

CURRICULUM VITAE

Personal and Contact Information

ALI RAZA

✉ alirazamughal143@gmail.com

🌐 https://www.researchgate.net/profile/Ali_Raza266

📄 <https://publons.com/researcher/2928814/ali-raza/>

🆔 <https://orcid.org/0000-0002-5120-2791>

🐦 @Ali_Raza6

☎ +86-13164229480; 📞 +92-321-7676506

📍 **Present:** OCRI, CAAS, Wuhan, China.

📍 **Permanant:** Jamil Town, G.M.Abad, Faisalabad, Pakistan.



Research Interest/Expertise

Crop genetics and breeding, Plant molecular biology, Plant biotechnology, DNA fingerprinting, Genetic diversity, Molecular markers, Abiotic stress responses and tolerance mechanisms (cold, salinity, drought, heavy metals, waterlogging, etc.), ROS and antioxidant defense systems, Bioinformatics, Cloning, Tissue culture, Transformation, Transcription factors, Transcriptomics, Metabolomics, Proteomics, OMICS, Plant hormones.

Work Experience

Internship (March, 2015 – June, 2015)

- Wheat Research Institute, Ayub Agricultural Research Institute (AARI), Faisalabad, Pakistan.

Education

Ph.D. Scholar & Research Assistant Fellow (March, 2018 – conti..)

- Key Lab of Biology and Genetic Improvement of Oil Crops, Oil Crops Research Institute (OCRI), Chinese Academy of Agricultural Sciences (CAAS), Wuhan, China.

Major: Crop Genetics and Breeding

Project: 1) Multi-OMICS analysis of rapeseed under chilling stress.

- 2) Functional characterization of transcription factors under chilling stress in rapeseed and *Arabidopsis*.

M.Sc. (HONS) Agriculture Biotechnology (2015 – 2017)

- Centre of Agricultural Biochemistry and Biotechnology (CABB), University of Agriculture Faisalabad, Pakistan.

Major: Agriculture Biotechnology

Thesis research: Molecular based genetic diversity among *Brassica* species.

B.Sc. (HONS) Agricultural Sciences (2011 – 2015)

- Centre of Agricultural Biochemistry and Biotechnology (CABB), University of Agriculture Faisalabad, Pakistan.

Major: Agriculture Biotechnology.

Publications

Published articles

- Salim, N., & Raza, A. (2020). Nutrient use efficiency (NUE) for sustainable wheat production: a review. *Journal of Plant Nutrition*, 43(2), 297-315.
- Razzaq, A., Sadia, B., Raza, A., Khalid Hameed, M., & Saleem, F. (2019). Metabolomics: A Way Forward for Crop Improvement. *Metabolites*, 9(12), 303.
- Raza, A., Razzaq, A., Mehmood, S. S., Zou, X., Zhang, X., Lv, Y., & Xu, J. (2019). Impact of climate change on crops adaptation and strategies to tackle its outcome: a review. *Plants*, 8(2), 34.

- **Raza, A.,** Ashraf, F., Mehmood, S. S., & Khan, R. S. A. (2019). Evaluation of Genetic Diversity Among Exotic Sorghum (*Sorghum bicolor* L. Moench) Genotypes Through Molecular Based Analysis (RAPD-PCR). *Gesunde Pflanzen*, 71, 187-196.
- **Raza, A.,** Mehmood, S. S., Ashraf, F., & Khan, R. S. A. (2019). Genetic diversity analysis of *Brassica* species using PCR-based SSR markers. *Gesunde Pflanzen*, 71(1), 1-7.
- Ali, Q., Salisu, I. B., **Raza, A.,** Shahid, A. A., Rao, A. Q., & Husnain, T. (2019). A modified protocol for rapid DNA isolation from cotton (*Gossypium* spp.). *MethodsX*, 6, 259-264.
- **Raza, A.,** Shaukat, H., Ali, Q., & Habib, M. (2018). Assessment of RAPD markers to analyse the genetic diversity among sunflower (*Helianthus annuus* L.) genotypes. *Turkish Journal of Agriculture-Food Science and Technology*, 6(1), 107-111.

