



AIC Report

**Prof. Dr. Fayyaz-ul-Hassan
Prof. Dr. Habib Akbar**

April 2, 2014

**Department of Agronomy
University of Swabi**

Table of Contents

S.No	Particulars	Page
1.	Executive Summary	3
2.	Introduction	3
3.	Criteria Wise Analysis	4
4.	SWOT Analysis	7
5.	Actionable Recommendations	7
6.	Annexures	9

Exective Summary

The committee members along with NAEAC officials were welcomed by the University Faculty members. Thereafter, Head of Department (Dr. Hidayat Ullah) briefed about the department and journey made so far by the department. AIC had detail meeting with all faculty members in the presence of Dean and some under graduate students. Thereafter, AIC had brief meeting with Vice Chancellor where she elaborated the planned University departmental activities as well as academic programs. Agriculture was the one of major departments when Campus of AWK University started back in 2012. Scope with the name of “Department of Agriculture” having six sections have been limited, it needs to be re-named as “Faculty of Agriculture or Institute of Agriculture” or any other suitable name covering the future needs of the area and the university itself. The courses for degree programs offered by the section are those developed by the HEC constituted committee (NCRC) and adopted by the section, hence are in harmony with other institutions. The objectives of curriculum are well clear and in accordance with the HEC guidelines. There are three faculty members in the section under discussion, out of these three, one holds PhD degree, rest are M.Phil degree holders, some requirements are being met through visiting teachers. The pyramid as per recommendation (1:1:2:2) is incomplete which needs to be filled as early as possible. Moreover, availability of class rooms as per number of students, labs and offices is still needed. Facilities like laptop provision to students and scholarship/financial aid from different resources need to be streamlined with regular office/focal person in the university.

Introduction

The University of Swabi was former “Ambar Campus” of AWK University which started its initial classes of Agriculture and few other subjects back in 2012. After two years the campus was upgraded as “The University of Swabi”. Since its inception, University itself and the department of Agriculture has made significant and visible progress towards constitution of different academic and administrative bodies to run day to day affairs of the University. Although, couple of P.C1s for university development have been approved yet

release of funds did not materialized. Consistent efforts of university administration, planning wing of the university and Dean Sciences are commendable.

Present Nomenclature of “Agriculture Department” comprising number of several important teaching disciplines is not only confusing but also misleading. It is therefore, proposed that each discipline may be declared as an independent teaching department notifying its Chairman/HOD to streamline the academic activities. Furthermore, this nomenclature hardly corresponds to the prevalent nomenclature such as teaching department (one discipline), faculty and Institute, Centre of excellence etc adopted by the institutions of higher education in Pakistan. The present scenario reflects that “Agriculture Department” lacks the capacity of offering M.Sc (Hons) and Ph.D degree programs. It is therefore proposed that initiation of these degree programs may be deferred till 2015 (till the completion of academic block and other facilities), the availability of well-equipped labs (atleast 2) for each discipline, provision of IT facilities and teaching learning Resources and above all a significant improvement in the strength and quality of teaching faculty by inducting senior Professors and Associates possessing PhD degree in the discipline.

CRITERION ANALYSIS

Criteria I: Strength and quality of Faculty

The Faculty members of the Department of Agronomy, University of Swabi are capable of teaching and conducting research. Most of the teachers are young and qualified. They are able to teach and train the students to face future challenges. Presently, there are two Assistant professors and one lecturer. One of them is Ph.D while remaining are M.Sc (Hons). Range of experience of faculty members; vary from 3-10 years. Department is running graduate program and plan to have post graduate program (M.Sc/PhD) in near future. Faculty members of the department are also rendering their services to the farmer community. There are only Assistant professors and lecturers working in the department. There is a need of permanent/regular appointment of assistant professors, associate professors and professor to justify the work load and to fulfill the HEC criteria. The Faculty is using multimedia for teaching and evaluations techniques such as quizzes, assignments, projects, seminars plus presentations. Evaluations for sessional, mid and final examinations are in operation. Dean and HoD are there for monitoring

the existing system. Participations of students in seminars and conferences are limited. Funds and facilities are not available for participation of students in seminars/conferences.

