



**National Agriculture Education Accreditation Council**

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

**Mr. Syed Mehfooz Ali Shah  
Mr. Mohammad Hashim Laghari  
Mr. Mohammad Tahir Saleem**

**Horticulture Department,  
Pir Mehr Ali Shah Arid Agriculture University,  
Rawalpindi**

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# 1. General:

## Introduction:

Accreditation is a mandatory process for all academic degree programs offered by public and private sector institutions to enhance their recognition. To accomplish this assignment, the National Agriculture Education Accreditation Council (NAEAC) was established by Higher Education Commission (HEC) to arrange external review by Accreditation Inspection Committees (AIC) comprising of senior scientists in respective fields listed in the Council's roster developed for the purpose.

## 1.2 Accreditation of Agriculture Education Institutions in Pakistan

In pursuance to its mandate given by the HEC, the NAEAC constituted a Review Team comprising the following scientists to review Degree Programs of the Horticulture Department of Pir Mehr Ali Shah Arid Agriculture University, Rawalpindi (PMAS AAUR) for the assessment and accreditation of its degree awarding academic programs:

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|------|--|----------|
| i)   | Mr. Syed Mehfooz Ali Shah,<br>Director General Agri. (Retd.), NWFP.        | Convener |
| ii)  | Mr. Mohammad Hashim Laghari,<br>CSO/ Sr. Director (Retd.) PARC, Islamabad. | Member   |
| iii) | Mr. Mohammad Tahir Saleem,<br>Project Director NFDC (Retd.), Islamabad.    | Member   |

The main terms of reference of the committee were as follows:

- To carry out an external evaluation of the academic programs of the Horticulture Department of PMAS Arid Agriculture University, Rawalpindi for assessing and accreditation of the degree programs of the department.
- To synthesize the critical observations recorded on the basis of discussion with the Chairman of the department and interaction with the Dean, the teaching faculty and students besides the actual visits to the infrastructure of available laboratories, class rooms and field facilities into a consolidated report.
- To submit the program rating and accreditation recommendations to Chairman NAEAC.

The Accreditation Inspection Committee (AIC) setup by the National Agriculture Education Accreditation Council (NAEAC) for the external review of the Degree Programs of Horticulture Department of Pir Mehr Ali Shah Arid Agriculture University, Rawalpindi visited the department on April 13-14, 2009 for the in-depth review of Horticulture Programs. The report of the Committee is presented below:

The itinerary of accreditation visit schedule is given at annexure-I.

### **1.3 Pir Mehr Ali Shah Arid Agriculture University, Rawalpindi (PMAS AAUR)**

#### ***Historical background***

In the early 1970's, the Govt. of Pakistan constituted 'Barani Agriculture Commission' under the chairmanship of Dr. Z. A. Hashmi for suggesting appropriate measures for the integrated development of arid/rain-fed areas of the country. Pursuant to the recommendations of the Commission, the Govt. of Punjab established Barani Agriculture College at Rawalpindi in 1979. Initially courses for B.Sc. (Hons.) Agriculture was introduced, and later on major disciplines were introduced in 1982. The college was upgraded to the status of University of Arid Agriculture in 1994 for different degree programs.

#### ***The setup***

The university consists of four faculties (1- Crop and Food Sciences, 2- Forestry, Range Management & Wildlife, 3- Veterinary & Animal Sciences and 4- Sciences), four directorates (1- Advanced Studies, 2- Research, 3- Placement Bureau and 4- Quality Control), two institutes (1- Management Sciences (UIMS), 2- Information Technology (UIIT)) besides Division of Continuing Education, Home Economics and Women Development. The university is located in Rawalpindi, almost in the center of the twin cosmopolitan cities of Rawalpindi and Islamabad, the capital of the country. It is situated in the beautiful foothills in the northern part of Pakistan, on the Pothohar plateau in the Province of Punjab.

The University offers a number of degree Programs leading to Bachelor, Master and Ph.D. in various disciplines of Agriculture, Bachelor and Master in Business Administration, Bachelor and Master in Computer Sciences and Information Technology, Master, M.Phil and Ph.D. in Biological Sciences, and Master in Social Sciences, Master and Ph.D. in Education.

