

MUHAMMAD FAHIM

DIRECTOR & Associate Professor

Centre for Omic Sciences, 2 Ahmad Faraz Block, Islamia College University Peshawar 25120, Peshawar, KP 25120 | H: 00923331660521 | M: 92-3009075775 | fahim@icp.edu.pk

SUMMARY

Experienced researcher with a demonstrated history of working in the education management and research industry. Skilled in Plant Biotechnology, Plant Virology with a strong command over RNAseq and other relevant tools. Strong professional with a Doctor of Philosophy focused in Plant Biotechnology and Plant Developmental Genetics from The Australian National University Canberra.

RESEARCH INTERESTS

My research interests include applied agricultural biotechnology, the structure and expression of plant genomes, the discovery and application of molecular genetic markers and applied bioinformatics, with a focus on crops. I have specific interests (but not limited to) : (1) application of next generation sequencing of small RNAs and RNAseq to study biotic and abiotic stresses in plants of economic importance; (2) development of tools for identifying disease resistance/Abiotic stress tolerance; (3) Application of RNAi/artificial microRNA technology for resistance against biotic stresses and metabolic engineering of novel plant products (4) Conservation of high value medicinal plants for improved livelihood of small-scale farmers.

EDUCATION

2011 Ph.D.: Plant Biotechnology

The Australian National University, Canberra, Australia/Plant Industry CSIRO Canberra – Canberra Australia

Dissertation: Natural and Engineered Resistance against Wheat streak mosaic virus.

PhD Supervisors: Dr. Philip J. Larkin (Plant Industry CSIRO)

Dr. Anthony A. Millar (The Australian National University Canberra)

2003 M.Sc. (Hons.): Plant Pathology **with Distinction**

UNIVERSITY OF AGRICULTURE, PESHAWAR PAKISTAN
– Peshawar Pakistan

Thesis: Management of Viral Diseases of Tomato in Swat District Northwest Pakistan

2001 B.Sc. (Hons.): Agriculture **with Distinction**

UNIVERSITY OF AGRICULTURE, PESHAWAR PAKISTAN
– Peshawar Pakistan

Project: Characterization of Colletotrichum sp from Guava Orchards.

PROFESSIONAL EXPERIENCE

- Current since** **Director/Associate Professor**
10/2018 **Centre for Omics Sciences, Islamia College University**
Peshawar
– Peshawar, KP
- 03/2013 to** **Assistant Professor**
09/2018 **IBGE, University of Agriculture Peshawar,**
– Peshawar, KP Pakistan
- 09/2011 to** **Research Professor**
01/2013 **Center for Plant Ambient Temperature Sensing, Korea**
University
– Seoul, South Korea
- 11/2006 to** **Lecturer**
12/2012 **Department of Microbiology, Hazara University**
– Mansehra, KP, Pakistan
- 07/2006 to** **Seed Certification Officer (Seed Health/Plant Virology)**
11/2006 **Federal Seed Certification and Registration Department,**
Ministry of Food & Agriculture
– G-9/4, Islamabad, Pakistan
- 10/2004 to** **Research Fellow**
06/2006 **Crop Disease Research Program, IPEP, NARC**
– Islamabad Pakistan
- 06/2001 to** **Research Fellow (Plant Virology)**
06/2002 **Department of Plant Pathology, University of Agriculture**
Peshawar
– Peshawar, KP, Pakistan
- 07/2002 to** **Technical Sales Officer**
09/2004 **Iqbal Agro Services**
– Kabal, Swat, KP Pakistan

PUBLICATIONS

PATENT

1. Transgenic Wheat plants immune to Wheat streak mosaic virus. US Patent 20110154534 Granted September 18, **2013**

JOURNAL ARTICLES

1. Rizwan Khan, Najeeb Ullah, Khalid Pervaiz Akhtar, Shabir Ullah, Ijaz Ahmad, **M. Fahim (2018)** Characterization of Phytoplasma associated with Periwinkle Witches'-Broom Disease in Pakistan. Plant Protection, 02 (03). 145-148

