CURRICULUM VITAE

Dr. Javed Iqbal
Professor Emeritus
Department of Botany
University of the Punjab
Lahore.

DR. JAVED IQBAL
PROFESSOR EMERITUS
SUMMARY OF ACADEMIC ACHIEVEMENTS

I joined Botany Department, University of the Punjab as lecturer on 01.02.1968 and retired as Meritorious Professor and Chairman, Department of Botany on 25.10.2002. After my retirement I served as professor and one of the Directors of School of Biological Sciences upto 30.11.2017.

Thus my teaching and research career spans over 50 years. During this period I taught Plant Biochemistry, Cell Biology, Plant Anatomy as general courses and Plant Morphogenesis, Radiation Botany, Plant Tissue Culture and Plant Biotechnology as specialized courses to M.Sc, M.Phil and Ph.D. students. In research in my early years I worked in areas of Radiation Botany and Biochemical markers of growth and differentiation. In the last two decades my main areas of research have been Plant Cell Tissue and Organ Culture, Molecular Markers, Somaclonal variants, transformation and resistance development against diseases in plants.

Thirty three Ph.D. students successfully completed their work under my supervision. I completed eleven research projects as principal investigator sponsored by different national and international organizations. During years1970-2000, I availed 05 post-doctoral fellowships and worked in some of the best Labs in Europe.

I have published 177 research papers, of which 50 were published in peer reviewed foreign journals. Out of 177 publications 101 are in impact factor journals, with total impact factor of 153.015 (JCR-2020 citations 2593, upto 06.04 2021).I have been continuously awarded Research Productivity allowance for years 2002-20014 by PCST.

I have immensely contributed in development of Biology Curricula and editing of books as member National Review Committee, at Secondary, Higher Secondary and of Botany at B.Sc, M.Sc level in the country. As member and expert of large number of bodies and organizations in the University of the Punjab, other universities and National Organizations, has contributed in planning policies regarding improvement in teaching and research of Biological Sciences in the country. I was mentor of regular Ph.D. programme of the University introduced in 2001.

I have actively worked in procuring funds for infrastructure development of University in general and School of Biological Sciences in particular. Overall funds of about Rs.600.00 millions have been procured from HEC by writing successful PC-Is upto 2007. I established Punjab University Seed Centre and played a vital role in establishing School of Biological Sciences.

In recognitions of my established scholarship and meritorious services to the university I was appointed Meritorious Professor in 2002 and **Professor Emeritus** (Botany) in 2010 by the Punjab University.

CURRICULUM VITAE

PERSONAL

Name	JAVED IQBAL
Father's Name	Muhammad Aslam Qureshi
Date of Birth	26th October, 1942
Marital Status	Married with three children
Religion	Islam
Nationality	Pakistani

ACADEMIC

A) Present Position:

Professor Emeritus
Department of Botany, University of the Punjab, Lahore.

B) Educational Qualification:

B.Sc	Government College, Lahore 1962
B.Sc.(Hons) Botany	Government College, Lahore 1963
M.Sc Botany	Punjab University, Lahore 1964
Ph.D. Botany	Punjab University, Lahore 1969

Service Record:

01-12-2017 todate	**Professor emeritus**	**School of Biological Sciences**
01.07.2013 to 30.11.2017	Professor & Director	School of Biological Sciences
01.03.2010	Professor Emeritus (To date)	Botany Department, P.U. Lahore University of the Punjab
01.07.2002 to 30.06.2013	Director	School of Biological Sciences University of the Punjab
02.07.2002	Meritorious Professor (Till retirement; 25.10.2002)	Botany Department, P.U. Lahore.
1997-2002	Chairman	Botany Department, P.U. Lahore.
1990-2002	Professor	Botany Department, P.U. Lahore.
1982-1990	Associate Professor	Botany Department, P.U. Lahore.
1979-1982	Assistant Professor	Botany Department, P.U. Lahore.
1968-1979	Lecturer	Botany Department, P.U. Lahore.

C) RESEARCH INTERESTS:

1. Radiation Botany:

1.1. Morphological, physiological and biochemical aspects of gamma irradiated plants.
1.2. Radiosensitivity of crop plants.

2. Plant Morphogenesis:

2.1. Biochemical indices during differentiation of tissues and organs.
2.2. Underlying Biochemical causes of heavy metal toxicity. (Barium, Lead, Cadmium & Mercury).

3. Biotechnology:

3.1. Plant Cell, Tissue and Organ Culture.
3.2. Molecular markers – somaclonal variants, disease resistance.
3.3. Transformation – *Agrobacterium tumefaciens*; Particle bombardment.
3.4 Fermentation – Production of citric acid/raw starch hydrolyzing enzymes/ production of ethanol

D) POST-DOCTORAL AWARDS:

1. UNESCO Award (1971-72)

- Worked in Institute of Experimental Botany, Prague, Czechoslovakia. (Dr. Milan Kutacek).
- Gamma irradiation effects – soluble proteins – free and bound amino acids – corn.

2. Alexander von Humboldt Stiftung, Germany (1974-76)

- Worked in Department of Biology II, Ulm University, Germany. (Prof. Dr. H. Schraudolf).
- Biochemical markers of growth and differentiation: Isozymes (Shikimate dehydrogenase – Peroxidase) – protein pattern – poly A-sequences – fern Anemia.

3. Alexander von Humboldt Stiftung, Germany (1980-81)

- Worked in Department of Biology II, Ulm University, Germany.(Prof. Dr. H. Schraudolf)
- Biochemical markers of growth and differentiation: mRNA populations – *in vitro* translation – Characterization of tubulin – Anti tubulin antibodies – fern Anemia.

4. Alexander von Humboldt Stiftung, Germany (1993)

- Worked in Department of Cell-Biology in Kaiserslautern University, Germany. (Prof. Dr.W. Nagl)
- Transformation – *Agrobacterium tumefaciens* – Phaseolus.

5. I.P.K/AvH, Germany (1999)

- Worked in the Department of Molecular Cell Biology (Gene-transfer group) in the Institute of Plant Genetics and Crop Research, Gatersleben, Germany.
- (Dr. F. Altpeter – group leader – Gene transfer group).
- Transformation – Callogenesis – Organogenesis – transformation – Particle bombardment – Lolium.

E) RESEARCH PROJECTS (AS PRINCIPAL INVESTIGATOR)

1. Completed:

1.1 Enhance sugarcane production in Pakistan by Modern Breeding Technology (2008-2011): Funded by Pakistan – US Science and Technology Programme.

1.2 Micropropagation of jojoba (*Simmondsia chinensis*) - an oil yielding plant of high commercial value (2000-2002). Funded by Pakistan Science Foundation.

1.3 Biochemical and Molecular investigations on somaclonal variants and induced mutants of Potato (1999-2000). Funded by Punjab University.

1.4 Biochemical markers of sex differentiation in Jojoba (*Simmondsia chinensis*). Funded by Agricultural Research Council (1998).

1.5 Biochemical and molecular markers of somaclonal variants in sugarcane(1996-98). Funded by Punjab University.

1.6 Commercial production of disease free potato seed (1994-95). Funded by Punjab University.

1.7 Protoplast cultures and somatic hybridization in sugarcane (1994-95). Funded by Punjab University.

1.8. Sugarcane cell cultures: Isolation of protoplast, regeneration of cell cultures, embryos and somatic hybridization (1989-92).
Research project funded by National Scientific Research and Development Board (NSRD - Bio-I, P.U).

1.9 Biochemical investigations on growth and differentiation of chickpea (*Cicer arietinum* L.) callus cultures (1989-91).
A coordinated research programme funded by Pakistan Atomic Energy Commission, PAEC-Res-II (4).

1.10 Morpho-physiological effects of gamma irradiation on crop plants (1975-78).
A research project funded by Pakistan Science Foundation PSF. Bio (5), 1975.

1.11 Morpho-physiological effects of gamma irradiation on rice (1972). A research project funded by Govt. of Pakistan under "Young Scientists" programme.

IN PROGRESS

1,12 Testing the potential of wrinkled-1 transcription factor in fibre quality improvement of cotton. 2018-2021, Funded by Higher Education Commission, Pakistan, As Co-PI

F) PC1s PREPARED, GOT APPROVED AND EXECUTED

S.#	Project	Period	Amount (in million Rs.)	Funding Agency
01.	"Strengthening of Science Departments" University of the Punjab	1999-2002	37.470	HEC
02.	Establishment of "School of Biological Sciences" University of the Punjab	2002-2003	150.000	Government of Punjab
03.	Revised PC1 "School of Biological Sciences" University of the Punjab	2003-2005	171.447	Government of Punjab
04.	Hostel of Visiting Faculty, University of the Punjab	2004-2005	15.035	HEC
05.	Hostel for Students Ph.D. University of the Punjab	2005-2006	27.160	HEC
06.	"Strengthening of the School of Biological Sciences" University of the Punjab	2008-2013	377.328	HEC

G) TOTAL IMPACT FACTOR (UP to March 2021)----153.015

H) Total citations (Up to March 2021) 2593

I) RESEARCH PRODUCTIVITY ALLOWANCE:

For years 2002-2006, 2008, 2010-2014 from PCST

J) DETAILS OF PUBLISHED RESEARCH WORK:

1.	Total Published Papers	177
	a. In Peer Reviewed Foreign Journals	50
	b. In Impact Factor Journals (Foreign & Local)	101
	c. In Local Refereed Journals	76

(For Titles, year of publication, See Appendix-I)

K) Book Chapters:

Recent developments in the Biosystematics and Molecular Biology of Sugarcane. Khushi Muhammad, Waqar Ahmad, Habib Ahmad, Ezed Ali, Javed Iqbal, Yong-Bao Pan and Khalid rehman Kakeem In "Crop production Technologies for Sustainable Use and Conservation". 2019

Editors : Munir Ozturk, Khalid Rehman Hakeem, Muhammad Ashraf. Muhammad Sajid Aqeel Ahmad. PP 131-153.APPLE ACADEMIC PRESS, CRC Press Canada.

L) HEC APPROVED PH.D. SUPERVISOR IN BIOLOGICAL SCIENCES:

M) POST-GRADUATE RESEARCH GUIDANCE:

1. Guidance of Ph.D Work:

1.1.	Awarded	33

(For details, see Appendix-II)

2. Guidance of M.Phil Work

2.1.	Awarded	(Appendix-II-c).	06

3. Guidance of M.Sc Work:

3.1. 1973-2006: 102 M.Sc. students have worked under my guidance.

N) TEACHING EXPERIENCE:

- In the past 53 years, since my joining the University, I have been giving the following courses to Post-graduate students.

1. General Courses:

1.1. Plant Biochemistry
1.2. Cell Biology
1.3. Plant Anatomy

2. Special Courses:

2.1. Plant Morphogenesis
2.2. Radiation Biology
2.3. Plant Biotechnology for sustainable development.
2.4. Plant Tissue Culture & its agricultural applications.
2.5. Recombinant DNA Technology.
2.6. Biochemistry of Nucleic Acids

O) OTHER ACADEMIC ACTIVITIES:

1. Editor:

1.1. Text Book of Biology for Class-XI. (Punjab Text Book Board).
1.2. Practical Guide Book for Biology for Class-XI. (Punjab Text Book Board).
1.3. Model Text Book of Biology at secondary level. (Developed by Ministry of Education, Islamabad).