Faculty research publications in national (HEC recognized journals) and international journals are encouraging yet there is room for improvement. Contribution toward publication of books, chapters and proceedings is also encouraging. Faculty got foreign exposures, have earned IRSIP-6 months fellowship. Agronomy faculty have life time membership in Pakistan Society of Agronomy (PSA). Faculty perception about degree program is clear. The student teacher ratio is not good; however, teacher can focus the students in a better way due to low strength of students and giving more session to question answer and presentations etc.

Criteria II: Curriculum Design and Development

The Department of Agriculture section Agronomy, at University of Swabi, is focusing on already approved curricula by HEC. So far, main focus of faculty is towards the teaching of 4 years B.Sc (Hons) degree program. The curriculum has been revised as and when need by the Department/Faculty as well as HEC. Curriculum is well defined with clear objectives. Still, there is continuous revision of the curricula for B.Sc (Hons). The text books and reference books are available though in few number. Availability of text books should be increased in central library which catering the need of all the University. However, there is no book bank of the Department and available one is for the whole University. The budget for books is available for main library of the University and not for the department. A reasonable amount of money has been earmarked for purchase of books for central library. However, efforts are under way for securing funds for development activities. Credit hours and contact hours are justified for existing staff. Course completion is a regular and encouraging process of this department.

All students of this department are well informed and fully aware about course program, admission policy, enrolment, withdrawal and course break up. However, it was felt that rules related to admission, course load in each semester should be written in some or other form available to students. Course files verified by the AIC are maintained but need some improvement that has been pointed out by the committee. QEC of the university exists and has evaluated teachers, course satisfaction, and teacher evaluation by the student. However, formal establishment of relevant office shall be done in due course of time.

Criteria III: Infrastructure and Learning Resources

There were couple of lab facilities available which are being shared by all the sections for their practical classes and demonstration to the students. Size of lab is meant for small number of students, if enrollment increases these labs shall not be able to cater the needs. Class rooms are not enough for the working of students. There is need of fully equipped more departmental labs and class rooms. Equipment available in lab is insufficient and need upgradation before start of research oriented degrees like M.Sc/PhD. Supporting staff is insufficient and not fully trained. Practical work and write up of practical note books is good. Provision of better equipment in lab as well at proposed research farm and trained supporting staff is urgent need of this department. Moreover, establishment of proper research farm shall be required for undertaking better research. The efforts for establishment of proper class rooms are being made by Administration. In this regard two projects have already been approved and transfer of funds are under way. Once funds are transferred to university shall be utilized for this purpose. Similarly, transfer of funds for proper research farm are under way. However, securing of funds should be focused for early disbursement.

Criteria IV: Students Support and Progression:

Students actively participate in cultural, scientific, academic and welfare societies. Based on merit students have received 72 (%) Laptops from Provincial Government. Besides this, merit based Fulbright Fellowship, Mora scholarships, Fauji Foundation, Hamdard and Endowment Fund scholarships have been won by students which is good sign of student's progress and abilities. Mobility facilities provided by University for academic and educational visits are commendable. Out of the total enrolled student strength top most talented 1/3rd students have expressed interest in majoring Agronomy (20+33=53), which is another sign of future prospects of the section. Departmental admission to B.Sc. (Hons) is normal as per available facilities. Availability of academics guidance/counselling to students needs strengthening which at present is insufficient.

Hostel accommodation is limited at present but catering the of the day. Transport facility is available as per need but limited sports facilities are available. There is a good atmosphere for co-curricular activities. Student attendance is being recorded regularly and there is restriction of 75 %. presence Record of attendance has been verified by the AIC as course files. Medical

and transport facilities are adequate. However, there is need in improvement of computing facilities, research funds, and internship allowances.

SWOT Analysis

Strengths of Degree Programs

1. Students' preference for admission in the section.
2. Existence of section in diversified ecological zone of rainfed and irrigated agriculture.
3. Highly motivated faculty and friendly environment for teaching and learning.
4. Easy and short access to international standard road net work.
4. Close proximity of well developed similar organizations.

Weaknesses of Degree Programs

1. Insufficient qualified teaching and supporting staff.
2. Lack of office, lecturing and laboratory space.
3. Lack of sports, co-curriculum, recreational and refreshment facilities.
4. Absence of well developed and equipped research farm.
5. Lack of exposure of students to other Universities, research institutions of the country.