#### ***The Faculty of Crop and Food Sciences***

The faculty of crop and food sciences comprises eight departments (Agronomy, Plant Breeding and Genetics, Plant Pathology, Soil Science and Soil and Water Conservation, Entomology, Food Technology, Horticulture and Agricultural Extension)

### **1.4 The Horticulture Department**

The *raison d'être* of the establishment of horticulture department in the Pir Mehr Ali Shah Arid Agriculture University, Rawalpindi is to educate and train scientific manpower for the rapidly growing demographic pressures and the increasing demand for food and other agricultural products in the country, particularly in rain-fed (*barani*) and arid areas, for the uplift of the rural areas to improve their economic conditions.

The department is headed by the Chairman and has a faculty of 10 members against the sanctioned strength of 11 positions. (The list is given at annexure-II). The faculty

members are fully committed and produce a reasonable number of students every year who are contributing to national development.

The horticulture department offers degrees of B.Sc Hons. Agriculture, M.Sc Hons. Horticulture and Ph.D. (since 1996) in Horticulture.

It has facilities of research and teaching laboratories, computer, internet and multimedia, class rooms and library besides field experimental area and plastic tunnels/ shed houses. During the last twelve years, the Horticulture Department has produced considerable number of graduates, post-graduates and a few PhDs. Alumni of the Department are working in various organizations and holding responsible positions. Some of the students have won rewards and national recognition. The department is responsible for the landscaping and floriculture activities of the university. Recently, the department has accomplished a three-year duration Rs.33 million HEC funded project for the improvement and strengthening of lab and green house facilities for teaching and research purposes particularly in the field of tissue culture.

The Chairman of the department of Horticulture briefed the Committee comprehensively on the background of setting up the Pir Mehr Ali Shah Arid Agriculture University, Rawalpindi (PMAS AAUR), its setup and policy besides the facilities and infrastructure, including the department of horticulture.

## **1.5 Program Mission and Objectives**

### **Program Mission**

To impart quality education and research - oriented training. Extending the agricultural knowledge for self- sufficiency in quality food and to develop a sustainable system of profitable production which can be environment friendly to make the future of Pakistan prosperous.

### **Program Objectives**

- To develop Horticulture discipline on modern and innovative lines for teaching and research for the graduate and post-graduate students.
- To impart basic and applied high quality knowledge and skills in the field of Horticulture applying highly advanced analytical techniques for crop management
- To guide students and conduct research on scientific lines in the area of Horticulture.
- To strengthen the discipline with integration of knowledge and approach of related Fields such as Biotechnology, Hydroponics, Plant Physiology and Landscape Horticulture.
- To anticipate new problems in Horticulture.
- To train the teaching faculty and students on scientific technological lines.

## **2. Criterion wise Analysis**

### **2.1 Criterion-I. Strength and Quality of Faculty**

The faculty consists of ten members comprising only one Professor, two Associate professors, three Assistant professors and four Lecturers. Forty percent possess less than ten years teaching experience and half of the faculty possesses Ph. D qualification.

The faculty members are well qualified and possess adequate teaching experience in their respective disciplines. Almost all the faculty members were very enthusiastic and committed professionals. The committee felt that the faculty staff was adequate to commensurate with the current needs. However, the number of students and their choice for various horticulture disciplines is also on the increase which implies considerable addition to the faculty staff. The faculty is dominated by floriculture/landscape specialists and the vegetable sector although equally or more important for the region, has minimal or no specialized teacher and need to be improved in future recruitment. Or alternatively some of the current staff members should be considered for an advanced training in the production of vegetables and its latest techniques. Faculty meets criteria of HEC for qualification and experience. Detail of the teaching faculty and support staff is given at annexure-II.

There is no visiting faculty although there is a need and opportunity to engage scientists from National Agriculture Research Center (NARC) and other institutions located in twin cities or even from other universities in the country, particularly in the areas of vegetables and post harvest technology. The subject on nutrition of horticulture crops was very weak – obviously because the area of nutrition, as at other institutions in the country, is left for the soils department. But horticulture seems to be relegated to a low priority in the soils department, although for value addition crops nutrition is of high priority area.

The teaching load is manageable for the faculty but the staff is also engaged in extra administrative and managerial activities like landscaping, maintenance of lawns and maintenance of indoor plants, etc which has involved the faculty in other works consuming a lot of time.