2. Member National Review Committee – Biology, Ministry of Education, Islamabad.

Work Accomplished:

2.1. Review of lesson plans/units in the subject of Biology at Secondary level.
2.2. Review of Elementary Science Text-book for classes VI-VIII by Balochistan Text Book Board, Quetta.
2.3. Review of Elementary Science Text-book for classes VI-VIII by NWFP Text Book Board, Peshawar.
2.4. Review and Editing of Elementary Science Text Books for classes VI-VIII, by Sind Text Book Board, Jamshoro.
2.5. Review of manuscripts of supplementary readers for children on different Science subjects.
2.6. Biology lesson plans for use of Science Teachers and students at secondary level.
2.7. Review of Biology manuscripts for Secondary classes by Punjab Text Book Board.
2.8. Review of General Science (English) for classes IX-X by Punjab Text Book Board.
2.9. Review of Biology manuscript for class XI.

P) SYMPOSIA AND CONFERENCES:

- Participated and presented articles in numerous international and National Symposia and Conferences.

Q) MEMBER STATUTORY BODIES (PUNJAB UNIVERSITY/OTHER UNIVERSITIES):

a) Convenor Board of Studies in Botany, Punjab University (1997-2002).
b) Member, Academic Council, Punjab University (1990-2002).
c) Member, Senate, Punjab University (1990-2002).
d) Member, Structure Committee, Punjab University (1990-1998).
e) Member, Equivalence Committee, Punjab University (1992-2002).
f) Member, Disciplinary Committee, Punjab University (1994-1999).
g) Member Elect, Library Committee (from Academic Council), Punjab University (1995-1997).
h) Member, Board of Studies – Biotechnology/Biochemistry, Punjab

University (1999-2001).

i) Member, Board of Intermediate and Secondary Education, Sargodha (1997-1999; A nominee of the Vice-Chancellor, University of the Punjab).

j) Member, Board of Intermediate and Secondary Education, Faisalabad (1998-2000; A nominee of the Vice-Chancellor, University of the Punjab).

k) Member, House Allotment Committee, Punjab University (1996-2000).

l) Chairman, House Allotment Committee, Punjab University (2001-2002).

m) Convener, Self Cultivation Committee, Punjab University (1996-2002).

n) Member, Board of Studies in Botany, Islamia University, Bahawalpur (1998-2002).

o) Member, Board of Studies in Botany, Government College, Lahore (1998-2000, 2000-2002, 2016-2018).

p) Member, Board of Studies in Botany, Lahore College for Women, Lahore (1999-2002).

q) Member, Board of Advanced Studies and Research, University of Baluchistan Quetta (1994-1995).

r) Member Elect, Board of Advance Studies and Research (from Academic Council) Punjab University (2000-2002).

s) Member Board of Studies in Botany, AJK, University Muzaffarabad (1999-2001)

t) President, Pakistan Botanical Society, 1998-2000.

u) Member Affiliation Committee, Punjab University (2000-2002).

v) Chairman, Doctoral Programme Coordination Committee, Punjab University (2001-2002).

w) Member, Joint Forum of Collaboration between Lahore Chamber of Commerce and Industry and University of the Punjab (2002).

x) Member/Secretary, National Core Group on Biology (2002-2003).

y) Member (Expert) Board of Studies: Balochistan University of Information Technology, Engineering and Management Sciences, Quetta (2008-2011).

z) Member Syndicate, G.C. University, Faisalabad (2015-2018).

(DR. JAVED IQBAL)
Emeritus Professor ®
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TOTAL IMPACT FACTOR

BASED ON 2014 JCR SCIENCE EDITION

NAME OF JOURNAL	IMPACT FACTOR	NO. OF PAPERS	TOTAL IMPACTS
ACTA BIOTECHNOL (Presently Engineering in Life Sciences)	1.633	1	1.633
ACTA PHYSIOLOGIAE PLANTARUM	1.820	1	1.820
AFRICAN J. OF BIOTECHNOL.	0.573	1	0.573
APPL MICROBIOL BIOTECH	3.689	1	3.689
AMERICAN JOURNAL OF PLANT SCIENCES	1.410	1	1.410
BIOL FERTIL SOIL	2.505	1	2.505
BIOL PLANTARUM	1.692	1	1.692
BIORESOURCE TECHNOL	4.750	5	23.750
BRAZILIAN JOURNAL OF BOTANY	0.648	2	1.296
CAN.J. MICROBIOL	1.199	1	1.199
CEREAL RES COMMUN	0.549	1	0.549
CROP PROTECTION	1.652	1	1.652
DEV GROWTH DIFFER	2.397	1	2.397
ELECTRON J BIOTECH	0.827	3	2.481
ENVIRON EXP BOT (FORMELY RADIATION BOTANY)	2.578	8	20.624
FOLIA MICROBIOL	0.680	1	0.680
GENETICS AND MOLECULAR RESEARCH	0.994	1	0.994
I J B (INT. J. BIOSCIENCES)	0.076	1	0.076
J. ANIM. PLANT SCI.	0.638	4	2.552
J ENVIRON SCI – CHINA	1.773	1	1.773
J HAZARD MATER	3.925	1	3.925
J PHYTOPATHOL	3.119	2	6.238

LETT APPL MICROBIOL	1.629	2	3.258
MOL BIOL REP	2.506	1	2.506
MOL BREEDING	2.018	1	2.018
PAKISTAN J AGRI RES.	0.240	2	0.48
PAKISTAN J BOT	0.872	47	40.984
PLANT CELL TISS ORG	3.633	2	7.266
PLANT SOIL	2.638	1	2.638
PLANTA	3.347	1	3.347
PROCESS BIOCHEM	2.414	2	4.828
WORLD J MICROB BIOT	1.262	2	2.452
TOTAL		**101**	**153.015**

DR. JAVED IQBAL
Professor Emeritus

PUBLISHED PAPERS:

a. Peer Reviewed Foreign and local impact factor journals (alongwith citations).

SR	TITLE	CITED BY	YEAR
1.	Evaluation of phenotypic, physiological and biochemical attributes connected with resistance in tomato against Alternaria solani ASJIKAK Nafisa Acta Physiologiae Plantarum 42, 88-104	2*	2020
2.	Cultural, morphological, molecular comparison and pathogenicity of Alternaria solani causing early blight disease in tomato J Iqbal, AS Nafisa MYCOPATH 15 (1)	1	2018
3.	QSY-3 controls multiple morphology, phenology and grain yield traits in rice (Oryza sativa L.)under salinity stress. MSAJI M.S.Khan, M.Saeed, S.Parveen J.Anim.Plant Sci. 28 (6), 1803-1812		2018
4.	Development of an RAPD-based SCAR marker for smut disease resistance in commercial sugarcane cultivars of Pakistan JI Mehwish Khan, Yong-Bao Pan Crop Protection 94, 166-172	4	2017
5.	DNA Fingerprinting of essential commercialised medicinal plants from Pakistan JI Waqar Ahmad,Khushi Muhammad,Altaf Hussain, Habib Ahmad, Khalid Khan ... American Journal of Plant Sciences 8, 2119-2132	2	2017
6.	Association mapping validates previously identified quantitative trait loci for salt tolerance in rice (Oryza sativa L.) JI Md.Shah Kamal Khan, Muhammad Saeed Mol Breeding 36, 172-183	4*	2016

SR	TITLE	CITED BY	YEAR
7.	Quantitative trait locus mapping for salt tolerance at maturity stage in indica rice using replicated F2 population. J Khan Md. Shah Kamal, Saeed M & Iqbal Braz.J.Bot. 39, 641-650	12	2016
8.	Identification of quantitative trait loci for Na+, K+ and Ca++ accumulation traits in rice grown under saline conditions using F2 mapping population. SMIJ Md. Shah Kamal Khan Braz. J. of Bot. 38 (3), 555-565	7	2015
9.	Genetic analysis of resistant gene analogues from a sugarcane cultivar resistant to red rot disease J Hameed, U., Pan, Y.B. and Iqbal Journal of Phytopathology 163, 755-763	9	2015
10.	Comparative study of agronomic traits of different rice varieties grown under saline and normal conditions. M Khan, K.S., Md, Iqbal, J. and Saeed J. Anim. Plant Sci. 24 (2), 632-640	9*	2014
11.	Genetic variability among the brown rust resistant and susceptible genotypes of sugarcane by RAPD technique. J Muhammad, K., Afghan, A., Pan, Yong-Bao and Iqbal Pak. J. Botany 45 (1), 163-168	15	2013
12.	Comparative study of grain yield and biochemical traits of different rice varieties grown under saline and normal conditions. M Khan, K.S., Iqbal, J.and Saeed J. Anim. Plant Sci.: 23 (2), 575-588	12	2013
13.	Use of RAPD markers to characterize commercially grown rust resistant and susceptible cultivars of sugarcane (Saccharum spp.). J Ali, W, Muhammad, K., Nadeem, M.S., Inamullah, Ahmad H. and Iqbal International Journal of Biosciences (IJB); 3 (2), 115-121		2013
14.	Genetic analysis of somaclonal variants and induced mutants, of Potato (Solanum Tuberosum L.) C.V. Diamant using RAPD Markers. H Afrasiab, J and Iqbal Pak. J. Bot; 44 (1), 215-220	25	2012

SR	TITLE	CITED BY	YEAR
15.	Biochemical and molecular characterization of somaclonal variants and induced mutants of potato (Solanum tuberosum L.) cv. Desire. J Afrasiab, H., and Iqbal Pak. J. Botany. 44 (5), 1503-1508	9	2012
16.	In vitro direct plant regeneration from cultured young leaf segments of sugarcane (Saccharum officinarum L.) J Ali, S., Khan, M.S. and Iqbal J. Anim. Plant Sci.: 22 (4), 1107-1112	16	2012
17.	Use of simple sequence repeat markers for DNA fingerprinting and diversity analysis of sugarcane (Saccharum spp.) cultivars resistant and susceptible to red rot. J Hameed, U., Pan, Y.B., Muhammad, K., Afghan, S. and Iqbal Gen. and Mol. Res. 11 (2), 1195-1204	29*	2012
18.	Identification of two sugarcane mosaic virus (scmv) variants from naturally infected sugarcane crop in Pakistan. J Haider, M.S., Afgharn, S., Riaz, M., Javed, A. J. Rashid, N. and Iqbal Pak. J. Bot. 43 (2), 1157-1162	14	2011
19.	Probing genetic diversity to characterize and rot resistance in sugarcane. AS Mumtaz, D Nayab, K Iqbal, J. and Shinwari Pak. J. Bot 43 (5), 2513-2517	16*	2011
20.	Development and photosynthetic regulation of δ-endotoxin reveals that engineered sugarcane conferring resistance to ‘dead heart’ contains no toxins in cane juice. J Khan, M.S., Ali, S. and Iqbal Mol. Biol. Rep. 38 (4)		2011
21.	Effect of interaction of 6-benzylaminopurine (BA) and sucrose for efficient microtuberisation of two elite potato (Solanum tuberosum L.) cultivars. Desiree and Cardinal. J Aslam, A., Ali, A., Naveed, H. H., Saleem, A. and Iqbal African J. of Biotechnology 10 (59), 12738-12744	14	2011

