



## **AIC Report**

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**Department of Plant Breeding and Genetics  
Islamia University, Bahawalpur**

## **AIC REPORT**

**(For Islamia University, Bahawalpur)**

### **Executive Summary**

The Accreditation Inspection Committee (AIC) setup by the National Agriculture Education Accreditation Council (NAEAC) for the external review of the Degree programs B.Sc. (Hons) and M.Sc. (Hons) of the Department of Plant Breeding and Genetics, University College of Agriculture & Environmental Sciences (UCA & ES) visited the Department on 27-28 February, 2013 and review the degree programs. The College was established on 25<sup>th</sup> March, 2005 and classes were started on October, 2005. An Agricultural research Farm of about one hundred and fifty acres has been provided for practical & research experimentation of students and faculty at Baghdad-ul-Jadeed Campus. B.Sc. (Hons) Agriculture (PBG) program started in 2008, and M.Sc. (Hons) in Fall-2011 semester. The PhD program was started in current semester.

The College follows HEC recommended curriculum for B.Sc. (Hons) & M.Sc. (Hons) degree programs as per decision of the national Curriculum Revision Committee and duly approved by statutory bodies such as Board of Studies and Academic Council. It is generally revised/updated after every five (05) years. The course of BSc. (Hons) Agriculture at UCA & ES comprise of 137 credit hours, as per direction of HEC with recommended major/minor/supporting courses. The PBG discipline is one of the pioneer and core discipline and integral part of the College. There are some short comings in the program and more infrastructure /other facilities are required for the high quality degree programs. There is a shortage of senior faculty, and more faculty members such as Professors and Associate Professors may be appointed. Upgradation and strengthening of the Lab facility and qualified lab staff is required. More labs are needed and particularly a Lab for Biotechnology will be very helpful for successful Molecular Breeding Program. There are five faculty members and among those two are working as adjunct professor and visiting faculty as Lecturer. Computer facilities for the students within the discipline/college for approaching the online journals and textbooks may be provided. Alumni Association, Placement Bureau need to be established. The degree programs in PBG are also deficient in some major criteria namely “Infrastructure and Learning Resources and Strength of faculty. However, construction of new building comprising class, laboratories, offices are under progress which may be helpful for strengthening and upgradation of the status of the department. The degree programs are recommended as X category.

## **Introduction**

College was established in 25<sup>th</sup> March, 2005 and classes were started on October, 2005. College is an integral constituent of the Islamia University of Bahawalpur. PC-1 of the College has been approved and construction of 'Academic block' of the building is in progress. Programs offered B.Sc. (Hons) Agriculture (PBG) started in 2008, M.Sc. (Hons) started in Fall-2011 semester, PhD program started in current semester. The College follows HEC recommended curriculum for B.Sc. (Hons) & M.Sc. (Hons) degree programs as per decision of the National Curriculum Revision committee and duly approved by statutory bodies. It is generally revised/updated after every five years. The course of B.Sc. (Hons) Agriculture at UCA & ES comprise of 137 credit hours, as per direction of HEC with recommended major/minor/supporting courses. To provide quality education, major focus is on development of trained and skilled human resources in breeding of field crops through quality academics and research. The main components i.e sessional evaluation (20%) Lab. & Field participation/group work/behaviour/attendance Quiz/short answer questions. Internship for 8<sup>th</sup> semester also under practice. In time submission of practical reports presentation/seminar, mid term examination (30%) and final term examinations (50%). Transparency mechanism i.e. All admission lists are made available on internet. Marked copies of mid-term and final exams are shown and discussed by the students. Lecture shortage warning is displayed at least twice before the onset of final exams. The Plant Breeding & Genetics Department is in the basement of Central library and has; Germplasm preservation room/lab, Ginning sample collection room, and PBG Lab, Experimental farm (05 acres reserved for PBG Dept.), 03 Classrooms at Central library basement while one classroom in the faculty of Islamic learning. Currently computer labs in faculty of Islamic learning and faculty of Science are allowed for our students. Some shared facilities like Desktop , Laptop Computers, and multimedia are available for student in the Labs./lecture rooms with internet connections. It is also recommended that the departmental teaching staff should win research projects from different funding agencies and publish students/faculty research findings in the form of quality research paper in the journal of national and international repute. Staff members should also make endeavour to prepare practical manuals and some text books helpful for the students of the Department of Plant Breeding and Genetics.

The experimental area was also visited. The students have conducted their experiments, on wheat and cotton and some other crops. They were advised to properly label the experiments, showing date of sowing, number of treatments/varieties and layout plan etc. There are five faculty members, one Associate Professor, one Assistant Professor (TTS), one regular Lecturer, and two visiting faculty members, one as adjunct Professor and one is visiting Faculty member. Whereas according to HEC standard criteria in case of strength and quality of faculty composition is 1:1:2:3 and at least there should be five PhD qualified faculty members. The recommended student ratio is 120 and supporting staff is 1:2. The detail can be seen in the Annexure-II (a,b).