Opportunities for Degree Programme:

1. Potential of targeted and problem orientated research.
2. Qualified and experienced faculty can provide consultancy services to national and international NGOs/donor agencies for sustainable development in the area.
3. Trainings for capacity building of professionals and farmers would be possible in future.

Threats to Degree Programme:

1. Lack, absence and disconnect of University bodies for quick decisions.
2. Security is a big threat to staff and students under present circumstances.
3. Lack of resources for running departmental matters independently.
4. Presence of other well developed or fasting developing Universities/institutions in the area.

Actionable Recommendations

- Completion of faculty pyramid i.e. Appointment of Professor/Associate Professor as soon as possible as per recommended of HEC 1:1:2:2.

- Provision of IT facilities, access to HEC digital library, textbooks and reference material of almost all disciplines.
- Provision of a seminar room, committee/conference room for each discipline.
- Provision of recreational as well as indoor/outdoor sports facilities for students.
- High achiever amongst faculty should be recognized and rewarded.
- Allotment of “major” after 4th semester should be more or less equal in all disciplines and as per student choice and merit. Guidance and counselling to students should be provided in this regards by senior faculty.
- Admission to M.Sc(Hons) and PhD should be halted till the strengthening of research facilities like labs., field area and provision of funds.
- Provision of scholarship facilities should be advertised at prominent places for information of students.
- Rules/regulations related to admission till the completion of degree should be available to students either in the form of catalogue.
- Enrolment of extra courses in 7th and 8th semester facility be provided to students for timely completion of degree.
- Field visits should be made part of practical as university does not have proper research farm.
- Infrastructure strengthening and upgradation like library, labs. Farm research area should be focused.

Prof. Dr. Fayyaz-ul-Hassan

Prof. Dr. Habib Akbar

Name, Qualification and experience of faculty and support staff:

S.#	Name	Designation	Univ. Exper.	Experience other than univ. experience	Total experience
1	Dr. Yousaf Jamal PhD	Assistant Prof.	2 years	8 years	10 years
2	Mr. Abdul Basir M.Sc(Hons)	Assistant Prof.	3 year	8 years	11 years
3	Mr. M. Ibrahim M.Sc(Hons)	Teaching Assistant	3 years	-	3 years
Supporting Staff					
1	Mr. Rahim Dil MA	Lab. Asstt.	2-3 years	Nil	3years
2	Mr. Ubaid Ullah BA	Office Asstt.	1-2	Nil	2 years

Apart from above staff, there are two office and lab. Attendants

LIST OF BOOKS PERTAINING TO THE SUBJECT OF AGRONOMY

S.No	Name of Author	Title of the Book
1	Powles, S.B. and J.A. M. Holtum.	Herbicide Resistance in Plants: Biology and Biochemistry, Lewis Pub.
2	Abbas, M. A.	General Agriculture. Emporium Urdu Bazar, Lahore
3	Addiscotl,T.M	Nitrate, Agriculture And The Environment
4	Ahmad, N. and A. Hamid.	Plant Nutrients Management for Sustainable Agricultural Growth. Proceedings of the Symposium held on December 8-10, 1997. Planning & Development Division, National Fertilizer Development Centre, Islamabad.
5	Ahmad, N. and G.R. Chaudhry.	Irrigated Agriculture of Pakistan. Publisher, Shahzad Nazir, Lahore.
6	Ahmad, S.I.	Seed Certification Manual. National Book Foundation, Islamabad
7	Anonymous.	Proceeding of International Seminar on Seed, Fauji Fertilizer Corporation. Islamabad.
8	Archer, Clive Ackrill, Robert (ed)	The Common Agriculture Policy Conservation
9	Arnon, I.	Agriculture in Dry Lands: Principles and Practices. Elsevier, London.
10	Ashiq M., M.M Nayyar and J. Ahmad	Weed Control Handbook Directorate of Agronomy. Ayub Agri. Res. Inst. Faisalabad.
11	B. B. Singh	Introduction Techn. & multimedia production for Agric. Scientists.
12	Bailey, P.T (ed)	Pests Of Field Crops And Pastures
13	Balasubramaniyan	Principles and Practices of Agronomy. Agrobios, Jodhpur, India.
14	Baldev, B., S. Ramamjan and H.K. Jain	Pulse Crops. Oxford and IBH Pub. Co., New Delhi.
15	Bashir, E. and R. Bantel.	Soil Science. National Book Foundation, Islamabad.
16	Basra, A.S.	Handbook of Seed Technology. Haworth Press New York, USA.
17	Benett, H. H.	Soil Conservation for Sustainable Agriculture. Agrobios, Jodhpur India.
18	Bhaskaran, M	Text Book On Principles Of Seed Production
19	Bhatti, I.M. and A.H. Soomro.	Agricultural inputs and Field Crop Production in Sindh, Directorate General, Agri., Res. Institute, Sindh, Hyderabad.
20	Bhowmik, J.P	Oilseed Brassicas
21	Biswas, TD	Text Book Of Soil Science
22	Bonner, J.	Principles of Plant Physiology. W.H. Freeman, NBF, San Francisco.