SR	TITLE	CITED BY	YEAR
22.	Combined effect of cytokinin and sucrose on in vitro tuberization parameters of two cultivars i.e. Diamant and Red Norland of Potato (Solanum tuberosum). J Aslam, A. and Iqbal Pak. J. Bot. 42 (2), 1093-1102		2010
23.	In vitro techniques and mutagenesis for the genetic improvement of potato cvs. Desiree and Diamant. J Afrasiab, H. and Iqbal Pak. J. Bot. 42 (3), 1629-1637	36	2010
24.	Genotype independent in vitro regeneration system in elite varieties of sugarcane. MS Ali, Safdar, Iqbal, J. and Khan Pak. J. Bot., 42 (6), 3783-3790	26	2010
25.	An efficient, short and cost-effective regeneration system for transformation studies of sugarcane (Saccharum officinarum.) J Shah, A.H., Rashid, N., Haider, M.S., Saleem, F., Tahir, M. and Iqbal Pak. J. Bot. 41 (2), 609-614	18	2009
26.	Virus indexation of in vitro regenerated sugarcane plants. J Naz, S., Siddiqui, F.A., Ali, A. and Iqbal Pak. J. Bot. 41 (4), 1931-1939	9	2009
27.	Association of a distinct Begomovirus and a Betasateltite with leaf curl symptoms in Pedilanthus tithymaloides. RW Tahir, M. Haider, M.S., Iqbal, J. and Briddon J. Phytopathogy, 1111, 1434-1439	25*	2009
28.	Isolation, characterization and effect of fluorescent pseudomonods on micropropagated sugarcane. J Mehnaz, S., Weselowski, B., Aftab, F. Zahid, S., Lazarovits, G, Iqbal Can. J. Microbiol. 55, 1007-1011	42	2009
29.	An efficient protocol for in vitro propagation of carnation (Dianthus caryophyllus). J Ali, A., Afrasiab, H., Naz, S., Rauf, M. and Iqbal Pak. J. Bot. 40 (1), 111-121	74	2008
30.	Rapid clonal multiplication of sugarcane (Saccharum officinarum) through callogenesis and organogenesis. J Ali, A., Naz, S., Siddiqui, F.A. and Iqbal Pak. J. Bot. 40 (1), 123-138	47	2008

SR	TITLE	CITED BY	YEAR
31.	An efficient protocol for large scale production of sugarcane though micropropagation. J Ali, A., Naz, S., Siddiqui, F.A. and Iqbal Pak. J. Bot. 40 (1), 139-149	87	2008
32.	Somatic embryogenesis from immature cotyledons and leaf calli of chickpea (Cicer arietinum L.). J Naz, S., Ali, A., Siddiqui, F.A. and Iqbal Pak. J. Bot. 40 (2), 523-531	18*	2008
33.	Effect of 3,5-dimethylphyrazole and nitrapyrin on nitrification under high soil temperature. T Ali, R., Iqbal, J., Tahir, G.R. and Mahmood Pak. J. Bot. 40 (3), 1053-1062	38	2008
34.	Estimation of fixed oils from various explants and invitro callus cultures of jojoba (Simmondisa chinensis) J Aftab, F., Akram, S. and Iqbal Pak. J. Bot. 40 (4), 1467-1471	16	2008
35.	DNA based genetic variation for red rot resistance is sugarcane. YB Alvi, A.K., Iqbal, J., Shah, A.H. and Pan Pak. J. Bot. 40 (4), 1419-1425	33	2008
36.	Phenolic content in vitro cultures of chickpea (Cicer arietinum L.) during callogenesis and organogenesis. J Naz, S., Ali, A. and Iqbal Pak. J. Bot. 40 (6), 2525-2539	34	2008
37.	Nitrous oxide emission from an irrigated cotton field under semiarid subtropical conditions. J Mahmood, T., Ali, R. and Iqbal Bio. Fertil. Soils 44, 773-781	27	2008
38.	Effect of different explants and media composition for efficient somatic embryogenesis in sugarcane (Saccharum officinarum). J Ali, A., Naz, S. and Iqbal Pak. J. Bot. 39 (6), 1961-1977	47	2007
39.	In vitro induced mutation for screening of red rot (Colletotrichum falcatum) resistance in sugarcane (Saccharum officinarum) J Ali, A., Naz, S., Alam, S.S. and Iqbal Pak. J. Bot. 39 (6), 1979-1994	41	2007

SR	TITLE	CITED BY	YEAR
40.	Multiple shoot formation from different explants of chickpea (Cicer arietinum L.). J Naz, S., Ali, A., Siddique, F.A. and Iqbal Pak. J. Bot. 39 (6), 2067-2073	16	2007
41.	Screening of different accessions of three potential grass species from Cholistan Desert for salt tolerance. J Ashraf, Y.M., Akhtar, K., Hussain, F. and Iqbal Pak. J. Bot., 38 (5), 1589-1597	96	2006
42.	Detection of genetic diversity among sugarcane (Saccharum sp) genotype using Random Amplified Polymorphic DNA markers MS Afghan,S:Haider, AH Shah, M Rashid,N:Iqbal,J:Tahir,M and Akhtar Sugarcane International 23 (6), 15-19	18*	2005
43.	Effect of low pH on continuous citric acid fermentation by Aspergillus niger J Ali, S., Haq, I.U. and Iqbal Pak. J. Bot., 37 (4), 981-988	6	2005
44.	Optimization of nitrogen for enhanced citric acid productivity by a 2-deoxy-D-glucose resistant culture of Aspergillus miger NGd-280. J Haq, I. U., Ali, S., Qadeer, M.A. and Iqbal Bioresource Technology 96 (5), 645-648		2005
45.	Pearl millat, a source of alpha amylase production by Bacillus lichniformis. J Ikram-ul Haq, Ashraf, H., Qadeer, M.A. and Iqbal Bioresoruce Technol. 96 (10), 1201-1204		2005
46.	Protein changes associated with dedifferentiation and differentiation in vitro callus cultures of sugarcane (Saccharum spp. hybrid cv. CP-43/33) F Aftab, ZH Aftab, J Iqbal Pakistan Journal of Biochemistry and Molecular Biology (Pakistan)		2004
47.	Citric acid production by selected mutants of Aspergillus niger from cane molasses. S Haq I.U, Ali, J Qadeer M.A and Iqbal Bioresource Technol. 93 (2), 125-130	121	2004

SR	TITLE	CITED BY	YEAR
48.	Enhancement of Lead (II) Biosorption by microalgal Biomass immobilized onto Loofa (Luffa cylindrica) Sponge. N Akhtar, M Iqbal, J and Iqbal Eng. Life Sci. 4 (2), 171-178	69	2004
49.	Removal and recovery of nickel (II) from aqueous solution of loofa sponge-immobilized biomass of Chlorella sorokinana: characterization studies. N Akhtar, M Iqbal, J. and Iqbal Journal of Hazardous Materials : B 108, 85-94	322	2004
50.	A high performance fermentation process for citric acid production by Aspergillus niger NG GCB –101, using vermiculite as an additive in stirred bioreactor. J Haq, I. U., Ali, S., Qadeer M.A and Iqbal World J. Microbiol. & Biotechnol. 20, 463-467		2004
51.	Effect of vegetative inoculum on submerged citric acid fermentation by Aspergillus niger S Ali, A Ehsan, J Iqbal Pakistan Journal of Biological Sciences (Pakistan)	1	2003
52.	RATE OF CITRIC ACID FERMENTATION BY ASPERGILLUS NIGER USING STATIONARY CULTURE S Ali, J Iqbal JOURNAL OF NATURAL SCIENCES AND MATHEMATICS-LAHORE- 43 (1), 11-16		2003
53.	Control of Aspergillus niger morphology to enhance citric acid production under liquid culture. IU Haq, S Ali, J Qadeer, M. A. and Iqbal Pak. J. Bot. 35 (4), 533-539	9	2003
54.	Nitrogen limitation for enhanced citric acid productivity by a 2-deoxy D-Glucose resistant culture of Aspergillus niger NGD-280. S Ali, IU Haq, J Qadeer, M. A. and Iqbal Pak. J. Bot. 35 (4), 541-545		2003
55.	Direct production of citric acid from raw starch by filamentous fungi Aspergillus niger. IU Haq, J Ali, S. and Iqbal Process Biochemistry 38 (6), 921-924	52	2003

SR	TITLE	CITED BY	YEAR
56.	Production of alpha amylase by Bacillus lichniformis using an economical medium. IU Haq, H Ashraf, MA Iqbal, J. and Qadeer Bioresource Technology. 87 (1), 57-61	163	2003
57.	Effect of volume of culture medium on enhanced citric acid productivity by a mutant culture of Aspergillus niger in stirred fermentor. IU Haq, S Ali, J and Iqbal Letters in Applied Microbiology, 36, 302-306	19	2003
58.	Indusive effect of cresoquinone on microbiological transformation of L-tyrosine to 3,4 dihydroxy phenyl (L – alanine by Aspergillus oryzae NG-11P1. IU Haq, S Ali, J Qadeer, M.A. and Iqbal Applied Microbiol and Biotechnol., 60, 696-699	10	2003
59.	Stimulatory effects of alcohols (methanol and ethanol) on citric acid productivity by a 2–deoxy D-glucose resistant culture of Aspergillus niger GCB-47. IU Haq, S Ali, J Qadeer, M.A. and Iqbal Bioresource Technol. 86 (227-233)	60	2003
60.	The kinetic basis of the role of Ca++ ions for higher yield of citric acid in a repeated batch cultivation system. IU Haq, S Ali, J Qadeer, M.A and Iqbal World Journal of Microbiology and Biotechnology. 19, 817-823	10*	2003
61.	Microalgal-luffa sponge immobilized disc: a new efficient biosorbent for the removal of Ni(II) from aqueous solution. M Akhtar, N., Iqbal, J. and Iqbal Letters in Applied Microbiology 37, 149-153	52	2003
62.	NITROGEN REQUIREMENT FOR ENHANCED CITRIC ACID PRODUCTION BY FILAMENTOUS FUNGI ASPERGILLUS NIGER S Ali, J Iqbal SCIENCE INTERNATIONAL-LAHORE- 14 (4), 329-332		2002
63.	Citric acid fermentation by a UV-treated mutant of Aspergillus niger. S Ali, J Haq, I.U. and Iqbal Pak. J. Bot. 34 (2), 125-128	2	2002

SR	TITLE	CITED BY	YEAR
64.	Optimization of conditions for Electrofusion in Sugarcane protoplast. F Aftab, Y Zafar, J Iqbal Pak. J. Bot 34 (3), 297-302	3	2002
65.	Effect of copper ions on mould morphology and citric acid productivity by Aspergillus niger using molasses based media. SI Haq, I.U., Ali, J Qadeer, M.A. and Iqbal Process Biochemistry, U.K., 37, 1085-1090	45*	2002
66.	The role of Mn++ ions for high and consistent yield of citric acid in recycling fed batch bioreactor system and its novelty on kinetic basis. S Ali, J Haq, I.U. Iqbal Electronic Journal of Biotechnology 5 (2), 110-117	12	2002
67.	Citric acid fermentation by mutant strain of Aspergillus niger GCMC-7 using molasses based medium. IU Haq, SI Ali, J Qadeer, M.A. and Iqbal Electronic Journal of Biotechnology, 5 (2), 125-132	52	2002
68.	Production of citric acid by Aspergillus niger using cane molasses in a stirred fermentor. S Ali, IU Haq, J Qadeer, M.A. and Iqbal Electronic Journal of Biotechnol. 5 (3), 258-271	113	2002
69.	Influence of cultivation conditions on citrate production by Aspergillus niger in a semi-pilot scale plant. IU Haq, J Ali, S. and Iqbal Folia Microbiologica 47 (5), 511-515	5	2002
70.	PEG-mediated somatic hybridization studies in sugarcane (Saccharum SPP. Hybrid cvs. CoL-54 and CP-43/33). FIJ Aftab Pak. J. Bot. 33 (3), 233-238	6	2001
71.	Screening of Bacillus licheniformis mutants for improved production of alpha amylase. H Ashraf, IU Haq, J Qadeer, M.A. and Iqbal Pak. J. Bot: 33 ((special issue)), 71-79	24	2001
72.	Kinetics of improved citric acid production by mutant strain of Aspergillus niger. S Ali, IU Haq, J Qadeer, M.A. and Iqbal Pak. J. Bot: 33 ((special issue)), 527-534		2001