Development of faculty through appropriate training is very crucial for achieving quality of education of students. This is invariably a weak area in all aspects. Internationally lots of training opportunities are available which unfortunately are not availed of either for lack of information or for lack of proper follow up. Trainings in this country are deemed by the seniors as luxury and this culture needs to be changed.

Training of faculty is inadequate as there is hardly any established system. There is an urgent need to establish Faculty Development plan on regular basis. Training abroad for teachers may also be arranged on priority basis. Currently such training is being arranged on personal level.

The University must plan for faculty development and their 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.

Standard salaries pay scales and facilities as in other universities in Pakistan are admissible but there is no remuneration for the extra work devoted by the teaching staff to extend guidance and undertake specialized research Programs.

Recruitment procedures are well documented. The stability of faculty index seems good. However, the mechanism of evaluation is poor and there exists only insufficient opportunities for academic progress.

Seminars are organized regularly but seem to be inadequate. Two national workshops were organized during the year 2007-08 which provided a good opportunity to the students to widen their knowledge base and open vistas for both teachers and students about the prospects and problems of horticulture sector.

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. Obviously, there is a lot room for improvement. The faculty felt serious financial constraints for conducting research and teaching activities.

The student- teacher ratio in the department is 12:1 whereas teaching staff Vs Non-teaching staff ratio is 4:1 indicating shortage of support staff. Average teaching load of professor is 4 credit hrs/ week and rest of the teaching staff has about 8 credit hrs/ week. This is understandable as the professor who is also Chairman of the department has number of other administration and research responsibilities. Teachers maintain a suitable balance between the theory and practical of a course.

## **2.2 Criterion-II. Curriculum Design and Development**

At present three degree Programs are offered:

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|------------------------------|-------------------------------------|
| i. B.Sc (Hons) Agree:        | Eight semesters (after F.Sc).       |
| ii. M.Sc (Hons) Horticulture | Four Semesters (after B.Sc (Hons)). |
| iii. Ph.D. Horticulture:     | Four Semesters (after M.Sc (Hons)). |

There is definite number of credit hours for each course. Internship is an essential pre-requirement and the student has to complete it before the award of the degree. Discussions with the teachers and students revealed that all the rules and regulations are being properly fulfilled. (Details of courses offered are given at annexure- III).

It was 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 horticulture. 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. However, the mission statement and objectives need to be revisited with more focus on concrete achievable goals.

Students felt that the curriculum reflected their perceptions of goals in the horticultural profession. Enough reading material and instructional courses were available to them to grasp the curriculum content. Sufficient course files for the Course registration,

withdrawal and admission policy is well documented with adequate details for the benefit of the students.

Feedback from stakeholders is occasional. However, post-graduate curriculum is sufficiently flexible to accommodate any changes arising out of the latest trends and the changing objectives beside the market orientation. The curriculum seems to be inadequately reviewed to meet the changing trends and quality demands. The curriculum has not been reviewed since 2005.

The course review reports by the faculty members at the time of completion of the course are submitted regularly and the program monitoring system was in place. However, the monitoring system needs some improvements.

### **2.3 Criterion-III. Students Support and Progression**

There was strong admission response and the intake was more than the requirements. The yield index was good and the dropouts minimal. There was hardly any academic counseling available to the students.

Since the establishment of department of Horticulture in 1982, it has produced 245 B.Sc (Hons) and 55 M.Sc (Hons) and a few PhDs. Total current enrollments in B.Sc (Hons) and M.Sc (Hons) is 39 each. The department has only two class rooms and two labs. Only 6 computers are available for 10 faculty members and 4 PCs for almost 80 students.

Financial support to students was inadequate and more avenues should be explored to help students in financing their studies. More scholarships and interest free loan should be provided to facilitate students.

There is no computer lab for post-graduate students' department library. Facilities need to be strengthened and a book bank may be made functional. Current literature and latest books may be made available to students by procuring books on regular basis with sufficient funds.

Facilities for the students pertaining to hostel accommodations, class rooms, practical training, convocation and auditorium halls besides the transport were available. However, more class rooms, labs, transport and medical facilities need to be provided to avoid congestion and facilitate students.

Various course assessment tools are used effectively. However, there is scope for further improvement through addition of modern tools of student's assessment.

Performance of the students is also evaluated and feed back is collected for improving teaching strategies and methods keeping in view the student demands and available resources. A sample of students was interviewed for their feed back which was satisfying. It was also observed that there was no parent - teacher association and the tutorial system.