23	Byerlee, D. and T. Hussain	Farming Systems of Pakistan. Vanguard Books, Lahore.
24	Carver, Robert H	Doing Data Analysis With SPCC Version 12.0
25	Chaudhery, F. Muhammad	Fundamentals Of Tractor Machines And Energy Conservation
26	Cheema, Z.A. and M. Farooq.	Agriculture in Pakistan. Allied Book Centre, Urdu Bazar, Lahore.
27	Chhajer M.D. Dr. Bimal	Zero Oil: South Indian Cook Book
28	Choudhry Sher Muhammad	Introduction To Statistical Theory (P.1)
29	Choudhry Sher Muhammad	Introduction To Statistical Theory (P.2)
30	Cline, William R	Global Warming And Agriculture
31	Copeland L.O. and M.F. McDonald	Principles of Seed Science and Technology – 4th Ed. Burgess Pub. Co., USA
32	D.E Evans	Plant Cell Culture By E.E Evans
33	Dahama, A.K.	Organic Farming for Sustainable Agriculture. 2nd Enlarged Ed. Pub. Agrobios, Jodhpur, India.
34	Damsaniya, N.K	Agriculture Process Engineering
35	Daniel, Joy	Handbook Of Organic Farming & Compost Technology
36	Daryl Stevens (ed)	Growing Crops
37	Das, Dilip Kumar	Introduction Soil Science
38	DAS, P.C	Crops And Their Production Technology Under Different
39	David H. Barrker (ed)	Ground & Water Bio Engineering For Erosion
40	David Pimentak (ed)	CRC Handbook Of Pest Management In Agriculture
41	De, Deep Esh N	Plant Cell Vacuoles: An Introduction
42	Debasis Bhatta Charya	Statistics Social Science and Agriculture Research
43	Dhamu, K.P	Fundamentals Of Agricultural Statistics
44	Dilip Kumar	Plus Crop Production
45	Dixit, R.S	Cropping System Research
46	Dris, R., J. Mohan and I.A. Khan	Environment and Crop Production. Science Pub. Inc., New York.
47	Dutt, S.	Dictionary Of Agriculture
48	Dyke, G.v	Comparative Experiments With Field Crops
49	EIRI	Technology Of Preservation & Processing
50	Eldon D. Enger	Environmental Science: A Study Of Internationship
51	Epstein, E. and A. J. Bloom.	Mineral Nutrition of Plants: Principles and Perspectives. John Wiley and Sons Inc., USA.
52	Esau, Katherine	Anatomy Of Seed Plants
53	Esser E. Finney (ed)	CRC Handbook Of Transportation Market In Agriculture
54	Fageria, N.K	Maximizing Crop Yields
55	Fattooqi, A A	Cultivation Of Spice Crops
56	Foth, Heury D	Fundamentals Of Soil Science
57	Fredlund, D.G	Soil Mechanics For Unsaturated Soils
58	G. Ray Noggle	Introductory Plant Physiology