Manuscript under review

- Maofu Li, Yuan Yang, **Ali Raza**, Shanshan Yin, Hua Wang, Yuntao Zhang, Jing Dong, Guixia Wang, Chuanfei Zhong, Hong Zhang, Jiashen Liu, and Wanmei Jin. Heterologous Expression of *Arabidopsis* rty Enhances Drought Tolerance in Strawberry (*Fragaria × ananassa* Duch.). (In BMC Biology).
- Hussain Muhammad Azhar; Huang Yong; Luo Dan; Mehmood Sundas; **Raza Ali**; Zhang Xuekun; Cheng Yong; Zou Xiling; Lu Guangyuan; Li Mei; Lv Yan. Combined transcriptome- and miRNAome-based analyses of the regulatory pathways involved in low-temperature adaption in rapeseed (*Brassica napus* L.). (In Plant, Cell and Environment).
- **Ali Raza**, Abu Bakr Umer Farooq, Mahwish Ali, Waqar Ahmad Khan, Ahsan Iqbal, Sadettin Çelik, and Rao Sohail Ahmad Khan. Polymorphic Information and Genetic Diversity in Six Brassica Species revealed by RAPD markers. (Accepted for publication in BIOCELL).
- **Ali Raza**, Ammad Ramzan, Ahasn Iqbal and Rao Sohail Ahmad Khan. Existence of variation among American bollworm (*Helicoverpa armigera*) collected from different host plant in Punjab-Pakistan. (In Pakistan Journal of Agricultural Sciences).
- **Ali Raza**, Ali Razzaq, Sundas Saher Mehmood, Muhammad Azhar Hussain, Qamar U Zaman, Zhang Xuekun, and Mirza Hasanuzamman. Exploitation of Omics Approaches to Improve Abiotic Stress Tolerance in Rapeseed (*Brassica napus* L.). (In Plant Cell Reports).
- Sundas Saher Mehmood, Zonara Zafar, **Ali Raza**, Zain-ul-Abdin, and Rao Sohail Ahmad Khan. Computational Structure Prediction of Whitefly Endosymbiotic Bacterial GroEL Protein and Its Interaction with Virus Capsid Protein. (In The Protein Journal).

Manuscript under preparation

- Metabolome and transcriptome analysis reveals new insights for chilling tolerance in rapeseed (*Brassica napus* L.).
- Induction of hydrolytic enzymes activities in dormant seeds of a high-valuable endangered medicinal plant (*Dracocephalum kotschy* Boiss.) caused remarkable improvement of seedling vigor indices.
- Effect of heat and cold stress on physiological parameters in bell pepper (*Capsicum annum* L.) genotypes.
- Reactive oxygen species and antioxidant metabolism under abiotic stress: revisiting the recent progresses and new insights.
- Phytoremediation of cadmium: physiological, biochemical and molecular mechanisms.
- Jasmonic acid: a key frontier towards abiotic stress tolerance in crop plants.
- Beneficial and harmful roles of Selenium in plants.
- Transcription factors: key regulators to study abiotic stress responses and tolerance in a model plant (*Arabidopsis thaliana*)

Published book chapters

- **Raza, A.**, Mehmood, S. S., Shah, T., Zou, X., Yan, L., Zhang, X., & Khan, R. S. A. (2019). Applications of Molecular Markers to Develop Resistance Against Abiotic Stresses in Wheat. In *Wheat Production in Changing Environments* (pp. 393-420). Springer, Singapore.
- **Raza, A.**, Mehmood, S. S., Tabassum, J., & Batool, R. (2019). Targeting Plant Hormones to Develop Abiotic Stress Resistance in Wheat. In *Wheat Production in Changing Environments* (pp. 557-577). Springer, Singapore.

Book chapters in press

- **Ali Raza**, Farwa Ashraf, Xiling Zou, Xuekun Zhang, and Hassan Tosif. Plant adaption and tolerance to environmental stresses: mechanisms and perspective. ([Springer](#)).
- **Ali Raza**, Muhammad Bilal Hafeez, Umar Nawaz, Xiling Zou, Yan Lv, Jinsong Xu, and Xuekun Zhang. Eco-physiological and biochemical responses of rapeseed (*Brassica napus* L.) to abiotic stresses. ([Springer](#)).
- **Ali Raza**, Muhammad Bilal Hafeez, Noreen Zahra, Kanval Shaukat, Shaheena Umbreen, Javaria Tabassum, Sidra Charagh, Rao Sohail Ahmad Khan and Mirza Hasanuzzaman. The Plant Family Brassicaceae: Introduction, Biology, and Importance. ([Springer](#)).
- **Ali Raza**, Sidra Charagh, Nida Sadaqat and Wanmei Jin. Arabidopsis thaliana: model plant for the study of abiotic stress responses. ([Springer](#)).
- **Ali Raza**, Sidra Charagh, Ali Razzaq, Rida Javed, Rao Sohail Ahmad Khan, and Mirza Hasanuzzaman. Brassicaceae plants responses and tolerance to drought stress. ([Springer](#)).
- **Ali Raza**, Noreen Zahra, Muhammad Bilal Hafeez, Muhammad Ahmad, Shahid Iqbal, Kanval Shaukat, and Gulraiz Ahmad. Nitrogen fixation of legumes: Biology and physiology. ([Springer](#)).
- Muhammad Bilal Hafeez, **Ali Raza**, Noreen Zahra, Kanval Shaukat, Muhammad Zubair Akram, Shahid Iqbal, Shahzad Maqsood Ahmed Basra. Gene regulation in halophytes in conferring salt tolerance. ([Elsevier](#)).
- **Ali Raza**, Madiha Habib, Sidra Charagh, Shiva Najafi Kakavand. Genetic engineering of plants to tolerate toxic metals and metalloids. ([Elsevier](#)).
- **Ali Raza**, Sadam Hussain, Rida Javed, Muhammad Bilal Hafeez, and Mirza Hasanuzzaman. Antioxidant defense systems and bioremediation. ([Springer](#)).