Trend of the last three years graduates of the department indicates that 70 percent graduates (B.Sc (Hons) preferred to pursue Master degree program and 25 percent took jobs whereas 86 percent Master's degree holders got employment and others joined the PhD program. Average annual enrollment over the last 8 years in the Horticulture department was 13, 10 and 2 students at under-graduate, post-graduate and PhD level

respectively and as reported; the department is maintaining a ratio of 20:20:5 for admission of corresponding Degree Programs. Average GPA of the students of all Degree Programs of Horticulture department is 3.0.

#### **2.4 Criterion-IV. Infrastructure and Learning Resources**

Infrastructure in terms of building space for class rooms and labs was inadequate. The equipment required for laboratories was inadequate except for Tissue Culture, with laboratories staff provision. The available lab equipment was being properly utilized. The faculty / students computer ratio was, however, inadequate and the website needs to be updated regularly. Competent technical guidance to students was available.

There is a well established library having about 30,000 books of which 133 books are related to Horticulture. It was regretted to note that there was no subscription for foreign journals and only two local journals for horticulture sector were available. The team observed that the reference books were available to the students and the teachers. However, it was felt that trained library staff was inadequate in spite of the fact the library after upgrading of the Agric College into university has been expanded. However, effort should be made to incorporate the recent updated information. Besides, the departmental library should be upgraded.

The budget provision, however, was not adequate for the maintenance of equipment and purchase of chemicals. Further, provision for purchase of latest books and journals, especially from abroad was hardly there which need to be seriously considered for the up-gradation of facilities. Further, digital library facilities should be added and access to online journals provided. There was adequate library space available.

The experimental farm area facilities including shade houses were adequate and functional, especially with the purchase of new experimental area near Mandra and Hydroponics farm near Rawat.

#### ***Safety Arrangements:***

There are no proper safety arrangements and no security plan is available in case of emergency. The department is located on the 2<sup>nd</sup> floor; there are no emergency exits for the labs. No fire extinguishers have been installed in any laboratory or in the offices. No first aid kits/ facilities provided in the laboratories/ department. However, the University maintains a Medical Dispensary for such incidents where the required apparatus is insufficient.

#### **IT Support:**

Not available to all faculty members and the post graduate students. Computers with internet facilities should be available to all faculty members and post-graduate students on individual basis. Majority of the faculty members do not have access to the PCs. Computers that are not provided by the university. The internet services provided by the university are poor. The speed of internet is slow and often internet does not work. The telephones are also connected with the internet and the services are often interrupted. Break down of power intermittently, due to which both research and academic work suffer a lot.



Some of Lab equipment is either out of order or outdated. Latest and modern molecular equipment or apparatus are lacking. Untrained & unqualified technical and non-technical supporting staff. Scanty budget for consumables.

The library must possess an up-to-date technical collection relevant to the program and must be adequately staffed with professional personnel. The University Central Library has very limited number of books, journals and periodicals. It's a small library in terms of space and facilities with no catalogue systems. It does not meet the standards of a university library. However, department itself owns few books.

## 2.5 Criterion-V. Research and Consultancy Activities

There are insufficient research grants available to the faculty staff that is competent enough to utilize the funds adequately. The faculty has successfully completed two main research projects already for which grants were available. Mention should be made of two very successful outcomes namely loquat variety and olive plant nursery through tissue culture techniques. There are only two on-going projects, besides four in pipeline.

The faculty has completed about 57 research theses. Based on the successful completion of projects during the last five years, the faculty staff produced following publications which speak the hard-work as well as competence and capability of the teaching staff:

In addition, two workshops related to protected horticulture and tunnel farming were organized, 20 oral presentation in local conferences and 4 in overseas conferences were made. No text book has been published. Teachers should be encouraged to write text books for the students, using the available local information.

### Research Publications of Teaching Faculty

Name	Research Journals		Other Publications	Total
	Impact Factor	HEC Recog.		
Dr. Nadeem A. Abbasi	19	12	14	45
Dr. Ishfaq A. Hafiz	16	10	4	30
Dr. Khalid M. Qureshi	-	8	4	12
Ms. Najma Y. Zahid	2	-	4	6
Dr. Shahid J. Butt	-	12	30	42
Dr. Imran Hassan	2	1	-	3
Mr. Touqeer Ahmad	11	2	8	21
Ms. Ambreen Bhatti	-	-	1	1
Mr. Mehdi Maqbool	5	1	8	14
Mr. Umer Habib	-	-	3	3
Total	55	46	76	177

More funds should be provided for national and international collaboration, including holding of conferences and for participation in seminars and conferences.