59	G.K Veeresh	Organic Farming
60	Gangopadhyay,Ajay	Conserving Agriculture
61	George	Principles of Crop Production
62	Ghani M.A.	Principles of Counting. Pak Imperial Book Depot Chowk Urdu Bazar, Lahore.
63	Ghost,Arupratan	Dryland Farming
64	Goal,P.K	Water Pollution, Causes, Effects & Control
65	Govindan. K. and V. Thirumurugan	Principle and Practices of Dry Land Agriculture. Kalyani Publishers New Delhi.
66	Groves,R.H	Weed Risk Assessment
67	Gupta, O.P.	Modern Weed Management. Agro Botanica, Bikaner, India.
68	Gupta,G.P	Text Book Of Plant Diseases Agriculture
69	H.F.Linkens (ed)	Immunology In Plant Sciences
70	Hans, M. and P. Schopfer.	Plant Physiology. Springer Verlag Berlin.
71	Hansen, A. P.	Symbiotic N ₂ Fixation of Crop Legumes. Margref Verlag Weikenheim, Germany.
72	Hartemink,Alfred E	Soil Fertility Decline In The Tropics With Case Studies
73	Hatch,L.Upton	Managed & Ecosystems
74	Havlin, J.L., Tisdale, S.L., J.D. Beaton and W.L. Nelson.	Soil fertility and fertilizers. 7th Ed. Macmillan Publishing Co., NY, USA.
75	Hester, R.E. and R.M. Harrison	Sustainability in Agriculture. Vol. 21. RSC Publishing, Thomas Graham House, Sci. Park, Milton Road, Cambridge CB4 0WF, UK.
76	Hillock,s R.J	Cassava: Biology, Production & Utilization
77	Hoag,Dana I	Applied Risk Management In Agriculture
78	Hopkins, G.H.	Introduction to Plant Physiology. John Wiley & Sons, N.Y.
79	Hudson, N.W.	Soil and water conservation in semi-arid areas. Scientific Publishers, India.
80	Iqtidar Ahmad Khalil	Cropping Technology
81	ISTA	International rules for seed testing. Proceedings of International Seed Testing Association, Zurich.
82	J.C.Tarafdar	Organic Agriculture
83	Jain,C.K	Commercial Crop Technology
84	Jain, V.K	Fundamentals Of Plant Physiology
85	Jayakumar,Dr.R	Weed Science Principles
86	John L. Havlin	Soil Fertility and fertilizers
87	Julie A Serter	Enviromental Science
88	Kar, Dipak Kumar	Plant Breeding & Biometry
89	Karthikeyan, C. K.	Dry Land Agriculture Traditional Wisdom. Kalyani Pub. New Delhi, India.
90	Kay,Ronald D	Farm Management

91	Khalil, I.A. and A. Jan.	Cropping Technology. National Book Foundation, Islamabad.
92	Khalil, Shad Khan	Scientific Writing And Presentation In Crop Sciences
93	Khan, S. R. A.	Crop Management in Pakistan with Focus on Soil and Water Agric. Deptt. Directorate of Agricultural Information, Punjab. Lahore.
94	Khan,Samiullah	Breeding Of Pulse Crops
95	Khare, D. andM.S. Bhale	SeedTechnology. Sci. Pub., India.
96	Kirkham. M.B.	Water Use in Crop Production. Food Products Press, Binghamton, New York
97	Kolay,A.K	Basics Concepts Of Soil Sciences
98	Kulkarni,Dr.G.N	Principles Of Seed Technology
99	Kumar, J. R. and Jagannathen.	Weed Science: Principles. Kalyani Publishers New Delhi.
100	Kumar,H.D	Modern Concepts Of Ecology
101	LeClerg, E.L., W.H. Leonard and A.G. Clark	Field Plot Technique. National Book Foundation, Islamabad.
102	Lee,D.R	Intensification, Economics Development & Environment
103	Leela.D	Principles Of Crop Production
104	Lenka,D	Agronomy For Beginners
105	Loomis, R.S. and D. J. Connor.	Crop Ecology. Productivity and Management in Agricultural Systems. Cambridge University Press, New York.
106	Louis K. Strasbourg	Agriculture Business Management
107	M. A Hendra Pal	Fundamentals of Cereal Crop Production
108	Majumdar,Dilip Kumar	Irrigation Water Management: Principles Practice
109	Maloo, S.R.	Sustainable Crop Production under stress environments. Agro-tech Publishing Academy, Udaipur, India.
110	Manisegarm,Dr.S	Pest Management In Field Crops
111	Manzor Ahmad Khan	Plant Breeding
112	Marasaiah, M.Lakshmi	Agricultural Production
113	Martin, J.H., R.P.Waldren and D.L. Stamp	Principles of Field Crop Production 4th Ed. The McMillan Co., New York.
114	McDonald, M.B. and L.O. Copeland.	Seed Science and Technology Laboratory Manual. Iowa State University Press / Ames, USA
115	Mcmahon,Margaret J	Hartmann's Plant Science
116	Mengel, K., E. A. Kirkby, H. Kosegarten and T. Appel.	Principles of Plant Nutrition. 5th Ed. International Potash Institute, Bern, Switzerland.
117	Micheal, M. A	Irrigation Theory and Practices. Vikas Pub. House, New Delhi, India
118	Miller,Raymond W	Soils in our Environment
119	Misra, R.D. and M. Ahmad.	Manual of Irrigation Agronomy. Oxford and IBH Publishing Co. New Delhi.
120	Mita Bahl	Handbook on Mushroom
121	Moh,Hans	Plant Physiology

