PIR MEHR ALI SHAH

ARID AGRICULTURE UNIVERSITY

RAWALPINDI

DEPARTMENT OF HORTICULTURE

MSc (Hons)

Self Assessment Report

2012-2014

Program Self Assessment Team

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Introduction

Horticulture offers the most lucrative potential for socio-economic development and keeping in view the importance of Horticulture the department started working with the establishment of the Barani Agricultural College in 1979. The degree for M.Sc. (Hons) in horticulture commenced in 1997 when college was upgraded to University of Arid Agriculture in 1994. Presently the department is awfully engaged in conducting professional degree courses of M. Sc (Hons). So far, Department has produced 152 postgraduate students. Most of them are serving in government departments and private organizations of the country. Some of them proceed abroad for higher studies. Similarly, research work of members of faculty has been published in journals of national and international repute.

The Horticulture department of this university is in full confidence to prepare the responsible students by imparting research-oriented quality education to meet such challenges. The area of Horticulture is highly technological that encompasses production and management of food crops grown on-farm as well as under controlled environmental conditions.

In addition to the provision of knowledge-based services, another beneficial aspect of horticulture is the marketing and utilization of intensively cultivated value-added crops. The department is committed to provide a variety of study programs such as Post-harvest Technology and Physiology, Crop Improvement, Vegetable Breeding, Biotechnology, Hydroponics/Soil less Culture Technology, Protected Cultivation Technology, Floricultural Crop Improvement, Landscape Horticulture and Certified Nursery Plant Production to enhance student's professional training skill and career opportunities. Regarding the latest development in the Horticulture sector, the department improve its curriculum on regular basis and has incorporated the emerging tools of molecular/tissue culture approaches. The department is committed to provide a variety of study programs such as Post-harvest Technology and Physiology, Crop Improvement, Vegetable Breeding, Biotechnology, Hydroponics/Soil less Culture Technology, Protected Cultivation Technology, Floricultural Crop Improvement, Landscape Horticulture and Certified Nursery Plant Production to enhance student's professional training skill and career opportunities.

SECTION 1

Components of Self Assessment Process

This report has been prepared on the basis of criteria as guided by the Self- assessment manual.

Criterion-1: PROGRAM MISSION, OBJECTIVES AND OUTCOMES

Introduction

The Department of Horticulture Provides applied education to graduate students and imparts professional training through use of modern techniques for crop improvement and related innovative research methodologies. The department presents the M.Sc.(Hons.) students the association, ability and indulgent critical for professional achievement in a changing world. Horticulture is a diverse profession that encompasses all aspects of crop production and crop management. The goal of the Department is to increase yield production, quality and profit by utilizing crop possessions and crop physiology. Horticulture deals with multiplication, production technology and crop improvement of horticultural crops (Fruits, Vegetables, House Plant and Flowers). Crop improvement has a great impact on economic, social and political values of agricultural society. The introduction, evaluation, characterization, and development of horticultural crops are continuous processes of education and research both at graduate level.

Standard 1-1: The program must have documented measurable objectives that support faculty / college and institution mission statement.

Mission Statement of the M.Sc (Hons) Program

The goal of the M.Sc (Hons) Program is to bestow quality education and research-oriented training, extension of agricultural knowledge for self-sufficiency in quality food and development of sustainable systems. The Mission of the department is to equip and impart training to M.Sc (Hons.) students for high-quality education and research resulting in increased scientific knowledge and skills for employment and productive citizenship. Presently the department is striving for multi- dimensional approach to impart standard educationand research skills.

Programme Objectives of the Department

1. To contribute basic and applied high quality knowledge and skills in the field of horticulture applying highly advanced analytical techniques for crop management and improvement.
2. Broaden the visualization of students by teaching them integrated horticulture.
3. Adherence to new teaching methods & planning for current and upcoming researchable problems
4. Build up the Department on modern lines for education and research at M.Sc. (Hons.) level.
5. Employ the superior analytical approaches to impart the realistic scientific skills in the field of Horticulture.

Main Elements of Strategic Plan to Achieve Mission and Objectives

1. Design and improvement of curricula by the introduction of core and elective subjects in specialized areas and study trips.
2. Supervision of graduate research students with thesis write-up.
3. Publication of research papers in reputed National and International Journals preferably with impact factor.
4. To award M.Sc. (Hons.) degrees to these students a crash training system collecting information's through consultation from world reviews, writing, symposia and workshops.
5. To update the curricula of major& major courses, regular planning was launched.
6. By equipping with up to date facilities & equipment's the departmental labs.
7. Publication of research data in scientific journals of world repute, books and other literature.
8. Research oriented graduate thesis.

Expected Outcome

1. It will ameliorate the basic structure of the department standardizing at par with advanced developed countries of modern world.
2. The students' vision and in depth approach will be more extensive.
3. The students will get the quality education.
4. Amalgamation of knowledge was achieved through induction of multidimensional courses for master's degree students in addition to contemplation on latest developments in applied research projects/thesis research.
5. Department of Horticulture was Strengthened by planning the point in time needed education and research for M.Sc. (Hons.) students.

Table-1: Program objective assessment

	Objective	How Measured	When Measured	Improvement Identified	Improvement made
1	Improvement and escalation of Horticulture Department for Master's education	After assessing the accessibility of latest research services and practical appliance of new technology in horticultural aspects of agriculture	As a requisite requirement It is an incessant practice.	Training and research style is required to be superior.	The induction of more striking and comprehensible Teaching and research methods has been done.
2	To teach practical / useful information to the M.Sc. (Hons.) students	Through the semestoral examinations, seminars and research	During their mid and final exams, seminars& research presentation.	A few innovative courses and research facilities are needed to be included in the Master's curricula	Under HEC requirement policy the curricle has been revised for

		presentation. Examinations.			Master's.
3	Assimilation of multi-dimensions of horticulture.	By examining the students in incorporation of the effects in semestoral and comprehensive exams.	During semester exams and in comprehensive exams after completion of research.	The induction of multidimensional courses is needed to be integrated in the M.Sc. (Hons.) course work	Introduction of new subjects covering the entire boundary of horticulture has been done.
4	To strengthen the discipline with integration of knowledge and approach of related fields such as Breeding, Biotechnology, Hydroponics, Plant Physiology and Landscape Horticulture.	Through entry tests, interviews research own interest	Subject / courses attachment before start	The relevant subjects are emphasize and recommended in the study programs	Enhancement of knowledge and vision
5	Anticipation of new teaching/researchable areas	Unfeeling the need of recent progress in the pertinent areas of horticulture	Regular activity	New courses to be included in curriculum, research on new problem	Approval of new curricula and research areas has been accorded by the Faculty Academic Council

<u>Standard 1-2:</u> The program must have documented outcomes for graduating students. It must be demonstrated that the outcomes support the program objectives and that graduating students are capable of performing these outcomes.

PROGRAM OUTCOMES

The program outcomes are tabulated in the following Table 2. Each program aligned in the table with each objective

Table-2: Program Vs Outcomes

Program Objectives	Program Outcomes				
	1	**2**	**3**	**4**	**5**
1	XX	XX	X	XX	XXX
2	X	XX	X	X	XX
3	XX	XX	XX	X	X
4	XX	..	XX	XXX	XX
5	XX	XX	XX	XX	XXX

X:- Relevant

XX:- Relevant and Satisfactory

XXX:- Very Relevant and Very Satisfactory

Meeting Standards 1-2: Program Outcome Measurement

A number of surveys based on the QAC questionnaires were initiated to assess the Program outcomes/graduates of the Department.

Performa 1 & 10 Course and Teacher Evaluation

Teacher Evaluation (2012-14)

Dr. Khalid M. Qureshi

i. Teacher Evaluation

Data were collected from 11 students. The evaluation criteria parameters showed that the 75% of the students strongly agreed, 24% agreed, 1% uncertain, 0% disagreed, and 0% strongly disagreed that the instructor was prepared for each class. The data of other parameters inferred that major proportion of the students is agreed that, the performance and expertness of the teacher, the instructor came with good preparation. ,instructor demonstrates knowledge of the subject, instructor had completed the whole course, the Instructor provided additional material apart from the textbook, the Instructor gave citations regarding current situations with reference to Pakistani context, the Instructor communicates the subject matter, the Instructor shows respect towards students and encourages class participation effectively, the Instructor maintained an environment that was conducive to learning, the Instructor arrived on time, the Instructor returned the graded scripts etc. in a reasonable amount of time, the Instructor was available during the specified office hours after class for consultations, the Subject matter presented in the course has increased their knowledge of the subject, the syllabus clearly states course objectives requirements, procedures and grading criteria, the course integrates theoretical course concepts with real- world applications, and the assignments and exams covered the materials presented in the course, the course material is modern and updated.

Comments / Suggestions

- Instructor was fine in conduct and always wearisome to assist.
- Instructors was prepared for each class.
- Instructor cleared the concepts in a good manner.

Teacher Evaluation Graph
A
B
C
D
E
0
10
20
30
40
50
The instructor returns the graded scripts etc. in a reasonable amount of time.
The instructor provides additional material apart from the textbook
The instructor is prepared for each class
The syllabus clearly states course objectives requirements, procedures and grading criteria.
The instructor arrives on time
The instructor demonstrates knowledge of the subject
The subject matter presented in the course has increased your knowledge of the subject
The instructor shows respect towards students and encourages class participation
The instructor is fair in examination
The instructor was available during the specified office hours and for after class consultations
The course material is modern and updated
The assignments and exam covered the materials presented in the course
The instructor communicates the subject matter effectively.
The course integrates theoratical course concepts with real-world applications.
The instructor leaves on time.
The instructor maintains an environment that is conducive to learning.
The instructor gives citations regrading current situations with refrence to pakistani context.
The Instructor provided course split schedule during the 1st week of semester

ii. Course Evaluation

Hort-701	**Rootstock for Horticultural**	**3(2-2)**	**Dr. Khalid M. Qureshi**

Data were collected from 11 students. The individual parameter showed that 60% the students strongly agreed, 27% agreed, 6% uncertain, 4% disagreed and 4% strongly disagreed that the course objectives were clear. Data regarding other parameters showed that major proportion of the students agree the course was well structured to achieve the learning outcomes (there was a good balance of lectures, tutorials, practical etc.). Similarly, they agreed that the learning and teaching methods encouraged participation, the overall environment in the class was conductive to learning, and classrooms were satisfactory, learning materials (Lesson Plans, Course Notes etc.) were relevant and useful, recommended reading books etc. were relevant and appropriate, the provision of learning resources in the library was adequate and the course stimulated their interest and thought on the subject area, the pace of the Course was appropriate, ideas and concepts were presented clearly, the method of assessment were reasonable, the material was well organized and presented, the instructor was responsive to student needs and problems, instructor was regular throughout the course and the material in the tutorials was useful.

Comments / Suggestions

- Learning atmosphere in class was not reasonable.
- The objectives of the course were very clear.
- Appropriate information about course was in the books available in library but it must be updated.
- Practically, lab requirements were not satisfactory.

Course Evaluation Graph
A
B
C
D
E
0
20
40
60
80
100
The material was well organized and presented
Class rooms were Satisfatory
The learning and teaching methods encouraged participation.
The provision of learning resources in the library was adequate and appropriate.
The course workload was manageable
The tutor dealt effectively with my problems
The method of assesment were reasonable
Recomended reading Books etc. were relevent and appropriate.
The course objectives were clear.
The pace of the Couse was appropriate
Learning materials (Lesson planes,Course Notes etc) were relevent and usefull.
Approximate level of your own attendence during the whole course
The instructor was responsive to student needs and problems
The material in the tutorials was usefull
The provision of learning resources on the web was adequate and appropriate(if relevent)
The Overall environment in the class was conducive to learning.
The demonstrators dealt effectively with my problems.
The Material in Practical was useful
I was happy with the amount of work needed for tutorials
Had the instructor been regular throughout the course?
I understood the lectures
Feedback on assessment was helpful
Ideas and concept were presented clearly
The course stimulated my interest and though on the subject area
I think I have made progress in this course
The course was well organized (e.g. timely) access to materials, notification of changes, etc)
Feedback on assessment were timly
I think the Course was well structured to achive the learning outcomes
I practicipated actively in the course

Dr. Ishfaq Ahmad Hafiz

i. Teacher Evaluation

Data were collected from 6 students. The evaluation criteria parameters showed that the 93% of the students strongly agreed, 7% agreed, 0% uncertain, 0% disagreed, and 0% strongly disagreed that the instructor was prepared for each class. The data of other parameters inferred that major proportion of the students are agreed that, the performance and expertness of the teacher, the instructor came with good preparation. Instructor demonstrates knowledge of the subject, instructor had completed the whole course, the Instructor provided additional material apart from the textbook, the Instructor gave citations regarding current situations with reference to Pakistani context, the Instructor communicates the subject matter, the Instructor shows respect towards students and encourages class participation effectively, the Instructor maintained an environment that was conducive to learning, the Instructor arrived on time, the Instructor returned the graded scripts etc. in a reasonable amount of time, the Instructor was available during the specified office hours after class for consultations, the Subject matter presented in the course has increased their knowledge of the subject, the syllabus clearly states course objectives requirements, procedures and grading criteria, the course integrates theoretical course concepts with real-world applications, and the assignments and exams covered the materials presented in the course, the course material is modern and updated.

Comments / Suggestions

- Instructor was fine in conduct and always appreciative to assist.
- Instructor was prepared for each class.
- Instructor cleared the concepts in a good manner.
- Instructor encouraged to ask more questions.

Teacher Evaluation Graph
A
B
C
D
E
0
10
20
30
40
50
60
The course integrates theoratical course concepts with real-world applications.
The instructor is prepared for each class
The instructor was available during the specified office hours and for after class consultations
The instructor provided course split schedule during the 1st week of semester
The course material is modern and updated
The instructor demonstrates knowledge of the subject
The instructor is fair in examination
The instructor arrives on time
The instructor maintains an environment that is conducive to learning.
The instructor shows respect towards students and encourages class participation
The instructor communicates the subject matter effectively.
The instructor gives citations regrading current situations with refrence to pakistani context.
The subject matter presented in the couse has increased your knowledge of the subject
The instructor leaves on time.
The assignments and exam covered the materials presented in the course
The syllabus clearly states couse objectives requirements, procedures and grading criteria.
The instructor returns the graded scripts etc. in a reasonable amount of time.
The instructor provides additional material apart from the textbook

ii. Course Evaluation

Hort-702	**Advanced Physiology of Horticultural**	**3(2-2)**	**Dr. Ishfaq Ahmad Hafiz**

Data were collected from 6 students. The individual parameter showed that 66% the students strongly agreed, 29% agreed, 1% uncertain, 1% disagreed and 4% strongly disagreed that the course objectives were clear. Data regarding other parameters showed that major proportion of the students agree the course was well structured to achieve the learning outcomes (there was a good balance of lectures, tutorials, practical etc.). Similarly, they agreed that the learning and teaching methods encouraged participation, the overall environment in the class was conductive to learning, and classrooms were satisfactory, learning materials (Lesson Plans, Course Notes etc.) were relevant and useful, recommended reading books etc. were relevant and appropriate, the provision of learning resources in the library was adequate and the course stimulated their interest and thought on the subject area, the pace of the Course was appropriate, ideas and concepts were presented clearly, the method of assessment were reasonable, the material was well organized and presented, the instructor was responsive to student needs and problems, instructor was regular throughout the course and the material in the tutorials was useful.

Comments / Suggestions

- Learning atmosphere not up to the date.
- The objectives of the course were according to the course requirements.
- Much information about course was in books available in library but it should be updated.

