



AIC Report

**Dr. Abdul Khaliq
Dr. Dil Baugh Muhammad**

February 13-14, 2012

**Department of Agronomy
University College of Agriculture, BZU, Multan**

Acknowledgment

The evaluation team acknowledges the support and cooperation of the Honourable Principal, University College of Agriculture, BZU, Multan, and Chairman and faculty/staff members of the Department of Agronomy, University College of Agriculture, BZU, Multan, Pakistan. The active help, guidance and logistic support of Mr. Naseer Alam Khan (Secretary) and other staff of NAEAC Secretariat is highly acknowledged.

Accreditation Inspection Committee (AIC), NAEAC

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Prologue

The Accreditation Inspection Committee (AIC) constituted by the National Agriculture Education Accreditation Council (NAEAC) visited the Department of Agronomy, University College of Agriculture, BZU, Multan, on February 13-14, 2012. The objective was to have an external assessment of B. Sc. (Hons), M. Sc. (Hons) and Ph. D. programs offered by this Department. NAEAC secretary and the AIC members visited the office of Professor Dr. Muhammad Bismillah Khan, Principal, UC Agriculture. Mr. Naseer Alam Khan, Secretary NAEAC highlighted the aims and objectives of the whole review process. Professor Dr. Muhammad Bismillah Khan briefed the AIC members about the academic programs being offered in the College. Itinerary of accreditation visit as provided by the NAEAC, was followed by the AIC. Detailed discussions and exchange of information were held with the Head of Department, Principal, faculty members and senior students of the Department. The Team visited the Departmental labs, field area, classrooms, main library, auditorium and faculty offices.

a) Accreditation of Agriculture Education Institutions in Pakistan

In pursuance of the mandate as under clause 10 subsections (d) and (1) of the byelaws of NAEAC, as laid down by the HEC, an Accreditation Inspection Committee (AIC) comprising of the following scientists was constituted to review the Department of Agronomy, University College of Agriculture, BZU, Multan for its external assessment and the accreditation of its degree programs:

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| i. | Dr. Abdul Khaliq
Associate Professor
Department of Agronomy
University of Agriculture
Faisalabad. | Convener |
| ii. | Dr. Dilbaugh
Senior Scientific Officer/Head Agronomy and Technology Transfer
Central Cotton Research Institute
Multan. | Member |
| iii. | Mr. Naseer Alam Khan
Secretary, NAEAC
HEC, Islamabad | Member |

b) Terms of References of the Committee (TORs)

Members of AIC visited the Department of Agronomy, UCA, BZU, Multan on February 13-14, 2012. The objective was

1. To validate the Self-Assistance Report of the Department as submitted by the Head of to NAEAC.
2. To have an external evaluation of the academic programs offered by the Department for their rating and accreditation by the NAEAC.
3. To compile and submit consolidated report on the bases of interaction with Principal, Head of Department, Faculty members and students as well as after having on-site visits of the infrastructure and facilities meant for its academic programs.
4. To formulate and submit recommendations to NAEAC Chairman.

The Department of Agronomy

Agronomy is the branch of agriculture dealing with principles and practices of field crop production and soil management. Keeping in view the agricultural potential and specific ecological conditions of the region, University College of Agriculture (hereafter referred to as UCA) was established in 1989 at Bahauddin Zakriya University, Multan. The UCA building consisted of different blocks as agronomy, soil science, agricultural entomology, plant pathology, horticulture, plant breeding and genetics, and agricultural engineering. There is one administrative block, main library, agri. Auditorium, computer lab, and a green/glass house in the College. B.Sc (Hons.) program was initiated in UCA in 1991. It was only recently that agronomy sections, in the college, like all others, was raised to the status of Department of Agronomy with having an independent Head of Department.