Advisory services were inadequate and need to be promoted for the proper dissemination of knowledge to the end users – of course, in collaboration with other similar efforts with a view to avoiding duplication of efforts.

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 junior faculty to carry forward the spirit and implementation of their teaching plans.

## **2.6 Criterion-VI. Governance and Leadership**

Pir Mehr Ali Shah Arid Agriculture University, Rawalpindi (PMAS AAUR) 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, Controller of Examinations, Director of Board of Studies and Director Quality Control. There are four faculties of Agricultural sciences/ subjects and a competent/ experienced scientist is the Dean of each faculty. There are various departments in each faculty headed by a senior professor and assisted by a number of teaching staff.

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 & Planning Unit, and directorates of Student Affairs, Quality Control & 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. This is attributed to the governance system prevailing in the country. The budget allocation for operational expenses and research are very low as compared to the expectations. Efforts are also underway for generating finances which may ease out problems for operating expenses.

There is a useful exchange of knowledge and experiences with related institutions like PARC, BARI, UAF, etc through periodical seminars, workshops and field visits. The team observed that good leadership has emerged at university level which shall improve/ up-grade the status of the University. Contacts are also maintained with senior Alumni to benefit from their experience. The students are encouraged to become members of professional and scientific bodies to have interaction 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.

## **2.7 Criterion-VII. Innovative Practices**

The mechanism for improving quality of instruction is satisfactory. There is a good blend of theory and practical. Student's perception in their feedback on the quality of instructions is encouraging. It is a relatively new university and is emerging as a very successful institution. Teachers and programme assessment mechanism do exist but the quality is a factor which is inherent in the teachers' attitudes towards the taught and their technical competence and confidence. There is Quality enhancement cell (QEC) in the university to monitor teachers' performance. Some of the teachers hardly appreciate the functions of this cell.

### **3. Overall analysis**

#### **Major Strengths**

- The teaching faculty for the degree programs is adequately qualified (50% PhDs) and experienced with vision and capacity to impart quality education and training.
- Successful Accomplishment of HEC funded Rs.33 million project for strengthening the teaching and research facilities of graduate programs, especially establishment of tissue culture lab.
- Necessary infrastructure and facilities are available for teaching-learning activities of the degree programs including laboratories, experimental farm, plastic tunnels and cold chamber. Strong collaboration with sister – institutions like PARC, NARC, Barani Agricultural Research Institute and UAF for exchange of information and sharing of teaching – research facilities.
- Holding of seminars and workshops for exchange of knowledge and experience is a positive sign that help teachers and the taught in updating their knowledge.
- Prescribed rules, procedures and standards are being properly followed for students, assessment and performance of students and teachers with feedback from stakeholders.

#### **Major Weaknesses**

- The degree programs of Horticulture discipline located at second floor have inadequate space for classrooms, labs and faculty offices.
- Untrained and unqualified supporting staff for labs and research farm. No proper safety arrangements and security plan is available. Shortage of lab equipment, farm machinery and transport.
- Imbalance of teaching faculty for different sub-sectors and new subjects. Teaching faculty in some areas of the Horticulture discipline is unavailable. Inadequate facilities for extra-curricular activities.
- Very limited allocation of operational funds for the procurement of consumables and repair/maintenance of Lab. Equipment and apparatus.

## **Major Opportunities**

- Horticulture sector has been accorded high priority in the government policies to improve production and quality for local and export markets. The faculty may develop a replacement project of earlier HEC funded project to further improve and strengthen the infrastructure for degree programs. The post-graduate students and PhD scholars may be inducted as research associates under the supervision of senior faculty members.
- Horticulture department has vast opportunity of contributing. The faculty may improve linkages with the industry to support its teaching and research process.
- Innovative horticultural initiatives need to be explored in view of the peculiar soil and climatic conditions of the rain-fed areas of Punjab. Experimental area of Horticulture at Kont farm may be developed to initiate graduate research activities.
- National and international avenues may be identified for exchange of information, participation in conferences/seminars and visiting faculty program, etc.
- The faculty may plan to establish a modern nursery of fruit-plants and flowers not only for teaching/research purpose but also for income generation.