122	Mondal, Amal Kumar	Advanced Plant Taxonomy
123	Nagi,H.P.S	Handbook Of Cereal Technology
124	Nair,P.K Ramchandran	An Introduction To Agroforestry
125	Nanda,J.S	Manual On Rice Breeding
126	Nayyar, M. M. Ashiq and J. Ahmad	Manual on Punjab Weeds: Part I and II. Directorate of Agronomy. Ayub Agri. Res. Inst. Faisalabad.
127	Nazir, M.S.	Crop Production. National Book Foundation, Islamabad.
128	Norman,David	Farming Systems Development & Soil Conservation
129	Oachmanabh,Dwived	Physiology Abiotic Stress In Plant
130	P. L Maliwal	Technology for Food Security and Sustainable Agriculture
131	Palaniappan, and K. Annadurani.	Organic farming theory and practice. Scientific Publishers. Jodhpur, India.
132	Panda, S. C	Dry Land Agriculture. Kalyani Pub. New Delhi, India
133	Panda,S.C	Agronomy
134	Pandey,A.K	Taxonomy And Biodiversity
135	Parker,Rick	Introduction Of Plant Science
136	Paterson,D.D	Statistical Technique In Agriculture Research
137	Paul,Sujit Kumar	Tribal Agriculture And Modernization
138	Pearcy, R.W., J.R. Ehleringer, H.A. Mooney and P.W. Rundal.	Plant Physiological Ecology: Field Methods and Instrumentation. Champman and Hall, London, New York.
139	Petersen, R.G.	Agricultural Field Experiments: Design & Analysis. Marcel Dekker AG., Switzerland.
140	Peterson, R.G.	Design and Analysis of Experiments. Marcel Dekker, Inc. New York.
141	Powar, Balesaheb	Impact Of Technology On Crop Productivity
142	Powles, S.B. and J.A. M. Holtum	Herbicide Resistance in Plants: Biology and Biochemistry, Lewis Pub.
143	Prado, R. De., J. Jossin and L. G. Torres.	Weed and Crop resistance to herbicides. Kluwer Academic Publishers. Dordrecht/ Boston/London.
144	Pretty,Jules	Sustainable Agriculture And Food
145	Prihar S.S	Intensive Cropping, Efficient use of Water, Nutrients, and Tillage. Pak Book Corp. Lahore.
146	PUSTE A.M	Agronomic Management Of Wetland Crops
147	Qureshi, M.A. M.A. Zia and M.S. Qureshi	Pakistan Agriculture Management and Development. A-One Publisher, Urdu Bazar, Lahore.
148	R. S Shukla	Categorical Evolution
149	Rahman, A. and M. Munir.	Rapeseed, Mustard Production in Pakistan, PARC, Islamabad.
150	Rajab Ali Memon	Extension Methods