Course Evaluation Graph
A
B
C
D
E
0
20
40
60
80
100
The material was well organized and presented
I think I have made progress in this course
Had the instructor been regular throughout the course?
I understood the lectures
The course was well organized (e.g. timely) access to materials, notification of changes, etc)
Approximate level of your own attendence during the whole course
Feedback on assessment was helpful
I think the Course was well structured to achive the learning outcomes
I practicipated actively in the course
The course workload was manageable
The Material in Practical was useful
The tutor dealt effectively with my problems
The course stimulated my interest and though on the subject area
The provision of learning resources on the web was adequate and appropriate(if relevent)
The provision of learning resources in the library was adequate and appropriate.
The course objectives were clear.
The material in the tutorials was useful
The instructor was responsive to student needs and problems
Learning materials (Lesson plans,Couse Notes etc) were relevent and useful.
The Overall environment in the class was conducive to learning.
The demonstrators dealt effectively with my problems.
Feedback on assessment were timly
Recomended reading Books etc. were relevent and appropriate.
The learning and teaching methods encouraged participation.
I was happy with the amount of work needed for tutorials
The method of assesment were reasonable
Ideas and concept were presented clearly
The pace of the Course was appropriate
Class rooms were Satisfactory

Ms. Qurret-Ul-Ain Farooq

i. Teacher Evaluation

Data were collected from 16 students. The evaluation criteria parameters showed that the 64% of the students strongly agreed, 28% agreed, 7% uncertain, 0% disagreed, and 0% strongly disagreed that the instructor was prepared for each class. The data of other parameters inferred that major proportion of the students is agreed that the teacher is fair in examination; the instructor came with good preparation. ,instructor demonstrates knowledge of the subject, instructor had completed the whole course, the Instructor provided additional material apart from the textbook, the Instructor gave citations regarding current situations with reference to Pakistani context, the Instructor communicates the subject matter, the Instructor shows respect towards students and encourages class participation effectively, the Instructor maintained an environment that was conducive to learning, the Instructor arrived on time, the Instructor returned the graded scripts etc. in a reasonable amount of time, the Instructor was available during the specified office hours after class for consultations, the Subject matter presented in the course has increased their knowledge of the subject, the syllabus clearly states course objectives requirements, procedures and grading criteria, the course integrates theoretical course concepts with real-world applications, and the assignments and exams covered the materials presented in the course, the course material is modern and updated.

Comments/Suggestions:

- The teacher always relates the course topics with his practical incidents under the local environmental conditions for proper understanding of the students.
- The teacher's attitude was affable during and after his lectures with the students.
- The pace of course covering was commendable and understanding of the theme of the course was also appreciable.

Teacher Evaluation Graph
A
B
C
D
E
0
20
40
60
80
100
120
The subject matter presented in the course has increased your knowledge of the subject
The instructor is fair in examination
The instructor leaves on time.
The course material is modern and updated
The instructor returns the graded scripts etc. in a reasonable amount of time.
The instructor shows respect towards students and encourages class participation
The course integrates theoratical course concepts with real-world applications.
The instructor was available during the specified office hours and for after class consultations
The instructor gives citations regrading current situations with refrence to pakistani context.
The instructor demonstrates knowledge of the subject
The assignments and exam covered the materials presented in the course
The instructor maintains an environment that is conducive to learning.
The instructor is prepared for each class
The syllabus clearly states course objectives requirements, procedures and grading criteria.
The instructor provides additional material apart from the textbook
The instructor arrives on time
The instructor communicates the subject matter effectively.
The instructor provided course split schedule during the 1st week of semester

ii. Course Evaluation

Hort-706	**Landscape Horticulture**	**3(2-2)**	**Ms. Qurret-Ul-Ain Farooq**

Data were collected from 16 students. The individual parameter showed that 65% of the students strongly agreed, 27% agreed, 4% uncertain, 1% disagreed and 3% strongly disagreed that the course objectives were clear. Data regarding other parameters showed that major proportion of the students agreed that the course workload was manageable, well organized ,the approximate level of student's attendance during the whole course was higher; students participated actively in the course and have made progress in this course, the course was well structured to achieve the learning outcomes ,the learning and teaching methods encouraged participation, the overall environment in the class was conductive to learning, and classrooms were satisfactory, learning materials (Lesson Plans, Course Notes etc.) were relevant and useful, recommended reading books etc. were relevant and appropriate. They described that the provision of learning resources in the library was adequate and the course stimulated their interest and thought on the subject area. According to most of the students, the pace of the Course was appropriate, ideas and concepts were presented clearly, the method of assessment were reasonable.

Comments / Suggestions

- More practicals will make the course better.
- Lab equipments were not generous.
- Projector and multimedia should be used to deliver lectures.
- There was lack of practical demonstrations in the practical part of the course.
- No doubt the course was informative and interesting.

Course Evaluation Graph
A
B
C
D
E
0
20
40
60
80
100
Learning materails (Lesson plianes,Course Notes etc) were relevent and usefull.
The learning and teaching methods encouraged participation.
Ideas and concept were presented clearly
The course objectives were clear.
The material in the tutorials was usefull
Feedback on assessment was helpful
The provision of learning resources on the web was adequate and appropriate(if relevent)
I think the Course was well structured to achive the learning outcomes
I understood the lectures
The method of assesment were reasonable
The course stimulated my interest and though on the subject area
The provision of learning resources in the library was adequate and appropriate.
Class rooms were Satisfactory
The Material in Practical was useful
The tutor dealt effectively with my problems
The material was well organized and presented
Recomended reading Books etc. were relevent and appropriate.
I think I have made progress in this course
Approximate level of your own attendence during the whole course
I was happy with the amount of work needed for tutorials
Had the instructor been regular throughout the course?
The instructor was responsive to student needs and problems
Feedback on assessment were timly
The demonstrators dealt effectively with my problems.
The pace of the Course was appropriate
The Overall environment in the class was conducive to learning.
The course was well organized (e.g. timely) access to materials, notification of changes, etc)
I practicipated actively in the course
The course workload was manageable

Dr. Nadeem Akhtar Abbasi

i. Teacher Evaluation

Data were collected from 18 M. Sc. students. The evaluation criteria parameters showed that the 65% of the students strongly agreed, 26% agreed, 8% uncertain, 1% disagreed, and 0% strongly disagreed that the instructor was prepared for each class. The data of other parameters inferred that major proportion of the students are agreed that the teacher was fair in examination, came with good preparation, the instructor demonstrates knowledge of the subject, instructor had completed the whole course, the Instructor provided additional material apart from the textbook, the Instructor gave citations regarding current situations with reference to Pakistani context, the Instructor communicates the subject matter, the Instructor shows respect towards students and encourages class participation effectively, the Instructor maintained an environment that was conducive to learning, the instructor arrived on time, the Instructor returned the graded scripts etc. in a reasonable amount of time, the Instructor was available during the specified office hours after class for consultations.

Comments/Suggestions

1. Kind and good teacher with amiable and parental attitude with the students.
2. Always teaches his practical experiences to make the understanding of the subject effective.
3. Course was accomplished in appropriate time and was very motivating.

Teacher Evaluation Graph
A
B
C
D
E
0
20
40
60
80
100
The course integrates theoratical course concepts with real-world applications.
The instructor leaves on time.
The instructor arrives on time
The instructor maintains an environment that is conducive to learning.
The instructor demonstrates knowledge of the subject
The subject matter presented in the course has increased your knowledge of the subject
The instructor returns the graded scripts etc. in a reasonable amount of time.
The Instructor provided course split schedule during the 1st week of semester
The course material is modern and updated
The instructor shows respect towards students and encourages class participation
The assigments and exam covered the materials presented in the course
The instructor was available during the specified office hours and for after class consultations
The instructor is fair in examination
The instructor gives citations regrading current situations with refrence to pakistani context.
The instructor provides additional material apart from the textbook
The syllabus clearly states course objectives requirements, procedures and grading criteria.
The instructor communicates the subject matter effectively.
The instructor is prepared for each class

ii. Course Evaluation

Hort-712	**Post-Harvest Physiology of Horticultural**	**3(2-2)**	**Dr. Nadeem Akhtar Abbasi**

Data were collected from 18 M. Sc students. The individual parameter showed that 51% the students strongly agreed, 39% agreed, 5% uncertain, 3% disagreed and 2% strongly disagreed that the course objectives were clear. Data regarding other parameters showed that major proportion of the students agreed about the effectiveness and objectivity of the course, the course objectives were clear, the course workload was manageable, well organized , the approximate level of student's attendance during the whole course was higher; students participated actively in the course and have made progress in this course. Most of the students agreed that the course was well structured to achieve the learning outcomes, the learning and teaching methods encouraged participation, the overall environment in the class was conductive to learning, and classrooms were satisfactory, learning materials (Lesson Plans, Course Notes etc.) were relevant and useful, recommended reading books etc. were relevant and appropriate, the provision of learning resources in the library was adequate and the course stimulated their interest and thought on the subject area. According to most of the students, the pace of the Course was appropriate, ideas and concepts were presented clearly, the method of assessment were reasonable.

Comments / Suggestions

- The course can be improved by adding more tours and practical demonstrations.
- There was lack of practical demonstrations in the practicals.

Course Evaluation Graph
A
B
C
D
E
0
20
40
60
80
100
120
The tutor dealt effectively with my problems
The provision of learning resources on the web was adequate and appropriate(if relevent)
The provision of learning resources in the library was adequate and appropriate.
The course was well organized (e.g. timely) access to materials, notification of changes, etc)
Had the instructor been regular throughout the course?
Feedback on assessment was helpful
The material was well organized and presented
I understood the lectures
I think the Course was well structured to achive the learning outcomes
I think I have made progress in this course
I was happy with the amount of work needed for tutorials
Feedback on assessment were timly
The method of assesment were reasonable
Ideas and concept were presented clearly
Class rooms were Satisfactory
The Overall environment in the class was conducive to learning.
The Material in Practical was useful
The pace of the Course was appropriate
Recomended reading Books etc. were relevent and appropriate.
Learning materails (Lesson planes,Couse Notes etc) were relevent and usefull.
I practicipated actively in the course
The course objectives were clear.
The demonstrators dealt effectively with my problems.
The course workload was manageable
The material in the tutorials was usefull
The instructor was responsive to student needs and problems
The course stimulated my interest and though on the subject area
The learning and teaching methods encouraged participation.
Approximate level of your own attendence during the whole course

Mr. Usman Shaukat Qureshi

i. Teacher Evaluation

Data were collected from 50 M. Sc. students. The individual parameters showed that the 46%of the students strongly agreed, 43% agreed, 7% uncertain, 2% disagreed, and 2% strongly disagreed that the instructor was prepared for each class. The data of rest of the parameters inferred that major proportion of the students are agreed that the teacher is fair in examination, the instructor came with good preparation the instructor demonstrates knowledge of the subject, instructor had completed the whole course, the instructor provided additional material apart from the textbook, the instructor gave citations regarding current situations with reference to Pakistani context, the instructor communicates the subject matter, the instructor shows respect towards students and encourages class participation effectively, the instructor maintained an environment that was conducive to learning, the instructor arrived on time, the instructor returned the graded scripts etc. in a reasonable amount of time, the instructor was available during the specified office hours after class for consultations, the Subject matter presented in the course had increased their knowledge of the subject, the syllabus clearly states course objectives requirements, procedures and grading criteria, the course integrates theoretical course concepts with real-world applications, and the assignments and exams covered the materials presented in the course, the course material is modern and updated.

Comments / Suggestions

- He conveyed the lectures in a conceptual way.
- More practicals must be arranged in labs.
- Prepared for each class.
- Good behavior of the teacher and was available any time.
- Completed course in time.
- He had full command in the subject.

Teacher Evaluation Graph
A
B
C
D
E
0
10
20
30
40
50
60
70
80
The course integrates theoratical course concepts with real-world applications.
The assigments and exam covered the materials presented in the course
The subject matter presented in the course has increased your knowledge of the subject
The instructor was available during the specified office hours and for after class consultations
The instructor demonstrates knowledge of the subject
The course material is modern and updated
The instructor is fair in examination
The instructor returns the graded scripts etc. in a reasonable amount of time.
The instructor arrives on time
The instructor is prepared for each class
The instructor shows respect towards students and encourages class participation
The instructor provides additional material apart from the textbook
The syllabus clearly states course objectives requirements, procedures and grading criteria.
The instructor leaves on time.
The instructor provided course split schedule during the 1st week of semester
The instructor maintains an environment that is conducive to learning.
The instructor communicates the subject matter effectively.
The instructor gives citations regrading current situations with refrence to pakistani context.

ii. Course Evaluation

Hort-706	**Landscape Horticulture**	**3(2-2)**	**Mr. Usman Shaukat**

Data were collected from 49 M. Sc. students. The individual parameters showed that the38%of the students strongly agreed, 49% agreed, 10% uncertain, 3% disagreed, and 0% strongly disagreed that the instructor was prepared for each class. Data regarding other parameters showed that most of the students agreed about the effectiveness and objectivity of the course, the course workload was manageable, well organized , the course was well structured to achieve the learning outcomes, the learning and teaching methods encouraged participation, the overall environment in the class was conductive to learning, and classrooms were satisfactory, learning materials were relevant, recommended reading books etc. were relevant and appropriate, provision of learning resources in the library was adequate and the course stimulated their interest and thought on the subject area,, the pace of the Course was appropriate, ideas and concepts were presented clearly, the method of assessment were reasonable, the material was well organized and presented, the instructor was responsive to student needs and problems, instructor was regular throughout the course and the material in the tutorials was useful.

Comments / Suggestions

- The course was thought provoking and informative.
- Course can be improved by adding more practicals and tours.
- Lab equipments/facilities are needed to be improved.
- Classrooms condition should be improved.
- Course was interesting and conceptual

Course Evaluation Graph
A
B
C
D
E
0
20
40
60
80
100
Feedback on assessment was helpful
Ideas and concept were presented clearly
The course stimulated my interest and though on the subject area
Learning materials (Lesson planes,Course Notes etc) were relevent and usefull.
I practicipated actively in the course
The demonstrators dealt effectively with my problems.
The tutor dealt effectively with my problems
Class rooms were Satisfatory
The course objectives were clear.
The course workload was manageable
The material in the tutorials was usefull
I think I have made progress in this course
The material was well organized and presented
Approximate level of your own attendence during the whole course
The instructor was responsive to student needs and problems
I understood the lectures
The method of assesment were reasonable
The provision of learning resources on the web was adequate and appropriate(if relevent)
I think the Course was well structured to achive the learning outcomes
Had the instructor been regular throughout the course?
Feedback on assessment were timly
The provision of learning resources in the library was adequate and appropriate.
Recomended reading Books etc. were relevent and appropriate.
The Overall environment in the class was conducive to learning.
The Material in Practical was useful
I was happy with the amount of work needed for tutorials
The pace of the Couse was appropriate
The learning and teaching methods encouraged participation.
The course was well organized (e.g. timely) access to materials, notification of changes, etc)

Dr. Touqeer Ahmad

i. Teacher Evaluation

Data were collected from 58 M. Sc. students. The individual parameters showed that the 52%of the students strongly agreed, 34% agreed, 7% uncertain, 5% disagreed, and 2% strongly disagreed that the instructor was prepared for each class. The data of rest of the parameters inferred that major proportion of the students are agreed that the teacher is fair in examination, the instructor came with good preparation the instructor demonstrates knowledge of the subject, instructor had completed the whole course, the instructor provided additional material apart from the textbook, the instructor gave citations regarding current situations with reference to Pakistani context, the instructor communicates the subject matter, the instructor shows respect towards students and encourages class participation effectively, the instructor maintained an environment that was conducive to learning, the instructor arrived on time, the instructor returned the graded scripts etc. in a reasonable amount of time, the instructor was available during the specified office hours after class for consultations, the Subject matter presented in the course had increased their knowledge of the subject, the syllabus clearly states course objectives requirements, procedures and grading criteria, the course integrates theoretical course concepts with real-world applications, and the assignments and exams covered the materials presented in the course, the course material is modern and updated.

