agriculture Faisalabad, visited the department on May 12-13, 2010. The NAEAC secretary and the AIC members visited the office of the Dean, Faculty of Agriculture. The secretary Naseer Alam Khan highlighted the aims and objectives of this review process. Dr. Asghar Mian on behalf of Dean briefed about the academic programs being offered in the Faculty. The tentative schedule provided by the NAEAC was followed by the AIC and detailed interviews and discussions were made with the Chair, Dean, faculty members and senior students of department. Visits were also made to review the lab facilities, research programs, classrooms and offices.

a) Accreditation of Agriculture Education Institutions in Pakistan

In pursuance to its mandate given by the HEC under clause 10 subsections (d) and (1) of the byelaws of NAEAC, an Accreditation Inspection Committee (AIC) was constituted comprised of the following scientists to review the Department of Agronomy, University of Agriculture, Faisalabad for assessment and accreditation of their degree programs:

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| i) | Prof. Dr. Muhammad Ashraf
Professor Agronomy Department
Pir Mehr Ali Shah Arid Agriculture University,
Rawalpindi. | Convener |
| ii) | Prof. Dr. Muhammad Bismillah Khan
Chairman Department of Agronomy and Soil Science
University College of Agriculture, BZ University, Multan. | Member |

b) Terms of References of the Committee (TORs)

The team visited Agronomy department on May 12-13, 2010:

To validate the Self-Assistance Report of Agronomy department.

To carry out external evaluation of the academic programs for rating and accreditation.

To synthesize and submit consolidated report on the based on of interaction with Dean, Chairman, Faculty Members and students as well as detailed visits of infrastructure and facilities.

To submit recommendations to NAEAC Chairman.

The Agronomy Department

Agronomy is the science of crop production and soil management. The Agriculture Section, predecessor of Agronomy Department, was one of the few sections which started functioning with the establishment of the former Punjab Agriculture College and Research Institute at Faisalabad (Lyallpur) in 1906. First Professor of Agronomy was appointed in the same year. This Section kept functioning up to 1962 when the status of college was raised to University and the Section was renamed as Department of Agronomy. Former Agriculture Section offered M. Sc. degree to 38 students and produced 126 research publications.

With the inception of the University most of senior staff members opted for research leaving back a few junior teachers. One or two senior teachers who opted for the University were abroad in pursuance of higher studies. After its inception, the department had no regular chairman for the first five year. It was only after 1967 that a regular chairman of department was appointed from the Agronomy staff. Currently Agronomy is the largest department of the university and attracts students with the highest cumulative grade point average and hence, has earned the title of “parent department”.

Department of Agronomy is intensively engaged in developing trained human resource base in production technology, conduct basic and applied research in various aspects of field crop production and soil management under varying agro-ecological conditions and socio-economic conditions of the farming community. It provides advisory services to farmers, NGOs and the relevant agro-based industry, pertaining to the latest developments in this field for better resource management and sustaining crop yields under changing environmental scenarios.

Program mission

To develop the department to provide leadership in agronomic education with focus on problem oriented research.

Program Goals and Objectives

- Impart training to students with necessary theoretical and practical knowledge about the principles of crop production and soil management.
- Developing effective, environment-friendly and economically viable weed management strategies.
- Exploitation of allelopathy in agricultural systems.

- Studying the impact of climate change on agricultural productivity and crop modeling.
- Investigating the basis of irrigation scheduling and its impact on crop yields.
- Evaluating and devising new cropping systems adapted to changing climatic and water scenario.
- Managing crop nutrition under varying systems.
- Addressing different aspects of seed science and technology.
- Handling emerging/current issues.

Degree plan

Presently three programs are being offered by the department.

B. Sc. (Hons) Agronomy

B. Sc. (Hons) degree program consists of 4 academic years (8 semesters). As a whole, a student has to study 140 total credit hours. For each course 10% marks are reserved for the assignments, 30% marks for mid-term examination while 60% marks for final examinations as per university rules. Degrees are awarded after completing the required number of credit hours (courses) following by comprehensive examination and internship report submission and presentation.

M. Sc. (Hons) Agronomy

The M. Sc. (Hons) degree program consists of 2 academic years (4 semesters). A student has to study 35 credit hours with 10 credit hours (research work and thesis writing) consisting of total 45 credit hours. Degrees are awarded after completing course work, one year research work, thesis writing and comprehensive examination. For each course 10% marks are reserved for the assignments, 30% marks are for mid-term examination while 60% marks for final examination as per university rules.