SR	TITLE	CITED BY	YEAR
73.	Effect of mineral nutrients on the biosynthesis of citric acid by Aspergillus niger UV-6, using sucrose salt media. IU Haq, S Ali, H Ashraf, WA Butt, MA Qadeer, J Shafique, K. and Iqbal Pak. J. Bot. 33 ((special issue)), 535-540	6	2001
74.	Callogenesis, embryogenesis and organogenesis in Christmas cactus (Schlumbergera bridesi). A Ali, S Naz, J Siddiqui, F.A. and Iqbal Pak. J. Bot: 33 ((special issue)), 569-274	1	2001
75.	In vitro propagation of gloxinia (Sinningia specioba). S Naz, A Ali, J Siddiqui, F.A. and Iqbal Pak. J. Bot: 33 ((special issue)), 575-579	2	2001
76.	Production of xylanase by solid state fermentation by Aspergillus niger. WA Butt, IU Haq, S Ali, J Qadeer, M.A. and Iqbal Pak. J. Bot 33 ((special issue)), 581-585	1	2001
77.	Use of microalgal biomass for the removal of heavy metals from aqueous systems. N Akhtar, M Iqbal, J Zafar, S.I. and Iqbal Pak. J. Bot 33 ((special issue)), 773-777	2	2001
78.	Seed treatment with growth regulators and crop productivity AJ Gulnaz, J Iqbal, F Azam II	3	1999
79.	Somaclonal variation in microsperma lentil (Lens culinaris Medik) N Altaf, J Iqbal, MS Ahmad Pakistan Journal of Biological Sciences (Pakistan)		1999
80.	Some aspects of adventitious rooting in microsperma lentil CV-Masoor-85 N Altaf, J Iqbal, MS Ahmad Pakistan Journal of Biological Sciences (Pakistan)		1999
81.	Somatic embryogenesis in protoplast cultures derived from mesophyll and embryogenic callus of sugarcane. J Aftab, F. and Iqbal Pak. J. Botany 31 (2), 293-300	2*	1999

SR	TITLE	CITED BY	YEAR
82.	Tissue culture of microsperma Lentil (Lens culinaris Medik) cv. Masoor 85. N Altaf, JAMS Iqbal Pak J. Botany 31 (2), 283-292	6	1999
83.	Plant regeneration from protoplasts derived from cell suspension of adventive somatic embryos in sugarcane (Saccharum spp. hybrid cv. CoL-54 and cv. CP-43/33). J Aftab, F. and Iqbal Plant cell Tissue and Organ Culture. 56, 155-162	36	1999
84.	Seed treatment with growth regulators and crop productivity. II. Response of critical growth stages of wheat (Triticum aestivum L.) under salinity stress. A Gulnaz, F Iqbal, J. and Azam Cereal Research Communications (Hungary), 27 (4), 419-426	45	1999
85.	Seed treatment with growth regulators and crop productivity. I. 2, 4-D as an inducer of salinity tolerance in wheat (Triticum aestivum L.). A Gulnaz, J Iqbal, F Farooq, S. and Azam Plant and Soil, 210, 209-217	33	1999
86.	Influence of microsperma lentil genotypes on tissue culture responses N Altaf, J Iqbal, MS Ahmad Pakistan Journal of Biological Sciences (Pakistan)	2	1998
87.	Plant regeneration from embryogenic cell suspension and protoplasts in sugarcane (Saccharum Spp. hybrid. cv. CoL-54). Y Aftab, F., Zafar, J Malik, K.A. and Iqbal Plant cell Tissue and organ culture 44, 71-78	151	1996
88.	Agrobacterium mediated transformation of Phaseolus vulgaris:Adaptations of some conditions W Becker,J: Vogel,T: Iqbal,J ans Nagl Annual Reports of the bean improvement 37, 127-128	19*	1994
89.	In vitro propagation of carnation. Advances in plant tissue culture FA Siddiqui, S Naz, J Iqbal Proceedings of the 3rd National Meeting of Plant Tissue Culture, Pakistan, 43-47	6	1993

SR	TITLE	CITED BY	YEAR
90.	Total phenolics, phenyl alanine ammonia lyase and polyphenol oxidase in in vitro calli of chickpea. MS Iqbal, J., Naz, S., Nazir, S., Aftab, F. and Ahmad Pak. J. Bot. 23, 227-235		1991
91.	Effects of industrial wastes on the germination, early growth and nucleic acids of Zea mays varieties. H Shahida, M Khalid, I Javed Pakistan Journal of Agricultural Research 10 (4), 331-340	6	1989
92.	Chages in nucleic acid content, peroxidase content and its isozymic forms in in vitro propagated calli of chickpea. MS Iqbal, J., Butt, N., Saeed, F. and Ahmad Pak. J. Bot. 21 (13-23)	2	1989
93.	TOXIC EFFECTS OF BACL2 ON GERMINATION, EARLY SEEDLING GROWTH, SOLUBLE-PROTEINS AND ACID-PHOSPHATASES IN ZEA-MAYS-L J Iqbal, N Rafique Pakistan Journal of Botany 19 (1), 1-8	22	1987
94.	Effect of lead on germination, early seedling growth, soluble protein and acid phosphatases content in Zea mays L J IQBAL, S MUSHTAQ Pakistan Journal of Scientific and Industrial Research 30 (11), 853-856	28	1987
95.	Effect of post-irradiation treatment by gibberellic acid and indoleacetic acid on germination and early growth of Helianthus annuus J Iqbal, S Naz, RSA Shamsi Biologia 30, 55-71	3	1984
96.	Effect of post irradiation seed treatment of gibberellic and indole acetic acid on germination and early growth of Helianthus annuus L. J Iqbal, S Naz, SRA Shamsi Biologia (Pakistan)		1984
97.	Changes in isozymes shikimate dehydrogenase and peroxidase during gibberellic acid induced induction and formation of antheridium in the ferm Anemia phyllitidis J Iqbal, H Schraduolf Pakistan journal of botany	1	1984

SR	TITLE	CITED BY	YEAR
98.	Tubulin synthesis during spermatogenesis in the fern Anemia phyllitidis: demonstration with antitubulin antibodies J Iqbal, H Schraudolf Pakistan journal of botany	1	1984
99.	Effects of gamma irradiation on the amino acid levels in normal and opaque-2 maize (zea mays L) seedlings J Iqbal Pak. J. Bot.;(Pakistan) 15 (1)		1983
100.	Effect of low dosage of gamma irradiation of seed on the growth and yield of two cultivars of soybean (Glycine max) SRA Shamsi, T Syed, K Akhtar, J Iqbal Pakistan Journal of Science 34, 71-78	2	1982
101.	Effects of acute gamma irradiation, developmental stages and cultivar differences on yield of gamma-2 plants in wheat and sorghum. G Iqbal, J. and Aziz Environmental and Experimental Botany 21 (1), 27-33	7	1981
102.	Effect of acute gamma irradiation, developmental stages and cultivar differences on growth and yield of wheat and sorghum plants. J . Iqbal Environmental and Experimental Botany 20 (3), 219-232	9	1980
103.	Changes in protein bio-synthesis during gibberellic acid induced induction and formation of antheridium in the Anemia phyllitidis. Development H Iqbal, J. and Schraudolf Growth and Differentiation 19, 85-92		1977
104.	The polyadenylic sequences in the ribonucleic acid of the fern Anemia phyllitidis. J 40. Iqbal Planta. 134, 1-3	3	1977
105.	Cell population effects on levels of nucleic acids (DNA+ RNA) in irradiated shoot apices of Capsicum annuum L. seedlings J Iqbal Biologia	3	1976

SR	TITLE	CITED BY	YEAR
106.	Effect of acute gamma irradiation and developmental stages on growth and yield of rice plants M Iqbal, J. and Zahur Radiation Botany (Renamed: Environmental and Experimental Botany in 1980 …	18*	1975
107.	Effect of acute gamma irradiation on the concentration of amino acids and protein nitrogen in Zea mays. V Iqbal, J., Kutacek, M. and Jirachek Radiation Botany (Renamed: Environmental and Experimental Botany in 1980 …	14*	1974
108.	Effect of acute gamma irradiation on initiation and maturation of vascular tissues in stems of Capsicum annuum L. J Iqbal Biologia Plantarum 15 (3), 208-2016	1	1973
109.	Effect of acute gamma irradiation on the survival, growth and radio sensitivity of the apical meristems of Capsicum annuum L. at different stages of seedling development. J Iqbal Radiation Botany (Renamed: Environmental and Experimental Botany in 1980 …	15	1972
110.	Recovery of cellular damage in vegetative shoot apices of Capsicum annuum L. after acute gamma irradiation. J Iqbal Radiation Botany (Renamed: Environmental and Experimental Botany in 1980 …	16	1970
111.	Radiation induced growth abnormalities in vegetative shoot apices of Capsicum annuum L. in relation to cellular damage J Iqbal Radiation Botany 9 (6), 491-499	22	1969
112.	A STUDY OF MORPHO-PHYSIOLOGICAL EFFECTS OF GAMMA IRRADIATION ON SHOOT APICAL MERISTEM AND TISSUE DIFFERENTIATION IN STEM AND LEAF OF CAPSICUM ANNUM L. (Ph.D. Thesis) J IQBAL UNIVERSITY OF PUNJAB	1	1968

b. HEC Recognized Local Journals (X,Y,Z Category)

113. Ali, S. and Iqbal, J. 2012. Influence of physical factors on callogenesis in sugarcane (*Saccharum officinarum* L.) Sci. Int., 23(2): 205-208.

114. Ali, S. and Iqbal, J. 2010. Facile regeneration through adventives/somatic embryogenesis from *in vitro* cultured immature leaf segments of elite varieties of sugarcane (*Saccharum officinarum* L.) Biologia 56: (1&2): 55-62.

115. Aftab, F., Yousaf, S., Munir, N. and Iqbal, J. 2005. Maintenance of regeneration potential over successive subcultures in sugarcane (*Saccharum* spp. hybrid cv. SPF-212) Biologia 51(1): 83-91.

116. Aftab, F., Butt, M.K., Munir, N. and Iqbal, J. 2004. Quantitative/qualitative study of azadirachtin and neem oil extracted from various explants and callus of *Azadirachta indica*. Biologia. 50(2): 183-194.

117. Haq, I.U; Ali, S; Qadeer, M.A and Iqbal, J. 2002. Citric acid fermentation by *Aspergillus niger*: Basic theme, principles and importance, A Review. *Proceedings of Pakistan Academy of Sciences*, 40 (1): 107-112.

118. Haq I, Ali S, Qadeer MA and Iqbal J (2002) Nitrogen requirement for enhanced citric acid production by filamentous fungi *Aspergillus niger, Biologia*, 48 (1&2): 267-273.

119. Ali S, Haq I and Iqbal J (2002) Study of Kinetic parameters for citrate over production by an *Aspergillus niger* mutant NG-110 using shake flask technique. *Biologia*, 48 (1&2): 189-196.

120. Ali, S; Haq, I.U.; Qadeer, M.A. and Iqbal, J. 2000. Effect of additives on citric acid fermentation by *Aspergillus niger* GCBT-32 in stirred fermentor. *Biologia*, 46 (1&2) : 1-6.

121. Khan, N.H; Zaidi, N; Jabeen, S. and Iqbal, J. 2000. Micropropagation potential of *Polianthes tuberosum* L. Bulbs, scales and leaves. *Pak. J. Sci. Ind Res: 43(21): 118-122.*

122. Aurangzeb, M: Qadeer, M.A. and Iqbal, J. 1992. Ethanol fermentation of raw starch. *Pak. J. Sci. Ind. Res. 35* (4): 162-164.