Comments / Suggestions

- He conveyed the lectures in a conceptual way.
- More practical must be arranged in labs.
- Prepared for each class.
- Good behavior of the teacher and was available any time.
- Completed course in time.
- He had full command on the subject.

Teacher Evaluation Graph
A
B
C
D
E
0
20
40
60
80
100
The instructor leaves on time.
The instructor shows respect towards students and encourages class participation
The syllabus clearly states course objectives requirements, procedures and grading criteria.
The instructor communicates the subject matter effectively.
The instructor provides additional material apart from the textbook
The instructor gives citations regrading current situations with refrence to pakistani context.
The instructor is prepared for each class
The instructor provided course split schedule during the 1st week of semester
The course material is modern and updated
The assigments and exam covered the materials presented in the course
The instructor is fair in examination
The instructor demonstrates knowledge of the subject
The instructor arrives on time
The course integrates theoratical course concepts with real-world applications.
The subject matter presented in the course has increased your knowledge of the subject
The instructor was available during the specified office hours and for after class consultations
The instructor returns the graded scripts etc. in a reasonable amount of time.
The instructor maintains an environment that is conducive to learning.

ii. Course Evaluation

Hort-708	**Propagation of Horticultural Plants**	**3(2-2)**	**Dr. Touqeer Ahmad**

Data were collected from 58 M. Sc. students. The individual parameters showed that the28%of the students strongly agreed, 69% agreed, 0% uncertain, 3% disagreed, and 0% strongly disagreed that the instructor was prepared for each class. Data regarding other parameters showed that most of the students agreed about the effectiveness and objectivity of the course, the course workload was manageable, well organized , the course was well structured to achieve the learning outcomes, the learning and teaching methods encouraged participation, the overall environment in the class was conductive to learning, and classrooms were satisfactory, learning materials were relevant, recommended reading books etc. were relevant and appropriate, provision of learning resources in the library was adequate and the course stimulated their interest and thought on the subject area,, the pace of the Course was appropriate, ideas and concepts were presented clearly, the method of assessment were reasonable, the material was well organized and presented, the instructor was responsive to student needs and problems, instructor was regular throughout the course and the material in the tutorials was useful.

Comments / Suggestions

- The course was thought provoking and informative.
- Course can be improved by adding more practical and tours.
- Lab equipments/facilities are needed to be improved.
- Classrooms condition should be improved.

Course Evaluation Graph
A
B
C
D
E
0
20
40
60
80
100
120
The course workload was manageable
I think I have made progress in this course
Learning materials (Lesson planes,Course Notes etc) were relevent and usefull.
Recomended reading Books etc. were relevent and appropriate.
The course stimulated my interest and though on the subject area
Feedback on assessment was helpful
The instructor was responsive to student needs and problems
Approximate level of your own attendence during the whole course
The Overall environment in the class was conducive to learning.
Feedback on assessment were timly
The Material in Practical was useful
The course objectives were clear.
The material in the tutorials was usefull
I was happy with the amount of work needed for tutorials
I practicipated actively in the course
Class rooms were Satisfatory
The tutor dealt effectively with my problems
The provision of learning resources on the web was adequate and appropriate(if relevent)
The demonstrators dealt effectively with my problems.
The pace of the Course was appropriate
The method of assesment were reasonable
I think the Course was well structured to achive the learning outcomes
The learning and teaching methods encouraged participation.
The provision of learning resources in the library was adequate and appropriate.
Had the instructor been regular throughout the course?
The course was well organized (e.g. timely) access to materials, notification of changes, etc)
I understood the lectures
Ideas and concept were presented clearly
The material was well organized and presented

Dr. Touqeer Ahmad

i. Teacher Evaluation

Data were collected from 43 M. Sc. students. The individual parameters showed that the 40%of the students strongly agreed, 46% agreed, 9% uncertain, 5% disagreed, and 0% strongly disagreed that the instructor was prepared for each class. The data of rest of the parameters inferred that major proportion of the students are agreed that the teacher is fair in examination, the instructor came with good preparation the instructor demonstrates knowledge of the subject, instructor had completed the whole course, the instructor provided additional material apart from the textbook, the instructor gave citations regarding current situations with reference to Pakistani context, the instructor communicates the subject matter, the instructor shows respect towards students and encourages class participation effectively, the instructor maintained an environment that was conducive to learning, the instructor arrived on time, the instructor returned the graded scripts etc. in a reasonable amount of time, the instructor was available during the specified office hours after class for consultations, the Subject matter presented in the course had increased their knowledge of the subject, the syllabus clearly states course objectives requirements, procedures and grading criteria, the course integrates theoretical course concepts with real-world applications, and the assignments and exams covered the materials presented in the course, the course material is modern and updated.

Comments / Suggestions

i. He conveyed the lectures in such a way that we understood them properly.
ii. Need of more practical work in labs.
iii. Good behavior of the teacher and was available in most of the time.
iv. Completed course in time.
v. Prepared for each class.
vi. He had full command in his subject.

Teacher Evaluation Graph
A
B
C
D
E
0
20
40
60
80
100
120
The syllabus clearly states course objectives requirements, procedures and grading criteria.
The instructor maintains an environment that is conducive to learning.
The instructor is prepared for each class
The instructor demonstrates knowledge of the subject
The couse material is modern and updated
The instructor gives citations regrading current situations with refrence to pakistani context.
The instructor provides additional material apart from the textbook
The course integrates theoratical course concepts with real-world applications.
The instructor communicates the subject matter effectively.
The instructor was available during the specified office hours and for after class consultations
The instructor shows respect towards students and encourages class participation
The assignments and exam covered the materials presented in the course
The subject matter presented in the course has increased your knowledge of the subject
The instructor returns the graded scripts etc. in a reasonable amount of time.
The instructor arrives on time
The instructor is fair in examination
The instructor leaves on time.
The Instructor provided couse split schedule during the 1st week of semester

vii. Course Evaluation

Hort-709	**Plant Growth Regulators**	**3(3-0)**	**Dr. Touqeer Ahmad**

Data were collected from 42 M. Sc. students. The individual parameters showed that the 16% of the students strongly agreed, 67% agreed, 11% uncertain, 3% disagreed and 3% strongly disagreed that the instructor was prepared for each class Data regarding other parameters showed that most of the students agreed about the effectiveness and objectivity of the course, the course workload was manageable, well organized , the course was well structured to achieve the learning outcomes, the learning and teaching methods encouraged participation, the overall environment in the class was conductive to learning, and classrooms were satisfactory, learning materials were relevant, recommended reading books etc. were relevant and appropriate, provision of learning resources in the library was adequate and the course stimulated their interest and thought on the subject area,, the pace of the Course was appropriate, ideas and concepts were presented clearly, the method of assessment were reasonable, the material was well organized and presented, the instructor was responsive to student needs and problems, instructor was regular throughout the course and the material in the tutorials was useful.

Comments / Suggestions

- Course contents were properly planned
- Course effectiveness can be improved by increasing practical and field outings.
- Lack of ultimate environment of the class which is desirable to be improved.
- Course was properly completed and course objectives were clear.

Course Evaluation Graph
A
B
C
D
E
0
10
20
30
40
50
60
70
80
Ideas and concept were presented clearly
The Overall environment in the class was conducive to learning.
The course objectives were clear.
The Material in Practical was useful
The material was well organized and presented
The provision of learning resources on the web was adequate and appropriate(if relevent)
Recomended reading Books etc. were relevent and appropriate.
The learning and teaching methods encouraged participation.
I practicipated actively in the course
The demonstrators dealt effectively with my problems.
The tutor dealt effectively with my problems
The material in the tutorials was usefull
I understood the lectures
The instructor was responsive to student needs and problems
Feedback on assessment were timly
The course stimulated my interest and though on the subject area
Class rooms were Satisfactony
I think the Couse was well structured to achive the learning outcomes
The pace of the Couse was appropriate
Approximate level of your own attendence during the whole course
Had the instructor been regular throughout the course?
Learning materails (Lesson planes,Couse Notes etc) were relevent and usefull.
The course was well organized (e.g. timely) access to materials, notification of changes, etc)
The course workload was manageable
I was happy with the amount of work needed for tutorials
Feedback on assessment was helpful
The method of assesment were reasonable
The provision of learning resources in the library was adequate and appropriate.
I think I have made progress in this course

Dr. Nadeem Akhtar Abbasi

i. Teacher Evaluation

Data were collected from 12 students. The evaluation criteria parameters showed that the 79% of the students strongly agreed, 21% agreed, 0% uncertain, 0% disagreed, and 0% strongly disagreed that the instructor was prepared for each class. The data of other parameters inferred that major proportion of the students are agreed that, the performance and expertness of the teacher, the instructor came with good preparation. ,instructor demonstrates knowledge of the subject, instructor had completed the whole course, the Instructor provided additional material apart from the textbook, the Instructor gave citations regarding current situations with reference to Pakistani context, the Instructor communicates the subject matter, the Instructor shows respect towards students and encourages class participation effectively, the Instructor maintained an environment that was conducive to learning, the Instructor arrived on time, the Instructor returned the graded scripts etc. in a reasonable amount of time, the Instructor was available during the specified office hours after class for consultations, the Subject matter presented in the course has increased their knowledge of the subject, the syllabus clearly states course objectives requirements, procedures and grading criteria, the course integrates theoretical course concepts with real- world applications, and the assignments and exams covered the materials presented in the course, the course material is modern and updated.

Comments / Suggestions

- Instructor was fine in conduct and always wearisome to assist.
- Instructor was prepared for each class.

Teacher Evaluation Graph
A
B
C
D
E
0
20
40
60
80
100
The instructor leaves on time.
The instructor provided course split schedule during the 1st week of semester
The instructor shows respect towards students and encourages class participation
The instructor gives citations regrading current situations with refrence to pakistani context.
The instructor is prepared for each class
The instructor provides additional material apart from the textbook
The course material is modern and updated
The instructor is fair in examination
The instructor demonstrates knowledge of the subject
The subject matter presented in the course has increased your knowledge of the subject
The syllabus clearly states course objectives requirements, procedures and grading criteria.
The instructor returns the graded scripts etc. in a reasonable amount of time.
The instructor maintains an environment that is conducive to learning.
The instructor communicates the subject matter effectively.
The assigments and exam covered the materials presented in the course
The instructor was available during the specified office hours and for after class consultations
The instructor arrives on time
The course integrates theoratical couse concepts with real-world applications.

viii. Course Evaluation

Hort-712	**Post-Harvest Physiology of Horticultural Crops**	**3(2-2)**	**Dr. Nadeem Akhtar Abbasi**

Data were collected from 13 students. The individual parameter showed that 41% the students strongly agreed, 50% agreed, 5% uncertain, 3% disagreed and 0% strongly disagreed that the course objectives were clear. Data regarding other parameters showed that major proportion of the students agree the course was well structured to achieve the learning outcomes (there was a good balance of lectures, tutorials, practical etc.). Similarly, they agreed that the learning and teaching methods encouraged participation, the overall environment in the class was conductive to learning, and classrooms were satisfactory, learning materials (Lesson Plans, Course Notes etc.) were relevant and useful, recommended reading books etc. were relevant and appropriate, the provision of learning resources in the library was adequate and the course stimulated their interest and thought on the subject area. The pace of the Course was appropriate, ideas and concepts were presented clearly, the method of assessment were reasonable, the material was well organized and presented, the instructor was responsive to student needs and problems, instructor was regular throughout course and material in the tutorials was useful.

Comments / Suggestions

- Learning atmosphere in class was not reasonable.
- The objectives of the course should be very clear.
- Appropriate information about course was not offered in the books available in library.
- Practically, lab requirements were not satisfactory.

Course Evaluation Graph
A
B
C
D
E
0
20
40
60
80
100
120
Had the instructor been regular throughout the course?
Recomended reading Books etc. were relevent and appropriate.
The Overall environment in the class was conducive to learning.
I practicipated actively in the course
Approximate level of your own attendence during the whole course
The course objectives were clear.
The provision of learning resources on the web was adequate and appropriate(if relevent)
The learning and teaching methods encouraged participation.
Ideas and concept were presented clearly
The course workload was manageable
The material was well organized and presented
Feedback on assessment was helpful
The method of assesment were reasonable
Learning materails (Lesson plans,Couse Notes etc) were relevent and usefull.
The demonstrators dealt effectively with my problems.
The material in the tutorials was usefull
The pace of the Course was appropriate
The tutor dealt effectively with my problems
I was happy with the amount of work needed for tutorials
I think the Course was well structured to achive the learning outcomes
The Material in Practical was useful
The instructor was responsive to student needs and problems
I understood the lectures
Feedback on assessment were timly
The course stimulated my interest and though on the subject area
The provision of learning resources in the library was adequate and appropriate.
Class rooms were Satisfactory
I think I have made progress in this course
The course was well organized (e.g. timely) access to materials, notification of changes, etc)

Dr. Ishfaq Ahmad Hafiz

i. Teacher Evaluation:

Data were collected from 27 M. Sc. students. The individual parameter showed that 60% the students strongly agreed, 38% agreed, 2% uncertain, 0% disagreed and 0% strongly disagreed that the course objectives were clear. The data of other parameters inferred that major proportion of the students are agreed that the teacher was fair in examination , came with good preparation, the instructor demonstrates knowledge of the subject, instructor had completed the whole course, the Instructor provided additional material apart from the textbook, the Instructor gave citations regarding current situations with reference to Pakistani context, the Instructor communicates the subject matter, the Instructor shows respect towards students and encourages class participation effectively, the Instructor maintained an environment that was conducive to learning, the instructor arrived on time, the Instructor returned the graded scripts etc. in a reasonable amount of time, the Instructor was available during the specified office hours after class for consultations.

Comments/Suggestions

1. Kind and good teacher with amiable and parental attitude with the students.
2. Always teaches his practical experiences to make the understanding of the subject effective.
3. Course was accomplished in appropriate time and was very motivating.

Teacher Evaluation Graph
A
B
C
D
E
0
20
40
60
80
100
The instructor arrives on time
The instructor was available during the specified office hours and for after class consultations
The instructor provided course split schedule during the 1st week of semester
The instructor gives citations regrading current situations with refrence to pakistani context.
The instructor maintains an environment that is conducive to learning.
The course material is modern and updated
The instructor is prepared for each class
The instructor demonstrates knowledge of the subject
The instructor shows respect towards students and encourages class participation
The instructor is fair in examination
The subject matter presented in the course has increased your knowledge of the subject
The assigments and exam covered the materials presented in the course
The instructor provides additional material apart from the textbook
The instructor returns the graded scripts etc. in a reasonable amount of time.
The syllabus clearly states course objectives requirements, procedures and grading criteria.
The instructor communicates the subject matter effectively.
The course integrates theoratical course concepts with real-world applications.
The instructor leaves on time.

ii. Course Evaluation

Hort-709	**Plant Growth Regulators**	**3(3-0)**	**Dr. Ishfaq Ahmad Hafiz**

Data were collected from 21M.Sc. Students. The individual parameter showed that 52% the students strongly agreed, 42% agreed, 2% uncertain, 2% disagreed and 2% strongly disagreed that the course objectives were clear. Data regarding other parameters showed that major proportion of the students agreed about the effectiveness and objectivity of the course, the course objectives were clear, the course workload was manageable, well organized , the approximate level of student's attendance during the whole course was higher; students participated actively in the course and have made progress in this course. Most of the students agreed that the course was well structured to achieve the learning outcomes. The learning and teaching methods encouraged participation, the overall environment in the class was conductive to learning, and classrooms were satisfactory, learning materials (Lesson Plans, Course Notes etc.) were relevant and useful, recommended reading books etc. were relevant and appropriate, the provision of learning resources in the library was adequate and the course stimulated their interest and thought on the subject area. According to most of the students, the pace of the Course was appropriate, ideas and concepts were presented clearly, the method of assessment were reasonable.