Ph. D Agronomy

The Ph. D. program has been designed for quality research completely coherent with HEC standards. The Ph.D. study program consists of three academic years (6 semesters). As per HEC rule, a student has to complete 18 credit hours for course work, two-year research work, thesis writing and after the recommendation/approval of thesis from foreign examiners of technologically developed countries.

Criterion Wise Analysis

Criteria I: Strength and Quality of Faculty

The department has 27 regular faculty positions with different specializations in Agronomy. All the faculty members hold Ph. D. degree. The faculty is specialized in diverse disciplines of Agronomy with covering almost every aspect of the crop production and management technology.

The teaching load in the department has been distributed according to the faculty's position i.e. 6 credit hours per week for Professor, 6 for Associate Professor, 10 for Assistant Professor and 12 for Lecturer. Similarly, graduate students are equally distributed amongst the faculty for research of their degree programs giving consideration to the aptitude as well as the mutual understanding of the faculty and student. Beside the teaching and research, the faculty is also shouldering various administrative responsibilities in various capacities i.e. departmental administration, students counseling, hostel warden ship, farm management etc.

The faculty, properly and adequately use quizzes, assignments, projects/seminars, mid-term and final exams for students evaluation during the active semester. Similarly, course review report is prepared and submitted regularly by each faculty member. The program monitoring systems exist and exercised by the department. A Quality Enhancement Cell (QEC) has been established in the university to facilitate course review and monitoring system, but practically the task is assigned to the faculty. This exercise seems an extra burden on the department and must be addressed and assured to accomplish by the QEC. No training facilities at present, exist in the department for newly inducted faculty. They get themselves acquainted with the teaching skills by attaching to a senior faculty. All the faculty is Ph. D. and many of them have their post doc training. The salaries and other fringe benefits seem reasonable. Majority of faculty members believe that the working environment in the department is good. The faculty stability index is excellent and option for the job in university is a top priority. Few international scholarship/fellowship awards are won by faculty. Five books and four chapters of books have been written by the Agronomy faculty. The participation of faculty members in professional seminars/conferences/workshops inland and also abroad is reasonable. The members of Agronomy faculty have won four Star Awards, Pakistan National Education Award, Allelopathy Foundation Award, 2010.

Graduate research supervision by the faculty is satisfactory, M. Sc. (Hons) degree has been awarded to 1400 students so far, 100 students have completed their Ph.D degree and currently 66 Ph.D students are being supervised. The students must be encouraged to compete for HEC sponsored indigenous M. Sc leading to Ph. D. program.

The job satisfaction was reasonable and opportunities for academic progress are abundant subject to the devotion. The existing faculty members are satisfied with the department degree programs. The teaching-learning techniques and implementation seem professional.

Criteria II: Curriculum Design and Development

All the courses of the degree programs are developed by HEC constituted committee and adopted by the department. The objectives of curriculum are well defined and inline with the HEC guidelines. The curriculum is revised regularly and upgraded through different bodies at departmental level i.e. Board of Studies. The department is lacking the latest text books and reference books. The faculty and students rely on the main library which is fully equipped with the textbook, references and journals. The length of semester (19 weeks) is within the desired requirement of HEC. Completion of theory and practical courses are well in time as observed from faculty course files. The course registration and withdrawal policy is well defined and is adopted without any discrimination. All faculty members maintained course files and some were randomly checked by the AIC. The standard of course record was upto the mark practically. The curriculum adopted in the department for degree program is satisfactory and fulfills the desired objectives. The flexibility in modification of curriculum prevails according to need and demand, and is strongly recommended practice. Meeting of Board of Studies and Board of Faculty is a permanent feature and conducted regularly. The mechanism of feedback from the stakeholders is being broadened by participation of members from research and other relative bodies.

Criteria III: Infrastructure and Learning Resources

The available space for faculty offices is by no mean enough and appropriate. Senior faculty members have independent offices but most of the faculty is sharing their offices. Some space in labs has been partitioned to accommodate faculty members. The department has eight labs and each of these is being used for teaching purpose as well. All the labs are adequately equipped with almost fully operational equipments and are being utilized properly, however the qualification/training of the labs staff is not relevant to their job. It has been noticed that farm lab has not been adequately equipped. No specific budget allocation is made for labs. Departmental research farm has sufficient land for conducting research. It was observed that farm is not well mechanized even the department does not own a tractor and farm is being run like a common farmer. Being the mother institution and ideal for country's other universities and progressive growers, research farm should be upgraded to the level of Model Research Farm by providing all the latest farm implements/machinery and irrigation systems for practicals/demonstrations.

