

Curriculum vitae

Muhammad Qadir Ahmad (PhD)



Title	Dr.
Highest Qualification	PhD, Postdoc (China)
Date of Birth	01-01-1985
Passport No.	UZ1156382
Present position	Associate Professor Department of Plant Breeding and Genetics, Bahauddin Zakariya University, Multan, Punjab, Pakistan
Phone	0092619210168
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Email	mqadirahmad@gmail.com mqadirahmad@bzu.edu.pk
Foreign Position	Adjunct Associate Professor at Jiangsu Xuzhou Institute of Agricultural Sciences/Jiangsu Xuzhou Sweetpotato Research Centre, Chinese Academy of Agricultural Sciences (CAAS).

EDUCATION

University of Agriculture, Faisalabad	
PhD, Plant Breeding & Genetics,	2013
• Dissertation: "Association mapping for drought tolerance in wheat (<i>Triticumaestivum</i> L.)"	
M.Sc. (Hons), Plant Breeding & Genetics,	2008
• Dissertation: "Assessment of genetic diversity in selected germplasm lines of (<i>Gossypium hirsutum</i> L.)"	
B.Sc. (Hons), Agriculture,	2006
Board of Intermediate and Secondary Education, Lahore	
F.Sc. (Equivalent to A-Level),	2002
Matriculation(Equivalent to O-Level),	2000

TRAINING RECIEVED

- **PostDoc:**Researcher at Jiangsu Xuzhou Institute of Agricultural Sciences/Jiangsu Xuzhou Sweetpotato Research Centre, Chinese Academy of AgriculturalSciences (CAAS), Peoples Republic of China, from July 04, 2019 to July 03, 2020.
- **Visiting Scientists:**Visiting researcher at Jiangsu Xuzhou Institute of Agricultural Sciences/Jiangsu Xuzhou Sweetpotato Research Centre, Chinese Academy of AgriculturalSciences (CAAS), Peoples Republic of China, from July 04, 2020 to July 21, 2020.
- **Faculty Member:**(Serving as University Faculty at Department of Plant Breeding andGenetics, Bahauddin Zakariya University, Multan Since March 5, 2014 to date
- **PhD Training:** Accomplished six month research experience in Genomics and Gene Discovery Research Unit, Western Regional Research Centre at United States Department of Agriculture (USDA), California USA from April 5, 2011 to Sep 30, 2011

- **Undergraduate Internship:** Completed sixteen (16) week Internship Experience at Rice Research Institute Kala Shah Kaku. Worked on phenotypic characterization of rice lines under nursery conditions.

TEACHING AND MENTORING EXPERIENCE

- **Associate Professor** at Bahauddin Zakariya University, Multan, Pakistan. March 19-03-2022 to Present
- **Assistant Professor** at Bahauddin Zakariya University, Multan, Pakistan. March 05, 2014 to 18-03-2022
- **Adjunct Associate Professor** at Jiangsu Xuzhou Institute of Agricultural Sciences/Jiangsu Xuzhou Sweetpotato Research Centre, Chinese Academy of Agricultural Sciences (CAAS).
- Instructor of various courses at undergraduate and postgraduate level
- Supervising 3 PhD and 5 MPhil students
- Supervised 21 M-Phil students

FELLOWSHIPS AND AWARDS

- Awarded with International Research Support Initiative Program (IRSIP) fellowship Selected for Western Regional Research Centre (USDA), Albany, California, (USA), 2011
- Awarded with Indigenous Scholarship for M-phil leading to PhD studies, 2008-2013
- Award of Research Grant of Amount (387920) by HEC entitled “Tagging genomic regions conferring tolerance to limited water conditions in wheat”

RESEARCH INTERESTS

- Identification and development of heat and drought tolerant wheat germplasm
- Working on development of biofortified wheat lines
- Working on improvement of wheat yield
- Developed eight high yielding wheat candidate lines
- Developed RIL population of wheat for spike characteristics
- Genome wide association studies in wheat
- Molecular and Transcriptomic analysis in sweetpotato

PRESENTATION/ORAL/POSTER

- **Oral Presentation(2018)** 1st International and 2nd National conference on “Challenges and Opportunities to Boost Agriculture in Changing Climate” 26-28 March, 2018 held at College of Agriculture, Bahauddin Zakariya University, Bahadur Sub Campus, Layyah, Pakistan.
- **Poster Presentation(2017)** International Conference on Tackling Climate Change through Plant Breeding held at PMAS-Arid, Agriculture University, Rawalpindi, Pakistan.