Comments / Suggestions

- The course can be improved by adding more tours and practical demonstrations.
- There was lack of practical

Course Evaluation Graph
A
B
C
D
E
0
20
40
60
80
100
120
I understood the lectures
The course stimulated my interest and though on the subject area
Recomended reading Books etc. were relevent and appropriate.
Class rooms were Satisfactory
Had the instructor been regular throughout the course?
I practicipated activelY in the course
The course was well organized (e.g. timely) access to materials, notification of changes, etc)
The tutor dealt effectively with my problems
The material in the tutorials was usefull
Feedback on assessment was helpful
The provision of learning rosources in the library was adequate and appropriate.
The Overall environment in the class was conducive to learning.
I think the Couse was well structured to achive the learning outcomes
The instructor was responsive to student needs and problems
The method of assesment were reasonable
Ideas and concept were presented clearly
I think I have made progress in this course
I was happy with the amount of work needed for tutorials
The material was well organized and presented
Feedback on assessment were timly
Approximate level of your own attendence during the whole course
The course workload was manageable
The demonstrators dealt effectively with my problems.
The Material in Practical was useful
Learning materails (Lesson planes,Course Notes etc) were relevent and usefull.
The learning and teaching methods encouraged participation.
The course objectives were clear.
The pace of the Couse was appropriate
The provision of learning resources on the web was adequate and appropriate(if relevent)

Performa 2

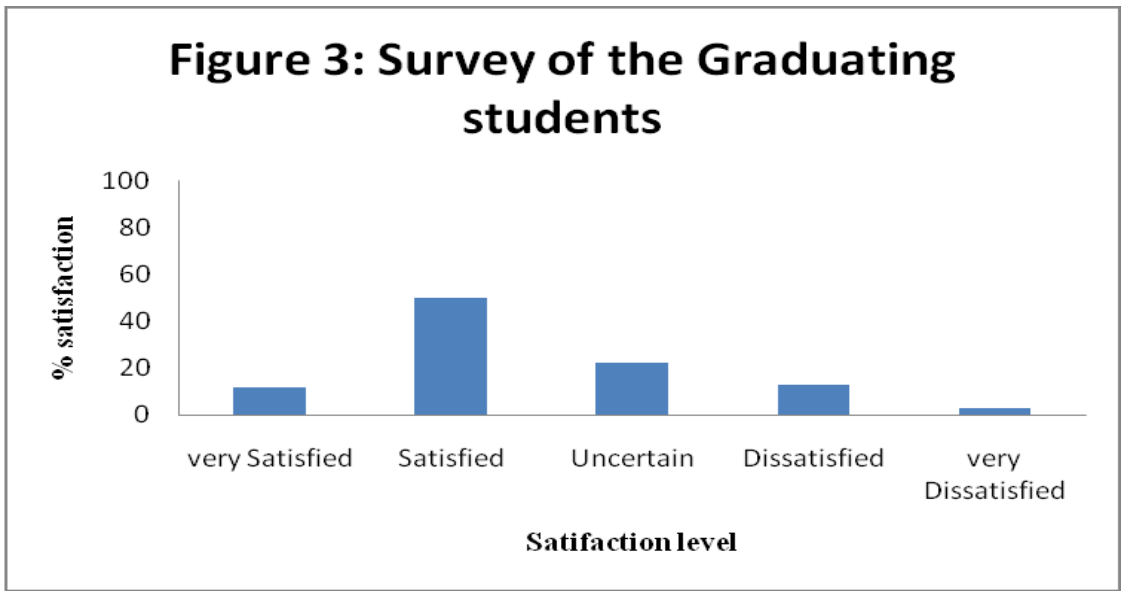
Faculty course review report

The evaluation showed that the faculty is satisfied with curriculum. Evaluation Questionnaire were filled by each faculty member regarding his course and then analyzed and presented in the table given below. The internal evaluation was done through with mid and final term examinations for all courses offered by department.

Course code	Title	Credit Value	Assessment Methods/ Exams	No. of Students	comments on curriculum	Any changes for future	Semester	Course Instructor
Hort-701	Rootstock for Horticultural Crops	3(2-2)	Mid term And Final	27	Good	Should be divided	Fall	Dr. Khalid M. Qureshi
Hort-702	Advanced Physiology of Horticultural	3(2-2)	Mid term And Final	26	Good but lengthy	Should be divided	Spring	Dr. Ishfaq Ahmad Hafiz
Hort-706	Landscape Horticulture	3(2-2)	Mid term And Final	13	Good	Should be divided	Fall	Ms. Qurret-Ul-Ain Farooq
Hort-709	Plant Growth Regulators	3(3-0)	Mid term And Final	19	Excellent but lengthy	Should be divided	Spring	Dr. Ishfaq Ahmad Hafiz
Hort-712	Post-Harvest Physiology of Horticultural Crops	3(2-2)	Mid term And Final	18	Very good	No	Fall	Dr. Nadeem Akhtar Abbasi
Hort-719	Special Problem	1(1-0)	Mid term And Final	21	Well prepared	No	Spring	Dr. Nadeem Akhtar Abbasi
Hort-720	Seminar-I Seminar-II	1(1-0) 1(1-0)	Mid term And Final	7	Well prepared	No	Fall	Dr. Nadeem Akhtar Abbasi
Hort-708	Propagation of Horticultural Plants	3(2-2)	Mid term And Final	19	Excellent but lengthy	No	Spring	Dr. Touqeer Ahmad
Hort-709	Plant Growth Regulators	3(3-0)	Mid term And Final	18	Very good	No	Fall	Dr. Touqeer Ahmad
Hort-712	Post-Harvest Physiology of Horticultural Crops	3(2-2)	Mid term And Final	21	Well prepared	No	Fall	Dr. Nadeem Akhtar Abbasi

Performa 3: Survey of Graduating Students

A total of 45 students were included in the survey. The data showed that 18% of the students were very satisfied (VS), 51% satisfied, 21% uncertain, 12% dissatisfied and 8% very dissatisfied for the work in the program is too heavy and induces a lot of pressure. Moreover, most of the students were very satisfied with program administration, development of analytical and problem solving skills, the program is effective in developing independent thinking, written communication skills and planning abilities, the contents of curriculum are advanced and meet program objectives, faculty was able to meet the program objectives and the environment was conductive for learning.



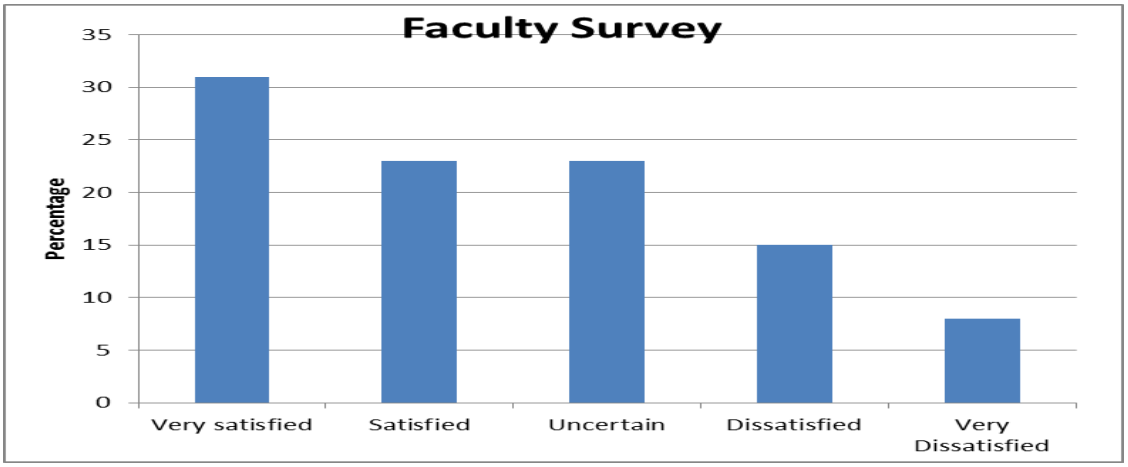
Performa 4: Research Student Progress Review Form

A total of 16 students of M.Sc. (Hons.) were surveyed. Most of the students of the Masters are interested in laboratory work and eager to operate modern equipments. They pointed out the problems regarding to the availability of space, computers and internet which is very poor. Skills and Capabilities Reflected in Performance as horticulturist

- Students will be able to work in the field of Horticulture with confidence.
- To develop abilities of effective writing, oral presentations and demonstration.
- To use modern techniques/ tools in research studies

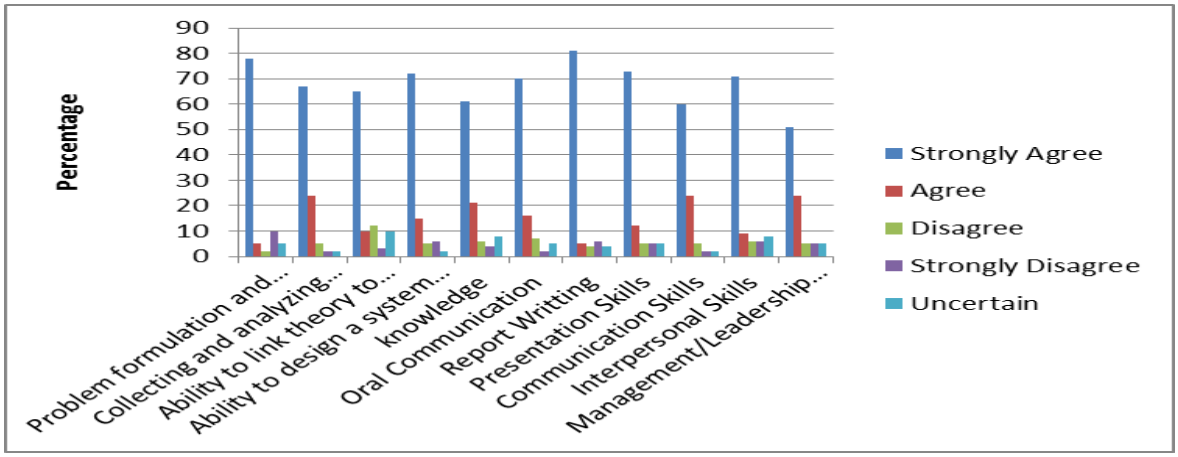
Performa 5: Results of Faculty Survey

The data generated as a result of faculty survey, showed that 31% of faculty members were very satisfied , 23% satisfied, 23 uncertain, 15% dissatisfied and 8% very dissatisfied are satisfied with their job clarity about promotion process. However, most of the faculty themselves reported as very satisfied mentoring and administrative support, job security, support from the department, their progress through ranks. The least time availability to faculty to interact with their family is due to extra load on present teachers as some times of the faculty members proceed on training, workshops etc so the poor strength of remaining faculty in the campus has to bear out the load of course work and other assignments.



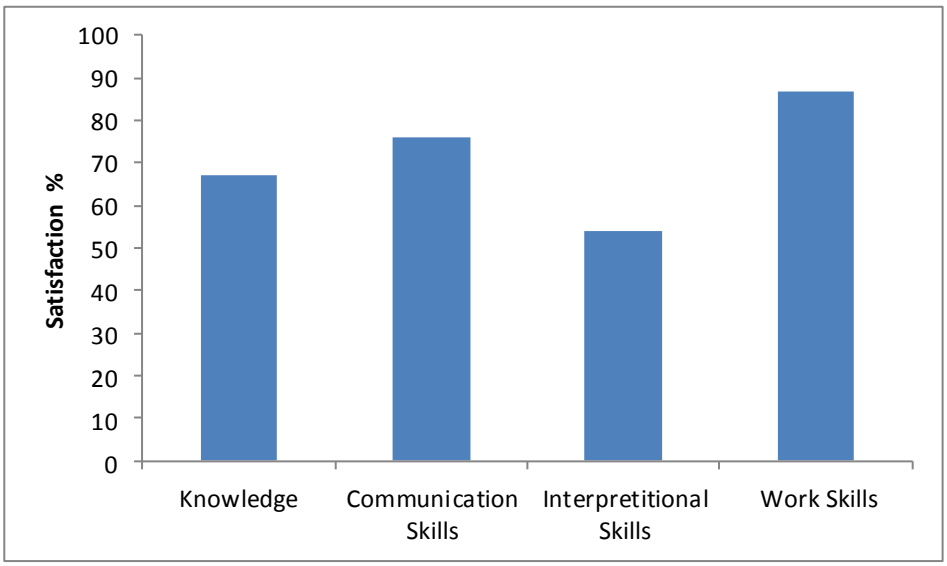
Performa 7: Alumni Survey

Results obtained from alumni survey showed that when the alumni were asked regarding the knowledge they obtained from this department, the overall response was very good. 78% of the alumni agreed that the problem formulation and solving skills were well acquainted with scientific knowledge. 68% of the students showed their agreement regarding collecting and analyzing appropritae data. Most strong positive response was given by alumni regarding ability to link theory to practice where 72% alumni showed agreement which means department was able to impart research skills in students. Regarding Oral Communication 70% alumni showed agreement. Alumni showed agreement towards management skills by 51%. There was a highest response in report writing as shown by agreement of 91% alumni and 6% uncertain.



Performa 8: Employer Survey

Feedback about 32 employees was obtained from organizations viz. Pakistan Horticultural Authority, Khyber Pakhtoon Khaw Forest Department , NIGAB Research Institute-National Agriculture Research Centre Islamabad (NARC), Pir Mehr Ali Shah Arid Agriculture University Rawalpindi and Banks. Their views were keen observed and discussed in the department for future improvements. The major emphasis was to know the employers comments on the quality of education regarding: knowledge, communication skill, work skill and interpersonal skill these students have. Survey reflects that our graduates fall above average and in all areas, their abilities were rated above 70%. This indicates that our graduates are well adaptable and show their better potential in any given environment. However, some employers have given general comments about some weaknesses, particularly the practical workability. The point has been well noted and will be tried to overcome for our future and current students.



<u>Standard 1-3:</u> The results of program's assessment and the extent to which they are used to improve the program must be documented

Skills and capabilities reflected in performance as Horticulturist

Special importance has been given on the practical work in the profession of horticulture to build confidence and communication skills effectively in writing, oral and demonstration to use modern tools and techniques for their profession. Efforts also have been made to explicate and design the experiments/project and to work effectively in a team, to manage a crop problem and assimilate ability to recognize future needs.

Major future improvement plans

- An essential and distinguishing attribute of horticulture education through audio visual aids and modern tools along with provision of latest literature, journals, books, reviews and access to internet.
- Flourishing the facilities for horticulture crop improvement, hydroponics setup, germplasm units and develop extension material.
- To increase former know-how through publishing material and advisory services
- To improve the post-graduate laboratories (Post- harvest physiology, Plant Tissue culture, Horticulture Laboratory) by introducing and sophisticated equipments and tools.
- Human Resource development in Horticulture for future challenges.
- To conduct research on specific horticultural issues prevailing in arid zone.
- To train & equip the teaching staff through widen skill spectrum of horticulture in and outside Pakistan.

Strength and weaknesses of the department

Strength

The main strength of the department is the availability of highly qualified teachers including (8 Ph. Ds), with good experience of their respective subjects, having vast knowledge of horticultural production and management systems and associated problems. Faculty members have local as well as foreign degrees (USA, UK, Turkey, China etc) and are experts in their area of specialization. Four faculty members got postdoctoral research

experience from Australia, Italy and UK and China. Many faculty members have national research projects and are highly conscious of the problems to be taken by the post-graduate students. 2 professor, 1 Associate Professor, 3 Assistant Professor & 4 Lecturers specialized in their subjects are currently engaged in their academic and research activities. Latest research facilities for conducting experiments on tissue culture and post harvest are available to students.