151	Rajoo.R.K	Maize The Golden Grain Of Himachal Pradesh
152	Rajput, C.B.S	Citriculture
153	Rao, V.S.	Principles of Weed Science 2nd edition, Sci. Pub. Inc. USA.
154	Rao,G.G.I.H.V Prasada	Agricultural Meteorology
155	Rashid, A. and K.S. Memon.	Soil Science
156	Reddy, D.V.	Fodder Production and Grassland Management for Veterinarians. Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi.
157	Reddy, SR	Principles of Crop Production. 2nd Ed. Kalyani publishers New Delhi.
158	Reddy,S.R	Principles Of Agronomy
159	Reddy,SR	Agronomy Of Field Crops
160	Reddy.S.R	Principles Of Crop Production
161	Reuter,D.J	Plant Analysis
162	Rodha V. Murthy Krishna	Noxious Weeds Control Method
163	Ruxton,Graeme D	Experimental Design For Theology Science
164	Ryan, J., G. Estefan and A. Rashid.	Soil and Plant Analysis Laboratory Manula. 2nd Ed., ICARDA, Aleppo, Syria and NARC, Islamabad, Pakistan.
165	Salisbury F.B. and Ross C.B.	Plant Physiology. 5th Ed. Wadsworth Publishing Co. Belmont, CA.
166	Samashekar,N.T	Impact Of Irrigation On Agricultural Products
167	Sanjay Kumar	Handbook of Plant and Crop Physiology
168	Sankara, R. G. H. and T. Y. Reddy.	Efficient Use of Irrigation Water. Kalyani Publishers New Delhi, India.
169	Saxena. N.P.S	Management of Agricultural Drought. Oxford & IBH Publishing Co. New Delhi.
170	Scarm	Sustainable Agriculture Assessing Australia
171	Schwab,Glenn O	Soil And Water Conservation Engineering
172	Serrano Maria	Postharvest Biology and Technology
173	Setia,R.C	Crop Improvement Strategies
174	Shafi Nazir	Crop Production
175	Sharma R.N	Origin And Development Of Agriculture Science
176	Sharma,B.L	Risk Spreading Agriculture
177	Sharma,Premjit	Agricultural Drainage Water Quality
178	Shoemaker,James Sholdon	Vegetable Growing
179	Shresther, A.	Cropping System. Food Products Press. An imprint of the Haworth Press, Inc.
180	Sidhu,D.S	Agriculture Productivity In Asia
181	Singh G.	Economics of Seed Production at Farm level. Pak Book Corp. Lahore.
182	Singh,Anil Kumar	Forges & Fodder

183	Singh, Parmeshwar	Encyclopedia Of Agronomy
184	Singh, Phamdan	Cotton Breeding
185	Singh,S.R	Research Methodology In Agriculture
186	Singh,Sultan	Trends In Wheat Breeding
187	Slafer,Gustavo A	Barley Science: recent Advances From Molec.
188	Sprent, J.I. and P. Sprent.	Nitrogen Fixing Organisms: Pure and applied aspects. Chapman and Hall, London.
189	Stacy, G., R.H. Burris and H.J. Evans.	Biological Nitrogen Fixation. Chapman and Hall, London.
190	Steel, R. G. D., J. H. Torrie and D. Dickey.	Principles and Procedures of Statistics: a biometric approach, 3rd Ed. McGraw Hill Book Co. Inc., New York. USA.
191	Stoskopf, N.C.	Understanding Crop Production. Reston. Pub. Co., Inc. Reston, Virginia.
192	Suresh N.Deshmukh	Organic Farming: Principles Prospects & Problems
193	Sutherland,J.A	Introduction To Agriculture
194	Swamination,M.S	Sustainable Agriculture Toward Foods Security.
195	Taiz, L. and E., Zeiger.	Plant Physiology 4th Ed. Sinauers Associate, Inc. Sunderland Massachusetts, USA.
196	Tandon, H.L.S (Ed.)	Methods of Analysis of Soils, Plants, Waters and Fertilizer Development and Consultation Organization, New Delhi, India.
197	Tandon,H.C.S	Fertilizer Management In Rain fed dry land
198	Thompson,Peter	Creative Propagation
199	Troeh,Frederick R	Soil Conservation
200	Turnor II,B.C	Comparative Farming Systems
201	V.B.Awasthi	Agricultural Insects Pests & Their Control
202	Vasudev Bhatnagar	Seed Science and technology
203	Vendermeer, J.	The Ecology of Intercropping. Cambridge University Press.
204	Verma,S.K	A Text Book Of Plant Physiology Biochemistry And Biotech
205	Virmani, S.M., J.C.Katyal, H. Eswaru, and I.P. Abarol	Stressed Ecosystems and Sustainable Agriculture. Oxford & IBH Publishing Co., New Delhi.
206	Walia, U.S.	Weed Management. Kalyani Publishers, B-I/292, Rajinder Nagar, Ludhiana-141008.
207	Warsen G.F	Form Management
208	Weiss,E.A	Spice Crops
209	Weston, G.D	Crop Physiology