- **Oral Presentation(2017)**National Conference on“Challenges and Opportunities to Boost Agriculture in Changing Climate held at College of Agriculture,Bahauddin Zakariya University, Bahadur Sub Campus, Layyah, Pakistan.
- **Oral Presentation(2016)**Conference on sustainable crop and animal production systems held at University of Haripur, KPK, Pakistan.

TRAINING COURSES/CONFERENCES AND SYMPOSIUMS

- Organized 2nd Sino-Pak International conference on Innovations in Cotton Breeding and Biotechnology (2018)
- International seminar on pulses and wheat for food security (2018)
- Participation in international seminar on pulses and wheat for food security (2018)
- Participation in International Conference on Plant Based Food: Current Scenario & Future Prospective & Food Expo (2018)
- Participation in International Conference on Climate Smart Agriculture: The Way of Farming for 21st Century (2018)
- Organized 1stSino-Pak International conference on Innovations in Cotton Breeding and Biotechnology (2017)
- Participation in two days international workshop on CRISPR Cas-genome editing (2017)
- Participation in one day seminar on European Union, Horizon 2020 (2017)
- Participation in One Day Seminar on “Writing Successful Research Proposal” organized by Office of Research Innovation and Commercialization (ORIC) BZU dated August 23, (2017)
- Participation in 3 days training workshop on The Role of Faculty in the Protection of Human Values and Conflict Management in Muslim Society dated August 16-18(2017).
- Participation in International Conference “ Safe Food For all & Food Expo (2017)
- Wheat production challenges in Pakistan under changing climate. (2017)
- Workshop on “intellectual property rights and patent drafting” (2016)
- Participated in national grants writing workshop held under the auspices of U.S.Pakistan Center for Advanced Studies in Agriculture and Food Security (2016)
- Participated in International Symposium on Advances in Molecular Biology of Plants and Health Sciences (2015)
- Participated in active citizen participation training program mutually organized by British Council and Higher Education Commission of Pakistan (2015)
- Participation in International Conference “ Malnutrition in South Asia: The Peril Persists (2015)
- Participation in training course on Nuclear and other Advanced Techniques in Agricultural and Biological research at (NIAB) (2011)
- International Conference on Applied Genetics & Biotechnology (2011)
- Certificate of participation in international symposium on Modern approaches and Techniques in Agriculture to ensure food security in Pakistan (2008)
- Participated in International Conference of Plant Scientists (UAF) (2008)

BOOK EDITED

- Azhar, M.T., M.Qadir Ahmad, I.A. Rana, R.M.Atif . 2024. Biofortification of Grain and Vegetable Crops: Molecular and Breeding Approaches . Elsevier, Academic Press