Weaknesses

Advanced teaching and research is being handicapped due to lack of important equipments as hydroponics system including a fully equipped and the set of automated greenhouses and cold storage facilities for post-graduate students. To introduce the most economical protected horticulture, there is a dire need to establish the chain of greenhouse based on the Chinese energy saving technology (in progress). For the research to solve the problems in the area of post- harvest there is need for controlled atmosphere storage and multi-temperature storage chambers. In case of biotechnology, there is need for vector construction, electroporation and gene transformation equipment. Additionally, to ensure the production of pathogen-free plant material, a complete system of ELISA and other diagnostic kits for detection and determination of plant pathogens. Areas for seed production of vegetables and ornamentals are not available. Lecture rooms and survey / offices for faculty members are also lacking. A landscape studio is indispensable to coup up the present needs of landscape horticulture. The is a need to have a computer with efficient internet access for every faculty member

<u>Standard 1-4:</u> The department must assess its overall performance periodically using quantifiable measures.

Present students' enrolment

In the past, the enrolment was significantly less compared with the present status. The new trend is that the applicants give high preference to opt the horticulture as a major subject in the agriculture faculty as illustrated in the following table:

Table-3: Quantitative assessment of the department (last three years)

Sr. #	Particular	No.	Remarks
I	M.Sc degree awarded	37	5 students joined PhD program; the remaining got employment, currently holding various positions
Ii	Students: Faculty rates	12:1	
iii	Technical : No Technical ratio	4:1	
iv	Average grade point	3	Fulfils HEC criteria

The evaluation process pointed high efficiency of system and satisfactory impact of outcomes. Almost all the students got jobs in various organizations (provincial department, universities, research organizations, banks and private firms) except those started PhD program.

Performance for research activities

The faculty staff of Horticulture department is awfully engaged in teaching and research activities, consequently the findings are being published in reputed national and international journals along with the presentation of the findings of problem-oriented and solution-oriented research outcomes at different national and international forums. The following table shows some laudable performance in the form of publication:

Table- 3: Performance for research activities

Faculty	Journal Publications (National & International)	Conference Publications (Proceedings/ Abstract)	Projects
Dr. Nadeem Akhtar Abbasi	19	01	02
Dr. Ishfaq Ahmad Hafiz	07	--	01
Dr. Khalid Mahmood	4	1	-
Ms. Najma Yousaf Zahid	--	--	--
Ms. Mehwish Yaseen	3	-	-

Mr. Umer Habib			
Mr. Hammad Aziz Khan	--	--	--
Dr. Touqeer Ahmad	1	--	-

The staff is well trained in horticultural crop production, post-harvest technology, biotechnology, protected cultivation, vegetable breeding, hydroponics/soilless crop production, floriculture, landscape horticulture, and many other specialized fields in horticulture.

Community services

- Holding of national and international conferences/workshops and training programme on horticulture for students, teachers and farming community.
- Advisory services to the farmers, especially for Pothohar region.
- Knowledge dissemination for the promotion of greenhouse and tunnel technology in arid region.
- To guide the education institutes for improved landscaping.
- Guidance and supervision of students and interested people for the promotion of horticulture.
- Coordination and participation in different horticultural competitions (e.g. fruit, flower and vegetable shows).
- Supervision of students on internship in various organizations.

Departmental administrative services for faculty and students

- To achieve the task assigned by the competent authority.
- The department maintains a ratio of 4:1 for the academic (technical) and administrative non-technical staff which fulfils this standard set by the HEC.
- Administrative meetings (departmental, university, academic council, and syndicate) are attended as and when required. Generally two meetings of academic council are held per month. Board of studies of the department meets quarterly.
- Sharing the role in publishing the university magazine.
- Quick office disposal; no complaint pertaining to delay has ever received from authorities.
- Proper records of individuals' students, their theses etc. are maintained.

Criterion 2: CURRICULUM DESIGN AND ORGANIZATION

M.Sc. (Hons) Agri. (Horticulture)

A minimum of 2 years / four semesters duration program after B.Sc. (Hons) Agriculture majoring Horticulture.

Pre-requisites

A candidate seeking admission to the course must have passed the B.Sc. (Hons) Horticulture Degree with C.G.P.A. of 2.75 and must be a resident of the Punjab Barani Area. Merit for post graduate program is determined as per the following formula

Matric	10%
Intermediate	15%
B. Sc. (Hons.)	35%
Entry test	40%

Degree requirements for M.Sc. (Hons) Agric.

The requirement is 45 credits comprising 35 credits of course work and 10 credits of research thesis. All M.Sc. students are required to pass a comprehensive examination and thesis evaluation and examination by an external examiner and supervisory committee.

Table-5: Post graduate courses (M. Sc. (Hons) Horticulture)

Course No.	Course Title	Credit Hours
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 Horticultural 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)

Standard 2-1: The curriculum must be consistent and supports the program's documented objectives.

The assessment of curriculum given in the following table and the courses are cross tabulated according to the program outcomes.

Table-6: Courses *vs* program outcomes

Course/ Groups of Course	**Outcomes**				
	1	**2**	**3**	**4**	**5**
Hort-712	XXX	X	X	X	XX
Hort-707	X	XX	XXX	X	XX
Hort-702	XXX	XX	X	XXX	XX
Hort-706	XX	X	XXX	XX	X
Hort-719	X	XX	XXX	X	XX
Hort-720	XXX	XX	X	XXX	XX

Course/ Groups of Course	**Outcomes**				
	1	**2**	**3**	**4**	**5**
Hort-703	XXX	XX	XX	X	XX
Hort-704	X	XXX	XX	X	XX
Hort-705	XXX	X	XXX	XXX	XX

Hort-710	XX	XX	X	XX	X
Hort-711	X	XXX	XX	X	XX
Hort-713	XXX	XXX	XX	XXX	XX
Hort-719	XX	XX	XXX	XX	X
Hort-720	XXX	X	XXX	XX	XXX

X: relevant

XX: relevant and satisfactory

XXX: very relevant and satisfactory

- The curriculum fits very well and satisfies the core requirements for the program, as specified the respective accreditation body.
- The curriculum satisfied the general arts and professional and other discipline required for the program according to demands and requirements set by HEC.

Standard 2-2: Theoretical background, problem analysis and solution design must be stressed within the problem core material.

The meeting standard of this clause is tabulated in the following:

Table-7: Standard 2-2 requirement (percentage of elements in courses)

Elements	**Courses**
Theoretical backgrounds	Hort-702, Hort-712, Hort-706, Hort-703, Hort-704, Hort-705, Hort-710, Hort-711
Problem analysis	Hort-707, Hort-719, Hort-720

Standard 2-3 to standard 2-5

The above cited standards have already been justified in table 8.

Standard 2-6: Information Technology Component of the Curriculum must be developed and applied in the Program.

While the curriculum was prepared, all aspects of information technology were considered and after a critical analysis, relevant aspects were integrated into the program as:

Computer and I.T. courses (3 credit hours) have been integrated in the curriculum of M.Sc (Hons). Students which fulfill the requirements for equipping the students with I.T knowledge.

Standard 2-7: Oral and written communication skills of the student must be developed and applied in the program.

- Two seminars having one credit hour each are compulsory at the Post-graduate level.
- Assignments are given to M.Sc. (Hons) students on specific titles (part of the course) which are presented orally and are submitted as written report, to increase their oral and written communication skills.

Criterion 3: LABORATORIES AND COMPUTING FACILITIES

There are four laboratories in the department. The facilities and shortcomings of these laboratories are listed as under.

- Laboratory Title: 1. Tissue Culture Laboratory I,
  2. Tissue Culture Laboratory II
  3. Horticulture Analytical Post harvest laboratory.
- Location and Area: Faculty of Agriculture and Food Sciences, A-Block, 1st Floor, Main Campus
- Objectives: Laboratories are used for: Practical exercise and demonstrations to graduate students in their introductory and major courses. Research work for the graduate and post-graduate students.
- Shortcoming: The number of labs is not sufficient. The standard requirements in view of operation and quality, available resources and expansion programs are vitally required. Major apparatus viz. equipment: along with necessary chemicals are needed. Teachers usually arrange the lecture material and helping literature at their own expense. Some manuals/broachers are being prepared by the academic staff.

- Safety Regulations: Safety measures are not available against fire (Extinguishers), minor hazards and accidents, injuries (First Aid Kit). However, the University maintains a Medical Dispensary for such incidents where the required apparatus is insufficient.

Standard 3-1: Laboratory Manuals/ documentation/instructions experiments must be available and readily accessible to faculty and students.

Laboratory manuals (tissue culture lab, horticulture manuals etc) are available. The department library has the collection of books but still a number of books are required.

Standard 3-2: There must be adequate support personnel for instruction and maintaining laboratories

There is shortage of laboratory assistants and laboratory attendants and are direly needed to maintain laboratory, equipment, glassware, chemicals, material etc.

Standard 3-3: The University computing infrastructure and facilities must adequate to support program's objectives.

- **Computing facilities support*:*** Not available to all faculty members and the post graduate students.
- **Shortcoming in computing infrastructure:** Computers with internet facilities should be available to all faculty members and postgraduate students on individual basis.
- **Safety Arrangements:** There are no proper safety arrangements and no security plan is available in case of emergency. The department is located on the 2nd 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.

Criterion 4: STUDENT SUPPORT AND ADVISING

Our University organizes support programs for students and provide information regarding admission, scholarship schemes etc. Department in its own capacity arranges

orientation and guided tours of the department. Director Students Affairs is also there and arranges various cultural and social activities and solves the students' problems. However currently there is no Parent/Teacher association.

Standard 4-1: Courses must be offered with sufficient frequency and number for students to complete the program in a timely manner.

- Courses are taught as per criteria of HEC.
- At undergraduate level subjects/ courses are offered as per scheme of study provided by the HEC and approved by Academic Council. Postgraduate level courses are however offered according to the availability of the teacher and number of students.
- Elective courses are offered as per policy of HEC and the University.
- For post graduate programs, a variety of courses is offered according to demand of the profession.

Standard 4-2: Courses in the major area of study must be structured to ensure effective interaction between students, faculty and teaching assistants.

To ensure effective interaction and understanding between students, faculty and teaching assistants, at the time of course formulation both theoretical and field/practical aspects are focalized. Theoretical problems are explained and assignments are also given to the students whereas practical are carried out in the labs and filed. Field visits and study tours to various research organizations are also organized to keep them update on the latest developments in the area and to stimulate them for discussion through teacher/student interaction.

- Courses are developed and decided in the board of studies meeting.
- At the commencement of the semester, faculty members interact frequently among themselves and with students. Students are welcome to ask question in class and even after the class.

Standard 4-3: Guidance on how to complete the program must be available to all students and access to academic advising must be available to make course decisions and career choices.

Several steps have been taken to provide students guidance such as:

- Students are informed about the program requirement through the office of the head of the department.
- Through the personal communication of the teachers with the students.
- Monthly meetings are organized by the head of the department for counseling of the students. In addition, students can also contact with the relevant teachers whenever they face any problem.
- It is necessary for the students to participate in the monthly meeting.
- In case of some problem Director Student Affairs appointed by the university, helps the students.
- Student can interact with the teachers/scientist in universities or research organization whenever they needed and there is an open option for the students to get the membership in the professional societies like National Rose Society Islamabad, Horticultural Society of Pakistan, National Horticulture Society, Pakistan Horticulture Society, Pakistan Botanical Society and other relevant professional societies.
- Realizing the need for exploring job opportunities for the university graduates, Directorate of Placement Bureau has been established.

Criterion 5: PROCESS CONTROL

It includes student admission, students' registration, faculty recruitment activities, which are dealt by various statutory bodies and the university administration.

<u>Standard 5-1:</u> The process by which students are admitted to the program must be based on quantitative and qualitative criteria and clearly documented. This process must be periodically evaluated to ensure that it is meeting its objectives.

- The process of admission is well established and followed as per rules and criteria set by HEC. For this purpose an advertisement is published in the National News Papers by the Registrar Office.
- An admission criterion for M.Sc. (Hons) is same as mentioned in section 2.
- An admission criterion is revised every year before the announcement of admissions.

<u>Standard 5-2:</u> The process by which students are registered in the program and monitoring of students progress to ensure timely completion of the program must be

documented This process must be periodically evaluated to ensure that it is meeting its objectives.

- The student name, after completion of the admission process, is forwarded to the Registrar Office for proper registration in the specific program and the registration number is issued to the student.
- Students are evaluated through Mid, Final and Practical exams and through Assignments.
- Registration is done for one time for each degree but evaluation is done through the result of each semester. Only those students who fulfill the criteria of the University, they are promoted to the next semester.
- In general, the students are registered on competition bases keeping in view the academic and research standards.

Standard 5-3: The process of recruiting and retaining highly qualified faculty members must be in place and clearly documented. Also processes and procedures for faculty evaluation, promotion must be consistent with institution mission statement. These processes must be periodically evaluated to ensure that it is meeting with its objectives.

- Vacant and newly created positions are advertised in the national newspapers, applications are received by the Registrar office, and call letters are issued to the short-listed candidates on the basis of experience, qualification, publications and other qualities/activities as determined by the University.
- The candidates are interviewed by the University Selection Board and Principal and alternate candidates are selected.
- Selection of candidates is approved by the Syndicate for issuing orders to join within a specified period.
- Induction of new candidates depends upon the number of approved vacancies.
- Standard set by HEC are followed.
- At present, no procedure exists for retaining highly qualified faculty members. However, the revised pay scales structure is quite attractive.

- HEC also supports appointment of highly qualified members as foreign faculty Professors, National Professors and deputes them in concerned departments of the University.

<u>Standard 5-4:</u> The process and procedures used to ensure that teaching and delivery of course material to the students emphasizes active learning and that course learning outcomes are met. The process must be periodically evaluated to ensure that it is meeting its objectives.

- To provide high quality teaching, department periodically revises the curriculum depending upon requirements, innovations and new technology.
- With the emergence of new fields, new courses are introduced, and included in the curriculum.
- The easily available books in the University library are provided to the students for the preparation of different courses. Additionally, copying and internet facilities are also available to the students.
- Notes are also prepared by the teachers and given to the students other than different handouts
- Most of the lectures are supplemented by overheads, slides and pictures.
- All efforts are made that the courses and knowledge imparted meet the objectives and outcome. The progress is regularly reviewed in the staff meetings.

<u>Standard 5-5:</u> The process that ensures that graduates have completed the requirements of the program must be based on standards, effective and clearly documented procedures. This process must be periodically evaluated to ensure that it is meeting its objectives.

- The controller of examinations announces the dates of commencement of examination. After each semester, the controller office notifies the results of the students. The evaluation procedure consists of quizzes, mid and final examinations, practical, assignments and reports, oral and technical presentations. The minimum pass marks for each course is 40% for Master degree in theory and practical separately.
- In theory, weightage to each component of examination is as prescribed here under:

Mid Examination	30%
Assignments	10%
Final Examination	60%

- Grade points are as follows

Marks obtained	Grade	Grade point	Remarks
80-100 %	A	4	Excellent
65-79 %	B	3	Good
50-64 %	C	2	Satisfactory
40-49 %	D	1	Pass
Below 40 %	F	0	Fail

- Gold medals are awarded to the students who secure highest marks. Degrees are awarded to the students on the annual convocation that is held late every year.

