Confidential

National Agriculture Education Accreditation Council

76

Report of the
Accreditation Inspection Committee
(AIC)

Prof. Dr. Abdul Jabbar Malik

Dr. Muhammad Mureed Kandhro

To accredit
Plant Breeding and Genetics programs
Faculty of Agriculture,
Sindh Agriculture Tando Jam

ACKNOWLEDGMENT

The Evaluation Team acknowledges the support and cooperation of the honorable Vice Chancellor, Sindh Agriculture University Tando Jam, Dean Faculty of Agriculture, Department of Plant Breeding & Genetics and Faculty / Staff members of the Department. The immense help, guidance and logistic support of Mr. Naseer Alam Khan (Secretary), NAEAC and Raja Mr. Mehtab Yasin (Admn. and Finance Officer), NAEAC Secretariat is highly appreciated.

Accreditation Inspection Committee (AIC), NAEAC

Accreditation of Agriculture Education Institutions in Pakistan

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 Plant Breeding & Genetics Department of Sindh Agriculture University Tando Jam visited the Department on March, 19-20, 2013 for the in-depth review of the degree programs.

The Sindh Agriculture University was established on 1st March 1977 by up grading the Sindh Agriculture College which was initially started as King George V College of Agriculture in 1934 at Sakrand,
Since then, the PBG discipline has remained as one of the pioneer subject & integral part of the Degree of B.Sc (Hons) Agriculture which was started in 1959 andM.Sc (Hons) in 1960. **There are ten full faculty members & one faculty member working as a visiting faculty,** the faculty members are focused, energetic and well qualified and have national & internal exposure. The university maintain Agriculture Farm which is used for research & other **farm practices and research by the PBG departmen**t.
How ever, some short comings were noted. There is shortage of Associate Professor which need to be appointed. Up gradation and strengthening of the facility of laboratories & qualified lab staff is required, computer facility for the students within the discipline may be expended.
Alumni association, Placement Bureau, functional tutorial groups and counseling for students may be initiated at the University.

1.1 Introduction:

The Accreditation Inspection Committee (AIC) setup by the National Agriculture Education Accreditation Council (NAEAC) for the external review of the Degree Programs of B.Sc. (Hons) and M.Sc. (Hons) of the Plant Breeding & Genetics at Sindh Agriculture University, Tando Jam visited the Department of PBG on March 19-20, 2013. The report of the Committee is presented below:

The AIC met on March 19-20, 2013, in the Department of Plant Breeding & Genetics to carryout external review of the B.Sc. (Hons) and M.Sc. (Hons) degree programs for accreditation.

1.2 Plant Breeding & Genetics Degrees

The PBG discipline is one of the pioneer subjects and integral part of the Faculty of Agriculture. Degree of B.Sc (Hons) Agriculture in PBG as a major subject was started in 1959. M.Sc. (Hons) Agriculture was started in 1960. **As the HEC**

Requirement the scheme of study is being followed and degree is awarded by SAU. **There are ten full time faculty members and one faculty member is working as a visiting faculty.** One course of 3 credit hours is taught as a general course to the B.Sc. (Hons) Agri. Students. Average CGPA of graduated students of B.Sc.(Hons) for the last years was 3.5. Total number of B.Sc. students passed from the discipline of PBG 690 & M.Sc. is 650 in-take of students PBG major in B.Sc (Hons) Agri. 5th semester has been 43 and that in 1st semester M.Sc. (Hons) has been **93.**

Program Mission

The mission of the program of Plant Breeding and Genetics is to develop and apply the basic & applied knowledge of Plant Breeding Genetics for efficient management & development of crop varieties.

Section-2: Point wise Analysis

2.1 Strength and Quality of Faculty

At present there are ten full time faculty members i.e. two Professors, five Assistant Professors and three Lecturers. Three faculty members hold Ph.D. degrees and the seven have M.Sc. (Hons). Two faculty members are Ph.D. from abroad and one earned his Ph.D. degree locally. Two Lecturers have proceeded abroad and one teacher is working as visiting faculty. Teacher student ratio is very good (1:5).

The faculty has 30 publications during the last three years; one in impact factor journal, 16 in HEC approved journals and 13 in other journals/proceedings etc. Existing teaching load of each faculty member is within the prescribed limit by HEC. Publications of the faculty are OK.

Salaries of the teachers are according to the national pay-scales. All the faculty members interviewed were found satisfied with their job and working environment except a few small problems.