## **Major Challenges**

- A multinational hydroponics facility has been recently handed over to the University. The faculty may face a gigantic task of maintenance and operation of this establishment located at Rawat.
- With a view to further enhance the post-graduate research facilities on the campus, there is a need to establish pedigree plants / mother plants blocks for nursery.
- Retaining of experienced and qualified teaching faculty could be a problem in the future. A system of rewards and incentives has to be in place besides enabling environment for learning and teaching activities.
- Dissemination of information is a major challenge which needs to be resolved with collaborative efforts of all stakeholders including the farming community and Horticulture industry.

## Employers' Feed back

The views of the employer's about Horticulture graduates are as follows.

- More emphasis on practical work is needed
- Improvement of communication skill, including written and presentation skills
- Development of the habit of reading to update technical knowledge
- To inculcate moral and ethical values of self respect, tolerance and truthfulness.

## 4. Recommendations

### General Recommendations

- **Curriculum** should be periodically updated to encompass the contemporary topics and future needs to prepare the students for global challenges, especially in arid agriculture. It should be problem-oriented and market-driven to serve the society. Curriculum must be consistent and supportive to the Program's documented objectives. Information (ICT) Communication Tech. component of the curriculum must be integrated in the program. Oral and written communication skills be inculcated.
- **Training programs** should be explored for capacity building of teaching and support staff to improve quality of work. Presently, the specialization of the faculty is concentrated on three areas namely Post-harvest Tech, Tissue culture and Landscaping. Training plan must be developed for higher training (PhD) of young faculty in other important but leftover areas such as vegetables.
- **Collaboration** with national and international institutions be further strengthened to up-grade teaching and research efforts.
- **Space** for laboratories, class rooms and offices be improved to cope up with the increasing number of students. Proper maintenance of lab equipment and safety arrangements be ensured.
- **Computer and inter-net facilities** are insufficient for the increasing number of students which need immediate attention of the management.
- **Student counseling** Guidance on how to complete the degree program must be available to all students at all stages and access to academic advising must be available to course decision and career choices. Also, informal interaction between the teacher and taught need to be promoted.
- **Central library** should be up-graded in respect of space, equipment and staff to accommodate the increasing number of students. Latest edition of text books and journals of international repute for respective subjects be added every year. Besides, the departmental library also needs up-gradation.
- **Operational budget** is extremely low and need to be increased significantly to meet the genuine needs for quality research and teaching. Different stake

holders and national/ international institutions be approached for necessary grants and technical support.

- **Linkages** with stakeholders, industry and respective institutions should be established for significant contribution for the improvement of standard and quality of degree programs.
- **Outreach activities** should be strengthened with the participation of stakeholders.
- **Improvement of Teaching Facilities** Class rooms must be adequately equipped; especially the multi media facility and offices must be adequate to facilitate the faculty.
- **Repair and Maintenance of Equipment** An Instrumentation Repair and Maintenance unit may be setup headed by a highly qualified and experienced engineer to reduce breakdown time of sensitive and costly equipment.
- **Seminar Roster** The department must develop its seminar roster and circulate the same to the sister Institutes for effective participation and information sharing.
- **Recreational facilities for female students** may be created. The number of female students is increasing day by day. There is an urgent need to build separate washrooms and recreational (rooms) for female students.

### **Final Recommendation**

The degree programs of Horticulture discipline have performed well. However, challenges in the Horticulture profession are also equally onerous. Some of the minor weak areas can be redressed in a shorter time frame.

In view of the performance and available infrastructure for the degree programs of the discipline and the opportunities available for further headway, the committee recommends that the degree programs of Horticulture department be graded as “X” category. This leaves scope for up-gradation to category “W” after appropriate improvements in due course of time.