Criterion 6: FACULTY

Standard 6-1: There must be enough full time faculty who are committed to the program to provide adequate coverage of the program areas/ courses with continuity and stability. The interests and qualifications of all faculty members must be sufficient to teach all courses, plan, modify and update courses and curricula. All faculty members must have a level of competence that would normally be obtained through graduate work in the discipline. The majority of the faculty must hold a Ph.D. in the discipline.

Table-8: Faculty distribution by program areas in Horticulture

Program area of specialization	Courses in the area and average number of sections per year	Number of faculty members in each area	Number of faculty with Ph.D. degree
Post-harvest	2	2	1
Tissue Culture	2	2	1
Protected Cultivation	2	2	1
Floriculture	2	1	1
Landscape Horticulture	1	1	-

<u>Standard 6-2:</u> All faculty members must remain current in the discipline and sufficient time must be provided for scholarly activities and professional development. Also, effective programs for faculty development must be in place.

- Professional training and availability of adequate research and academic facilities are provided to the faculty members according to the available resources.
- Currently two faculty members are abroad on study leave for doctoral degree as sponsored by the different organizations.
- Incentives in the form of allowances to theses supervisors have been implemented lately to promote high standard research.
- Existing facilities include mainly internet access, which is available through networking system in addition to library facility with latest books is also available.
- Effective programs for faculty development have been just introduced since the last semester.

<u>Standard 6-3:</u> All faculty members should be motivated and have job satisfaction to excel in their profession

- Time to time provision of enthusiasm to the young faculty by the senior faculty members.

Faculty survey

The results of faculty survey were summarized in the form of bar charts quoted in the previous pages.

Criterion 7: INSTITUTIONAL FACILITIES

The university administration has been struggling hard to strengthen all the departments and up-gradation of departments and establishing new faculties and Institutes. The university is also trying to attract highly qualified faculty. Following needs to focus on:

- The institution must have the infrastructure to support new trends in learning such as e-learning including digital publications, journals etc.
- The library must possess an up-to-date technical collection relevant to the program and must be adequately staffed with professional personnel. In- sufficient library's technical collection of books. Recommended books, relevant journals of the programs are not available to the students and to the teachers as well.

- These aspects need to be strengthened in number and space.
- Class rooms must be adequately equipped, especially the multimedia facility and offices must be adequate to enable faculty to carry out their responsibilities**.** In horticulture, offices for faculty staff are not available, thus they are accommodated minimum two/room, inspite the rooms are quite narrow in space, subsequently affecting the quality performance.

<u>Standard 7-1:</u> The institution must have the infrastructure to support new trends in learning such as e-learning

The faculty has access to E-library which is very helpful for the high quality education and producing research of international standard. They also have access to the internet. However the department has the following shortcomings/problems:

- Majority of the faculty members do not have access to the PCs. Computers 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 breached.
- Breach of power intermittently, due to which research and academic work both are suffered.
- Majority of equipments is either out of order or outdated.
- Latest and modern molecular equipments or apparatus are lacking.
- Untrained supporting staff.
- Faculties lack practical knowledge of modern and molecular techniques.
- Scanty budget for consumables.
- Fans and tube lights are out of order and are not properly and timely repaired.

<u>Standard 7-2:</u> 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 term of space and facilities with no catalogue systems. It does not meet the standards of a University Library. However department itself owns few books.

<u>Standard 7-3:</u> Class-Rooms must be adequately equipped and offices must be adequate to enable faculty to carry out their responsibilities.

Currently the class rooms are not enough and the space is not only limited but also some basic facilities are lacking. Multimedia are not available for the lecture halls. Practical lab space is also lacking. This affects the quality of teaching. The faculty offices are another serious problem of the department. Some faculty members are sharing small rooms and the other are having their desks in the laboratories.

Criterion 8: INSTITUTIONAL SUPPORT

The following are mentioned against this criterion:

- Due to unavailability of class rooms, classes are taken in the laboratories. Therefore, it is imperative to arrange more classes for quality teaching.
- As mentioned earlier, faculty offices are inadequate and therefore two or three teachers have one office room.
- Space limitation is the major constraint in the development and strengthening of discipline.
- There must be sufficient support and financial resources to attract and retain high quality faculty and provide the means for them to maintain competence as teachers and scholars.
- The experienced teachers are not provided the house accommodation by the university and are living in the rented houses with exorbitant rent within the source of mere salary, thus become difficult to concentrate on the efficient working. Therefore house accommodation is indispensably required for the department staff.
- Insufficient secretarial support, technical staff and office equipment.
- Staff attendant/s not available.

<u>Standard 8-1:</u> There must be sufficient support and financial resources to attract and retain high quality faculty and provide the means for them to maintain competence as teachers and scholars.

- At present department is not having sufficient financial resource to maintain the present needs of the department. Individual research grants for students and faculty are mainly supporting the departmental research activities. Due to lack of

proper facilities like fruit orchard the students conduct their research at different areas. There is a dire need for increasing the financial resources allocated to the department to establish a library, laboratories and computer facilities. Horticulture department has submitted a project for strengthening of department and it is hoped to be funded during the next year. Suggestions and factors that can contribute to the motivation of the faculty are given as follows:

- Research grants for young faculty members may be allocated.
- Trainings should be arranged in abroad to train the faculty members.

<u>Standard 8-2:</u> There must be an adequate number of high quality graduate students, research assistants and Ph.D. students

The intake of M.Sc. (Hons) students is once in a year. A strict merit policy is applied during admission coupled with GRE/NTS or entry test. A detail of the Students enrolled during the past seven years is given in the following Table.

Table-9: Enrollment in different programs from 2006-14

Discipline	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
M.Sc. (Hons)	05	08	08	11	05	09	12	20

<u>Standard 8-3:</u> Financial resources must be provided to acquire and maintain Library holdings, laboratories and computing facilities.

Total budget of the department for the financial year 2012-14 is **Rs 8,10,000** which hardly fulfill the departmental needs particularly for the purchase of contingency items. Limited resources are provided from the university budget. The computing facilities were provided on limited basis from the approved HEC project of Horticulture department, where more facilities for library, laboratories and computers are suggested for quality improvement of the department.

Executive Summary

Horticulture department initiated functioning during 1979 with in shortest possible time; the department achieved the possible success in the area for teaching, research and training. The degree course of MSc. (Hons) in Horticulture is being offered to 50 students each year. The admissions in M.Sc (Hons) are open in both autmn and spring semesters. Short courses on various aspects of horticulture including tunnel farming, fruit nursery raising and flower arrangements (for female) are also conducted for skilled labor/gardeners for those who are unable to continue higher education in horticulture. Different research projects have been completed / approved or in the pipeline for higher degree programmes. Problem oriented research matters are emphasized for better sharing of horticulture discipline in the agriculture section. A number of constrains and their solution have also been reported in the report for efficient improvement of the department which consequently will bring a positive change in the coming years. In order to assess whether department is fulfilling its objectives or not, surveys on various aspects such as course evaluation, teacher evaluation, alumni survey, research/graduating students surveys and faculty survey etc. have been conducted by the departmental members of the program team. The data were collected on prescribed Performa and later on analyzed and presented in the form of graphs and tables. The data revealed that students are satisfied with the subject approach of faculty members, their fairness in examination, and level of knowledge.

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Annex- XII

FACULTY

The brief summary of CV's regarding all faculty staff is given below, where as detail of each faculty member is given in the proceeding paragraphs:

Name	Position	Qualification	Specialization
Dr. Nadeem Akhtar Abbasi	Professor	Ph. D	Pre and Post harvest physiology of horticulture crops
Dr. Ishfaq Ahmed Hafiz	Professor	Ph. D	1. Protected Vegetable Farming 2. In-Vitro propagation of Horticultural Crops 3. Certified Seed and Nursery Production of Horticultural Crops
Dr. Khalid Mahmood Qureshi	Associate Professor	Ph. D	1. Arid Zone Horticulture
Dr. Imran Hassan	Assistant Professor	Ph.D	1. Introductory Horticulture 2. Commercial Flower Production 3. Horticultural Crop Production
Ms. Najma Yousaf Zahid	Assistant Professor	M. Sc. (Hons)	1. Production of Tropical & Sub-tropical Fruits 2. Medicinal and Aromatic Plants
Dr. Shahid J. Butt	Assistant Professor	Ph.D	1. Winter Vegetables 2. Temperate Fruit Production
Dr. Muhammad Azam Khan	Assistant Professor	Ph.D	Protected Vegetable Farming
Mr. Umer Habib	Lecturer	M. Sc. (Hons)	Ornamental Horticulture
Ms. Mehwish Yaseen	Lecturer	M. Sc. (Hons)	Physiology of Horticultural Plants
Dr. Touqeer Ahmad	Lecturer	Ph. D	Biotechnology/tissue culture of horticulture

Faculty Resume

Name	**Nadeem Akhtar Abbasi**
Personal	**Father's Name** : Muhammad Akhtar Abbasi **Date of Birth** : 03-03-1965 **N.I.C. NO.** : 61101-1748794-1 **Nationality** : Pakistani **Postal Address** : University of Arid Agriculture, Murree Road Rawalpindi. **Permanent Address** : Village Phulgran (Korang Valley) Distt. Islamabad, Pakistan. **Phone** : +92-51-9290771; 0300-5069600 **Email** : nadeemabbasi65@yahoo.com nadeem.abbasi@uaar.edu.pk
Experience	**Assistant Research Officer (Horticulture)** : Hill Fruit Research Station Murree under Ayyub Agriculture Research Institute, Faisalabad. Govt. of the Punjab from January 6, 1990 to December 1, 1999. **Duties Performed:** ☞ Training Farmers/students ☞ Management of Fruit/Nursery farms. ☞ Report Writing. ☞ Conducting research work on different fruit plants to solve farmers' problems. **Additional Duties Performed under Chief Minister of the Punjab Project for Beautification of Murree 1997 to 1999:** ☞ Planning and Execution of landscape projects to beautify Murree city. ☞ Management of the floriculture farm/nursery. ☞ Training farmers/students in the area of floriculture. ☞ Conducting research work on ornamental plants to determine the suitability for different areas of Murree. **Assistant professor:** Department of Horticulture, University of Arid Agriculture, Rawalpindi, Pakistan, from 01-12-1999 to 2-12-2002. **Associate Professor:** Department of Horticulture, University of Arid Agriculture, Rawalpindi, Pakistan, from 02-12-2002 to 02-08-06. **Professor:** Department of Horticulture, University of Arid Agriculture, Rawalpindi, Pakistan, from 02-08-2006 to date. **Responsibilities:** ☞ Responsible for organising teaching and research programs in the department. ☞ Active participation in teaching of various courses on fruits,

	vegetables, and floriculture/landscaping, Horticulture Business Management. ☞Supervising Research Projects of Ph.D., M.Sc. and B.Sc. students. ☞**Incharge of the University lawns/gardens.** Organized Mega Flower Shows, Flower Arrangements in the university two times every year since 2009. **Professor on Tenure Track System:** 28-05-2010 to date **Affiliation with International Organizations**: • With permission from University worked part time with Fincon Services Pakistan, H # 798, St # 16, I-8/2, Islamabad during 2011 in a research project "Agriculture Value Chain Assessment-USAID" as Horticulture Specialist. • Having permission from University working part time with FAO as Technical Specialist (Agriculture) for "Institutional Assessment for Integrating Disaster Risk Management into Agriculture Planning and Programming Process"
Administrative/ Financial Responsibilities	**Incharge Research Farm, Store & Transport at** Hill Fruit Res. Station Murree from Jan. 1990 to Aug. 1992. Responsible for Farm management, Purchase of store items for the entire station, maintaining record of purchase, issue orders, auctions and dead stock. Managing and maintaining transport and its record. **Incharge Research Farm & Nursery at Hill Fruit Res. Station Murree** from May. 1996 to Nov. 1999. Responsible for Farm & nursery management. **Member Purchase Committee for the Chief Minister Project for "Beautification of Murree"** from 1997 to Nov. 1999. **Chairman: Department of Horticulture, University of Arid Agriculture, Rawalpindi,** Sept. 2003 to 25 Feb. 25, 2004 and Dec. 1, 2004 to Date. **Responsibilities:** ● Administrative and financial management of the department. ● To disseminate the production technology of horticultural crops through publications, students and direct contact with farmers. **Project Director:** Higher Education Commission Project "Production of Pathogen Free Horticultural Plants". Dec. 1, 2004 to Sep. 30, 2007 (Project completed successfully). **Chairman University Purchase Committee: 27-09-07 to 10-09-12**. Responsible to conduct purchase of all university items like equipment, chemicals, glass ware, furniture etc. according to the

	prescribed criteria. **Coordinator of PMAS-AAUR Sub-Campus Khushab:** 05-01-07 to 01-01-2014. Established the sub-campus and after that provided support/guidance in running different academic programs. Financial matters of the sub-campus with the treasury at main campus are also handled. **Principal Officer Estate Care/Security:** of PMAS AAUR. 31-03-08 to 04-03-2014. Responsible to take care of the university property, paying bills and keeping the university environment secure for smooth working. • **Professor Incharge University Gardens/Lawns:** of PMAS-AAUR. 13-12-12 to date. Responsible for management of university lawns, landscape designing and its implementation including financial handling.
PROJECTS:	1. Maximization of gladiolus corms production through soil amendments, Rs. 87000/ Sponsored by PMAS-AAUR (2004). 2. Production of pathogen free horticultural plants, Rs. 35.884 million, Sponsored by HEC (2004-2007). 3. Collection of loquat genotypes of Pakistan and their multiplication through conventional vegetative methods and tissue culture techniques, Rs. 2.5 million, Sponsored by HEC. (2010-2013) 4. Pre and post harvest treatments of food grade chemicals to improve peach fruit quality and shelf-life, Rs.1.992 million, Sponsored by PSF (2010-2013). 5. Jelly seed disorder in mango fruit-causes and control, Rs. 4,99,290 Sponsored by HEC. (2012-2013) 6. Oil extraction and mass propagation of scented rose species, Rs. 50000 Sponsored by HEC. (As a Co-PI). (2012-2013) 7. Improving yield, quality and storage life of bell pepper by use of food grade chemicals.Rs. 3.14million, Principal Investigator Dr. Nadeem Akhtar Abbasi. Project No.PSF/NSLP/P-UAAR (264). Sponsored by Pakistan Science Foundation. (2014-2016). 8. Improvement of berry quality and postharvest performance of grapes cv. Perlette and King's Ruby by using food grade chemicals. Rs. 10.96 Million sponsored by HEC. (2014 – 2016). 9. Value addition of selected stone fruits by osmotic dehyderation and hot air drying. Rs. 4.0128 Million sponsored by HEC (As Co-PI). (2014-16).
TRAININGS/ WORKSHOPS/ CONFERENCES	1. Participated in Annual International Conference of International Society of Horticultural Sciences in **Montreal, Canada** in August 1995. (July 30 to August 3) 2. Training on "Diagnosis and management of fruit and vegetable crop diseases", held at National Agriculture Research Center, Islamabad, Pakistan (12th May to 3rd June,