2. Khan, R., Shah. SH., Ahmad, I., Rafi, A., and **M. Fahim (2018)**. Prevalence and Diversity of Candidatus Liberibacter species in Main Citrus Growing areas of Malakand in Northwest Pakistan. (Submitted to European Journal of Plant Pathology).
3. Nafees Bacha, Safwan Ahmed Murshed, **M. Fahim (2018)** Evaluation and Assessment of Aflatoxin M1 in Milk and Milk Products in Yemen Republic Emeritus Journal of Food and Agriculture (Submitted)
4. Zafar, Z., Shah SH., Numan M., Iqbal Z., **M. Fahim (2018)**. Alteration in lycopene biosynthesis pathway in response to virus infection in tomato. (Submitted to European Journal of Plant Pathology)
5. Rubina Gul, Saad Hussain Shah, Sultan Akbar Jadoon, Ijaz Ahmad, Najib ullah, **M. Fahim (2018)** Occurrence of Fusarium Head Blight in Northwest Pakistan and Evaluation of Wheat germplasm for resistance using Molecular Markers (Accepted: Pakistan Journal of Botany).
6. Raja Asad Ali Khan, Bilal Ahmad, Musharaf Ahmad, Asad Ali, Ishrat Naz and **M. Fahim. (2019)** Management of *Ralstonia solanacearum* (Smith) Yabuuchi wilt in tomato (*Solanum Lycopersicum* L.) with dried powder of the medicinal plant *Withania somnifera* (L.) Dunal. DOI:10.30848/PJB2019-1(8)
7. Akbar A, Hussain S, Ullah K, **Fahim M**, Ali GS **(2018)** Detection, virulence and genetic diversity of Fusarium species infecting tomato in Northern Pakistan. PLoS ONE 13(9): e0203613. <https://doi.org/10.1371/journal.pone.0203613>
8. Nasim Z, **Fahim M** and Ahn J **(2017)**. Possible role of MADS AFFECTING FLOWERING 3 and B-BOX DOMAIN PROTEIN 19 in flowering time regulation of Arabidopsis mutants with defects in nonsense-mediated mRNA decay. Front. Plant Sci. 8:191. doi: 10.3389/fpls.2017.00191
9. Arif, M., W. Khan, M. Ibrahim, **M. Fahim (2015)** Citrus tristeza virus: An increasing trend in the virus occurrence and distribution in citrus fruits of Northwest, Pakistan. African Journal of Biotechnology. Vol. 14(30), pp. 2352-2360
10. Arif, M., M. Ali, A. Rehman and **M. Fahim (2014)**. Detection of Potato mop-top virus in soils and potato tubers using bait-plant bioassay, ELISA and RT PCR. Journal of Virological Methods 195, 221-227 <http://dx.doi.org/10.1016/j.jviromet.2013.10.022>
11. Rafi, A., A. Hameed, A.A. Akhar, Farhatullah, K., Sohail, M., Shahid and **M. Fahim. (2013)** Identification and Characterization of Xanthomonas oryzae pv oryzae in North-West of Pakistan. Sarhad J. Agric. 29(3) 423-431
12. Arif, M., M. Ali, A. Rehman and **M. Fahim (2013)**. Occurrence of Potato mop top virus in Northwest of Pakistan. European Journal of Plant Pathology 137: 787-796.
13. Hayes, R.C., M.T. Newell, L.R. DeHaan, K.M. Murphy, S. Crane, M.R. Norton, L.J. Wade, M. Newberry, **M. Fahim**, S.S. Jones, T.S. Cox, and P.J. Larkin **(2012)**

Perennial cereal crops: An initial evaluation of wheat derivatives Field Crops Research 133 68–89