2.2 Curriculum Design and Development

The HEC revised curriculum for 2010 has been adopted by the University as well as by the Department of PBG. Sufficient number of text books are available in the Department library. There is access to HEC facility (books/journals etc) to the faculty members and students of the university.

Students Perception:

The students were satisfied about the teaching methodology and the covering of the theoretical as well as practical components of the courses as per available facilities.

Net credit hours are according to HEC plans and courses are generally completed before the examinations. Proper course files are maintained by the teachers although information needed for the course file was found with the teachers when asked for them.

Admissions, course registration and withdrawal policy is well documented and matches with that planned by HEC.

QEC exists in the University. The course evaluation system is more or less according to the HEC instructions. The mid semester, final semester and practical examinations are being held according to the scheduled date sheet. Quizzes, Assignments are also given to the students.

2.3 Infrastructure and Learning Resources

The department of Plant Breeding & Genetics is the independent part of the Faculty of Agriculture, SAU Tando Jam. Overall there are three lecture rooms of 23'*35',two teaching labs of 24'*40'and one postgraduate lab of 23'*25'.

The laboratory facilities for the students are partially adequate; There is a need of more qualified and regular lab staff. There are a few number of multimedia in the department & faculty and the teachers have access to it and they can use them as and when required. There are only quiet a number of M.Sc. (Hons) students in the department. Vast agriculture farm facilities are available at the campus for student's and faculty research and field activities.

There is well stuffed library in the PBG department and central library of the university. Local/foreign journals are received in the departmental and central library, along with honorary copies of the local journals are received. No facility of book bank exits in the university. DVD writer, scanner and photocopy facility is available to the students in the university. Website of the university is available. There is one computer lab with about 40 computers for undergraduate and post graduate students within the faculty. More number of computers are required to accommodate maximum post and under graduate students.

2.4 Students Support and Progression

Response of students to B.Sc. (Hons) PBG is comfortable. Average number of intake of students in PBG major is about 45, and in M.Sc. (Hons) is 93 students. Over 600 student have completed M.Sc. (Hons) in the discipline. Drop out is almost nil in B.Sc. (Hons) and very low in M.Sc. (Hons).
Admission system is transparent. Some merit scholarships are available from the university. A limited number of need based scholarship facilities to the students are available from other sources like HEC. Adequate hostels facilities are available for both boys and girls. Adequate medical facilities for faculty and students are available. Outdoor/indoor sports facilities & Gym are available at main campus.

2.5 Research and Consultancy activities

Research activities of the staff and the students were visited. Some research in the field was observed. A few faculty members were actively involved in field research. Number of project has been obtained by the faculty from HEC and other resources. There is research fund available for faculty research. Also they can get funds from the university. Faculty is also rendering advisory services to some farmers.

2.6 Governance and Leadership

The SAU is mainly run by the Vice Chancellor. The allocated operational funds for student's practical are at the disposal of the Vice Chancellor who has all the administrative and financial powers. However funds are sanctioned on need basis. There are no proper Alumni Association and Placement Bureau to develop a database of outgoing students, their employment record and feed back from them. No newsletter published by the University. However a research journal is published by the University regularly.

2.7 Adoption of Good Practices:

Practice of curriculum review as arranged by HEC is followed by the PBG Dept. of the University. At university level the faculty make improvements according to the local environments. Teachers get their assessment from the students informally. Quality Enhancement Cell as proposed by HEC does exist in the University and some actions are reported to QEC of the University. Major & minor crops research on the development/maintenance of germ-plasm of wheat, Cotton, rice oilseed, vegetables etc is being carried out by a few faculty members, which has lead for the development of new varieties for the area.

Section-3 Overall/ SWOT Analysis

3.1 Major Strengths:

The PBG program has the following strengths:

1: The faculty members are found focused and energetic they are well qualified and have national and international exposure.

2: The University has large farm area which is used for research. The area is fertile and well maintained.

3.2 Major Weaknesses:

1. More teachers are needed to be appointed specially at position of Associate Professor.

2. Addition of high quality equipment for quality teaching and research is required.

3. Post-graduate research funds are required to be increased.

4. Deficiency of technically trained support staff.

3.4 Major Opportunities:

1. Prime duty of faculty is teaching, supervise graduate research, conduct research and extend services to the community.