Book chapters under preparation

- Physiological and molecular responses to extreme temperatures, chilling and freezing in plant growth and production. ([Springer](#)).
- Strigolactones for sustainable plant growth and production under resilient environmental conditions. ([Springer](#)).
- Prospective of beneficial microbes for sustainable legumes production. ([Springer](#)).
- Interaction of pesticides with biological nitrogen fixation in legumes: An analysis of necessary evil. ([Springer](#)).
- Plant growth regulators and their interaction with abiotic stress factors. ([Springer](#)).
- Strigolactones, a novel carotenoid-derived plant hormone: biosynthesis, signalling and role in abiotic stress. ([Springer](#)).

Conference Abstracts/Poster Presentations

I have attended several national and international conferences, symposiums, seminars, and workshops related to plant sciences, biotechnology and bioinformatics in Pakistan, Beijing, Wuhan, Nanchang, China.

- **Ali Raza**, Muhammad Azhar Hussain, Sundas Saher Mehmood, Lv Yan, Xiling Zou, Jinsong Xu, Xuekun Zhang. Conjoint analysis of metabolome and transcriptome reveal the complex mechanism's response to chilling stress in rapeseed at "Plant Genomics in

- China XX” August 19-22, 2019. Jiangxi Agricultural University, and Institute of Genetics and Developmental Biology, Chinese Academy of Sciences, Nanchang, China.
- Muhammad Azhar Hussain, Lv Yan, **Ali Raza**, Xuekun Zhang. Transcriptomic study revealed: Small RNAs (miRNA) are efficient regulators of cold stress tolerance mechanisms in rapeseed (*Brassica napus* L.) at “Plant Genomics in China XX” August 19-22, 2019. Jiangxi Agricultural University, and Institute of Genetics and Developmental Biology, Chinese Academy of Sciences, Nanchang, China.
 - Ali Qasim, **Raza Ali**, Salisu Ibrahim Bala, Shakoor Sana, Shahid Ahmad Ali. A High Throughput DNA Extraction Protocol: From Cotton (*Gossypium Hirsutum*) Without Liquid Nitrogen at Ambient Temperature at “1st International Conference on Conventional and Modern Approaches in Plant Sciences” November 28-29, 2017. Department of Botany, University of the Punjab, Lahore, Pakistan.
 - **Raza Ali**, Ali Qasim, Shaukat Haseeb, Saeed Faisal, Saher Mehmood Sundas. Estimation of genetic diversity among sunflower (*Helianthus annuus* L.) genotypes by using RAPD markers at “1st International Conference on Conventional and Modern Approaches in Plant Sciences” November 28-29, 2017. Department of Botany, University of the Punjab, Lahore, Pakistan.
 - Habib Madiha, **Raza Ali**. “CRISPR/Cas9: Based Genome Engineering in Plants” at “1st International Conference on Conventional and Modern Approaches in Plant Sciences” November 28-29, 2017. Department of Botany, University of the Punjab, Lahore, Pakistan.
 - **Ali Raza**, Madiha Habib, Haseeb Shaukat. CRISPR/Cas9 Based Genome Engineering of Cotton to Develop Transgenic Plant at “SINO-PAK International Conference on Innovations in Cotton Breeding and Biotechnology” November 22-24, 2017. Muhammad Nawaz Shareef (MNS) University of Agriculture, Multan, Pakistan.

Reviewer Activities

Recently, reviewed manuscript for following journals.

- **Certified Publons Academy peer reviewer.**
- BIOCELL (1). **IF=0.633**
- Phyton-International Journal of Experimental Botany (1). **IF=0.282**
- Crop Breeding and Applied Biotechnology (1). **IF=1.01**
- Asian Journal of Agriculture and Biology (**WOS**)
- Reviewed some manuscript for Sci-Domain publishers.

Academic and Computational Skills and Competencies

- Handling and interpretation of transcriptomics, proteomics, and metabolomics data.
- Experienced with several statistical and bioinformatics tools, such as R, Cytoscape, Popgen, XLSTAT, SPSS, etc. including many online bioinformatics tools.
- Experienced with most of the lab skills and techniques.
- Experienced and passionate about scientific writing.