14. **M. Fahim**, P.J. Larkin, S. Haber, S. Shorter, P. Lonergan, G. Rosewarne (2012) Effectiveness of three potential sources of resistance against Wheat streak mosaic virus under field conditions. *Australasian Plant Pathology* 41:301–309
15. **M. Fahim.**, AA. Millar., CC. Wood., PJ. Larkin (2012) Resistance to Wheat streak mosaic virus generated by expression of artificial polycistronic microRNA in Wheat. *Plant Biotechnology Journal*. 10: 150–163
16. **M. Fahim**, A. Mechanicos, LA. Navarette, S., Haber, PJ. Larkin (2012) Resistance to Wheat Streak Mosaic Virus in Australia – a Survey of Resources and Development of Markers. *Plant Pathology* 61, 425–440
17. Shah, H., Yasmin, T., **Fahim, M.**, Hameed, S., Haque, M.I., Munir, M., and K.A., Khanzada, (2011). Reaction of exotic and indigenous capsicum genotypes against Pakistani isolates of Chili veinal mottle virus. *Pakistan Journal of Botany* 43(3): 1707-1711
18. **M. Fahim.**, Navarrete, LA., Millar, AA and PJ. Larkin (2010) Hairpin derived from viral NIa gene confers immunity to Wheat streak mosaic virus infection in transgenic wheat plants. *Plant Biotechnology Journal*. 8(7):821-34.
19. **M. Fahim.**, LA. Navarrete, W. Kelman, H. Dove, PJ. Larkin. (2010) Does Grazing of infected wheat by sheep results in salivary transmission of wheat streak mosaic virus? *Crop and Pasture Science* 61(3) 247–254
20. Shah,H., Yasmin, T., **Fahim, M.**, Hameed, S., and M.I., Haque. (2009). Prevalence, occurrence and distribution of Chilli veinal mottle virus in Pakistan *Pak. J. Bot.*, 41(2): 955-965
21. Shah,H., Yasmin, T., **Fahim, M.**, Hameed, S., and M.I., Haque. (2008). Transmission and host range studies of Pakistani isolate of chilli veinal mottle virus *Pak. J. Bot.*, 40(6): 2669-2681.
22. Akhtar, M.A., A. Rafi, and **M. Fahim** (2005). Characterization of *Xanthomonas oryzae* pv. *oryzae*, associated with bacterial blight of rice in Punjab and NWFP. *Pak. J. Phytopath.*, 17(2): 163-166.

BOOK CHAPTERS

1. Saad H. Shah & **Fahim, M.** (2018). Small RNA regulation of plant Development and Physiology. In *Plant Small RNA: Biogenesis, Regulation and Application*. Springer (**in prep**)
2. **Fahim, M.** & Larkin, P. J. (2013). Designing effective amiRNA and multimeric amiRNA against plant viruses. In *siRNA design* (Ed. Debra Taxman). *Methods Mol Biol* 942: 357-377.

3. Rafi, A. & **Fahim, M. (2010)**. Causes of seed-borne disease and their classification. In Textbook Introductory Seed Pathology by Higher Education Commission of Pakistan, Islamabad. (Ed. Dr. Abdur Rauf Bhutta) pp 51-70
4. Akhtar, M.A., A. Rafi, and **M. Fahim (2006)**. Vegetable Diseases and Their Control. In Vegetable Crops Published by Horticulture Foundation of Pakistan, Islamabad. (Ed. Dr. Saeed Ahmad). pp166-200