2. The Department also could look for training the scientists with advanced techniques of plant breeding including MAS (marker assisted selection), double haploid production, tissue culture and gene transformation for which the facilities need to be developed.

3. The students have good employment opportunities in government and private organizations / companies.

3.5 Major Challenges:

There is a need that i) More faculty, especially Associate Professors and lectures in the department are recruited.

Section- 4 Actionable Recommendations:

The following suggestions may be considered for institutional interest:

1. Shortage of faculty: More faculty members such as Associate Professors and lecturers may be appointed.

2. Up-gradation and strengthening of the facilities of laboratories and qualified lab staff is required.

3. Computer facilities for the students within the discipline for approaching the online journals and textbooks may be provided.

4. Post-graduate research funds of the department should be increased by the University according to the student strength.

5. Research journals of the subject need to be subscribed for the departmental /main library.

6. Alumni association, Placement Bureau , functional tutorial groups and counseling for students may be initiated at the University/department and made functional.

7. More furnished lecture rooms and teaching aids like the use of multimedia within the department are recommended.

8. 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, Faculty of Agriculture, Sindh Agriculture University, Tando Jam in "W+" category of National Agriculture Education Accreditation Council/HEC.

4.4 Signatures of AIC Members

Name and Designation		Signatures
Prof. Dr. Abdul Jabbar Malik Dean Faculty of Agriculture, LUAWMS **Permanent Add:** Fl No.407-Marina Alevation. Near Indus Valley School, Clifton block-2, Karachi.	(Convener)	Sd
Dr. Muhammad Mureed Kandhro Deputy Chief Scientific Officer, NIA Tando Jam	(Member)	Sd
Dated: 31-03-2013		

4.5 Comments and Signatures of Chairman

Annexure I

Composition of AIC, Term of Reference (TORs)

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 comprising of the following scientists to review the programs of Plant Breeding & Genetics Department, Faculty of Agriculture, Sindh Agriculture University, Tando Jam for the assessment and accreditation of degree awarding academic programs:

Permanent Add: Fl No.407-Marina Alevation.
Near Indus Valley School, Clifton block-2, Karachi Convener

Dr. Muhammad Mureed Kandhro
Deputy Chief Scientist,
Nuclear Research Institute, Tando Jam.

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

To validate the self-assessment report (SAR) of the degree programs (B. Sc. (Hons) Agri. and M.Sc. (Hons) Agri. prepared by the Plant Breeding & Genetics department.

To carry out external evaluation of the degree programs in a transparent, neutral, holistic and participatory manner for accreditation and rating based on the evaluation criteria given in the Evaluation Manual of NAEAC.

To submit synthesized and concise analytical report consisting of short introduction, criterion-wise analysis, self explanatory SWOT Analysis and explicit actionable recommendations along with completely filled-in evaluation manual(toolkit) based on validation of SAR and interaction with the Chairman of the Department, Faculty Members, Students and Support Staff and Alumni as well as detail on-site visit of physical infrastructure, facilities and other teaching-learning resources available for offering of degree programs.

To submit clear, specific and justified actionable accreditation and rating recommendations to the chairman NAEAC within two weeks of the on-site visit.

Annexure II

Full Time and Part Time Faculty Members Anne:I

S.No.	Name of Teacher	Qualification	Designation	Experience	Specialization
1.	Dr. Muhammad Jurial Rind	Ph.D.	Professor & Chairman	31 years	Genetics and Cytogenetics
2.	Dr. Gul Muhammad Baloch	Ph.D.	Professor	35 years	Plant Breeding and Cotton Breeder
3.	Mr. Shah Nawaz Mari	M.Sc.	Astt. Professor	16 years	Plant Breeding and Genetics
4.	Dr. Zahoor Ahmed Soomro	Ph.D.	Astt. Professor	16 years	Plant Breeding and Cytology
5.	Mrs. Munaiza Baloch	M.Sc	Astt. Professor	17 years	Plant Breeding and Genetics
6.	Mr. Saeed Hyder Ghaloo	M.Sc	Astt. Professor	16 years	Plant Breeding and Genetics
7.	Mr. Asghar Ali Rajper	M.Sc	Astt. Professor	16 years	Plant Breeding and Genetics
8.	Ms. Shabana Memon	M.Sc	Lecturer, gone for Ph.D. in China	7 years	Plant Breeding and Genetics
9.	Mr. Siraj Ahmed Channa	M.Sc	Lecturer, gone for Ph.D. in China	7 years	Plant Breeding and Genetics
10.	Ms. Nasreen Fatima Veesar	M.Sc	Lecturer	4 and half yrs	Plant Breeding and Genetics
11.	Dr. Moula Bux Kumbhar	Ph.D.	Visiting Professor	40 years	Biometry & Advanced methods in Plant Breeding