The budget allocated for purchase of books and subscription for foreign journals for the departmental library is insufficient. Computers and internet facilities are available for faculty and Ph.D students but faculty student computer ratio is poor.

Criteria IV: Students Support and Progression

The highest number of students seeks admission in Agronomy major in B. Sc. (Hons) degree program in the university. Approximately 80 students per session (5th semester) get admission in Agronomy and almost all students opt for M. Sc. (Hons) program in the department after graduation. The intake for Ph. D is approximately 20 students per session. The graduation percentage at B. Sc. (Hons) and M. Sc. (Hons) from 2007-2009 was more than 80 percent. Nineteen students got Ph.D degree from this department from 2007-2009. Rarely a student drop out in Ph.D. Merit, UAF need based, Pak-US need based, HEC-JICA sponsored and Bait-ul-mal scholarships are available to students. Although the number of hostels is 18 but still this accommodation is inadequate. An auditorium is present in the university to meet the university needs for various events. Indoor and outdoor sport facilities are available to the students. University owns 25 buses for student transport. University has a dispensary where 7 full time doctors, 5 male and 2 female serve the faculty, students and support staff of the university. The internship program is the permanent feature of B.Sc. (Hons) degree at final semester. The students are encouraged to conduct their internship assignment at progressive farmer fields or provincial/national research centres however, internship program is not practicable for female students. The students/faculty both considered it more than enough credit hours, assigned to internship program. The student's interaction with the teacher is good. The student's attitude towards studies, their attendance and perception about degree program was very positive.

Criteria V: Research and Consultancy Activities

The faculty is actively conducting various research projects. The faculty through open competition has won these projects. The number of projects completed by the Agronomy faculty is 26 and 10 are in progress. The amount of research grant of agronomy department during 2009-10 is Rs. 3561702.00 and has been appropriately utilized. The detail of research projects is given in annexure 1. University has also sponsored various projects to faculty from its research promotion funds. The finding and outputs of these research projects as well as post graduate students research is regularly published in HEC approved/ impact factor journals. The articles of immediate impact on crop productivity are published in Zari Digest and Zarat Nama. The faculty also renders advisory services to farmers and NGOs.

The department has quite effective academic collaboration with all agricultural research institutes of Punjab, National Agricultural Research Center, Islamabad/Pakistan Agricultural Research Council, Nuclear Institutes of Agriculture and Biology and all the agricultural universities/colleges of the country. The collaboration with many other national and international organizations/professionals societies has been established by the faculty of this department. They have also established a liaison with agro based industry. However, the department has no budget for participation and organizing conferences and seminars.

Criteria VI: Governance and leadership

The Vice chancellor is the chief executive of the university and is assisted by the Deans of the Faculties, Directors of the Institutes, Chairmen of the Departments and Principal Officers of the University. The administrative authorities/governance of the university and department is clearly defined. University catalogue is published every year. The implementations of statutory rules/regulations are intact. All the statutory bodies like Senate, Syndicate, Academic Council, Department Board of Studies, Faculty Board of Studies, Board of Advanced Studies and Research etc. are properly functioning. The academic setup rests with the departments while financial matters are controlled by the Treasurer office. The department does not have its own funds generating resources. The financial resources of the department mainly depend on the university. University has its funds generating resources and gets grant from HEC. Departmental placement bureau and alumni's association has not yet established. The departmental calendar for various activities was not observed.

Criteria VII: Adoption of Best Practices

A quality enhancement cell (QEC) has been established by the university authorities to ensure the quality of degree programs. Distribution of all taught courses is well balanced in terms of theory and practical classes. The allotted credit hours to theory and practical are satisfactory and well maintained. The classes are being taught regularly and course contents are completed within the stipulated period of time. The students-teacher assessment is well adopted and operated through the questioners provided by QEC as per HEC directives. The AIC members observed that the compilation of data generated through questioners is assigned to the faculty members. These tasks are an extra burden on the faculty and suppose to be done by the QEC staff.

The Agronomy faculty members showed an enthusiastic look towards teaching and research.

SWOT Analysis

1. Major strengths

- All the agronomy faculty hold the PhD degree and have also won national and international awards. Many of the teachers have completed their Post-doc from higher seats of learning abroad.
- The highest number of students seek admission at under-graduate and post-graduate level in the Department of Agronomy, being the most preferred subject.