ORAL PRESENTATIONS

INVITED SPEAKER

1. Fahim, M. (**2018**). Transgenic approaches towards resistance against Plant Parasitic Nematodes and Next Generation Technologies for functional genomics in Plant Nematology. 5th International Workshop for Capacity Building in Nematology. At National Nematological Research Center, Karachi University. February 12-22, 2018.
2. Fahim, M. (**2017**). Improving livelihood of small-scale tomato farmers through management of tomato viruses in northwest Pakistan. 6th International Conference of Pakistan Phytopathological Society. At Bahaud Din Zakriya University Multan. November 20-22, 2017
3. Fahim, M. (**2017**). delivered a talk on “???” in 4th Conference on Computational Biology and Genomics held during 27-29 September, 2017 at The Hazara University Mansehra.
4. Fahim, M. (**2013**). Artificial microRNA-mediated resistance against plant viruses. 2nd National Conference on 'Current Approaches in Microbiology' at Nathiagali Abbotabad. Pakistan.
5. Fahim, M. (**2010**) Cash Prize and Certificate for 2nd position in PhD student oral competition “Virus Resistance Mediated by Virus-derived Hairpin RNA against Wheat Streak Mosaic Virus in Transgenic Wheat Plants held by Society of In vitro Biology (SIVB) 2010 in collaboration with IAPB 2010 at St. Louis Missouri USA.
6. Fahim, M. (**2010**) Virus Resistance Mediated by Artificial miRNA Against Wheat Streak Mosaic Virus in Transgenic Wheat Plants in International Association of Plant Biotechnology conference 2010 at American Centre, St. Louis Missouri USA
7. Fahim, M. (**2009**) Hairpin RNA derived from viral NIa gene confers immunity to wheat streak mosaic virus infection in transgenic wheat plants at Australasian Plant Pathology Symposium 2009 Plant Health Management: An Integrated Approach 29 September – 1 October 2009 Newcastle NSW Australia

POSTER PRESENTATIONS

1. Nasim, Z., **M. Fahim**, Ahn JH., 2018. International Conference organized by Korean Society for Molecular and Cellular Biology September 17-19, 2018, South Korea. **Title:** Central role of nonsense-mediated mRNA decay in proper growth and development of Arabidopsis at low ambient temperature. (Poster presentation)
2. Nasim, Z., **M. Fahim**, Ahn JH., 2018. 24th International Union of Biochemistry and Molecular Biology Congress and 15th Federation of National Societies of Biochemistry and Molecular Biology Congress, Seoul South Korea, 4-8th June, 2018. **Title:** Nonsense-mediated mRNA decay is indispensable for normal growth and development of Arabidopsis.
3. Nasim, Z., **M. Fahim**, Ahn JH., 2017. International Conference organized by Korean Society for Molecular and Cellular Biology September 12-14, 2017, South Korea. **Title:** Fully functional nonsense-mediated mRNA decay is required for proper growth and development of Arabidopsis at low temperatures. (Poster presentation)
4. Nasim, Z., **M. Fahim**, Ahn JH., 2017. Plant Cell and Developmental Biology May 22-26, 2017, China. **Title:** Fully Functional nonsense-mediated mRNA decay is required for proper growth and development of Arabidopsis at low temperatures. (Poster presentation)
5. Shah, SH., Shah SH., Shah., AH., **M. Fahim** (2016). Understanding genetic basis of rice adaptation to salinity and drought using Arabidopsis as model. Think Adapt Climate Change. Annual Invention to Innovation Summit 2016. UET Peshawar November 16-17, 2016
6. Khan, MN., SH. Shah., Ahmad F., Bukhari Naeem., **M. Fahim** (2016). Impact of climate change on tobacco's productivity in Swabi District in KP Pakistan. Annual Invention to Innovation Summit 2016. UET Peshawar November 16-17, 2016
7. Zafar, Z., Numan, M., Shah, S.H., and **M., Fahim**. 2016. Alteration in lycopene biosynthesis in response to virus infection in tomato. Annual Invention to Innovation Summit 2016. UET Peshawar November 16-17, 2016
8. Shah, SH., Khan MN., Zafar Z., Khan S., Shah SH., **M. Fahim** (2016). Effect of drought and salt stress on gene expression in Arabidopsis thaliana as revealed by RNAseq. Annual Invention to Innovation Summit 2016. UET Peshawar November 16-17, 2016
9. **M. Fahim**, JH Lee., JJ Kim, JH Ahn. 2012. Global analysis of circadian rhythm associated gene expression in Arabidopsis nonsense-mediated RNA decay (NMD)-defective mutants. International Plant Molecular Biology Congress. ICC Jeju South Korea October 21-26 2012