Supporting Staff (Technical and Non-Technical) Ann-II

S. No.	Name	Qualification	Experience	Designation
Technical				
1	Mr. Abdul Rasheed Memon	M.A	17 year	Lab. Asst.
2	Ms. Sahabzadi	Intermediate	17 year	Lab. Asst.
3	Mr. Faizan Mehmood Halo (Project)	B.Sc (Agri) Hons.	01 year	Res. Asst.
4	Mr. Ayaz Ali Keerio (Project)	B.Sc (Agri) Hons.	01 year	Res. Asst.
Non-technical				
5	Mr. Shamsuddin Mahar	Inter	22 year	Senior clerk
6	Mr. Najamuddin Bhutto	Inter	05 year	Naib Qasid
7	Mr. Ali Nawaz Memon	Matriculation	24 year	Naib Qasid
8	Mr. Muhammad Bux Mirjat	Nil	32 year	Malhi
9	Mr. Sheral Bhatti	Nil	24 year	Lab. Attendent
10	Mr. Abdul Ghani Thaheem	Nil	24 year	Lab. Attendent
11	Mr. Ghulam Rasool Panhwar	Nil	18 year	Naib Qasid
12	Mr. Muhammad Budhal Rajper	Nil	17 year	Malhi
13	Mr. Abdul Raouf Shaikh	Nil	24 year	Naib Qasid
14	Mr. Qurban Ali Panhwar	Nil	21 year	Naib Qasid
15	Mr. Anwar Ali Chandio	Nil	21 year	Labour
16	Mr. Ali Nawaz Khaskheli	Nil	18 year	Labour
17	Mr. Nabi Bux Nizamani	Nil	17 year	Field Man
18	Mr. Muhbat Ali Gopang	Nil	17 year	Labour

Seminar/Workshop/ Training courses attended by Faculty members (Ann-III)

S. No.	Seminar/ Workshop/ Training courses	Attended by Faculty members
1.	1st National Workshop on Wheat Rust held on April 11-12, 2011 at Nuclear Institute of Agriculture (NIA) Tandojam.	1. Dr. Zahoor Ahmed Soomro
2.	One week orientation course on "Genetic Improvement of Crops" held on May 9-13, 2011 organized by Plant Genetics Division, Nuclear Institute of Agriculture (NIA), Tandojam.	1. Dr. Zahoor Ahmed Soomro 2. Mr. Shah Nawaz Marri 3. Ms. Shabana Memon
3.	Training workshop on "**Essential skills of office automation**" organized by Department of Learning Innovation, Higher Education Commission, Islamabad at Sindh Agriculture University Tandojam from May 19-22, 2010.	1. Dr. Zahoor Ahmed Soomro
4.	Training course "**Technology Transfer**" from 11.01.2010 to 20.02.2010 at Agriculture Training Institute, Sakrand. Organized by Directorate Training Agriculture Extension Sindh, Hyderabad.	1. Siraj Ahmed Channa
5.	Two days training program from 11 to 12th July 2011 at **Latif Farm Sindh Agriculture University Tandojam** in connection with "**Technology Transfer of Hybrid Seed Production of Cotton**".	1. Siraj Ahmed Channa
6.	Two days training program from 25 to 26th July 2011 at **Botanical Garden Sindh Agriculture University Tandojam** in connection with "**Technology Transfer of Hybrid Seed Production of Cotton**".	1. Siraj Ahmed Channa
7.	January 25th – 18th March 2010 Master Trainers Faculty Professional Development Program HEC Islamabad.	1. Nasreen Fatima Veesar
8.	One day seminar on Green Super Rice , organized by Nuclear Institute of Agriculture Tandojam in collaboration of NIBGE Faisalabad, 15-10-10.	Dr. Gul Mihammad Baloch

Research Publications (Ann-IV)

Year	No. of Publications
2012	07
2011	05
2010	05
2009	10
2008	14
2007	05
2006	04
2005	09
Total	49

Departmental Operational Budget for 2012-13.
(Ann-V)