LIST OF EQUIPMENTS AVAILABLE IN THE LABS To be used in AGRONOMY

S.No Lab/Research Equipments

- 1 Student Microscope
- 2 Autoclave
- 3 Binocular Microscope
- 4 Electronic Balance
- 5 Incubator
- 6 Magnetic Stirrer
- 7 Water Bath Digital
- 8 Cool Incubator
- 9 Scissors
- 10 Forceps
- 11 Rotary

S.No Lab Equipments order placed

- 1 Lux meter (Portable)
- 2 Binocular Stereo Microscope
- 3 Digital Grain Moisture Meter
- 4 Electronic Balance (China)
- 5 Electronic Balance
- 6 Chlorophyll Meter Portable
- 7 Soil Hydrometer
- 8 Portable pH Meter
- 9 Conductivity Meter (Portable)
- 10 Laminar Flow Cabinet, Horizontal
- 11 Salt Meter Portable
- 12 Vernier Caliper Digital
- 13 GPS Garmin

FACULTY PUBLICATIONS, BOOKS, SEMINAR/CONFERENCES

1. Ibrahim, M., Ullah, H., Ahmad, B., Inamullah, Malik, M.F.A. 2012. Effect of incremental dose of Phosphorous and Sulphur upon yield and protein content of Wheat. *Biological Diversity & Conservation (BioDicon)*, 5(3): 76-81. [HEC Recognized International Journal].
2. Ahmad, N; H. Fazal, B. H. Abbasi, I. U. Rahman, S. Anwar, M.A. Khan, A. Basir, H. Inaya R. Zameer, S. A. Khalil and K.Y. Khan. (2012). DPPH- scavenging antioxidant potential in regenerated tissues of *Stevia rebaudiana*, *Citrus sinensis* and *Saccharum officinarum*. *Journal of Medicinal Plants Research* Vol. 5(14), pp. 3293-3297
<http://www.academicjournals.org/JMPR>
3. Khan H. Z; S. K. Khalil, Farhatullah, M. Y. Khan, M. Israr, and A. Basir. (2013) "Selecting optimum planting date for sweet corn In peshawar, Pakistan" *Sarhad J. Agric.* Vol.27(3), pp. 341-347 <http://www.aup.edu.pk/sja.php>.
4. Ahmad N; H. Fazal, B.H. Abbasi, S. Anwar and A. Basir. (2011). DPPH-Free radical scavenging activity and phenotypic difference in hepatoprotective plant (*Silybum marianum* L.). *Toxicology and Industrial Health*. (Accepted).
5. S.A. Jadoon, H. Ullah, F. Mohammad, I.H Khalil, M. Alam, D. Shahwar, M.F.A. Malik and Y. Jamal "Impact of forage clipping treatments on performance of winter wheat" (2013) *Genetics and Molecular Research*, 12(4): 5283-5288.
6. Ullah. H, H. Subthain, I.H. Khalil, W.U. Khan, Y. Jamal and M. Alam. 2014. "Stress selection indices an acceptable tool to screen superior wheat genotypes under irrigated and rain-fed conditions". *Pakistan Journal of Botany*, 46(2): 627-638.
7. Jamal, Y., Shafi.M, Bakht. J and Arif. M. 2011. Seed priming improves salinity tolerance of wheat varieties. *Pak. J. Bot.* 43(6): 2683-2686.
8. Jamal, Y., Shafi.M, Bakht. J. 2011. Effect of seed priming on growth and biochemical traits of wheat under saline conditions. *African J. Biotech.* 10(75): 17127-17133.
9. Bakht. J., Shafi. M, and Y. Jamal. 2013. Response of maize (*Zea mays* L.) to seed priming with NaCl and salinity stress. *Spanish. J. Agric. Res.* 9(1), 252-261.
10. Khurshid, I., Alam, J., Ali, A., Ullah, H., Raqib, A. and Naz, G. (2013) Population trend of corn leaf aphid (*Rhopalosiphum maidis*) with different chemical doses in three maize varieties *Biological Diversity and conservation*, 6(1):1-7.