10. **M. Fahim**, JH Lee., JJ Kim, JH Ahn. 2012 Global analysis of circadian rhythm associated gene expression in Arabidopsis nonsense-mediated RNA decay (NMD)-defective mutants. Korean Society of Molecular and Cell Biology. Coex Seoul South Korean October 2012
11. **M. Fahim.**, Ayala LA, Millar AA. Larkin PJ 2010. Hairpin RNA derived from viral NIa gene confers immunity to wheat streak mosaic virus infection in transgenic wheat plants. ESF-EMBO Antiviral Applications of RNA interference St Feliu de Guixols, Spain. May 2010
12. **M. Fahim.**, Ayala LA, Millar AA. Larkin PJ 2010. Hairpin RNA derived from viral NIa gene confers immunity to wheat streak mosaic virus infection in transgenic wheat plants. IAPB SIVB joint congress St. Louis Missouri USA June 2010

HONORS/AWARDS

- | | |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2011 | Post Doctoral Fellowship, Korea University, Seoul South Korea |
| 2007 | AusAID Ph.D. Fellowship at Australian National University, Australia |
| 2010 | Student Travel Grant by European Science Foundation (ESF) for “Antiviral Application of RNA Interference” in Spain |
| 2010 | Student Travel Grant by Society of In vitro Biology (SIVB) USA for IAPB Congress 2010 at St. Louis Missouri USA |
| 2010 | The ANU Vice-Chancellor's Travel Grant for International Conference |
| 2010 | Cash Prize/ Certificate for 2nd position in PhD student competition held by Society of In vitro Biology (SIVB) 2010 in collaboration with IAPB Congress 2010 at St. Louis Missouri USA. |
| 1998-2002 | Merit Scholarship/Distinction Certificate in B.Sc. and M.Sc. (Hons) |

CAPACITY BUILDING/WORKSHOPS

AS RESOURCE PERSON/ORGANIZER

1. Chief Organizer: Organized a training workshop on Biosafety and Bioethics for scholars and staff of Zoology, Chemistry, Botany and Genetics departments, titled “ Developing Lab Bio-safety Culture”, in collaboration with PASTIC/PSF Islamabad and GULL’s Association Pakistan on November 19, 2018.
2. Delivered Lecture on “Use of Epigenetic Markers for DNA Fingerprinting” in Three Days National Workshop on “DNA Fingerprinting: Principles and Techniques”,

- organized by Centre for Omic Sciences, Islamia College University Peshawar, May 7-9, 2018.
3. As member organizing committee, contributed towards organizing 14th National Weed Science Conference on Vegetation Management: Sustainability of Ecosystems, held by Islamia College Peshawar. March 2018
 4. As member organizing committee, contributed towards organizing 7th International and 16th National Conference on “Plant Resources: Current Trends, Challenges and Solutions. Organized by Pakistan Botanical Society, Departments of Botany at Islamia College Peshawar and University of Peshawar held from March 23-26, 2018.
 5. As member organizing committee, contributed towards organizing 2nd International workshop on Digitization of Herbaria and Botanical Resources in Pakistan, held from March 24-26, 2018.
 6. Delivered lectures and hands-on training on application of RNAi, Artificial microRNA and RNAseq Analysis to researchers from Azerbaijan, Turkmanistan, Tajikistan, Afghanistan, Iran and Pakistan at the 5th International Workshop for Capacity Building in Nematology February 11-22, 2018) at National Nematological Research Center, University of Karachi.
 7. As Chief Organizer: in One day training workshop on “Climate change: Can we make a difference”, Organized by Crying Sky’s Ambassadors in Collaboration with Islamia College University Peshawar, held on May 16, 2017 at Roos Keppel Hall, Islamia College Peshawar.
 8. As Resource Person: in three days training workshop on “Application of Plant Tissue Culture in Forest Conservation”, organized by IBGE, University of Agriculture Peshawar May 22-24, 2017
 9. As Resource Person: delivered a talk on “Biological Interventions for Conservation of Forest Genetic Resources” and “Tree species, medicinal plants, birds: exploitation, used and conservation climate change and Biotechnological Interventions through Tissue Culture” for the training course “ Seed Technology and In vitro Culture for Tree Improvement Part I and Part II” from February 1-2, 2017 under the project “ Provision for Forestry Research Enhancement”, organized by Pakistan Forest Institute Peshawar.
 10. As member organizing committee and resource person April 2014 One day training workshop on “Writing Science Publication with an impact” at The University of Agriculture, Peshawar Pakistan. (60 Researchers/Students from various fields and departments of Agriculture in Khyber Pukhtunkhwa Province)