Department of Agronomy is rendering the services of developing trained human resource base in cultural practices suitable for the region, work on the feasibility of cropping systems, weed control and adoption of various production technologies for crops grown in the area. The faculty in the Department provides advisory services to farmers, NGOs and the relevant agro-based industry about the developments in this immensely significant area of agriculture that help them execute better resource management, and ultimately sustain crop yields under specific agro-climatic conditions.

Program mission

Develop the Department providing leadership in agronomic education with focus on better yield, better economy, and better life to the rural community of Southern Punjab.

Program Goals and Objectives

- Generate trained manpower with necessary theoretical and practical knowledge about the principles of crop production and soil management.
- Developing site-specific package of technology for different crops grown in the region.
- To address the problems of cotton-wheat cropping system.
- To cover the demographic and address the needs for agricultural development of Southern Punjab.
- Handling emerging/current issues limiting productivity of field crops in the region.

Degree plan

The Department offers three degree programs at present.

B. Sc. (Hons.) Agronomy

B. Sc. (Hons) degree program consists of 4 academic years (8 semesters). A student has to earn a total 140 credit hours. Course evaluation is carried out on the basis of class assignments (10%), mid semester examination (30%) and a final semester exam with 60% weightage of the whole course as per university rules. A degree is awarded by the University to a candidate who qualifies the required number of credit hours (courses) following by a comprehensive examination, and submission and presentation of an internship report.

M. Sc. (Hons.) Agronomy

The M. Sc. (Hons.) degree program comprises of 2 academic years (4 semesters). A student has to study 35 credit hours with 10 credit hours (research work and thesis writing) and making up a total of 45 credit hours. Degrees are awarded after completing course work, one year research work and thesis writing. The thesis is evaluated by the external examiner as approved by the Vice Chancellor and notified by Controller of Examinations of the UCA. Course evaluation is based on 10% marks for class assignments, 30% marks for mid-term examination and 60% marks for final examination as per university rules.

Ph. D Agronomy

The Department offers Ph.D. program that has been designed for quality research completely coherent with HEC standards. The Ph.D. study program consists of completing at least three academic years (6 semesters). As per HEC rule, a student has to complete 18 credit hours for course work, two-year research work carried out under field condition and/or partially under controlled environment as per requirement of his/her research project, and approved by the Supervisory Committee. A dissertation is submitted that is sent to technologically advanced countries for evaluation. Ph.D degree is awarded on the recommendation of the external reviewers of the thesis.

Criterion Wise Analysis

Criteria I: Strength and Quality of Faculty

The Department has 9 regular faculty positions with different specializations in Agronomy and all of these hold Ph. D. degree. Two teachers with M. Sc. (Hons.) in agronomy are serving as part part-time faculty in the Department. The faculty in the Department is specialized in diverse areas of Agronomy that cover important aspect of crop production.

Teaching load in the department has been well distributed according to faculty positions i.e. 6 credit hours per week for Professor, 6 for Associate Professor, 10 for Assistant Professor and 12 for Lecturer. Graduate students are equally distributed amongst the faculty for conducting research of their respective degree programs and giving due consideration to the aptitude as well as the area of research they are interested. Beside teaching and research, the faculty is also shouldering various administrative responsibilities in various capacities i.e. departmental administration, students counseling, hostel wardenship, farm management, etc.

The faculty makes an adequate use of quizzes, assignments, mid-term and final exams for evaluation of students in their course work. However, there is need to pay more attention towards project and seminars especially at post graduate levels to strengthen their communication and presentation skills. Presently, no course review reports are prepared by each faculty member at the time of course evaluation, and hence needs attention. There exists an adequate program monitoring system, and is exercised by the Department. There is no formal system for training of newly induced faculty in the department; nonetheless, they get themselves acquainted with the teaching skills by attaching to a senior faculty. All faculty in the Department holds Ph. D.

degrees and three of them have already completed their post-doctoral fellowships abroad. Salary package and other fringe benefits of the faculty look reasonable and attractive. Faculty in the department believes that the working environment is very good. The faculty stability index is excellent and seeking job in University is a top priority. There is hardly any national or international recognition of the faculty in terms of awards won by them. Same is the case with writing any text book and/or book chapter. The participation of the faculty members in professional seminars/conferences/workshops inland is just nominal quite reasonable and a few members have participated in such activities abroad.