BOOK CHAPTERS

- Madiha Habib, Muhammad Sajjad, Muhammad Qadir Ahmad, M.Tahseen Azhar, Abdul Qayyum. 2024. Marker Assisted Selection in Wheat In: Nusret Zencirci, Fahri Altay, Faheem S. Baloch, Muhammad Azhar Nadeem, Ndiko Ludidi. *Advances in Wheat Breeding* Springer. P. 597-621
- Hamda, Muhammad Qadir Ahmad, Attiqa Saleem, Hui Yan and Qiang Li. 2024. Biofortified sweet potato—an ideal source of mitigating hidden hunger In: *Biofortification of Grain and Vegetable Crops: Molecular and Breeding Approaches*. Elsevier, Academic Press. P. 239-254.
- Hafiz Muhammad Wasif Ali, Muhammad Qadir Ahmad, Muhammad Asif Saleem, Hafiz Mamoon Rehman, Abdul Qayyum, Waqas Malik, Etrat Noor and Sultan Habibullah Khan. 2024. Biofortified sorghum: a prospectus of combating malnutrition. In: *Biofortification of Grain and Vegetable Crops: Molecular and Breeding Approaches*. Elsevier, Academic Press. P. 115-138.
- Sultan Mahmood, Muhammad Qadir Ahmad, Attiqa Saleem, Hafiz Muhammad Wasif Ali, Hafiz Mamoon Rehman, Muhammad Asif Saleem, Muhammad Tehseen Azhar and Abdul Qayyum. Agronomic and genetic biofortification of wheat: progress and limitation In: *Biofortification of Grain and Vegetable Crops: Molecular and Breeding Approaches* . Elsevier, Academic Press. P. 81-96.
- Qasim Raza, Muhammad Tehseen Azhar, Iqar Ahmad Rana, Muhammad Qadir Ahmad and Rana Muhammad Atif. 2024. Biofortification of crops to achieve food and nutritional security In: *Biofortification of Grain and Vegetable Crops: Molecular and Breeding Approaches* . Elsevier, Academic Press. 1-13
- Zafar Iqbal, Asad Azeem, Sami ul- Allah, Ahmad Sher, Muhammad Qadir Ahmad, Bilal Haider, Muhammad Asghar. 2023. Advances in Biotechnological tools and their impact on global climate change and food security In: Mirza Hasanuzzaman: *Climate-Resilient Agriculture. Agro-Biotechnological Advancement for Crop Production*. Springer. P. 667-676.
- Khan S.H. et al. (2021) Applications of CRISPR/Cas Beyond Simple Traits in Crops. In: Ahmad A., Khan S.H., Khan Z. (eds) *CRISPR Crops*. Springer, Singapore. https://doi.org/10.1007/978-981-15-7142-8_8
- Ahmad, M.Q. et al. 2021. Wild relatives of sweet potato; Distribution and prospectus for crop improvement. In: Ahzar, M.T., Wani, S. (eds). *Wild Germplasm for Genetic Improvement in Crop Plants*. Elsevier.
- Hussain, B. and M.Q. Ahmad. 2016: Plant Biodiversity loss: A threat to global food security. p.1-7. In; *Environmental aspects of biodiversity*. Oxford Book Company, Jaipur, New Dehli.

PUBLICATIONS

- Saleem, M.A., W. Malik, M.Q. Ahmad, et al., 2024. Gene pyramiding improved cell membrane stability under heat stress in cotton (*Gossypium hirsutum* L.). *BMC Plant Biology* (2024) 24:886 <https://doi.org/10.1186/s12870-024-05610-7>.
- Saleem, M.A., M.M.A. Baig, M. Q. Ahmad, Z. Zia, M. Asif, M. Nauman. 2023. Micro-Climatic effect on Cotton Yield, quality, Bt toxin & GT Gene. *International Journal of Innovative Approaches in Agricultural Research* 2023, Vol. 7 (1), 40-52.
- Kou M, Li C, Song W, Shen Y, Tang W, Zhang Y, Wang X, Yan H, Gao R, Ahmad MQ and Li Q (2023) Identification and functional characterization of a flavonol synthase gene

from sweet potato [*Ipomoea batatas* (L.) Lam.]. *Front. Plant Sci.* 14:1181173. doi: 10.3389/fpls.2023.1181173.