11. Letter of Appreciations from Director Agricultural Research Center for outreach activities on “Management of Viral Diseases in Winter-tomato crops in Swat District” for the small-scale farming community of Swat and Malakand Are. October 10, 2004.

AS PARTICIPANT/TRAINEE

1. Fahim, M. (December 2016). Participated as trainee in 6-hours long hands-on workshop on “Python Programming For Life Scientists” at Institute of Integrative Biosciences, CECOS University of IT & Emerging Sciences Peshawar, Pakistan.
2. Fahim, M. (May 28-29, 2014). As trainee in Higher Education Commission training workshop on “Learning Outcomes” organized by Curriculum Division HEC Islamabad.
3. Fahim, M. (October 28-30, 2014). As trainee in workshop organized by Climate Change Centre in collaboration with Ecoexistence - Robledo Abad Althaus Switzerland.

The Australian National University

1. Gene Technology Practices October 2009
2. Effective Research Grant Execution (FRLP06) October 22, 2009
3. Managing and Leading People in Research Context (FRLP07) November 13, 2009
4. Intellectual property and commercialization (FRLP04) May 20, 2010
5. Graduate Course in “Science Communication” July 2010 Centre for Public Awareness of Science.

Plant Industry CSIRO Canberra

1. Delivering successful presentations May 14, 2009
2. Journal Article Writing Workshop March 29-31 2011

MEMBERSHIP OF PROFESSIONAL BODIES

National Correspondent: International Association of Plant Biotechnology Since June 2015

Life member: Pakistan Phytopathological Society since 2017

Life member: Pakistan Society of Nematologists since 2018

EDITORIAL BOARD MEMBER

Editor

1. Pakistan Journal of Nematology: Official Journal of Pakistan Society of Nematologists
2. Plant Protection: official publication of Pakistan Society of Plant Protection

COURSES TAUGHT

Level	CODE	Title	Semester	Times Taught
Ph.D.	IBGE724	Microbial and Molecular Genetics	Fall 2016, Fall 2015, Spring, 2014	3
M.Phil.	PPL703	Plant Virology	Fall 2016, Fall 2014, Fall 2013	3
	IBGE712	Microbial Biotechnology	Fall 2014	1
B.Sc. (Hons)	IBGE313	Cell and Tissue Culture	Fall 2013	1
	IBGE401	Elements of Biotechnology	Spring 2014, Spring 2017	3
	IBGE501	Genetic Resources and Conservation	Spring 2014, Spring 2015	2
	IBGE512	Microbial Biotechnology	Fall 2014, Fall 2013	2
	IBGE602	Skills Enhancement	Spring 2014, Spring 2016	2
	IBGE614	Nanobiotechnology	Fall 2015, Fall 2016	2
	AGCH604	Agricultural Microbiology	Spring 2013	1

Research Activities and Student Supervision

B.Sc. (Hons.)