- The classes are being taught regularly and course contents are completed within the stipulated period of time. Computer and internet facilities are available for the faculty in the department.
- All the faculty is highly skilled and have expertise in their respective areas of teaching and research. Well established research groups working on different research projects. Presently eight research projects are being executed by the faculty.
- The department has well established library and well maintained laboratories. Young teachers are enthusiastic about their career development.

2. Major weakness

- Inadequate office space for the faculty, shortage of communication facilities, lack of controlled environment facilities and lack of computer lab etc.
- Shortage of farm machinery and implements including the latest farm equipment and other farm machinery. Department is facing difficulties in practical training of students.
- Lab maintenance budget has not been specified and funds for the purchase of books are insufficient. Lack of qualified and trained laboratory staff.
- Majority of the teachers got their PhD degree from this department, hence inbreeding and student teacher ratio is very high.
- System of fund allocation is faulty and there is biasness for allocation of funds.

3. Major opportunities

- Abundant job opportunities for agronomy graduates in different government and non-government organizations.
- Technical guidance for students is available from different research groups for their undergraduate and post-graduate studies.
- Technical faculty of agronomy has an opportunity of training leading to PhD and post-doctorate for their career development.
- An opportunity to win projects from national and international donors.

4. Major threats

- Admission of students in B.Sc(Hons) based on F. Sc. (Pre-Medical) having urban background.
- Reduction of credit hours of general courses of agronomy B.Sc(Hons) Agri.
- Violation of merit in the admission and recruitment of faculty and staff.
- Trend of shifting emphasis from teaching to publications is developing.

General Recommendations

- The department needs more space for faculty offices. It is proposed that more offices may be constructed for the faculty.
- A computer lab should be established for the students with the latest computers and internet facilities.
- Lab's supporting staff must be selected on the basis of relevant qualification/experience for handling the scientific instruments/equipment safely. A qualified electronic engineer may be appointed at faculty level to look after the working and maintenance of lab equipment.
- Budget allocation for development, research, library and labs may be specified and be increased at least two times.
- A well mechanized research farm and a field lab should be established.
- Funding to conduct/attend International conferences/seminars may be ensured.
- The latest editions of the books should be purchased, international journals be subscribed and communication facilities be upgraded.
- The credit hours of the general courses of Agronomy for B.Sc. (Hons) Agri. may not be reduced.
- A trend of shifting emphasis from teaching to only publications may not be encouraged and emphasis should be placed on writing text books.

- The principle of merit/natural justice may strictly be observed for admission of students, selection/promotion of faculty/staff etc.
- Admission in agriculture should be restrained only to the sons of farmers.

Final Recommendation

The department has research farm, laboratories, equipment and highly qualified teaching faculty to cater the needs of present level of enrolment of B.Sc. (Hons), M.Sc. (Hons) and Ph.D.

On the basis of the inspection/evaluation, the AIC recommended accreditation of the degree programs department of Agronomy, University of Agriculture Faisalabad in the “X” category as per HEC rating system i.e. Degree Program having minor shortfalls.

Signatures of AIC Members

Name and Designation

Signatures

Prof. Dr. Muhammad Ashraf

(Convener)

Professor Agronomy Department
Pir Mehr Ali Shah Arid Agriculture University,
Rawalpindi.

Prof. Dr. Muhammad Bismillah Khan

(Member)

Chairman Department of Agronomy
and Soil Science, University College of Agriculture,
BZ University, Multan.

Comments and Signatures of Chairman

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

Chairman

Department of Agronomy
University of Agriculture,
Faisalabad.

Research Projects

Annexure 1

The detail of the research projects is as under:

Sr. No.	Project worth (Million rupees)	Title of the Project	Funding Agency
1	1.218	Use of allelopathy for reducing herbicide import.	Higher Education Commission.
2	3.117	Utilization of allelopathic properties of sorghum, sunflower and brassica for weed management in some field crops.	Pakistan Agricultural Research Council.
3	1.135	Induction of salt tolerance in wheat (<i>Triticum aestivum</i> L.) by seed invigoration techniques.	HEC
4	1.218	Studies into biology, economic threshold level and control of <i>Euphorbia dracunculoides</i> in chickpea.	HEC
5	1.218	Integrated weed management in direct seeded rice.	HEC
6	1.22	Modelling the impact of climate changes on wheat productivity in Punjab	HEC
7	3.713	Use of spectral reflectance to estimate growth, biomass and yield of different wheat cultivars under moisture stress conditions.	HEC
8	9.008	Establishment of cell for climatic changes and crop productivity.	HEC
Total worth of the research projects (Million rupees) = 21.847			