- Yan, H., Y. Zhang, M.Q. Ahmad, Y. Liu, et al., 2022. Comparative Analysis of Anthocyanin Compositions and Starch Physiochemical Properties of Purple-Fleshed Sweetpotato “Xuzishu8” in Desert Regions of China. *Front. Plant Sci.*, <https://doi.org/10.3389/fpls.2022.841969>
- Yan, H., M. Ma, **M.Q. Ahmad**, M.H.Arisha, W.Tang, C.Li, Y. Zhang, M.Kou, X.Wang, R. Gao, W.Song, Z. Li and Q. Li. 2022. High-Density Single Nucleotide Polymorphisms Genetic Map Construction and Quantitative Trait Locus Mapping of Color-Related Traits of Purple Sweet Potato [*Ipomoea batatas* (L.) Lam.]. *Front. Plant Sci.*, <https://doi.org/10.3389/fpls.2021.797041>
- Anwar, M., M.A.Saleem, M.Dan, W.Malik, S.Ul-Allah, **M.Q. Ahmad**, et al., 2022. Morphological, physiological and molecular assessment of cotton for drought tolerance under field conditions. *Saudi J. Biol. Sci.*, 29: 444-452.
- Farheen, R., **M. Q. Ahmad**, M. A. Saleem, A. Qayyum, E. Noor, W. Malik, A. Saleem, S. H. Khan, and S. Mahmood. 2021. Genetic diversity, population structure and evaluation of bread wheat genotypes under high temperature stress. *J. Anim. Plant Sci.*, 31: (4). 1015-1027
- Saleem, M.A., W. Malik, A. Qayyum, S. Ul-Allah, **M. Q. Ahmad**, H. Afzal, M. W. Amjid, M. F. Ateeq, Z.U. Zia. Impact of heat stress responsive factors on growth and physiology of cotton (*Gossypium hirsutum* L.). *Plant Molecular Biology Reporter*. DOI: 10.1007/s11033-021-06217-z.
- Arisha, M. H., Y. Hui, **M. Q. Ahmad**, T.Wei, K. Meng, L. Yaju, W. Xin, Z. Yungang, Q. Li. 2021. Transcriptome Sequencing of a Novel Albino Mutant of Hexaploid Sweetpotato. *Plant Molecular Biology Reporter*. DOI: 10.1007/s11105-020-01239-6
- Arisha, M. H., **M. Q. Ahmad**, W. Tang, Y. Liu, H. Yan, M. Kou, X. Wang, Y. Zhang and Q. Li. 2020. RNA sequencing analysis revealed genes associated drought stress responses of different durations in hexaploid sweetpotato. *Scientific Reports*. 10: 12573.
- Shabirb, A., M. Saqibb, M. Ahmad, M. Latif, S.A.H. Bukharia, **M.Q. Ahmad**, M. Dawood and M. Rashid. 2020. Enhancing drought tolerance of wheat through foliar application of proline and L-Tryptophan. *Pakistan journal of scientific and industrial research*. 63: 199-206.
- Iqbal, M., S. Ul-Allah, M. Naeem, M. Ijaz, **M. Q. Ahmad**. 2020. Genotypic variability and association between seed traits and seedling vigor in upland cotton. *Pakistan Journal of Agriculture research*. 33. 337.
- Muhammad, R. W., H.M.W. Ali, A. Hamza, **M.Q. Ahmad**, A. Qayyum, W. Malik and E. Noor. 2020. Estimation of different genetic parameters in various safflower genotypes under field conditions. *Pakistan Journal of Agriculture research*. 33. 849.
- Howell, S.E., **M.Q. Ahmad**, M.A. Saleem, A. Qayyum, S. Ul-Allah, E. Noor, W. Malik, S. Mahmood, B. Islam. 2020. Population structure, genetic diversity and selection of terminal heat stress tolerant synthetic derivative wheat genotypes. *International Journal of Agriculture & Biology*. DOI:10.17957/IJAB/15.14.30
- Saleem, M.A., M.W. Amjid, **M.Q.Ahmad**, H. Riaz, S.F.Arshad, Z. UllahZia. 2020. EST-SSR based analysis revealed narrow genetic base of in-use cotton varieties of Pakistan. *Pakistan Journal of Botany*: 52: 1667-1672.
- **Ahmad, M. Q.**, M. F. Naseer, A. Qayyum, S. Ul-Allah, W. Malik, S.H. Khan, E. Noor, M. Sajjad. 2020. Agronomic, physiological and molecular characterization of spring wheat (*Triticum aestivum* L.) accessions for drought tolerance. *Bangladesh Journal of Botany*. 49(1): 29-38.