Year	Student Name	Topic
2016	Ms. Mahrukh N. Khan	Expression, Isolation and Purification of (<i>GFP</i>) Green Fluorescent Protein in <i>E. coli</i>
2015	Mr. Saad Hussain Shah	RNAseq analysis of drought and salt tolerance in Arabidopsis.
	Mr. Saadal Khan	Preparation of <i>E. coli</i> Competent cells using Calcium Chloride (CaCl_2)
	Ms. Mahrukh N. Khan	Impact of climate change on production of tobacco in Swabi District.
2014	Ms. Rabeea Khan	Comparative analysis of DNA extraction protocols for <i>Paeonia emodi</i>
	Mr. S. Usman Ali Shah	Optimization of DNA extraction protocols for endangered medicinal plants in Khyber Pakhtunkhwa
2015	Mr. Abdul Qayyum	Screening of Different AVRDC Brinjal lines against Fruit Borer under field conditions
	Muhammad Ijaz	To evaluate different NARC Brinjal lines for Brinjal Shoot Borer infestation

2014	Mr. KaleemUllah	Studies on bacterial flora of Pears in District Swat
	Mr. Muhammad Yaseen	Isolation and preservation of <i>Ralstonia solanacearum</i>

M. Phil

As SUPERVISOR

Year	Student Name	Topic
2018	Ms. Hafsa Nisar	In vitro establishment of callus culture from roots and shoots of Chia (<i>Salvia hispanica</i>)
2017	Ms. Rubina Gul	Screening of Elite Pakistani cultivars for resistance against Fusarium Head Blight in Wheat and development of molecular markers.
	Mr. Saad H. Shah	Genetic basis of induced-drought and -salt tolerance in Rice calli using RNAseq.
	Mr. EhsanUllah	Transcriptomics approach using de novo assembler Trinity ® to identify Lipid biosynthesis pathway genes Chia (<i>Salvia hispanica</i>) and their phylogeny.
	Ms. Ayesha Zafar	Molecular characterization of Strawberry (<i>Fragaria x ananassa</i>) Germplasm
2016	Shakir Khan	Impact of Viral synergism on resistance in exotic and local tomato lines.
	Ms. Zobia Zafar	Alternation in lycopene biosynthesis in response to virus infection in tomato
2015	Mr. Sajjad Fida	Molecular Characterization of Apricot Germplasm in Northwest Pakistan

As CO-SUPERVISOR

2018	Mr. Rizwan ullah	Molecular diversity of <i>Liberibacter asiaticus</i>, infecting citrus in northwest Pakistan
2017	Mr. Intekhab Alam	Screening of eggplant germplasm against <i>Ralstonia solanacearum</i> , the causal agent of bacterial wilt of eggplants.
2016	Mr. Qaisar Ali	Incidence, severity and population structure of <i>Ralstonia solanacearum</i> , the causal agent of bacterial wilt of eggplants.
	and I had no options but to avail it accordingly. Ms. Tayyeba Naz	Biochemical studies of selected Xerophytes under heat stress
	Mr. InamUllah	Phytochemical and antimicrobial investigation on <i>Terminalia chebula</i> and <i>Terminalia arjuna</i>
	Mr. Najeeb ullah	Screening of tomato germplasm against Tomato mosaic virus (ToMV)

Ph.D.

As CO-SUPERVISOR

Year	Student Name	Topic
2018	Asma Akbar	Detection, Epidemiology and Management of Fusarium wilt of tomato caused by <i>Fusarium oxysporum</i> f.sp <i>lycopersicae</i> in Khyber Pukhtukhwa
2017	Ijaz Ahmad	Characterization of <i>Xanthomonas vesicatoria</i> , the causal agent of tomato spot disease, and its management using host resistance and phytobiocides.

REFERENCES

- Dr. Ralf G. Dietzgen Associate Professor/Principal Research Fellow
University of Queensland St. Lucia Brisbane/Australia
R.Dietzgen@uq.edu.au
- Dr. Nicholas Collins Research Fellow
Floor/Room 2 37 Plant Genomics Centre, University of Adelaide
Nick.Collins@acpfg.com.au
- Dr. Habib Ahmad Vice Chancellor,
Islamia University Peshawar
drhahmad@gmail.com
- Dr. Safdar Hussain Shah Program Leader,
Institute of Biotechnology and Genetic Engineering,
University of Agriculture Peshawar, drsfadarshah@yahoo.co.in