### 4.3 Signatures of AIC Members

<u>Name and Designation</u>		<u>Signatures</u>
<b>Mr. Syed Mehfooz Ali Shah</b> Ex. DG Research, NWFP	(Convener)	_____
<b>Mr. Mohammad Hashim Laghari</b> CSO Horticulture (Rtd), PARC	(Member)	_____
<b>Mr. Mohammad Tahir Saleem</b> Ex. PD NFDC	(Member)	_____

Dated: 14<sup>th</sup> May, 2009

### 4.4 Comments and Signatures of Chairman

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

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**Chairman**

Department of Horticulture  
PMAS Arid Agriculture University,  
Rawalpindi

**Annexure-I**

**Itinerary of Accreditation Visit Schedule**

**Host Institution:** PMAS Arid Agriculture University, Rawalpindi  
**Department/ Program:** Horticulture, B.Sc (Hons) Agric. & M.Sc (Hons)

**Review Team:**

1. Syed Mehfooz Ali Shah (Convener)  
Ex. DG Research, NWFP
2. Mr. Muhammad Hashim Leghari  
CSO Horticulture (Rtd)
3. Mr. Tahir Saleem  
Ex. PD NFDC

**Deptt. Resource Person:** Prof. Dr. Ashfaq Ahmed  
**NAEAC Resource Person:** Raja Mehtab Yasin

**Schedule of Visit:** April 13-14, 2009 (Two Days)

Day 1	Time	Activity	Remarks
	09:00-09:30	<b>Meeting with Dean of the Faculty</b> <ul style="list-style-type: none"> <li>• Explain purpose of the visit</li> <li>• Describe the Program review process</li> </ul>	Convener of AIC
	09:30-10:00	<b>Meet Chairman of the Department</b>	All AIC Members
	10:00-11:30	<b>Presentation: Chairman of Horticulture Department</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 (08-09) &amp; human resources (Total)</li> <li>• Curricula summary, revision/update</li> <li>• Admission and withdrawal policy</li> <li>• Faculty summary, qualification/ experience</li> <li>• Students' feed back</li> <li>• Grading system</li> </ul>	All AIC Members



		<ul style="list-style-type: none"> <li>• Infrastructure summary, labs, greenhouse, library</li> <li>• Employers feedback</li> <li>• Alumni survey</li> <li>• Parents viewpoint</li> <li>• Question/answer session</li> </ul>	
	11:30-13:00	<b>Curriculum Review: Department Resource Person</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
	13:00-14:00	<b>Zohar Prayers &amp; Lunch</b>	
	14:00-16:00	<b>Infrastructure Visit: Department Resource Person</b> <ul style="list-style-type: none"> <li>• Research &amp; teaching labs</li> <li>• Greenhouses &amp; experimental facilities</li> <li>• Departmental and main library</li> <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>Forms Filling and meeting of AIC</b>	

Day 2	Time	Activity	Remarks
	09:00-09:30	<b>Meeting with Dean of the Faculty</b> <ul style="list-style-type: none"> <li>• Briefing on yesterday's activities of the visit</li> <li>• Seek guidance/help if required</li> </ul>	All AIC Members
	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> </ul>	Individual AIC members
	11:30-12:30	<b>Classroom Visit: Two classrooms with 30 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 resource person)</li> <li>• Students perception</li> <li>• Students feedback</li> <li>• Senior students views and suggestions to improve teaching-learning environment and facilities</li> </ul>	All AIC Members
	12:30-13:30	<b>SWOC Analysis: faculty /students point of view</b> <ul style="list-style-type: none"> <li>• Major strengths of academic programs</li> <li>• Major weaknesses of academic programs</li> </ul>	All AIC Members

		<ul style="list-style-type: none"> <li>• Major opportunities for academic programs</li> <li>• Major challenges for academic programs</li> </ul>	
	13:30-14:00	<b>Concluding Meeting with Chairman of the Department</b>	
	14:00-15:00	<b>Prayers and Lunch</b>	
	15:00-16:00	<b>Detailed discussions among the Evaluation Team</b>	
	16:00-16:30	<b>Concluding Meeting with Dean/Exit Meeting</b> <ul style="list-style-type: none"> <li>• Salient findings of the visit</li> <li>• Formulation of recommendations</li> <li>• Next procedure</li> </ul>	All AIC Members
	16:30	<b>End of Review Visit</b>	