	1998). 3. Seminar on "Efficient and Rapid HPLC and LC/MS Methods Development" on 21-05-04 at Perth, WA, organized by WATERS Asia Pacific. 4. Participated in seminar on "Gas Chromatography: How to Gain Efficiency and Improve Results, June 2004 in Perth, WA organized by BIOLAB Ltd. 5. Workshop for information forming the basis of 'Salty Business', on 11-06-04 at Perth, WA, organized by Department of Agriculture, Govt. of WA. 6. Conference on "Postharvest Unlimited Downunder 2004" organized by Food Science Australia co-bagged by International Society of Horticultural Sciences from 10-12 Nov. 2004 in **Sydney, Australia**. 7. International workshop on "Sanitary and Phytosanitary Measures in the Wake of Trade Liberalization: Challenges to Agriculture in Developing Countries 12–14 Jan., 2005 organized by UAAR, sponsored by Pakistan Academy of Sciences. 8. "Improving the quality and safety of fresh fruits and vegetables: a practical approach" Sub-regional workshop organized by **FAO** in cooperation with the Thailand DOA, **Bangkok, Thailand**, 28 Feb. – 4 Mar., 2005. 9. First International Conference on **Mango and Date Palm**: Culture and Export held on 20th – 23rd June, 2005 at Univ. of Agriculture Faisalabad, Pakistan. 10. Seminar on Food Safety Standards for Better Export of Fruit and Vegetable Products Organized by the Asian Productivity Organization, implemented by NPO and PARC from 12 to 16 Dec. 2005 in Islamabad, Pakistan. 11. Attended "International Training Workshop on Protected Agriculture" in Yangling, Shaanxi, Min. of Science & Tech., China from Nov. 20 to Dec. 3, 2006. 12. Participated in Conference on "Olive Oil Production: National Prospective and Sustainable Expansion" held at NARC – Islamabad on 12 May, 2008. Organized by Embassy of Italy and Instituto Abgronomico Per l'Oltremare. 13. Organized two training courses on "Poly Tunnel Farming" during Feb. 2-8 and 16-22, 2009 at PMAS-Arid Agriculture Univ. Rawalpindi in collaboration with Agribusiness Support Fund. 14. Participated and delivered lecture in "National Workshop on Streamlining Commercial Floriculture on Modern lines to gain foothold in Niche Markets" lecture titled "Postharvest management of cut flowers" on 26th March, 2009 held at NARC, Islamabad, organized by Horticultural Foundation of Pakistan. 15. Participated and presented country paper in "Seminar on Good Agricultural Practices (GAP) and Safety

	for Fruit Crops and Vegetables: Managing Food Quality" 29 June – 3 July, 2009, Yogyakarta, Indonesia organized by DG of Horticulture, Min. of Agriculture Indonesia, sponsored by APO Japan. 16. Participated and presented paper and posters in International Conference on Postharvest Pacifica 2009 from 15 to 19 Nov. 2009, in Napier, New Zealand. 17. Participated and presented papers in III International Symposium on Loquat in Antakya - Hatay, Turkey from 03-06 May, 2010. 18. Participated and presented paper in "Expert Consultation Meeting on Postharvest and Value Addition of Horticultural Produce 2010" from Nov. 29 to Dec. 2, 2010 at Marriott Hotel, Putrajaya, Malaysia organized by Malaysian Agricultural Research and Development Institute (MARDI) and Asia-Pacific Association of Agricultural Research Institutions (APAARI). 19. Participated and presented paper "Foliar spray of ethanol affected fruit growth, yield and postharvest performance of '*Sahil*" tomato" in 4th ISHS Conference on " Postharvest Unlimited" from May 23 – 26, 2011 in Leavenworth, Washington, USA. 20. Attended Workshop, GLOBAL G.A.P., Risk Assessment on Social Practices (GRASP), GRASP Module – DRAFT Interpretation for Pakistan, For Stakeholders Consultation in PC Lahore on April 19, 2012. 21. Participated and chaired a session in "Citrus Growers Conference" May 9-10, 2012 under Australia-Pakistan Agriculture Sector Linkages Program (ASLP Citrus Project) organized by IHS, Univ. of Agri. Faisalabad, HRI, NARC Islamabad. 22. Participated in Training Program (21st – 24th May, 2012) on International Featured Standards (IFS-6) offered by Star Farm Pakistan (Pvt.) Ltd. by Mr. Peter Wang (IFS Asia Representative and Head of IFS Asia Office, China). 23. Professional Development Training Program on "**Agri – Business Management**" 5 -16 November 2012 at Asian Institute of Technology, Thailand. 24. Training course on "Treatment and Utilization of Agriculture Waste for Developing Countries" July 16 to Aug. 12, 2013 in Chengdu, China, organized by Biogas Institute of Ministry of Agriculture sponsored by Ministry of Commerce P.R. China. 25. Participated in Multicountry Observational Study Mission on Innovative Farm Management Practices to enhance Agricultural Productivity held in Tokyo Japan on 18-22 Nov., 2013 sposored by Asian Productivity Organization vide project No. 13-AG-04-GE/DC-OSM-B. 26. Participated in Seminar on "Characterization of native &

	potential mango varieties in relation to ceratocystis manginecans and other economic traits" at University of Agric. Faisalabad on Sep. 10, 2014, sponsored by PARB, organized by HIS and ORIC UAF.
ORGANIZATIONAL MEMEBERSHIP	1. International Society for Horticultural Science (ISHS) currently suspended for non-payment of fee. 2. Agricultural Foundation of Pakistan. 3. Life Member of Islamabad Horticultural Society, Islamabad; General Secretary for 2014-2015.. 4. Life member of Pakistan Botanical Society, Vice President for 2008 – 2011. 5. Member Pakistan National Society of Horticulture

Publications	• **Abbasi, N. A**., M. M. Kushad, and A. G. Endress. 1998. Active oxygen-scavenging enzymes activities in developing apple flowers and fruits. Scientia Horticulturae 74:183-194. (**Impact Factor = 1.527**) • Chaudhry, M. I., **N. A. Abbasi,** and W. Ahmed. 1995. Effect of time of fertilizer application on winter injury and yield in some commercial **citrus** cultivars. Pak. J. Agri. Sci. 3(2): 137-140. • Ayyub, C. M., M. A. Hanjra, T. Saeed, A. U. Malik, and **N. A. Abbasi.** 1998. Nature farming, profitability, and sustainable development in vegetable production-II. Pak J. Sci. Res. 50(3-4):1-7. • Ahmed, C. M. S., S. Sajjad, and **N. A. Abbasi**. 2001. Performance of seedling potato tubers from true seed in second generation in comparison with local varieties. Sarhad J. Agri. 17: 69-73. • Ahmed, I. and **N. A. Abbasi**. 2002. Landscaping with a low cost dry rockery. Science, Technology, and Development, International Journal. 21(2): 49-51. • Rabbani, A.; B. Askari; **N. A. Abbasi** and M. Bhatti. 2001. Effect of growth regulators on in-vitro multiplication of potato. Int. J. Agric. and Biology 3:181-182. • Hussnain, R. R., **N. A. Abbasi** and R. S. Rehman. 2002. A quantitative analysis of residual organo chlorine insecticide (endosulfan) from brinjal. Paki. J. Arid Agric. 5(1): 29-33. • Zahoor, S., **N. A. Abbasi** and C. M. S. Ahmed. 2002. Effect of different phosphorus levels and EM inoculum on head cabbage (*Brassica oleracea* var. Capitata). Pak. J. Arid Agric. 5 (2): 7-10. • **Abbasi, N.A.**, A.N. Nazir and C.M.S. Ahmed. 2002. Evaluation of Nutrient Requirements for Production of Cut Flowers in *Rosa hybrida* cv. "Peace" under Rawalpindi Conditions. Pak. J. Arid Agric. 5(1): 43-47. • Zahoor, S., M.S. Ahmed, **N.A. Abbasi**. 2003. Effect of phosphorus levels and effective microorganisms on seed

	production in cabbage (Var. Capitata). Sarhad J. Agric. 19(2): 194-197. • Ahmed, M.S., **N.A. Abbasi** and M. Amer. 2003. Effects of IBA on hardwood cuttings of peach rootstocks under greenhouse conditions. Asian J. Pl. Sci. 2(30): 265-269. • Ahmad, A., **N. A. Abbasi** and K. K. Khoker (2003). Performance of F1 Russian hybrids cabbage under Rawalindi/Islambad Climatic Conditions. Sarhad J. Agric 19(3) :325-327. • **Abbasi. N.A**., I. A. Hafiz and B. Fazal. 2004. Evaluation of exotic Potato varieties under ecological condition of Islamabad. Int. J. Agric. Boil.1560-8530/2004/06-3-479-482. • **Abbasi, N. A.**, S. Zahoor and K. Nazir. 2004. Effect of pre harvest phosphorus and potassium fertilizer and post harvest $AgNO_3$ pulsing on the postharvest quality and shelf life of Zinnia (Zinnia elegans cv. Blue Point) cut flowers. Int. J. Agric. Biol. 6 (1): 129-131. • Sahar, T., I. A. Hafiz, **N. A. Abbasi** and S. Zahoor. 2005. Effect of Seedling Age and Different Levels of Phosphorus on Growth and Yield of Cucumber *(Cucumis sativus L*.) Int. J. Agric and Biol. 7(2): 311-314. • **Abbasi, N.A**., T. Mehmood, I.A. Hafiz and S. Khalid. 2005. Quality and Yield Responses of Cucumber (*Cucumis sativus* L.) to Soil Drench of L-Tryptophan.. Bangladesh J. Pl. Pathology 20(1-2): 9-12. • Javid, Q. A., **N. A. Abbasi**, N. Saleem, I. A. Hafiz and A. L. Mughal. 2005. Effect of NPK fertilizer on performance of Zinnia (*Zinnia elegans*) Wirlyging Shade. Int. J. Agri. Biol. 7(3): 471-473. • Javid, Q. A., **N. A. Abbasi**, and I. A. Hafiz. 2005. Performance of Zinnia (*Zinnia elegans*) "Dahlia Flowered" Crimson Shade by application of NPK fertilizer. Int. J. Agri. Biol. 7(4) 474-476. • Saleem, N., H. Rashid, **N. A. Abbasi**, I. A. Hafiz and A. Muhammad. 2005. Regeneration of banana cultivar "Dwarf Cavendish" (Musa Spp.) from callus culture. Pak. J. Phytopathol. 17(1): 4-9. • Hussain, K., Z. Chaudhary, I. A. Hafiz, N. Saleem and **N. A. Abbasi**. 2005. *In vitro* callogenesis and regeneration response of four tomato (*Lycopersicon esculentum* M.) cultivars. Pak. J. Phytopathology. 17(1): 22-29. • Hafiz, I. A., N. Anwar, **N. A. Abbasi** and A. A. Asi. 2005. Effect of various doses of gamma radiation on the seed germination and seedling growth of mango. Sarhad J. Agri. 21(4):563-567. • **Abbasi, N. A**., N. Shaheen I.A. Hafiz and S. Tanveer. 2005. Foliar Application of Calcium Chloride on Fruit Quality of Tomato (*Lycopersicon esculentum* L.). Pak. J. Arid Agric. 8(1): 5-8. • Shahid, M. N., **N. A. Abbasi** and N. Saleem. 2006. Effect of Different Compost Preparations and Lime Concentrations on the Yield of *Pleurotus sajor-caju*. . Int. J. Agri. Biol. 8(1): 129-131. • **Abbasi, N. A**. and M. M. Kushad. 2006. The activites of

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Experience	**Professor**. PMAS- Arid Agriculture University, Rawalpindi 27-03-2014 to date **Associate Professor:** PMAS- Arid Agriculture University, Rawalpindi 2-08-2006 to 26-3-2014 **Assistant Professor**: University of Arid Agriculture Rawalpindi 30-8-2003 to 01-08-2006 **Assistant Research Officer** Horticulture Section, Ayub Agricultural Research Institute, Faisalabad. 08-04-2000 to 29-8 2003 **Assistant Research Officer** Mango Research Station, Shujabad. 21.07.98 to 07.04.2000 **Ph. D Scholar** ZAU, P.R. China 9/95-7/98 **Assistant Research Officer** Barani Agricultural Research Institute Chakwal 1/90-8/95. **Agricultural Officer** Agriculture Extension Wing 2/88-12/89
Honor and Awards	1 Acquired first position in Horticulture Major Subject in B.Sc. (Hons), Degree1986. 2 Secured Ph.D. degree with excellent grade A 3 First, best individual performer in Barani Agriculture Research Institute, Chakwal. 4 Author and co-author of several research and technical papers. 5 Appreciation from the worthy Vice Chancellor

	University of Arid Agriculture Rawalpindi. 6 Research Productivity Award from Govt. of Pakistan 2010-11
Memberships	1. Agricultural Foundation of Pakistan 2. International Society for Horticultural Science (ISHS) 3. Islamabad Horticultural Society, Islamabad 4. Pakistan Botanical Society (Life time Member since 2007)
Service Activity	• Teaching of Courses of Horticulture Science to B.Sc (Hons), M.Sc. (Hons) and PhD Students • Management of progeny orchards, Glasshouse and nursery management • Incharge Laboratory
Brief Statement of Research Interest	1. Lawn In-charge of the PMAS- Arid Agriculture University, Rawalpindi. 2. Director of Farmers Market Private (Hydroponic Project) 3. Area In-charge of Experimental Orchard **Technology Transfer** 1. Participated in different farmer's field days in Punjab. 2. Advised the officers of Horticultural Research Institutes on planning and development of horticulture industry. 3. Addressed to the fruit growers and grower groups on production technology and marketing/export. 4. Promoted new technology through TV, radio and newspapers. 5. Provided the technical information on fruit production and quality management according to the needs of target export markets.
Projects	**Submitted** • Designing production technology for promising grapes varieties. Rs. 10.928 million, as Co PI. PARB. • Mass propagation of promising varieties of olive through in vitro techniques. Rs. 42 million, as PI. PARB. **Approved/Ongoing** • Varietal Improvement of Gladiolus through in vitro Mutation. Rs 3.2 million, as PI approved by HEC. • Technology transfer to potato growers in relation to pathogen free seed potato, management of diseases and adoption of improved agro techniques. Rs. 3.245 million, as PI. Approved by Endowment Fund

	Secretariat (FDTTPC) UAAR. • Production of Pathogen Free, True to Type Olive Plants through Tissue Culture. Rs 5.859 million. As Co PI, approved by HEC. **Completed** • Development of *In Planta* Transformation System for Wheat worked as CO PI in the Project of HEC

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	26 for *In Vitro* Rooting Potential, Using Different Carbon Sources. Pak. J. Bot., 41(2): 769-781. **(IF 0.52).** Ali, A., T. Ahmad, N. A. Abbasi and **I. A. Hafiz.** 2009. Effect of Different Media and Growth Regulators on *In Vitro* Shoot Proliferation of Olive Cultivar Moraiolo. Pak. J. Bot., 41(2): 783-795. **(IF 0.52).** Abbasi, N. A. A. Husain, M. Maqbool, **I. A. Hafiz** and Abdul A. Qureshi. 2009. Encapsulated calcium carbide enhances production and post harvest performance of potato (*Solanum tuberosum*) tubers. New Zealand J. Crop and Horticultural Sciences, 37:131-139. **(IF 0.303).** Haq, U. I., T. Ahmad, **I. A. Hafiz** and N. A. Abbasi. 2009. Influence of Microcutting Sizes and IBA Concentrations on *In Vitro* Rooting of Olive Cv. "Dolce Agogia" .Pak. J. Bot. 41(3): 1213-1222. **(IF 0.52).** Ali, A., T. Ahmad**,** N. A. Abbasi and **I. A. Hafiz.** 2009. Effect of Different Concentrations of Auxins on *In Vitro* Rooting of Olive Cultivar 'Moraiolo'. Pak. J. Bot., 41(3): 1223-1231. **(IF 0.52).** Yaseen, M., T. Ahmed, N. A. Abbasi, and **I. A. Hafiz.** 2009. *In Vitro* Shoot Proliferation Competence of Apple Rootstocks M. 9 and M. 26 on Different Carbon Sources. Pak. J. Bot., 41(4): 1781-1795. **(IF 0.52).** N. Y. Zahid, N. A. Abbasi, **I. A. Hafiz** and Z. Ahmad. 2009. Genetic diversity of indigenous fennel germplasm in Pakistan assessed by RAPD markers. Pak. J. Bot., 41(4)1759-1767. **(IF 0.52).** Hussain, A., N. A. Abbasi and **I. A. Hafiz**. 2009. Molecular Characterization and Genetic Relationship