## Criterion wise analysis

### Major criteria

- **Strength and quality of faculty:** There are five faculty members, one Associate Professor, one Assistant Professor (TTS), one regular Lecturer, and two visiting faculty members, one as adjunct Professor and one is visiting Faculty members. More senior faculty members needed to be appointed for strengthening the department and proper imparting of quality education and modern research technology. According to HEC standard criteria there should be atleast five PhD and the ratio of Professor, Associate Professor, Assistant Professor and Lecturer should be 1:1:2:2 respectively.
- **Curriculum Design and Development:** The curriculum is designed according to the Higher Education/HEC policies and examination system is also followed by the HEC policy. The curriculum is revised every five years with improved version. New research findings and books are included in the revised curriculum at postgraduate and undergraduate level.
- **Infrastructure and learning Resources:** There is some deficiency in case of infrastructure i.e. classrooms/laboratories and offices for the teaching staff. However, after the completion of new building of the college hopefully this deficiency would be makeup by providing such facilities to the Department of Plant Breeding and Genetics.
- **Students Support and progression:** The program offered in the Department is a 4 year degree named B.Sc. (Hons) Agriculture and a two years degree named M.Sc. (Hons) Agriculture Plant Breeding and Genetics. Presently there is 8<sup>th</sup> Batch of B.Sc. (Hons) and about 220 students per year are enrolled and now the total number of students is 600 in over all college strength. Two batches of M.Sc. (Hons) Agriculture PBG are in their 3<sup>rd</sup> and 1<sup>st</sup> semester having overall strength of 18 students. A number of supporting and minor courses are being taught according to HEC approved curriculum with 19 credit hours in each semester. In case of an F grade or a D grade by a student, he/she is given a chance to improve as per the rules & regulations attached as Annexure 'A'.
- **Standard 4-1: Frequency of Courses:** all courses are offered once in an academic year. However, if six or more students want to repeat a course, it is offered in the

summer semester.

- **Standard 4-2: Structure of courses:** All core courses are carefully planned by the faculty ensuring its 100% delivery. The major courses are three credit hours duration. The assignments, quiz tests and student presentations, suitable field research work in all such courses ensure that students keep in contact with instructor throughout the semester. Also in case of unplanned holiday, make-up classes are arranged so that total students contact hours with instructor remains the same as originally planned. Both the teachers and students have frequent informal meetings about the course.
- **Standard 4-3: Student Support:** Dr. Muhammad Naeem is appointed as 'Advisor' for students of Plant Breeding Department. However, all senior teacher also offer the advise if required by any student. Tutorial Group Meeting (TGM) is a constant feature of the college. These meetings are managed by all teachers on one hour per week basis, where 25 students are given under one teacher. This method provides the opportunities to all students and teachers to get familiarized with each other. The basic aim behind these TGM classes is to educate the students through career counseling, professional counseling, professional counseling, confidence building, co-curricular & extracurricular activities for character development effectively.
- **Student counseling system:** University has established a career counseling office for all the university students. Moreover, Department has developed links with a number of public and private agricultural sectors to facilitate the students in terms of research and internship and Mr. Mueen Alam Khan is Focal Person for such activities.

#### **Minor Criteria**

- **Research and Consultancy activities:** Students research at farms and lab is satisfactory. However, to equip the lab with latest equipments like electrophoresis, PCR machine, Gel documentation etc. is needed for research work based on biotechnology/molecular breeding. Collaborative programs are being run at CCRI, Multan and CRI, Faisalabad. Advisory Services are also rendered to private companies dealing with seed and pesticides/herbicides.
- **Governance and leadership:** In this regard there is needed for the establishment of Placement Bureau, Alumni Association office and increase in financial resources/operation budget. Placement Bureau will be very helpful for the recruitment of qualified and relevant staff at both level. Alumni Association could also play crucial

role for interacting nationally as well as internationally to improve and strengthen the activities of Islamia University in general and that of the department of PBG in particular.

- **Recent innovations and best practices:** It is also reasonably satisfactory. The stakeholder are included in the faculty board better incentive are also given to the hardworking teachers. There is transparent assessment system for assessment of the teachers by the students at the end of the each semester as required by QEC. There is a research work on the development of new varieties of crop like Cotton, Wheat, and other major crops, and a new strain of cotton IUB222 is also in the process of approval.

## **SWOT analysis:**

### **A. Strength**

- Germplasm of Cotton, Rice and Wheat has collected by the Department to develop new varieties of different crops.
- Collaboration of Plant Breeding Department with CRI Faisalabad and CCRI, Multan.
- MoU signed with Auriga Chemicals Lahore.
- Field and low cost tunnel facilities at agriculture farms for on-farm research

### **B. Weaknesses**

- Shortage of recurring budget for conducting research and maintenance of laboratories
- Limited laboratory, class room and office facilities, and there is no departmental library.
- Lack of senior faculty members especially Professor/Associate Professors
- Non availability of sufficient no of computers for students and staff
- Technically trained lab staff is not sufficient

### **C. Opportunity**

- Collection/creation of new germplasm in cotton and rice is under progress.
- Breeding for abiotic stress tolerance in Cotton, Rice and Wheat has initiated
- Shifting of College building's site in 'Master Plan' at suitable and accessible place.
- Good employment job opportunity for graduate/postgraduate students in public and private sector.