Graduate research supervision by the faculty is satisfactory. So far, 72 B. Sc. (Hons.) and 40 M. Sc. (Hons.) degrees have been awarded in the Department. One Ph.D degree has also been awarded in the department while 19 others are currently enrolled in this program. This numbers seems to be too high keeping in view the facilities available in the Department. The graduate students need to be encouraged to compete for HEC sponsored indigenous M. Sc leading to Ph. D. program.

Job satisfaction of the faculty is reasonable and adequate opportunities exist for academic progress to those holding good academic credentials. The faculty members believe that the department degree programs are performing well except that there is room for upgradation and improvement in internship at undergraduate level. The faculty tries to adopt teaching and learning methods as various instructional techniques, promote analytical skills, encourage questions from the taught, and also believe in dialogue and discussion, however much needs to be done in this direction. Professional code of ethics is fully observed in the Department.

Criteria II: Curriculum Design and Development

All the courses offered in the Department at undergraduate and post graduate programs are adopted from the scheme of studies as finalized by HEC constituted National Curriculum Committee in Agronomy. Presently, the objectives of curriculum are vaguely defined, and partially support to degree programs, and are achievable. The contents of curriculum are well structured and rich, compatible with emerging needs, and flexible enough to offer choices for the students. There is need to incorporate courses on information technology so that graduates can meet the demands of modern tools in communication and dissemination of knowledge.

Student's perception about the quality, innovation and new knowledge is only fairly satisfactorily. The department is in short of latest text and reference books. The faculty and students rely primarily on the main library which has got a basic collection of textbooks. However, there is dire need to have access to reference books, and journals of good repute as well.

Duration of semester (19 weeks) is quite within the standard requirement of HEC. Completion of theory and practical courses are only satisfactory to some extent as has been evident from faculty course files. The course registration and withdrawal policy is well spelled and with enough details. It is adopted without any discrimination. Admission to all programs is under well documented and properly notified policy.

A random verification by the AIC revealed that none of the faculty member maintained course files as per standards laid down by NAEAC. Nonetheless, there was need to have a break up for laboratory experimentation, and also recommendations need to be outlined for some course to be offered in next semester. Meeting of Board of Studies and Faculty are held very scarcely and need to be scheduled more frequently and, ofcourse, regularly. However, this may be, in part, owing to structural arrangement of the University policy, and hence dealt with at top administrative level. The students were generally satisfied about teacher's performance.

Criteria III: Infrastructure and Learning Resources

The Department has got enough space for faculty offices. Senior as well as junior faculty has got independent offices, and it seems quite appreciable. The department has five labs that are distributed for teaching (3) and research (2), and working capacity of each is quite sufficient to meet requirements of students and faculty. Quality of lab equipment is inadequate to meet the research needs of postgraduate and Ph. D students. The equipment, whatsoever available is also not properly utilized due to lack of operational funds. Some of the equipment was also reported to be out of order. There is hardly a single trained lab staff in the Department, and many a time personal recruited for other duty is working in labs. There is immense need for technical training of lab staff in the department. Annul budgetary allocation for maintenance and operation of labs is inadequate.

Funds allocated for purchase of books are meager. Student's views about lab practicals were not encouraging, although they maintained note books with whatsoever they did. The number of total books and those purchased in past two years was only satisfactory to some extent. The Department does not subscribe even a single foreign journal for its library. Book bank facility is present in main library but needs a lot of strengthening. Library is well equipped with computers, photocopier, and other tools. Library environment was quite suitable for peace of mind, and student's to library facility was only satisfactory. There was demand for broadening availability of more recent text books, reference material and internet facility.