Items	Budget 2012-13 (Rs M)
Chemicals & Glassware/Practical Material	0.200
Insecticides & Pesticides	0.070
Misc./Contingency/Unforeseen	0.100
Purchase of Electric Material	0.040
Purchase of Mach. & Equipment	0.120
Purchase of Sanitary Material	0.060
R & M of Furniture & Fixture	0.060
R & M of Mach. & Fixture	0.080
Seed & Fertilizer	0.120
Stationery	0.060
Total	0.910

Laboratory equipments (Functional) (Ann-VI a)

Name of Equipment	Quantity	Remarks
Refrigerator (Haier)	01	Functional
Electric Research Microscope with camera and LCD (HT, UK)	01	Functional
Projector	02	Functional
Mono occular Microscope (Electric)	07	Functional
Bin occular Microscope	02	Functional
Micro processor pH meter	01	Functional
Magnetic Stirrer	02	Functional
Hot plate	01	Functional
Water bath	01	Functional
Hot Oven	01	Functional
Analytical balance	01	Functional
Split A.C (LG)	01	Functional
Electric Balance	01	Functional
Chlorophyll meter Minolta	01	Functional
Leaf area meter	01	Functional
Deep freezer	01	Functional

Structures & Machinery of SPDC & Germplasm Conversation Center
(Ann-7 b)

Structures		
Name	**Quantity**	**Working capacity**
Seed stores	04	40' x 100' sq
Processing hall	01	40' x 100' sq
Ginning hall	01	40' x 100' sq
Germplasm conversation building	01	40' x 100' sq
Green house	01	40' x 100' sq
Equipment shade/ threshing yard	01	
Equipments		
Wheat seed grader (big)	01	
Single plant ginning machine	01	
15-saw ginning machine for blocks	01	
30-saw ginning machine for bulk	01	
Field equipments		
Tractors	02	
Five share plough	01	
Cotton drill	01	
Wheat drill	01	
Bund maker	01	
Rotavator	01	

Board of Studies/ Board of Faculty Meetings
Ann-VIII

Year	BoS	BoF
• 2013=	01	02
• 2012=	06	07
• 2011=	10	05
• 2010=	09	05
• 2009=	05	05
• 2008=	03	06

Internship program (Ann-IX)

Year	No. of Students
2009-10	25
2010-11	38
2011-12	54
2012-13	43

Institutes for placement of Internee:

- Federal Seed Certification and Registration Department (FSC&RD)
- Agriculture Research Institute (ARI) Tandojam (various sub-stations)
- Nuclear Institute of Agriculture (NIA) Tandojam
- National Institute of Biotechnology and Genetic Engineering, Shah Abdul -Latif University, Khairpur
- Agriculture Training Institute, Sakrand
- TASSCO Seed Company Tando Allahyar
- Sugarcane Research Institute, PARC, Thatta
- Pakistan Central Cotton Committee (PCCC) at Sakrand & Ghotki
- Agriculture Extension Dera Murad Jamali, Balochistan
- National Agriculture Research Council (NARC)
- Agriculture Extension Sindh

Output of Graduates & Post graduates (Ann-X)

- Total No. of B.Sc. Hons. produced so far = 690
- Total No. of M.Sc. Hons. produced so far =650
- Total No. of Ph.D. produced so far =06

SEED PRODUCTION & DEVELOPMENT CENTER (SPDC) (Ann-XIII)

Objectives

- **Develop new crop varieties of important crop species with desirable characteristics and high yield potential.**
- **Establish and maintain seed supply chain and supply 50% basic seed of approved varieties (20% in wheat) to private sector in Sindh.**
- **Maintaining germplasm of major crops**

Maintenance & Production of seed of Wheat varieties 2012-13 (Ann-XIV)

Variety	BNS (Acres)	Pre-Basic (Acres)
TD-1	6.5	85
TJ-83	8.5	22
Imdad-2005	2.5	5
SKD-1	7.5	11
Kiran-95	5	20
Sarsabz	2.5	7
Total	**32.5**	**150**

Maintenance & Production of seed of Cotton varieties 2012-13 (Ann-XV)

Variety	BNS Seed (kg)	Pre-Basic Seed (kg)
Sadori	31	164
Chandni-95	25	144
Sindh-1	32	100
CRIS-134	20	300
CRIS-342	0	463
SAU-1	60	3447
SAU-2	93	320
Total	**261**	**4938**