### **D. Threats**

- Lack of research funds may cause hinderance for the provision of quality education and to trained skilled human resource.
- Establishment of independent biotech lab is necessary for the molecular breeding program.
- More teaching staff should be recruited especially with PhD degree for dissemination of quality education and proper skill and advanced knowledge and technology.
- Sufficient no of research journal are not available to the department.



## **E. Actionable recommendations**

Having discussions with the faculty members / students and visiting lecture rooms and labs of the Department of Plant Breeding and Genetics the following recommendations may be considered to uplift the department of PBG, Islamia University, Bahawalpur.

- More faculty members particularly Professors and Associate Professors may be recruited for proper research guidance and imparting of new knowledge and technology to the students.
- Upgradation and strengthening of the lab facilities and qualified lab staff is direly needed.
- Computer facilities for students within the department should be provided for easily approaching online journals, books and research paper etc.
- Modern greenhouse should be constructed for proper conduct of experiment especially for stress breeding experiments.
- Independent office for faculty member should be made available.
- Funds for postgraduate studies should be increased to a reasonable extent.
- Alumni Association, Placement Bureau, Functional Tutorial group system for proper counseling and guidance of the students.
- More furnished lecture rooms and teaching aids like the use of multimedia within the department are recommended.
- The sports and co-curricular activities including formal counseling must be initiated at the department level

On the basis of the inspection/evaluation, the team recommends Accreditation of the Degree Programs of Plant Breeding and Genetics, Islamia University Bahawalpur in X category of National Agriculture Education Accreditation Council/HEC.

## Signatures of AIC Members

<u>Name and Designation</u>	<u>Signatures</u>	
<b>Prof. Dr. Abdus Salam Khan, Chairman Dept. PBG, UAF.</b>	<b>(Convener)</b>	<b>Sd/</b>
<b>Rao Abdul Qayyum, Assistant Professor Dept. PBG, BZU, Multan</b>	<b>(Member)</b>	
Dated: 31.5.2013		

## Annexures-I

### TORs

- To validate the Self-Assessment Report (SAR) of the degree programs (B.Sc and M.Sc (Hons) prepared by the department/discipline.
- To carryout external evaluation of the degree programs in a transparent, neutral, holistic and participatory manner for accreditation and rating of degree programs **based on the evaluation criteria of NAEAC.**
- To submit synthesized and concise analytical report (7-8 pages) consisting of short introduction, brief criterion-wise analysis, **Self-explanatory SWoT Analysis and explicit actionable recommendations along with completely filled-in and signed Evaluation manual (Toolkit)** based on the validation of SAR and interaction with the Chairman, Faculty members, Students and Support Staff and Alumni as well as detail on-site visit of physical infrastructure, facilities and othr teaching-learning resources available for the offering of degree programs.
- To submit clear, precise and justified actionale accreditation and rating recommendatins about the degree programs to the Chairman NAEAC.

## Annexures-II (a)

<b>REGULAR FACULTY</b>				
Sr #	Name	Qualification	Designation	Status
01	Dr. Muhammad Iqbal	PhD (PBG)	Associate Professor	Permanent
02	Dr. Muhammad Naeem	PhD (PBG)	Assistant Professor	TTS
03	Mr. Mueen Alam Khan	M.Sc. (PBG)	Lecturer	Permanent
04	Dr. Abid Mahmood	PhD (PBG)	Professor	Adjunct basis
05	Usman Aziz	M.Sc.	Lecturer	Visiting faculty

**Annexures-II (b)**

<b>OFFICIALS AND SUPPORT STAFF</b>				
Sr #	Name	BPS	Number	Status
01	Office Assistant	14	1	Permanent
02	Laboratory Assistant	7	1	Permanent
03	Field Assistant	8	1	Permanent
04	Beldar	1	1	Contract
05	Janitors	1	1	Permanent
	<b>Total</b>		<b>5</b>	

**Annexures- III****Inventory of apparatus/equipments/Books etc.**

Sr #	Laboratories apparatus / equipments
1	Binocular Microscope
2	Electronic Balance
3	Horizontal Gel Electrophoresis
4	Cotton Ginning machine
5	Electronic Balance
6	Refrigerator
7	Wash bottles and Glassware
8	Kjeldhal's Apparatus
9	Conductivity meter
10	pH meter
11	Centrifuge machine
12	Laminar Flow Cabinet
13	Spectrophotometer
14	Grain moisture Meter
15	Autoclave
16	Digital Analytical Balance
17	Zoom microscope
18	<b>Total number of books</b> <b>120</b>

## Annexures-IV

### Last three year completed and ongoing research project

S. No.	Title of Project	Principal Investigator/Co-P.I.	Amount	Funding Agency
1	Genetic and Molecular Genetic analysis of mutated and non-mutated rice varieties	Mr. Mueen Alam Khan (P.I) Dr. Muhammad Iqbal (Co-PI)	0.5 million	HEC