123. Aurangzeb, M. Qadeer, M.A. and Iqbal, J. 1992. Production of raw starch hydrolysing amylolytic enzymes by *Streptococcus bovis* - PCSIR-7 B. *Proc. Pakistan Acad. Sci. 29*(3): 227-236.

124. Aurangzeb, M., Qadeer, M.A. and Iqbal, J. 1991. Production of "raw starch hydrolysing enzymes" by mould cultures. *Proc. Pakistan Acad. Sci. 28:* 256-277.

125. Aurangzeb, M. Qadeer, M.A. and Iqbal, J. 1991. Shake flask studies on the production of raw starch hydrolysing amylolytic enzymes by *Aspergillus niger* PCSIR-10. *Pak. J. Sci. Ind. Res. 34*: 296-300.

126. Iqbal, J. and Tahavi, M. 1991. Effect of cadmium on germination, early seedling growth and soluble protein content in wheat (*Triticum aestivum* L. cv. Pak-81). *Sci. Int.* (Lahore). 3: 297-299.

127. Iqbal, J. and Majeed, K.A. 1991. Effect of mercury on germination, early seedling growth and soluble protein content in wheat. *Sci. Int.* (Lahore). 3: 233-235.

128. Iqbal, J. and Naz, S. 1989. Effects of Barium on germination, early seedling growth, soluble proteins and peroxidase activity in wheat (*Triticum aestivum* L. cv. Pak-81). *Pak. J. Agric. Res.* 10:15-22.

129. Iqbal, J., Butt, N. and Ahmad, M.S. 1988. Changes in peroxidase content and its isozymic forms in vitro calli of chickpea. *Pak. J. Science.* 39-40: 1-8.

130. Iqbal, J. and Mustaq, S. 1987. Effect of lead on germination, early seedling growth, soluble proteins and Acid phosphatases content in *Zea mays L. Pakistan J. Sci. Ind. Res.,* 30: 853-856.

131. Zaidi, S.A.H., Mahmood B.A., Iqbal, J. and Shah, F.H. 1986. Nitrate and nitrite content of various wheat varieties grown in Punjab. *Pak. J. Sci. Ind. Res.* 29(5): 357-360.

132. Iqbal, J., Naz, S. and Shamsi, S.R.A. 1984. Effects of post irradiation treatment of gibberellic and indole acetic acid on germination and early growth of *Helianthus annuus* L. *Biologia,* 30(1): 55-71.

133. Shamsi, S.R.A., Syed, T., Akhtar, K. and Iqbal, J. 1982. Effect of low dosages of gamma irradiation of seeds on the growth and yield of two cultivars of soybean *(Glycine max) Pak. J. Science,* 34: 71-78.

134. Iqbal, J. and Mahmood, S. 1980. Germination and growth of *Capsicum annuum* L. seedlings grown from gibberellic acid treated gamma irradiated seeds. *Biologia,* 26:173-181.

c. Local Refereed Journals:

135. Aslam, A., Ali A. and Iqbal, J. 2007. An efficient protocol for microtuberization in potato cultivar cardinal. Life Sciences International Journal; 1(3): 340-345.

136. Ali, A; Afrasiab, H; Saeed, M. and Iqbal, J. 2004. An invitro study of regeneration and micropropagation of *Mentha arvensis*. Int. J. Biol. Biotech., 1 (4) : 519-528.

137. Ali, S; Haq, I.U and Iqbal, J. 2003. Rate of citric acid fermentation by *Aspergillus niger* using stationary culture. *Journal of Natural Sciences and Mathematics.43* (1); 11-16.

138. Ali, S; Rehman, A.U ; Ehsan, A; Haq, I.U and Iqbal, J. 2003. Effect of vegetative inoculum on submerged citric acid fermentation by *Aspergillus niger. Pak. J. Biol. Sciences*., 6(4): 334 – 335.

139. Haq, I.U; Ishaq, A; Ali, S and Iqbal, J. 2002. Effect of calcium chloride on citric acid accumulation by Aspergillus *niger* in stirred fermentor. *Ind. J. Plant Sciences*.1 (4): 433-435.

140. Butt, W.A; Haq, I.U and Iqbal, J. 2002.Biosynthesis of xylanase by UV- treated mutant strain of *Aspergillus niger* GCBMX – 45. *Biotechnology*, 1 (1): 10- 14.

141. Ali, S., Haq, I.U. and Iqbal, J. 2002. Exploitation of raw sugarcane molasses for citric acid production by *Aspergillus niger – Indus J. Plant Sci*: 1 (2): 194-197.

142. Haq, I.U; Riaz, N; Ashraf, H; Qadeer, M.A and Iqbal, J.2002 Effect of inorganic salts on the biosynthesis of alpha amylase by B*acillus subtilis*. Indus Jour. Plant Sci., 1 (2): 115-119.

143. Ali, S; Haq, U.I.; Qadeer, M.A. and Iqbal, J. 2001. Biosynthesis of citric acid by locally isolated *Aspergillus niger* using sucrose-salt media. Online*. J. Biol. Sci*: 1 (4): 178-181.

144. Shoaib, K. and Iqbal, J. 1999. Callusing response of different explants and morphogenetic potential of calluses of soybean. *Pak. J. Pl. Sci.* 5(2): 133-146.

145. Altaf, N; Iqbal, J. and Ahmad, M.S. 1999. Some aspects of adventitious rooting in micro-sperma Lentil cv. Masoor-85. *Pakistan Journal of Biological Sciences*. 2(3): 998-1001.

146. Altaf, N; Iqbal, J. and Ahmad, M.S. 1999. Somaclonal variation in microsperma Lentil (*Lens culinaris* Medik) *Pakistan Journal of Biological Sciences.* 2(3): 697-699.

147. Shoaib, K and Iqbal, J. 1999. Histological studies on *in vitro* dedifferentiation in different explants of soybean. *Pak. J. Pl. Sc.* 5(1): 55-62.

148. Altaf, N; Iqbal, J. and Ahmad, M.S. 1998. Influence of explant source and medium ingredients on culture responses of microsperma lentil cultivar Masoor-85. *Pakistan Journal of Biological Sciences*. 1(4): 321-325.

149. Shoaib, K., Babar, A. and Iqbal, J. 1992. Changes in peroxidase content and its isozymic forms during *in vitro* root formation in soybean (*Glycine max* L. cv. William). *Acta. Sci.* 2(2): 101-108.

150. Iqbal, J. and Kafiatullah. 1992. Absorption and translocation of mercury in young wheat seedlings and its effect on growth and total proteins. *Acta. Sci.* 2: 37-44.

151. Iqbal, J. and Hussain, A. 1991. Cadmium uptake and distribution in Young Pea seedlings and its affect on growth. *Acta sci.*, 1(1): 37-46.

152. Iqbal, J., Siddiqui, F.A., Nazir, A. and Din, M. 1991: *In vitro* culture conditions for callogenesis, root and shoot initiation from callus cultures of sugarcane (*Saccharum officinarum* L.) Col. 54. *Acta. Sci.* 1: 85-94.

153. Iqbal, J., Hussain, A., Din, S. and Salariya, A.M.1991. Cadmium uptake and distribution in young pea seedlings and its effect on growth *Acta Sci. 1:* 37-46.

154. Iqbal, J. Nazir, A. and Siddiqui, F.A. 1991. Quantitative and qualitative changes in soluble protein during *in vitro* shoot and root regeneration from callus cultures of sugarcane (*Saccharum officinarum* L.) *Acta. Sci.* 1:161-168.

155. Iqbal, J., Azam, N. and Ehsan, I. 1991. *In vitro* culture conditions for callogenesis and induction of embryogenesis in citrus (*Citrus reticulata* L. cv. Blanco). *I. Acta Sci.* 1-12.

156. Iqbal, J., Haroon, M. and Ahmad, M.S. 1991. Acid Phosphatase: A possible marker of callus senescence and necrosis in chickpea (*Cicer arietinum* L.) Pakphyton 3:119-125.

157. Iqbal, J. and Azam, N. 1991. Changes in protein content during in vitro callogenesis and embryogenesis in *Citrus reticulata* L. cv. Blanco. III. *J. Syst. & Exp. Biol*. 1:44-50

158. Iqbal, J. and Ehsan, I. 1991. Changes in Peroxidase content and its isozymic forms during in vitro embryogenesis in citrus (*Citrus reticulata* L. cv. Blanco). II. *J. Syst. & Exp. Biol.* 1:11-18.

159. Qadeer, M.A., Rehman, M., Iqbal, J. and Ahmad, R. 1990. Studies on the production of extracellular proteolytic enzymes by *Bacillus substilis*. *Jour. Pure and Applied Sci.* 9:11-17.

160. Hasnain, S., Naz, R., and Iqbal, J. 1989. Modification of radiation damage with caffeine in *Vigna unguiculate*: Effects on germination, growth and anatomy of seedlings. *Jour. of Pure and Applied Sciences*. 8: 19-26.

161. Iqbal, J. and Mubarika, T. 1987. Effects of lead on germination, early seedling growth, soluble proteins and peroxidase activity in wheat (*Triticum aestivum* L.). *Mod. Trends. Pl. Sci. Res. (Pak):* 155-160.

162. Iqbal, J. and Ali, M. 1987. Effect of sodium azide treatment of seeds on growth, chlorophyll and protein content of rice seedlings. Jour. of Pure & Applied Sciences 6:23-27.

163. Iqbal, J. and Ahmad, N. 1985. Effects of pre- and post-irradiation treatment of sodium azide on germination and early growth of wheat, rice and maize seedlings. Jour. Pure and Applied Sciences, 4(1): 57-64.

164. Iqbal, J. and Zahur, M.S. 1983. Effect of gamma irradiation of seeds and sowing time on germination, survival and growth of *Capsicum annuum* L. plants. *Jour. Pure & Applied Science*, 2(2): 11-16.

165. Iqbal, J. 1968. Cellular damage and radio sensitivity of shoot apices of *Capsicum annuum* after acute gamma irradiation. *J. Sci. Res. Punjab University,* 3: 36-62.

d. International and Local Proceedings:

166. Javed, M.A., Misso, S., Mahmood, T., Haider, M.S., Shah, A.H., Rashid, V.N. and Iqbal, J. 2007. Effectiveness of alternate culture of salt

tolerant indica rice cultivars. African crop Science Conference Proceedings. Vol. 8; pp. 753-757.

167. Iqbal, J. 2005. G.M. Crops: Risks and concerns of the developing countries. Proceeding international congress of Bioethics; Tehran, Iran 26-28 March 2005, pp. 419-424.

168. Ali, S., Haq, I. and Iqbal, J. 2004. Role of additives on the secretion of citric acid from *Aspergillus niger*. Proceeding of 2nd National Conference of Biology, Lahore 22-24 April, 2004. Pp. 55-60.

169. Haq, I., Ali, S., Qadeer, M.A., Iqbal, J. 2002. Nitrogen requirement for enhanced citric acid production by filamentous fungi *Aspergillus niger*. Proc. Ist Nat. 26 Conf. Biol. Pp. 123-129.

170. Shoaib, K. and Iqbal J. 1997. Patterns of protein synthesis in different explants of soybean during *in vitro* dedifferentiation and callus proliferation. Endeavours in Biotechnology. PP 75-89.Proc. 4th National meeting of PTC, Department of Botany, University of Peshawar.

171. Aftab, F., Zafar, Y. and Iqbal, J. 1995. Development of protoplast technology in sugarcane. *Proc. Symp. Biotec. Sustainable Develop*: NIBGE: PP: 105-108.