- Arisha, M.H., H. Aboelnasr, , **M.Q. Ahmad**, L. Yaju, T. Wei, G. Runfei, Y. Hui, K. Meng, W. Xin, Z. Yungang L. Qiang. Transcriptome sequencing and whole genome expression profiling of hexaploid sweetpotato under salt stress. BMC Genomics 21, 197 (2020). <https://doi.org/10.1186/s12864-020-6524-1>
- Ul-Allah, S., S. Ahmad, M. Iqbal, M. Naeem, M. Ijaz, **M.Q. Ahmad**, Z. Hassan and H.G. Nabi, 2019. Creation of new genetic diversity in cotton germplasm through chemically induced mutation. International Journal of Agriculture & Biology, 22: 51–56.
- **Ahmad, M.Q.**, M. Hassan, A. Qayyum, M.A. Saleem, W. Malik, E. Noor and S. Ul-Allah, 2019. Characterization of synthetic wheat germplasm using morphological and molecular markers. International Journal of Agriculture & Biology, 22: 131–138.
- Saleem, M.A. M.W. Amjid, **M.Q. Ahmad**, E. Noor, A. Qayyum, M.I. Awan, M. Asif, M. Nauman. **2018**. Marker assisted selection for relative water content, excised leaf water loss and cell membrane stability in cotton. Advancements in Life Sciences. 05: 56-60
- Iqbal, M., S.U. Allah, M. Naeem, M. Hussain, M. Ijaz, A. Wasaya and **M.Q. Ahmad**, **2018**. Reproductive development and seed cotton yield of gossypium hirsutum L. affected by genotype and planting time. Int. J. Agric. Biol. 20: 1590-1596
- Rehman, H.M., M. Nawaz, Z.H. Shah, J. Ludwig-Muller, G. Chung, **M.Q. Ahmad**, S. H. Yang, S.I. Lee. **2018**. Comparative genomic and transcriptomic analysis of Family-1 UDP glycosyltransferase in three brassica species and Arabidopsis indicates stress responsive regulation. Scientific Reports doi:10.1038/s41598-018-19535-3
- Shah, Z.H., H.M. Rehman, T. Akhtar, I. Daur, M.A. Nawaz, **M.Q. Ahmad**, I.A. Rana, R.M. Atif, S.H. Yang, G. Chung. **2017**. Redox and ionic homeostasis regulations against oxidative, salinity and drought stress in wheat. Frontier Genetics; 8: 141.
- Ahmad, S., **M.Q. Ahmad**, A. Qayyum, M.A. Saleem, W. Malik, Sami-ul-allah, Q. Ali. **2017**. Estimation of combining ability and genetic advance in bread wheat using line × tester analysis. IJBPA, 6(12).
- Saeed, Q., **M.Q. Ahmad**, A. Hamza, A. Qayyum, W. Malik, E. Noor, R.W. Muhammad, B. Ahmad, M. Yousaf. **2017**. Combining ability analysis and selection of suitable parents for breeding high yielding cotton varieties. IJBPA, 6(11).
- **Ahmad, M.Q.**, F.A. Raza, A. Qayyum, W. Malik, R.W. Muhammad, M.A. Saleem, A. Hamza and A.B. Mahar. **2017**. Association of Leaf Related Traits and Boll Weight in Cotton. Pakistan Journal of Agricultural Research, 30: 129-135.
- Muhammad, R.W., A. Qayyum, **M.Q. Ahmad**, A. Hamza, M. Yousaf, B. Ahmad, M. Younas, W. Malik, S. Liaqat and E. Noor. **2017**. Characterization of maize genotypes for genetic diversity on the basis of inter simple sequence repeats. Genetics and Molecular Research 16 (1): gmr16019438
- Rehman, H.M., M. A. Nawaz, L. Bao, Z.H. Shah, P. Krishnamurthy, **M.Q. Ahmad**, G. Chung, S.H. Yang. **2016**. Genome-wide analysis of Family-1 UDP-glycosyltransferases in soybean confirms their abundance and varied expression during seed development. Journal of Plant Physiology. <http://dx.doi.org/10.1016/j.jplph.2016.08.017>
- Ashraf, J., W. Malik, M. Z. Iqbal, A. A. Khan, A. Qayyum, E. Noor, M. A. Abid, H. M. N. Cheema and **M.Q. Ahmad**. Comparative Analysis of Genetic Diversity among Bt Cotton Genotypes Using EST-SSR, ISSR and Morphological Markers. **2016**. J. Agric. Sci. Technol., 18: 517-531
- **Ahmad, M.Q.**, M., S.H. Khan, M. Sajjad and I. A. Khan. **2015**. Analysis of drought responsive traits in hexaploid wheat (*Triticum aestivum* L.). Pak. J. Agri. Sci., 52: 701-707.