Computers and internet facilities are available for faculty, and need to be further expanded to bring in reach of Ph. D students. Faculty/student computer ratio was found poor especially when it comes to undergraduate level.

The department has maintained a web site that needs to be updated more frequently. Buildings, covered area for lecture rooms as well as offices of faculty was found adequate. However, the presence of a proper computer lab and a common room was found missing.

Departmental has sufficient land (150 acres) for conducting field research that lies quite in access (less than 1 km) from main campus. Research facility at the farm is sufficient only to meet basic needs of post graduate students. A lot needs to be done for making these facilities worth conducting research for a doctoral program. Nevertheless, there is need for mechanization of the farm so that students are trained keeping in view modern innovative technologies, and also research of high impact is carried out.

Criteria IV: Students Support and Progression

The admission response to degree programs of Department is appreciable. On the commencement of each session about 25 to 30 undergraduates join the Department, and this is fairly satisfactory when compared with other programs in agriculture. Similarly about 25 students join M. Sc (Hons.) program in each session. Ph. D intake amounted from 3 to 5 during last three years. Yield index of the students in all programs is fine.

Merit, BZU need based, HEC sponsored and Bait-ul-mal scholarships are available to students at both under and post graduate level. Interest free loans by banks are adequately available.

Two hostels (one each for boys and girls) are available and sufficient to meet requirements of boarding students. An auditorium is under construction in the UCA, and indoor and outdoor sports facilities are present in the University adequately. University owns 55 buses with seating capacity of 2500 for student transport. University has a dispensary where to serve the faculty, students and support staff of the university.

Although academic counseling is present, but needs proper arrangement. The internship is compulsory for each undergraduate student as was evident from the scheme of studies but needed further strengthening. The student-teacher interaction as well attitude of students towards studies was encouraging. The student's attendance record was well maintained. Students perception about degree programs was quite positive but with more demand for emphasis on improvement of field work and lab experiments. Students are encouraged to participate in seminars/conferences but there is shortage of financial support for this purpose. Students participate in community welfare activities through professional societies.

Criteria V: Research and Consultancy Activities

The Department receives annual research grant from University. There is shortage of research grants from external sources as HEC, PARC or other donors based on competitive basis. Most of the research activities are limited to very scarce funding managed from local sources. The amount of research grant of agronomy department during past three years was Rs. 3.8369 million, and has been utilized properly. The finding and outputs of research activities of projects as well as post graduate students research are published only to some extent in HEC approved/impact factor journals, and needs to be improved a lot.

There is no constraint on the faculty to continue their research. The department has academic collaboration with some organizations as ACIAR, PARB and PARC, CCRI but it is only being a component of mega projects. Lack of competitive grant in the department has been felt severely. Department has no budgetary allocation for seminars and conferences. The faculty in the department renders advisory services to farmers, NGOs and private companies. None of

the research findings have been communicated to farming community through booklets, brochures, leaflets, etc., and hence, needs great attention.

Criteria VI: Governance and leadership

The Vice Chancellor is the chief executive of the University and is assisted by the Deans of the Faculties, Principals of Colleges, Heads of the Departments and Principal Officers of the University. The organizational setup, rules and procedures, administrative control, financial resources are all well documented and defined. University catalogue is published every year. The implementations of statutory rules/regulations are intact. The operational budget is available to run the Department quite smoothly, but a severe shortage of research and development budget was realized by the AIC. The academic setup rests with the department 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. A placement bureau exists and is operational in the University. The Department does not keep Alumni's profile, and same was true for calendar of activities. Department releases its own Newsletter to highlight various activities.

Criteria VII: Adoption of Best Practices

The process of curriculum revision is carried out as part of National Curriculum Revision Committee, and adopted as such. This assures uniformity in content and objective of different programs. Improvement in teaching quality is being tried through class discussions and in-session questioning. Assessment of students is done through examination, both written and oral, during, and at the end of each semester. Feedback from students is sought through proforma filled by them at the termination of each semester. Post graduate and Ph. D. students seek advice from their supervisor and also search internet for acquisition of further knowledge. A quality enhancement cell (QEC) works at the University level and Principal office gathers information from respective Departments to compile the annual report in this regards. The same is submitted to, and evaluated by University QEC.