172. Qadeer, A: Younas, O; Din, S.U. Choudry, M.Y; Qadeer, M.A. and Iqbal, J. 1993. Hydrolysis of penicillin G to 6-aminopenicillanic acid (6-APA) by free and immobilished penicillin amidase. Proc. Fifth Chem. Conf. PP 119-121.

173. Siddiqui, F.A., Naz, S. and Iqbal, J. 1993. *In vitro* propagation of carnation. Proc. II-International Tissue Culture Symp. *Pesh. Univ.* PP: 43-47.

174. Naz, S., Siddiqui, F.A. and Iqbal, J. 1993. Micropropagation of roses. Proc. II-International Tissue Culture Symposium. *Pesh. Univ.* PP: 48-54.

175. Naz, S., Siddiqui, F.A. and Iqbal, J. 1993. *In vitro* flowering of Hyacinths. Proc. II-International Tissue Culture Symposium. *Pesh. Univ.* PP: 40-42.

176. Qadeer, M.A., Aurangzeb, M. and Iqbal, J. 1991. Production of raw starch hydrolysing enzymes by mould cultures. Proc. Int. Symp. Biotechnology for Energy, PP: 119-128. Eds. K.A. Malik, S.H.M. Naqvi & M.I.H. Aleem. Published by NIAB/NIBGE Faisalabad, Pakistan.

177. Iqbal, J. 1986. Morpho-physiological effects of gamma irradiation on growth and yield of Agricultural crops. *Pak. Sci. Found. Projects Report I*, 142-143.

DNA Sequences in NCBI/Gene Bank Databases:

2003

1. Meksem, K., Ishihara, H., Koo, H., Shultz, J., Ali, S., Iqbal, J., Town, C.D., Lightfoot, D.A. (2003). *Fusarium solani* f. sp. Glycines whole genomes shotgun library, *Fusarium solani f.* sp. Glycines genomic survey sequence. Genebank (1,987 sequencers).

2. Ali S. Meksem k, I shihara H., shutz. J. Iqbal, J.

Light food DA & Town CS. 2003. End sequencing of BACs from a fingerprint physical map of causative agent of soybean sudden death syndrome, Fus arium verguliforme (ex-Fusarium soani f. sp. gcycines) Genebank CG812652-CG808501 (4,151 sequence).

2011

3. Hameed, U., Pan, Y-B., Iqbal, J. 2011. **GenBank; FR797967.** Isolation of resistant gene analogs from red rot resistant and susceptible sugarcane clones; *Saccharum* hybrid cultivar HSF-240, partial RGA-1 gene for NBS-LRR resistance protein.
4. Hameed, U., Pan, Y-B., Iqbal, J. 2011. **GenBank; FR797968.** Isolation of resistant gene analogs from red rot resistant and susceptible sugarcane clones; *Saccharum* hybrid cultivar HSF-240, partial RGA-2 gene for kinase resistance protein.
5. Hameed, U., Pan, Y-B., Iqbal, J. 2011. **GenBank; FR797969.** Isolation of resistant gene analogs from red rot resistant and susceptible sugarcane clones; *Saccharum* hybrid cultivar HSF-240, partial RGA-3 gene for kinase resistance protein.
6. Hameed, U., Pan, Y-B., Iqbal, J. 2011. **GenBank; FR797970.** Isolation of resistant gene analogs from red rot resistant and susceptible sugarcane clones; *Saccharum* hybrid cultivar HSF-240, partial RGA-4 gene for NBS-LRR resistance protein.
7. Hameed, U., Pan, Y-B., Iqbal, J. 2011. **GenBank; FR797971.** Isolation of resistant gene analogs from red rot resistant and susceptible sugarcane clones; *Saccharum* hybrid cultivar HSF-240, partial RGA-5 gene for NBS-LRR resistance protein.
8. Hameed, U., Pan, Y-B., Iqbal, J. 2011. **GenBank; FR797972.** Isolation of resistant gene analogs from red rot resistant and susceptible sugarcane clones; *Saccharum* hybrid cultivar HSF-240, partial RGA-6 gene for NBS-LRR resistance protein.
9. Hameed, U., Pan, Y-B., Iqbal, J. 2011. **GenBank; FR797973.** Isolation of resistant gene analogs from red rot resistant and susceptible sugarcane clones; *Saccharum* hybrid cultivar HSF-240, partial RGA-7 gene for NBS-LRR resistance protein.
10. Hameed, U., Pan, Y-B., Iqbal, J. 2011. **GenBank; FR797974.** Isolation of resistant gene analogs from red rot resistant and susceptible sugarcane clones; *Saccharum* hybrid cultivar HSF-240, partial RGA-8 gene for NBS-LRR resistance protein.
11. Hameed, U., Pan, Y-B., Iqbal, J. 2011. **GenBank; FR797975.** Isolation of resistant gene analogs from red rot resistant and susceptible sugarcane clones; *Saccharum* hybrid cultivar HSF-240, partial RGA-9 gene for NBS-LRR resistance protein.
12. Hameed, U., Pan, Y-B., Iqbal, J. 2011. **GenBank; FR797976.** Isolation of resistant gene analogs from red rot resistant and susceptible sugarcane clones; *Saccharum* hybrid cultivar HSF-240, partial RGA-10 gene for NBS-LRR resistance protein.
13. Hameed, U., Pan, Y-B., Iqbal, J. 2011. **GenBank; FR797977.** Isolation of resistant gene analogs from red rot resistant and susceptible sugarcane clones; *Saccharum* hybrid cultivar HSF-240, partial RGA-11 gene for NBS-LRR resistance protein.
14. Hameed, U., Pan, Y-B., Iqbal, J. 2011. **GenBank; FR797978.** Isolation of resistant gene analogs from red rot resistant and susceptible sugarcane clones; *Saccharum* hybrid cultivar HSF-240, partial RGA-12 gene for NBS-LRR resistance protein.
15. Hameed, U., Pan, Y-B., Iqbal, J. 2011. **GenBank; FR797979.** Isolation of resistant gene analogs from red rot resistant and susceptible sugarcane clones; *Saccharum* hybrid cultivar HSF-240, partial RGA-13 gene for NBS-LRR resistance protein.
16. Hameed, U., Pan, Y-B., Iqbal, J. 2011. **GenBank; FR797980.** Isolation of resistant gene analogs from red rot resistant and susceptible sugarcane clones; *Saccharum* hybrid cultivar HSF-240, partial RGA-14 gene for kinase resistance protein.

17. Hameed, U., Pan, Y-B., Iqbal, J. 2011. **GenBank; FR797981.** Isolation of resistant gene analogs from red rot resistant and susceptible sugarcane clones; *Saccharum* hybrid cultivar HSF-240, partial RGA-15 gene for kinase resistance protein.
18. Hameed, U., Pan, Y-B., Grisham, M.P., Iqbal, J. 2011. **GenBank; FR773982.** Isolation of resistant gene analogs from RSD resistant and susceptible sugarcane clones; *Saccharum* hybrid cultivar LCP 85-384, partial RGA-1 gene for kinase resistance protein.
19. Hameed, U., Pan, Y-B., Grisham, M.P., Iqbal, J. 2011. **GenBank; FR773983.** Isolation of resistant gene analogs from RSD resistant and susceptible sugarcane clones; *Saccharum* hybrid cultivar LCP 85-384, partial RGA-2 gene for kinase resistance protein.
20. Hameed, U., Pan, Y-B., Grisham, M.P., Iqbal, J. 2011. **GenBank; FR773984.** Isolation of resistant gene analogs from RSD resistant and susceptible sugarcane clones; *Saccharum* hybrid cultivar LCP 85-384, partial RGA-3 gene for NBS-LRR resistance protein.
21. Hameed, U., Pan, Y-B., Grisham, M.P., Iqbal, J. 2011. **GenBank; FR773985.** Isolation of resistant gene analogs from RSD resistant and susceptible sugarcane clones; *Saccharum* hybrid cultivar LCP 85-384, partial RGA-4 gene for NBS-LRR resistance protein.
22. Hameed, U., Pan, Y-B., Grisham, M.P., Iqbal, J. 2011. **GenBank; FR773986.** Isolation of resistant gene analogs from RSD resistant and susceptible sugarcane clones; *Saccharum* hybrid cultivar LCP 85-384, partial RGA-5 gene for NBS-LRR resistance protein.
23. Hameed, U., Pan, Y-B., Grisham, M.P., Iqbal, J. 2011. **GenBank; FR773987.** Isolation of resistant gene analogs from RSD resistant and susceptible sugarcane clones; *Saccharum* hybrid cultivar LCP 85-384, partial RGA-6 gene for NBS-LRR resistance protein.
24. Hameed, U., Pan, Y-B., Grisham, M.P., Iqbal, J. 2011. **GenBank; FR773988.** Isolation of resistant gene analogs from RSD resistant and susceptible sugarcane clones; *Saccharum* hybrid cultivar LCP 85-384, partial RGA-7 gene for NBS-LRR resistance protein.
25. Hameed, U., Pan, Y-B., Grisham, M.P., Iqbal, J. 2011. **GenBank; FR773989.** Isolation of resistant gene analogs from RSD resistant and susceptible sugarcane clones; *Saccharum* hybrid cultivar LCP 85-384, partial RGA-8 gene for NBS-LRR resistance protein.
26. Hameed, U., Pan, Y-B., Grisham, M.P., Iqbal, J. 2011. **GenBank; FR773990.** Isolation of resistant gene analogs from RSD resistant and susceptible sugarcane clones; *Saccharum* hybrid cultivar LCP 85-384, partial RGA-9 gene for NBS-LRR resistance protein.
27. Hameed, U., Pan, Y-B., Grisham, M.P., Iqbal, J. 2011. **GenBank; FR773991.** Isolation of resistant gene analogs from RSD resistant and susceptible sugarcane clones; *Saccharum* hybrid cultivar LCP 85-384, partial RGA-10 gene for NBS-LRR resistance protein.

2013

28. Alvi, A.K., and Iqbal, J. 2013. **KC571250.** *Saccharum* hybrid cultivar HSF-240 phenylalanine ammonia-lyase (PAL) mRNA, molecular and biochemical characterization of red rot resistant and susceptible genotypes of sugarcane (*Saccharum* spp. hybrids).

29. Alvi, A.K., and Iqbal, J. 2013. **KC571251.** *Saccharum* hybrid cultivar Co-1148 phenylalanine ammonia-lyase (PAL) mRNA, molecular and biochemical characterization of red rot resistant and susceptible genotypes of sugarcane (*Saccharum* spp. hybrids).
30. Muhammad, K., Pan, Y-B., Ahmad, H., Riaz, H., Iqbal, J. 2013. **AB836666.** *Saccharum* hybrid cultivar DNA, resistance gene analogues RGA-2, cultivar: NSG-311.
31. Muhammad, K., Pan, Y-B., Ahmad, H., Riaz, H., Iqbal, J. 2013. **AB836667.** *Saccharum* hybrid cultivar DNA, resistance gene analogues RGA-3, cultivar: NSG-311.
32. Muhammad, S., Pan, Y-B., Ahmad, H., Riaz, H., Iqbal, J. 2013. **AB836668.** *Saccharum* hybrid cultivar DNA, resistance gene analogues RGA-4, cultivar: NSG-311.