- Muhammad, R.W., A. Qayyum, A. Hamza, **M.Q. Ahmad**, N.S. Naseer, S. Liaqat, J. Shah, B. Ahmad, W. Malik and E. Noor. **2015**. Analysis of genetic traits for drought tolerance in maize. Genet.Mol.Res. 14: 13545-65.
- **Ahmad, M.Q.**, S.H. Khan, A.S. Khan, A. Mujeeb-Kazi and S.M.A. Basra. 2014. Identification of QTLs for drought tolerance traits on wheat chromosome 2A using association mapping. Int. J. Agri. Biol. 16: 862-870.
- Sajjad, M., S.H. Khan, **M.Q. Ahmad**, A. Rasheed, A. Mujeeb-Kazi, I.A. Khan. 2014. Association mapping identifies QTLs on wheat chromosome 3A for yield related traits. Cer. Res. Commun. 42: 177-188.
- Liaqat, S., A. Qayyum, R.W. Muhammad, A. Hamza, M. Yousaf, J. Shah, M. Hussain, B. Ahmad, A. Irshad, R.I. Ahmed, E. Noor, W. Malik, A. Ammar, S. Mahmood, M.K. Aziz, **M.Q. Ahmad** and S. Naseer. 2014. Genetic evaluation and linkage studies among the economic traits of barley (*Hordeum vulgare*.) under arid conditions. J. Food & Agric& Environ. 12: 718-724.
- Malik, W., J. Ashraf, M. Z. Iqbal, A. A. Khan, A. Qayyum, M. A. Abid, E. Noor, **M. Q. Ahmad** and Ghulam Hasan Abbasi. Molecular Markers and Cotton Genetic Improvement: Current Status and Future Prospects. The Sci. World J. 2014.
- **Ahmad, M.Q.**, S.H. Khan and F.M. Azhar, 2012. Decreasing level of genetic diversity in germplasm and cultivars of upland cotton (*Gossypium hirsutum* L.) in Pakistan. J. Agric. Soc. Sci. 8: 92–96.

UNDER AND POST-GRADUATE TEACHING COURSES

- PBG-401 Introductory Genetics
- PBG-402 Introductory Plant Breeding
- PBG-501 Principles of Genetics
- PBG-505 Cytogenetics
- PBG-508 Breeding Cereal Crops
- PBG-606 Crop Variety Registration and intellectual property rights
- PBG-702 Advanced Genetics
- PBG-713 Genetic Engineering in Plants

SUPERVISION OF THESIS

- | | | |
|---------------|-----------------------|------------------------|
| • PhD | Thesis submitted (02) | Thesis in Process (03) |
| • M.Sc (Hons) | Thesis Completed (22) | Thesis in Process (03) |

RESEARCH GRANTS AS PRINCIPAL INVESTIGATOR

No.	Project Title	Amount/Rs	Funding Agency
1	Tagging genomic regions conferring tolerance to limited water conditions in wheat. No:21-779/SRGP/R&D/HEC/2016	387920	Higher Education Commission (HEC), Islamabad
2	Genetic variation for some adaptability genes in high yielding Pakistan wheat cultivars	200000	Bahauddin Zakariya University (BZU), Multan
3	Genotypic exploration of bread wheat	150000	Bahauddin Zakariya

	germplasm for drought tolerance		University (BZU), Multan
4	Genome wide association mapping of drought related traits in hexaploid wheat (Triticum aestivum L.) No.DR & EL/D-545	250000	Bahauddin Zakariya University (BZU), Multan

ADMINISTRATIVE EXPERIENCE

Secretary/Member Purchase Committee (PBG)	B.Z.U	10-09-2015	03-07-2019	To look after purchase matters
Member BOS Department of PBG	BZU	22-10-2015	12-03-2016	To discuss and advise authorities on academic matters
Member Admission Committee (PBG)	B.Z.U	16-09-2015	03-07-2019	To look after admission matters
Member Examinations Committee (PBG)	B.Z.U	16-09-2015	03-07-2019	To look after examination matters
Incharge Examinations	B.Z.U	20-10-2015	03-07-2019	To look after examination matters
Superintendent Boys Hostel	B.Z.U	09-03-2018	19-01-19	Hostel Administration
Warden Boys Hostel (Hamza Hall)	B.Z.U	22-09-22	To date	Hostel Administration

References:

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