## Annexure-II

### Strength and Quality of the Faculty

S. No	Name	Position	Qualification	Experience	Specialization
1.	Dr Nadim Akhter Abbassi	Professor	PhD, (Illinois)	19	Pre- post harvest physiology of Horticultural crops.
2.	Dr. Ishfaq Ahmed Hafiz	Associate Professor	PhD. (Hangzhou)	21	Bio-technology, tissue culture protected horticulture.
3.	Dr. Khalid Mehmood Qureshi	Associate Professor	PhD. (Reading)	23	Pomology, Soft Fruits, Rootstock Interaction.
4.	Dr. Shahid Javed Butt.	Assistant Professor.	PhD. (Turkey)	21	Green House/ Hydroponics culture, Landscape.
5.	Ms. Najma Yousuf	Asstt. Professor.	M.Sc. Hons. (UAF)	11	Medicinal Plants.
6.	Dr. Imran Hassan	Asstt. Professor.	PhD. (Hebei)	11	Post Harvest physiology of Horticulture Crops.
7.	Mr. Touqeer Ahmed	Lecturer	M.Sc. Hons. (PMAS AUR)	6	Tissue Culture

8.	Ms. Ambreen Bhatti	Lecturer	M.Sc. Hons. (PMAS AUR)	2	Tissue Culture
9.	Mr. Mehdi Maqbol	Lecturer	M.Sc. Hons. (UAF)	1	Post Harvest physiology of Horticulture Crops.
10.	Mr. Umer Habib	Lecturer	M.Sc. Hons. (UAF)	1	Landscape, Floriculture.

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### Profile of Support Staff of Horticulture Department

S#	Name & Designation	Qualification	Experience (Yrs)	Major Duties
i	Mr. Muhammad Tayyab Stenographer	F.A	02	Office work & other official assignment
ii	Mr. Abdul Aziz Naz Computer Assistant	F.A	06	Office work & other official assignment
iii	Mr. Jibran Irshad Lab Assistant	F.A	02	Lab work and Dealing account matter
Iv	Mr. Bashir Ahmad Lab Assistant	Matric	03	Lab work
v	Mr. Muhammad Ayub Naib Qasid	Primary	19	Maintain the office cleaning
vi	Mr. Muhammad Umair Naib Qasid	Matric	01	Maintain the office cleaning
vii	Mr. Asif Mehmood Field Assistant	F.A	02	Field work
viii	Mr. Wajid Farooq Field Assistant	F.A	02	Field work
xi	Mr. Muhammad Riaz Lab Attendant	B.A	06	Field work

**Annexure-III****Major Courses M.Sc (Hons) - Major Horticulture**

<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hours</b>
Hort-701	Rootstock for Horticultural Crops	3(2-2)
Hort-702	Physiology of Horticultural Crops	3(2-2)
Hort-703	Advance Fruit Production	3(2-2)
Hort-704	Advance Vegetable Production	3(2-2)
Hort-705	Breeding of Horticultural Plants	3(2-2)
Hort-706	Landscape Horticulture	3(2-2)
Hort-707	Nutrition of Horticulture Crops	3(2-2)
Hort-708	Propagation of Horticultural Plants	3(2-2)
Hort-709	Plant Growth Regulator	3(3-0)
Hort-710	Plant Tissue Culture	3(1-4)
Hort-711	Advance Ornamental Plant Production	3(2-2)
Hort-712	Post Harvest Physiology of Horticultural Crops	3(2-2)
Hort-713	Environmental Horticulture	3(2-2)
Hort-714	New Trends in Horticulture	2(2-0)
Hort-719	Special Problem	1(1-0)
Hort-720	Seminar	1(1-0)

	<b>Total</b>	<b>43</b>
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### Major Courses B.Sc (Hons) - Agric. Major Horticulture

Course Code	Course Title	Credit Hours
Hort-501	Principles of Fruit Production	3(2-2)
Hort-503	Winter vegetables	3(2-2)
Hort-505	Ornamental Horticulture	3(2-2)
Hort-507	Production of Tropical & Sub-tropical Fruits	3(2-2)
Hort-502	Summer Vegetables	3(2-2)
Hort-504	Productions of Temperate Fruits	3(2-2)
Hort-506	Pre and post harvest Technology of Horticulture Crops	3(2-2)
Hort-508	Indoor House Plants	3(2-2)
Hort-601	Commercial Flower Production	3(2-2)
Hort-603	Certified Seed and Nursery Production of Horticultural Crops	3(2-2)
Hort-605	Green House Crops	3(2-2)
Hort-607	Certification of Horticulture produce for Export	3(2-2)
Hort-609	Project Planning and Presentation	3(2-2)
Hort-602	Internship Including Report writing and Presentation	15(0-30)
	<b>Total</b>	<b>54</b>