2017

33. Alvi, A.K., and Iqbal, J. 2013. **KC571250.** *Saccharum* hybrid cultivar HSF-240 phenylalanine ammonia-lyase (PAL) mRNA, molecular and biochemical characterization of red rot resistant and susceptible genotypes of sugarcane (*Saccharum* spp. hybrids).
34. Alvi, A.K., and Iqbal, J. 2013. **KC571251.** *Saccharum* hybrid cultivar Co-1148 phenylalanine ammonia-lyase (PAL) mRNA, molecular and biochemical characterization of red rot resistant and susceptible genotypes of sugarcane (*Saccharum* spp. hybrids).
35. Muhammad, K., Pan, Y-B., Ahmad, H., Riaz, H., Iqbal, J. 2013. **AB836666.** *Saccharum* hybrid cultivar DNA, resistance gene analogues RGA-2, cultivar: NSG-311.
36. Muhammad, K., Pan, Y-B., Ahmad, H., Riaz, H., Iqbal, J. 2013. **AB836667.** *Saccharum* hybrid cultivar DNA, resistance gene analogues RGA-3, cultivar: NSG-311.
37. Muhammad, S., Pan, Y-B., Ahmad, H., Riaz, H., Iqbal, J. 2013. **AB836668.** *Saccharum* hybrid cultivar DNA, resistance gene analogues RGA-4, cultivar: NSG-311.
38. Khan,M., Pan,Y.-B. and Iqbal,J. 2017. **KX611612.1** *Saccharum* hybrid cultivar CPSG-437 RAPD marker genomic sequence.
39. Khan,M., Pan,Y.-B. and Iqbal,J. 2017. **KX611613.1** *Saccharum* hybrid cultivar CPSG-3481 RAPD marker genomic sequence
40. Khan,M., Pan,Y.-B. and Iqbal,J. 2017. **KX611614.1** *Saccharum* hybrid cultivar CP77-4001 RAPD marker genomic sequence.
41. Khan,M., Pan,Y.-B. and Iqbal,J. 2017. **KX611615.1** *Saccharum* hybrid cultivar CPF-237 RAPD marker genomic sequence.
42. Khan,M., Pan,Y.-B. and Iqbal,J. 2017. **KX611616.1** *Saccharum* hybrid cultivar NSG-59 RAPD marker genomic sequence.
43. Khan,M., Pan,Y.-B. and Iqbal,J. 2017. **KX611617.1** *Saccharum* hybrid cultivar HoG-315 RAPD marker genomic sequence.
44. Khan,M., Pan,Y.-B. and Iqbal,J. 2017. **KX611618.1** *Saccharum* hybrid cultivar SPSG-26 RAPD marker genomic sequence.
45. Khan,M., Pan,Y.-B. and Iqbal,J. 2017. **KX611619.1** *Saccharum* hybrid cultivar CSSG-2402 RAPD marker genomic sequence.

46. Khan,M., Pan,Y.-B. and Iqbal,J. 2017. **KX611620.1** *Saccharum* hybrid cultivar CSSG-668 RAPD marker genomic sequence.
47. Khan,M., Pan,Y.-B. and Iqbal,J. 2017. **KX611621.1** *Saccharum* hybrid cultivar SPSG-79 RAPD marker genomic sequence.
48. Khan,M., Pan,Y.-B. and Iqbal,J. 2017. **KX611622.1** *Saccharum* hybrid cultivar SPF-241 RAPD marker genomic sequence.
49. Khan,M., Pan,Y.-B. and Iqbal,J. 2017. **KX611623.1** *Saccharum* hybrid cultivar HoSG-449 RAPD marker genomic sequence.
50. Khan,M., Pan,Y.-B. and Iqbal,J. 2017. **KX641242.1** *Saccharum* hybrid cultivar CPSG-437 cultivar CPSG-437 clone 1 smut resistance RAPD-based SCAR marker genomic sequence.
51. Khan,M., Pan,Y.-B. and Iqbal,J. 2017. **KX641246.1** *Saccharum* hybrid cultivar CPSG-3481 cultivar CPSG-3481 clone 1 smut resistance RAPD-based SCAR marker genomic sequence.
52. Khan,M., Pan,Y.-B. and Iqbal,J. 2017. **KX641251.1** *Saccharum* hybrid cultivar CP77-4001 cultivar CP77-4001 clone 1 smut resistance RAPD-based SCAR marker genomic sequence.
53. Khan,M., Pan,Y.-B. and Iqbal,J. 2017. **KX641254.1** *Saccharum* hybrid cultivar CPF-237 cultivar CPF-237 clone 1 smut resistance RAPD-based SCAR marker genomic sequence.
54. Khan,M., Pan,Y.-B. and Iqbal,J. 2017 **KX641256.1** *Saccharum* hybrid cultivar NSG-59 cultivar NSG-59 clone 1 smut resistance RAPD-based SCAR marker genomic sequence.
55. Khan,M., Pan,Y.-B. and Iqbal,J. 2017. KX641258.1 *Saccharum* hybrid cultivar HoG-315 cultivar HoG-315 clone 1 smut resistance RAPD-based SCAR marker genomic sequence

HEC APPROVED PH.D. SUPERVISOR IN BIOLOGICAL SCIENCES

PH.D. PROGRAMMES

A) PERSONAL LAB:

a) Ph.D. Awarded

1. "اردو تفسیری ادب میں سائنسی اکتشافات۔ایک تحقیقی مطالعہ"

   2019. Riaz Meboob

2. Phenotypic and Molecular marker Assited Screening of R Gene Analogues Against *Alternaria solani* for Early Blight Disease in Tomato 2018. Nafisa
3. Molecular Chracterization of Resistent and Susceptible Sugarcane (Saccharum hybrids L.) Cultivars to Smut Disease 2018. Mehwish Khan
4. Molecular and biochemical differentiation between red rot resistant and susceptible genotypes of sugarcane (*Saccharcum* spp.) hybrids-2013. **Ambreen Khadija Alvi**.
5. Molecular mapping of quantitative trait loci (QTL) for salt tolerance in indica rice using microsatellite markers – 2013. **Md. Shah Kamal Khan.**
6. Sugarcane transformation, using crystal insecticidal gene(s) of *Bacillus thuringiensis* and its molecular characterization (2012) **Hafiz Muhammad Sohail Akram**.
7. Molecular characterization of resistant and susceptible sugarcane clones to the red rot and ratoon stunting disease (2012) **Usman Hameed**.
8. Identification and characterization of rust resistance gene(s) in commercial cultivars of sugarcane (*Saccharum hybrids* L.) 2012 **Khushi Muhammad.**
9. Studies on the denitrification loss from irrigated cotton fields under semiarid subtropical conditions (2009) **Rehmat Ali**.
10. Optimization of cultural conditions on the biosynthesis of xylanase by locally isolated *Aspergillus niger* (2008) **Waseem Ahmad Butt**.
11. Biosorption of heavy metals (Cu, Ni & Pb) immobilized microalgae (2008) **Nasreen Akhtar**.
12. Phenolics in *in vitro* cultures of *Mangifera indica* variety chaunsa during Callogenesis and embryogenesis (2007) **Farah Khan**.

13. Drought tolerance studies on wheat as affected by different growth substances (2007) **Hafiz Muhammad Akram**.

14. Transgenic expression and analysis of salt tolerance/cane borer resistance in sugarcane (*Saccharum officinarum*) (2007) **Muhammad Safdar**.

15. Biochemical and molecular markers of somaclonal variants and induced mutants of potato (*Solanum tubersosum* L) (2006) **Humaira Farooqi**.

16. Large scale production of sugarcane through micropropagation and *in vitro* selection of mutants resistant to red rot disease in sugarcane using induced mutations (2006) **Aamir Ali**.

17. Physiological studies in some halophytic desert grasses of cholistan (2006) **Kalsoom Akhtar**.

18. Development of cotton leaf curl disease (CLCud) resistance in transgenic tobacco (2006) **Muhammad Siddique**.

19. Biological Control of different soil borne fungal disease of Potato *(Solanum tuberosum L.)* raised through tissue culture by using vesicular arbuscular mycorrhiza and other antagonistic fungi (2005) **Masood Khan Lodhi**.

20. Biochemical and molecular investigation of somaclonal variants in sugarcane (*Saccharum officinarum* cv. Col.54) (2005) **Rana Abrar Hussain**.

21. Studies on the submerged fermentation of citric acid by *Aspergillus niger* in stirred fermenter (2004) **Sikandar Ali**.

22. Studies on the biosynthesis of alpha amylase by a mutant strain of *Bacillus* species (2004) **Muhammad Hamad Ashraf**.

23. Studies on the microbial production of penicillin amidase for the conversion of penicillin G to 6-amino penicillin acid (6-Apa) (2004) **Arifa Qadeer**.

24. Essential oils and lipids of citrus species produced through Tissue Culture Technique. (2002) **Shahid Mahmood**.

25. Mechanism of salt tolerance in microorganisms exposed to saline stress. (1999) **Rashid Ali**.

26. Somaclonal variation in lentil (*Lens culinaris* Medik). (1997) **Nafees Altaf**.

27. Clonal propagation of pistachio through tissue culture. (1997) **Athar Hussain**.

28. *In vitro* studies on histological and biochemical changes associated with differentiation, callogenesis and organogenesis in soybean (*Glycine max*).(1997) **Kunwar Shaib**.

29. Protoplast culture, regeneration and somatic hybridization in *Saccharum officinarum* L. (1997) **Faheen Aftab**.

30. Phenolics in *in vitro* cultures of chickpea (*Cicer arietinum* cv. CM 70)

during callogenesis and organogenesis. (1996) **Shagufta Naz**.

31. Studies on the production of raw starch hydrolysing enzymes by various microbes and their use in ethanol fermentation. (1994) **Muhammad Aurangzeb**.

32. A study of the elimination of sugarcane mosaic virus from *Saccharum officinarum* by means of *in vitro* meristem and callus cultures and some biochemical aspects of regenerated healthy and infected plants. (1992) **Fayyaz Ahmad Siddiqui**.

33. Biosynthesis of Galactosidases from locally isolated micro-organisms (1987) Nasreen Zaidi

B) M.PHIL AWARDED

1. *In vitro* microtuberisation of three elite cultivars (Cardinal, Diamant and Red Norland) of potato (*Solanum tuberosum* L.) (2002) **Aafia Aslam**.

2. Transcription profiling and bioinformatic analysis of *Saccharum officinarum* (hybrid) aquaporin gene from sugarcane cultivars in response to PEG-8000 treatment. 2015. RIDA FAIZI.

3. Vector construction having Cry1Ac gene targeting tobacco chloroplast for contained insect resistance. 2015. AMNA SHAKARULLAH.

4. Resistance Gene Analogues based Molecular Identification for Smut Disease in Sugarcane. 2018. Tamanna Muqaddas.

5. RAPD based molecular characterization of drought resistance in some wheat (*Triticum aestivum* L.) varieties grown in Punjab under drought stress. 2019. Summat Tariq.

6. Application of RAPD technique for screening of drought resistance in some wheat (*Triricum aestivum* L.) varieties grown in Punjab under drought stress. 2019. Ayman Saba.