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Memberships	Islamabad Horticultural Society, Islamabad.
Service Activity	• Teaching of courses of horticulture science at graduate, postgraduate and Ph.D. level students. • Research and execution of developmental projects.
Brief Statement of Research Interest	• Production of Horticultural Crops • Plant Physiology • Soft Fruit Production
Publications	•
Research Grants and Contracts	**PROJECTS:** • Four years project on "Introduction of soft fruits (strawberry, blackberry, raspberry, black currant) in potential area s of Pakistan for economic return" has been completed successfully. • Three years project on "Underutilized Tropical fruit crops of Pakistan" funded by International Centre for Underutilized Crops (ICUC) has been completed successfully .
Other Research or Creative Accomplishments	No

Name	**Dr. Imran Hassan**
Personal	**Father Name:** Maqsood-ul-Hasan **Date of Birth:** 23-03-1970 **N.I.C No :** 37405-5803547-7 **Nationality:** Pakistani **Domicile :** Rawalpindi **Marital Status:** Married
Experience	Fourteen years & 10 months work experience of teaching, research and conducting examination of the under-graduate & post-graduate student in the Department of Horticulture**,** Pir Mehr Ali Shah, Arid Agriculture University, Rawalpindi **Additional Managerial Charge Experience:** Worked for **7 years** in all on additional charge as **Incharge University Lawns** from August, 1997 to May, 2000 and from May 2005 to May 2009 in PMAS, AAUR. Served for **12 years and 8 months** in all as from August, 1997 to Feb, 2002 and from May, 2005 to May 2009 nominated by Chairmen, Department of Horticulture, PMAS, AAUR. Worked **as Coordinator, Time Table & Date Sheet** of Horticulture Department from 2010 to date as nominated by Dean, FC& FS, PMAS, AAUR Served for **7 years** from 1997 to 1999 and from May, 2005 to May 2009 as Incharge Laboratory, Department of Horticulture, PMAS, AAUR

Publications	• Amjad M., M. A. Anjum and I. Hassan. 2001. Effect of N, P and K fertilizers on seed production of Okra (Abelmoschus esculentus L. Moench) cv. Pusa Sawani". The Journal of Animal and Plant Sciences. JAPS, Vol. 11(2):80-82. ISSN.1018-7081). • Banaras M., N. A. Abbasi and I. Hassan. 2006. HACCP System, Quality and safety of Fresh Fruits and Vegetables. Proceeding of International Conference on Value addition in Horticultural Products. Page 127-131 • Chaudhry A. N., S. Ali and I. Hassan. 2002. Effect of different colored plastic mulches on yield and nutrients content of tomato plant. Asian Journal of Plant Sciences. Vol 1(4):388-389. (ISSN. 1682-3974). • Hassan I., T. Ahmad, I. A. Hafiz, N. A. Abbasi and B. Rashid. (2008). Effect of various auxin treatments (Indole butyric acid & Nepthalene acitic acid) on root initiation of olive cultivars, coratina & carolea. Asian Journal of Chemistry. Vol 20(8):6509-6517 (Impact Factor) • Hassan I., Y. Zhang, G. Du, G. Wang, and J. Zhang. 2007. Effect of salicylic acid (SA) on delaying fruit senescence of Huang kum pear. Frontiers of Agriculture in China. Vol. 1(4): 456-459. • Jilani G., S. Mehmood, A. N. Chaudhry, I. Hassan and M. Akram. (2008). Allelochemicals: sources, toxicity, microbial transformation in soil. a review. Annals of Microbiology. Vol. 58(3):351-357. (Impact Factor) • WANG G., X. LI, G. QI, R. Huang, L. Wang and I, Hassan. 2003. Effect of different techniques of regulating soil water on soil water contents and fruit quality of Ya-pear. Journal of Agric. Uni. Hebei, China. Vol 26(1):24-27

Name	**Usman Shoukat Qureshi**
Personal	**Marital Status:** Married **Gender:** Male **Nationality:** Pakistani **Religion:** Islam **Date of Birth:** January 15, 1986
Experience	• Currently working as **Lecturer (BS-18), Department of Horticulture, Pir Mehr Ali Shah Arid Agriculture University Rawalpindi, Pakistan.** • Also having an additional charge of **'Campus Management Officer (CMO)'** at **Pir Mehr Ali Shah Arid Agriculture University Rawalpindi, Pakistan.**

	• Worked as a **'Member of Nursery Production Unit', PMAS Arid Agriculture University Rawalpindi, Pakistan.** **Ac** • Internship at **National Agriculture Research Centre (NARC) Pakistan** in **Horticulture Research Institute.**
Honor and Awards	**7 Microsoft Office:** Can prepare reports and use MS office for different purposes 8 **Auto CAD:** Can use auto CAD programme for making Layouts of gardens, structures etc. 9 **Flower Show:** I have organized and managed flowers show held by "PMAS, Arid Agriculture University Rawalpindi Pakistan", "Parks and Horticulture Agency (PHA) Rawalpindi Pakistan", "Attock Refinery Limited (ARL) Pakistan" and "Capital Development Authority (CDA) Islamabad Pakistan". 10 **Private Projects:** I have designed three residential lawns at Rawalpindi. Also I have worked with DHA Phase I authority and design children park.
Publications	• Qureshi, U. S., U. Habib, S. Chughtai, N. A. Abbasi and K. M. Qureshi. 2011. Impact of hydrogel application to Bermuda grass in combating drought under rainfed condition.J. Arid Environ., (Accepted). • Qureshi, K. M., S. Chughtai and U. S. Qureshi. 2012. Impact of Exogenous Application of Salt and Growth Regulators on Growth and Yield of Strawberry. Proc. *In*: 7th International Strawberry Symposium (VII ISS), 18-22, February 2012, Beijing, China. • Qureshi, K. M., F. ul Hassan, Q. ul Hassan, U. S. Qureshi, S. Chughtai and A. Saleem. 2012. Impact of cultivation systems on growth and yield of strawberry ***(fragaria ananassa)*** cv. "Chandler". Pakistan J. Agric. Res., 25 (2): 120-135. • Qureshi, K. M., S. Chughtai, U. S. Qureshi and N. A. Abbasi. 2013. Impact of Exogenous Application of Salt and Growth Regulators on Growth and Yield of Strawberry. Pak. J. Bot., 45(4): 1179-1185. • Qureshi, U. S., U. Habib and N. A. Abbasi. 2011. Hydrogels: Phenomenal Approach for Water Conservation in Ornamental Industry. Proc. *In*: International Conference on Prospects and Challenges to Sustainable Agriculture, 14-16, July 2011. ***Projects:*** • Research Project on "Phenological studies of Citrus" **11** Research Project on "Effect of Calcium Chloride on Post Harvest quality of Tomatoes"

Name	**NAJMA YOUSAF ZAHID**
Personal	Father's Name: Muhammad Yousaf Zahid Date of Birth: 17-04-1970 Nationality: Pakistani N.I.C. No: 37405-0555365-2 Language Skill: English & Urdu Marital Status: Married Citizenship: Pakistani
Experience	Worked with AKRSP (Agha Khan Rural Support Programme), Gilgit as consultant Agriculturist from August 1995 to April 1998. ▪ In 1999, I worked as Co. P.I in three years project funded by German with collaboration of UAAR, at chitral (NAs areas). ▪ Worked as advisor horticulturist in a one year project funded by china and UAAR at Chatta Bakhtawar village, Islamabad. ▪ As member academic council at UAAR ▪ Technical talk programmes regarding Horticulture to communicate information's to farmers in Kisan time programme on PTV world and Sohni Darti Tv Channels. ▪ As Supervisor & committee member of M.Sc (Hons.) Hort students for thesis and 2 years research every year.
Honor and Awards	1. Indigenous PhD scholarship through ministry of science and technology in 2001. 2. Awarded by research project by University in 2007
Publications	• Zahid, N.Y;N.Abbassi(2006).Fennel as Value Additive Crop: Essential Oils and Plant Extract .Proceeding International Conference on Value addition in Horticulture Products. • Zahid,N.Y;N.Abbassi(2007).Use of Allelopathic Potential of Vegetables in weed management. Proceedings of Arid Agriculture University, Rawalpindi. • Zahid,N.Y;N.Abbassi,H.Ishfaq(2008).Morphological Characterization and Oil Contents of Fennel (*Foeniculum vulgare* Mill.) Accessions from Different Regions of Pakistan.J.Chem.Soc.Pak.,vol30,No.6,2008 impact factor: 0.221 • Zahid,N.,N.Abbasi.Z.Ahmed;H.I.Ishfaq;Z.Yousaf(2009).Genetic diversity of Fennel Germplasm in Pakistan assessed by RAPD markers.J.Bot,41(3):june2009. Impact factor 0.524 • Zahid,N.Y;N.Abbassi,Z.Ahmed;H.Ishfaq(2012). Antifungal Properties of local fennel (*Foeniculum vulgare* Mill.) response to some soil diseases.Afrincan J of Microbiology research.vol 6(1) pp

	46-51.jan 2012.0.533 impact factor. • Zakia ,S; Zahid,N.Y;N.Abbassi;H.Ishfaq;M.Nasir. Booklet on Micropopagation of Aloe vera (Aloe barbadensis). Laplambert Accadamic Publishing Germany.ISBN:978-3-8443-23788.2012 Zakia,S.Zahid,N.Y;N.Abbassi;H.Ishfaq;M.Nasir.Standarization of micro propagation for Aloe vera-A Pharamaceutically important. Pak.J.of Pharmaceutical Sciences, 6 Nov 2013.vol 26, pp 1083-1087. Impact factor 0.947

Name	**TOUQEER AHMAD**	
Personal	Nationality: N. I. C. No: Passport No: Date of Birth: Domicile: Punjab(Chakwal). Marital Status: Single. Gender: Language Skills:	Pakistani. 37202-1589897-7 KH427022 23rd January 1977 Male. Full command on English, Urdu and Punjabi. Chinese (basic spoken)
Experience	Position: Period: Organization: Rawalpindi, Pakistan Field of Work: M.Sc. and B.Sc level. Supervise the Position: Period: Organization: Export Board Field of Work:	**Lecturer Horticulture** 14th Feb 2005 To date PMAS, Arid Agriculture University Teaching of various courses at PhD. Post Graduate students in their research work. Creating technical manpower through providing training in respective fields. Collaborated with farmers/fruit industry in order to improve management and solve horticulture issues. **Field Officer** 15th June 2004 To 14th Feb 2005 Pakistan Horticulture Development & Carry out research activities with the

	citrus industry to minimize the post-harvest losses in Citrus. Introduce improved orchard management practices (Good Agricultural Practices). Create awareness among different stakeholders specially the forming communities and traders on changing trade requirements regarding SPS and other issues under the WTO regime. Position: **Research Fellow** Period: 1st November 2002 To 14th June 2004 Organization: National Agriculture Research Center Islamabad, Pakistan Field of Work: Conduct project entitled "Production of Pathogen Free True to type ▪ Peach Rootstock GF 677 Plantlets through Tissue Culture". Propagation of Fruit through Conventional & Tissue Culture Method
Honor and Awards	• Establishment and Development of Plant Tissue Culture Lab in Horticulture Department of PMAS, AAUR. This landmark was achieved by my technical expertise and inspirational encouragement of Project Director, Prof. Dr. Nadeem Akhtar Abbasi • Standardization of protocols for mass scale *in vitro* propagation of economical important fruit and ornamental crops
Publications	Touqeer Ahmad, G. Sablok, T. V. Tatarinova, Q. Xu, X. X. Deng and W.W. Guo. 2013. Evaluation of codon biology in Citrus and Poncirus trifoliate based on genomic features and frame corrected expressed sequence tags. DNA-Research. 20 (2): 135-150. IF. 5.15 Mirza Muhammad Qadeer Baig, Ishfaq Ahmad Hafiz, Azhar Hussain, **Touqeer Ahmad** and Nadeem Akhtar Abbasi. 2011. An efficient protocol for in vitro propagation of Rosa gruss an teplitz and Rosa centifolia. Afr. J. Biotechnol. 10(22):4564-4573**. IF. 0.573** Sana Asghar, Touqeer Ahmad, Ishfaq Ahmad hafiz and Mehwish Yaseen. 2011. In Vitro Propagation of Orchid (Dendrobium nobile) Var. Emma White. Afr. J. Biotechnol. 10(16): 3097-3103. IF. 0.573 Syed Zia ul Hasan, Touqeer Ahmad, Ishfaq Ahmad Hafiz, and Azhar Hussain. 2010. Direct Plant Regeneration From Leaves of Prunus Rootstock GF-677 (Prunus Amygdalus x P. Persica). Pak. J. Bot., 42(6): 3817-3830. IF. 0.872 Asia Ramzan, Ishfaq Ahmad Hafiz, Touqeer Ahmad and N. A. Abbasi. 2010. Effect of Priming with Potassium Nitrate and Dehusking on Seed Germination of Gladiolus (gladiolus alatus). Pak. J. Bot., 42(1): 247-258. IF. 0.872 Bushra Zulfiqar, Nadeem Akhtar Abbasi, Touqeer Ahmad, and Ishfaq Ahmed Hafiz. 2009. Effect of Explant Sources and Different Concentrations of Plant Growth Regulators on In vitro Shoot Proliferation and Rooting of Avocado (Persea americana Mill.) CV. Fuerte. Pak. J. Bot., 41 (5): 2333-23461. IF. 0.872 Ansar Ali, Touqeer Ahmad, Nadeem Akhtar Abbasi and Ishfaq

	Ahmed Hafiz. 2009. Effect of Different Concentrations of Auxins on In Vitro Rooting of Olive Cultivar 'Moraiolo'. Pak. J. Bot., 41 (3): 1223-1231. IF. 0.872 Mehwish Yaseen, Touqeer Ahmed, Nadeem Akhtar Abbasi, and Ishfaq Ahmed Hafiz. 2009. In Vitro Shoot Proliferation Competence of Apple Rootstocks M. 9 and M. 26 on Different Carbon Sources. Pak. J. Bot., 41 (4): 1781-1795. IF. 0.872 Inam ul Haq Touqeer Ahmad, Ishfaq Ahmed Hafiz and Nadeem Akhtar Abbasi. 2009. Influence of Micrcutting Sizes and IBA Concentrations on In Vitro Rooting of Olive Cv. "Dolce Agogia". Pak. J. Bot., 41 (3): 1213-1222. IF. 0.872 Mehwish Yaseen, Touqeer Ahmed, Nadeem Akhtar Abbasi, and Ishfaq Ahmed Hafiz. 2009. Assessment of Apple Rootstocks M. 9 and M. 26 for In Vitro Rooting Potential, Using Different Carbon Sources. Pak. J. Bot., 41 (2): 769-781. IF. 0.872 Ansar Ali, Touqeer Ahmad, Nadeem Akhtar Abbasi and Ishfaq Ahmed Hafiz. 2009. Effect of Different Media and Growth Regulators on In Vitro Shoot Proliferation of Olive Cultivar Moraiolo. Pak. J. Bot., 41 (2):783-795. IF. 0.872 Imran Hassan, Tauqeer Ahmad, Ishfaq Ahmad Hafiz, Nadeem Akhtar Abbasi and Basit Rashid 2008. Effect of Various Auxin Treatments (Indole Butyric Acid and Naphthalene Acetic Acid) on Root Initiation of Olive Cultivars, Coratina and Carolea. Asian Journal of Chemistry. 20 (8): 6509-6517. IF. 0.253