All the faculty in the Department was highly positive and enthusiastically forward looking towards teaching and research.

SWOT Analysis

1. Major strengths

- All regular faculty in Department of Agronomy holds PhD degree. Some of the teachers have completed their Post-doc from higher seats of learning abroad.
- All the courses of offered in the Department at undergraduate and post graduate programs are adopted from the scheme of studies as finalized by HEC constituted National Curriculum Committee in Agronomy.
- The departments attracts highest number of students at under-graduate and post-graduate level so that it is most sought after major at UCA.
- The faculty stability index is excellent and seeking job in University is a top priority.
- Buildings, covered area for lecture rooms as well as offices of faculty is abundant. Departmental has sufficient land for conducting field research.
- The internship is compulsory for each undergraduate student.

2. Major weakness

- Absence of proper facility that may help strengthen the communication and presentation skills of the students.
- There is no effort at present on preparation and submission of course review report regularly by each faculty member at the time of course evaluation.
- Lack of state-of-the-art controlled-environment facility and a well-furnished computer lab at the departmental level.
- Shortage of farm machinery and implements including the latest farm equipment and other farm machinery. A lot of effort needs on it for student training and a good quality post graduate research.
- Course/s on information technology is missing from the curriculum at both under and post graduate levels.
- Quality of lab equipment is inadequate to meet the research needs of postgraduate and Ph. D students.
- Lab staff is only meagerly available. Annul budgetary allocation for maintenance and operation of labs is inadequate.
- Funds for the purchase of books are insufficient. The Department does not subscribe even a single foreign journal for its library.

3. Major opportunities

- Job opportunities exist for students graduating in agronomy in both public and private sector organizations.

- Faculty in the department is capable of providing technical guidance to the students and better research initiative can be taken by Ph. D students in improving their research plans.
- A lot of opportunity to win projects from national and international donors through competitive grants is there which can help overcoming the financial constraints in research.
- Room exists for transfer of technology by disseminating the findings of student and faculty research to farming community in the form of booklets, brochures, leaflets, etc.

4. Major threats

- The UCA in general is working under the umbrella of Dean Faculty of Biological Sciences. It faces problems related to teaching, research and student management. People at the helm of affairs often fail to understand these issues and try to handle in their own way.
- 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.
- Trend of shifting emphasis from teaching to publications is developing.

General Recommendations

- The farm facility should be mechanized keeping in view the future demands of precision agriculture and sustaining farming systems.
- Laboratories need to be made functional by providing operational funds as well as equipping these with more recent apparatus. A computer lab should be established for the students with the latest computers and internet facilities.
- Supporting staff need to be recruited on the basis of relevant qualification/experience for handling the scientific instruments/equipment safely.
- Budget allocation for development, research, library and labs may be specified and be increased to meet the demands properly.
- Funds should be allocated to attend international conferences/seminars.
- 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 further.
- 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 of Agronomy at UCA, BZU, Multan has enough physical infrastructure in the form of research farm, laboratories, 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 of the Department of Agronomy, UCA, BZU, Multan in the “X₃” category as per HEC rating system i.e. Degree Program having minor shortfalls.

Signatures of AIC Members

Name and Designation	Signatures
i. Dr. Abdul Khaliq Associate Professor Department of Agronomy University of Agriculture Faisalabad.	Convener _____
ii. Dr. Dilbaugh Senior Scientific Officer/Head Agronomy and Technology Transfer Central Cotton Research Institute Multan.	Member _____
iii. Mr. Naseer Alam Khan Secretary, NAEAC HEC, Islamabad	Member _____

Comments and Signatures of Chairman

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

Chairman
Department of Agronomy
UCA, BZU
Multan