(DR. JAVED IQBAL)
Emeritus Professor

D) M.Sc GUIDANCE

S.#	Name of Student	Title of Thesis	Academic Session
1.	Shaukat Mahmood	Morpho-physiological studies of *Capsicum annuum* L. seedlings grown from gibberellic acid treated irradiated seeds.	1973
2.	Muhammad Aslam	Morpho-physiological studies of *Capsicum annuum* L. seedling grown from irradiated seeds.	1973
3.	Saima Aslam	Growth and Protein Metabolism of rice seedlings (*Oryaz sativa* L) grown from irradiated seeds.	1973
4.	Kosar Fatima	Effects of hormones on the early growth of rice seedlings (Basmati) grown from irradiated seeds.	1973
5.	Sarwat Fatima	Effect of acute gamma irradiation on nucleic acids (RNA + DNA) and the total nitrogen content in different varieties of *Triticum vulgare* L.	1974
6.	Samina Noreen	Effect of post-irradiation seed treatment of gibberellic and indole acetic acid on germination and early growth of *Helianthus annuus* L.	1978
7.	Manzoor Ahmad Jan	Effects of pre and post-irradiation treatment of Ascorbic acid on germination and early growth of wheat, rice and maize.	1979
8.	Niaz Ahmad	Effects of pre and post-irradiation treatment of sodium azide on germination and early growth of wheat, rice and maize.	1979
9.	Naila Noreen	Effect of post-irradiation treatment of indole acetic acid and Zinc on germination and early growth of *Brassica compestris* L.	1983
10.	Mah-e-Naz	Effect of post-irradiation treatment of Gibberellic acid and Copper on germination and early gowth of *Triticum vulgare* L.	1983
11.	Kheed Gul	Effect of Post-irradiation treatment of Gibberellic acid and Zinc on germination and early gowth of *Triticum vulgare* L.	1983
12.	Asif Mahmood	Effect of Post-irradiation treatment of Indole acetic acid and Managenese on germination and early gowth of *Triticum vulgare* L.	1983
13.	Humera Farooqi	Effects of Post-irradiation IAA treatment of seeds on distribution of Nucleic acid content during early growth of *Raphanus sativus* L.	1984

14.	Amtul Wadood	Effect of Gamma-irradiation of seeds on soluble and total proteins during early growth of *Oryaz sativa* L. (Cv. K.S. 282).	1984
15.	Shehla Shah	Effect of harvesting intervals and precipitation techniques on the quality of protein concentrates in *Trifolium resupinatum*.	1984
16.	Afrasiab Yousaf Zai	Effect of gamma irradiation of seeds on distribution of Nucleic acid content during early growth of *Oryza sativa* L. (Cv. IRRI-6).	1984
17.	Fayyaz Ahmad Siddiqui	Trace elements (Zn, Cu, Sn, Pb) in commercially preserved fruit and fruit products.	1984
18.	Sadia Akram	Effect of Sodium Chloride salinity and kinetin on germination and early growth of wheat (*Triticum aestivum* L.) and Maize (*Zea mays* L.).	1985
19.	Naureen Rafique	Toxic action of Barium on early growth, Protein and Phosphatases content in maize (*Zea mays* L. Cv. Akbar).	1985
20.	Sahar Mushtaq	Toxic action of Lead on early growth, Protein and Phosphatases in Maize (*Zea mays* L. Cv. Akbar).	1985
21.	Mohsin Ali	Effect of Sodium Azide treatment of seeds on early gowth and chlorophyll contents of rice	1985
22.	Syed Aftab Haider Zaidi	A comparison of Nitrate and Nitrite content in some varieties of wheat grown in Punjab.	1985
23.	Darakhshanda Khurshid	Effect of Barium chloride on early growth, chlorophyll and total nitrogen content of *Barassica compestris*.	1986
24.	Farkhanda Musarrat	Toxic effect of Lead Nitrate on early growth, peroxidases and protein contents in wheat seedlings (*Triticum aestivum* L. Cv. FSA-83).	1986
25.	Fauzia Ijaz	Toxic action of Barium on early growth of Maize seedling and their reversal by GA_3 treatment.	1986
26.	Zaheer Babar	Toxic effects of Lead Nitrate on early growth, Nucleic acids and Protein contents in maize seedling (*Zea mays* L. Cv. Sultan).	1986
27.	Shakeel Ahmad Khan	Effect of Gamma irradiation of seeds on germination growth and yield of two cultivars of wheat (*Triticum aestivum* L. Cv. FSA-83).	1986
28.	Farida Majid	Soluble protein contents and its electrophoretic pattern in *in vitro* propagated calli of chickpea (*Cicer arietinum* L.).	1987

29.	Farah Saeed	DNA and RNA content of *in vitro* propagated calli of chickpea (*Cicer arietinum* L. CM 72).	1987
30.	Nadira Butt	Changes in peroxidase content and its isozymic forms in *in vitro* calli of chickpea (*Cicer arietinum* L. Cv. CM 72).	1987
31.	Tayyaba Mubarika	Toxic effect of Lead on germination, early seedling growth, soluble Protein and Peroxidase content in wheat (*Triticum aestivum* L. Cv. Pak. 81).	1987
32.	Shagufta Naz	Toxic effect of Barium on germination, early seedling growth soluble Protein and Peroxidase content in wheat (*Triticum aestivum* L. Cv. Pak. 81).	1987
33.	Sarwat Nazir	Phenylalanine Ammonia lyase (PAL) content *in vitro* propagated calli of chickpea (*Cicer arietinum*L. CM 72).	1988
34.	Munazza Haroon	Acid phosphatases content of *in vitro* propagated calli of chickpea (*Cicer arietinum* L. CM 72).	1988
35.	Kh. Asif Majeed	Effect of Mercury on germination, early seedling growth and soluble protein content in wheat (*Triticum aestivum* L. Cv. Pak. 81)	1988
36.	Muhammad Tahawi	Effect of Cadmium on germination, early seedling growth and soluble protein content in wheat (*Triticum aestivum* L. Cv. Pak. 81).	1988
37.	Zubeda Chaudhry	Callus formation and differentiation from various explants of *Citrus reticulata* L. Cv. BLANCO (Kinnow Mandarin).	1989
38.	Faheem Aftab	Polyphenol oxidase content of *in vitro* propagated calli of chickpea (*Cicer arietinum* L.)	1989
39.	Kafiat ullah	Absorption and translocation of Mercury in young wheat seedling and its effect on growth.	1989
40.	Abrar Hussain	Cadmium uptake and distribution in young pea seedlings and its effect on growth.	1989
41.	Fouzia Mussarat	Effects of Zinc on early growth of seedling and its uptake by shoot and root in wheat (*Triticum aestivum* L. Cv. FD. 83).	1989
42.	Afshan Babar	Changes in proteins, peroxidases and oil content in calli of soybean (*Clycine max* Cv. William).	1990
43.	Aqsa Nazir	Changes in protein content during *in vitro* root and shoot regeneration from callus cultures of sugarcane (*Saccharum officinarum* L.).	1990
44.	Mamoona Din	Changes in peroxidase content and isozymes during root and shoot regeneration from callus cultures of sugarcane (*Saccharum officinarum* L.)	1990
45.	Naila Azam	Changes in protein content during *in vitro* callogenesis and embryogenesis in citrus (*Citrus reticulata* Cv. Kinnow).	1990

46.	Iram Ehsan	Changes in peroxidase content and isozymes during *in vitro* callogenesis and embryogenesis in citrus (*Citrus reticulata* Cv. Kinnow).	1990
47.	Iram Latif	*In vitro* regeneration of strawberry (*Fragaria* Sp.).	1991
48.	Fauzia Farrukh	*In vitro* shoot and root formation from nodal explants of soybean (*Glycine max.*).	1991
49.	Mannaza Ijaz	Effect of Zinc and Cadmium on germination, early growth, Protein and acid Phosphatase content in maize (*Zea mays* Cv. Sultan).	1991
50.	Zahid Hussain	Effect of Nickle chloride on germination and early growth of *Gossypium hirsutum* L. Cv. FH 87.	1992
51.	Mussarat Nasim	Total phenolics in *in vitro* callus culture of chickpea (Cicer arietinum Cv. Pb-1).	1992
52.	Sumaira Naz	Total Phenolics in *in vitro* callus cultures of chickpea (*Cicer arietinum* Cv. 6153).	1992
53.	Sadia Ambreen	Effect of Nickle chloride on early growth of *Zea mays* Cv. Sultan.	1992
54.	Shazia Ambreen	*In vitro* Plant regeneration via somatic embryogenesis in Peanut (*Arachis hypogea* L. Cv. Bari 89)	1993
55.	Raheela Ayub	*In vitro* micropropagation, hardening and acclimatization of Potato (*Solanum tuberosum* L. Cv. Cardinal & Diamant).	1993
56.	Farzana Malik	*In vitro* micropropagation, hardening and acclimatization of Potato (*Solanum tuberosum* L. Cvs. Desiree & Patrones).	1993
57.	Tasneem Kausar	Changes in proteins, acid phosphatases, esterases during callogenesis in soybean (*Glycine max* L.) Cv. W.1.	1993
58.	Khushnuda Gulfam	Effect of Zinc and Lead on germination, early seedling growth, protein and acid phosphatase content in maize (*Zea mays* L. Cv. Sultan).	1993
59.	Samina Ambreen	*In vitro* microtuber induction in *Solanum tuberosum* L. Cv. Desiree.	1994
60.	Fauzia Anwar	*In vitro* microtuber induction in *Solanum tuberosum* L. Cv. Patrones.	1994
61.	Tayyaba Noreen	Callogenesis and organogenesis in *Solanum tuberosum* L. Cv. Cardinal.	1994
62.	Barza Saeed	Effect of Nickle on early growth and chlorophyll pigments of young maize.	1994
63.	Ghazala Nasim	The influence of Nickle on early growth and esterases in maize (*Zea mays* L. Sultan).	1994
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65.	Asma Ashraf	Micropropagation of *Eucalyptus camaldulensis*.	1995

66.	Tehseen Zehra	*In vitro* callogenesis and organogenesis of *Arachis hypogae* Var. Bari. 89.	1995
67.	Samiya Zahur	*In vitro* microtuber induction in *Solanum tuberosum* L. Cvs. Cardinal, Desiree, Patronas, Parus and biochemical analysis of enzyme peroxidase during different ontogenetic stages of microtuber formation.	1995
68.	Fauzia Zahra	*In vitro* organogenesis of *Ipomoea batatas* (L.) Lam Cv. Portio Rico.	1995
69.	Shehla Noreen	Some biochemical markers of sex determination (Phenolics and related enzymes) in *Carica papaya*.	1996
70.	Aneela Maqbool	Some biochemical markers of sex determination (Phenolics and related enzymes) in *Simmondsia chinensis* (JOJOBA).	1996
71.	Ayesha Sharif	Some biochemical markers of sex determination (Acid and basic phosphatases, esterases) in *Carica papaya.*	1996
72.	Muhammad Siddique	Micropropagation of *Azadirachta indica*	1996
73.	Tamanna Muqaddas	Effects of Nickle and Copper toxicity on early growth, soluble protein and peroxidases content of wheat (*Triticum aestivum* cv. Inqalab 91) seedlings.	1996
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75.	Juveria Omer	Comparison of soluble proteins and isozymes of peroxidase of male and female plants of Jojoba (*Simondsia chinensis* (Link) Schneider.	1997
76.	Rehana Kausar	Quantitative and qualitative changes in enzymes esterase and Acid phosphatase during *in vitro* ontogenetic development of microtubers in *Solanum tuberosum* L. cv. Cardinal.	1997
77.	Zeb Siddique	Biochemical analysis of enzymes peroxidase, esterase and acid phosphatase in different cultivars of sugarcane (Saccharum officinarum L.)	1997

78.	Fouzia Zahra	In vitro organogenesis in Impomea batatas (Linn.) Lens	1997
79.	Sabahat Noor	Biochemical markers of varietal differentiation in six cultivars of Wheat (*Triticum aestivum*)	1998
80.	Neelma Munir	Changes in soluble protein - peroxidase and Acid phosphatase during somatic embryogenesis in sugarcane (*Saccharum officinarum L*. Col. 54)	1998
81.	Asifa Munawar	Micropropagation of Jojoba (*Simmondsia chinensis*)	1998
82.	Saiqa Amber	Micropropagation of *Prunus persica*	1998
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85.	Farhat Jabeen	*In vitro* regeneration of jojoba (*Simmondsia chinensis*)	1999
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93.	Ambreen Idrees	*In vitro* somatic embryogenesis in *Azadirachta indica* A. Juss (var. Neem).	2000

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