

JAVARIA TABASSUM

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EDUCATION:

- Mar 2018 – Dec 2021 **Ph.D.** in Crop Genetics and Breeding
Chinese Academy of Agricultural Sciences, Beijing, China
Supervisor: Prof. Luo Ju
Thesis Title: [Map-based cloning and functional analysis of *FLO2* gene regulating starch synthesis in rice endosperm.](#)
- Sep 2015 – Nov 2017 **M.Sc. (Hons.)** in Plant Breeding and Genetics
PMAS-Arid Agriculture University Rawalpindi, Pakistan.
(CGPA: 3.64/4.00)
Supervisor: Assist. Prof Rashid Mehmood
Thesis Title: [Morpho-physiological screening of bell pepper genotypes for heat and cold tolerance.](#)
- Aug 2011 – July 2015 **B.Sc. (Hons.)** in Agriculture (Major: Plant Breeding and Genetics)
PMAS-Arid Agriculture University Rawalpindi, Pakistan.
(CGPA: 3.54/4.00).

RESEARCH/PROFESSIONAL EXPERIENCE:

- May 2022 –Present **Assistant Professor**
Department of Plant Breeding and Genetics, FAS, University of the Punjab, Lahore Pakistan
- Apr 2018 – Dec, 2021 **Research Scholar**
State Key Laboratory of Rice Biology, China National Rice Research Institute, Hangzhou
- Nov 2017 – Mar, 2018 **Research Assistant**
Molecular Breeding Laboratory, Rice Research Institute, Kala Shah Kaku.
Mentor: Dr. Muhammad Sabar
- Feb 2017 – Feb, 2018 **As an internee**
Internship at The Prime Minister's Youth Internship Program.
- Jan 2016 – Aug, 2017 **Research Scholar**
Biotechnology lab, Department of Plant Breeding and Genetics, PMAS-Arid Agriculture University, Rawalpindi
Mentor: Dr. Rashid Mehmood

PUBLISHED PAPERS

- Anwar, A†., **Tabassum, J†.**, Ahmad, S., Ashfaq, M., Hussain, A., Ullah, M. A., Saad, N.S.B.M., Ghazy, A.I., and Javed, M. A. (2025). Screening and Assessment of Genetic Diversity of Rice (*Oryza sativa* L.) Germplasm in Response to Soil Salinity Stress at Germination Stage. *Agronomy*, 15(2), 376 <https://doi.org/10.3390/agronomy15020376> (IF: 3.3)
- Anwar S et al., **Tabassum J***. (2024). Genome wide identification and characterization of Bax inhibitor-1 gene family in cucumber (*Cucumis sativus*) under biotic and abiotic stress <https://doi.org/10.1186/s12864-024-10704-5> (IF: 3.5)
- Tabassum, J.**, Raza, Q., Riaz, A., Ahmad, S., Rashid, M A R., Javed, M A., Ali, Z., Kang, F., Khan, I A., Ju, L and Atif, R M. (2022). Exploration of the genomic atlas of Dof transcription factor family across genus *Oryza* provides novel insights on rice breeding in changing climate. *Frontiers in Plant Sciences* 13:1004359. [doi: 10.3389/fpls.2022.1004359](https://doi.org/10.3389/fpls.2022.1004359) (IF: 5.753)
- Tabassum, J.**, Ahmad, S., Hussain, B., Mawia, A. M., Zeb, A., & Ju, L. (2021). Applications and Potential of Genome-Editing Systems in Rice Improvement: Current and Future Perspectives. *Agronomy*, 11(7), 1359. <https://doi.org/10.3390/agronomy11071359> (IF: 3.417)
- Ahmad, S., **Tabassum, J.**, Sheng, Z., Lv, Y., Chen, W., Zeb, A., Dong, N., Ali, U., Shao, G., Wei, X., Hu, Shikai & Tang, S. (2024) Loss-of-function of *PGL10* impairs photosynthesis and tolerance to high temperature stress in rice. *Physiologia Plantarum*. <https://doi.org/10.1111/ppl.14369> (IF: 6.4)
- Song L., Jiamin W., Mawia A.M., Xiangjin W., Ruijie C., Guiai J., Yawen W., Jian Z., Lihong X., Zhonghua S., Hu, Shikai., Sanfeng L., Yusong L., Feifei L., Yujuan C., Fiaz S., **Tabassum J.**, Zhimin D., Fangyuan G., Guangjun R, Shao, G., Peisong H and Tang, S. (2024). A novel transcription factor OsMYB73 affects grain size and chalkiness by regulating endosperm storage substances' accumulation-mediated auxin biosynthesis signalling pathway in rice. [doi: 10.1111/pbi.14558](https://doi.org/10.1111/pbi.14558) (IF: 13.2)
- Sami, A., Han, S., Haider, M. Z., Khizar, R., Ali, Q., Shafiq, M., **Tabassum, J.**, Khalid, M.N., Javed, M. A., Sajid, M., Manzoor, M. A & Sabir, I. A. (2024). Genetics aspect of vitamin C (Ascorbic Acid) biosynthesis and signaling pathways in fruits and vegetables crops. *Functional & Integrative Genomics*, 24(2), 1-15 (IF: 3.67)
- Hussain, M., Javed, M.\ M., Sami, A., Shafiq, M., Mazhar, H. S., **Tabassum, J.**, Javed., M. A., Haider, M. Z., Hussaon, M., Sabir, I. A., Ali, D. (2024) Genome-wide analysis of plant specific YABBY transcription factor gene family in carrot (*Dacus carota*) and its comparison with Arabidopsis. *BMC Genom. Data*. <https://doi.org/10.1186/s12863-024-01210-4> (IF: 2.69)
- Raza, A., Salehi, H., Bashir, S., **Tabassum, J.**, Jamla, M., Charagh, S., Barmukh, R., Mir, R. A., Bhat, B.A., Javed, M. A., Guan, D., Mir, R. R., Siddique, K. and Varshney, R. K. (2024). Transcriptomics, proteomics, and metabolomics interventions prompt crop improvement against metal(loid) toxicity. *Plant Cell Reports*, 43(3), 80. [doi:10.1007/s00299-024-03153-7](https://doi.org/10.1007/s00299-024-03153-7) (IF: 6.2)
- Shaheen, N., Ahmad, S., Alghamdi, S. S., Rehman, H. M., Javed, M. A., **Tabassum, J.**, & Shao, G. (2023). CRISPR-Cas System, a Possible “Savior” of Rice Threatened by Climate Change: An Updated Review. *Rice*, 16(1), 39. [doi:10.1186/s12284-023-00652-1](https://doi.org/10.1186/s12284-023-00652-1) (IF: 5.5)
- Ashfaq, M., Rasheed, A., Zhu, R., Ali, M., Javed, M. A., Anwar, A., **Tabassum, J.**, Shaheen, Shabnum and Wu, X. (2023). Genome-Wide Association Mapping for Yield and Yield-Related Traits in Rice (*Oryza Sativa* L.) Using SNPs Markers. *Genes*, 14(5), 1089.

<https://doi.org/10.3390/genes14051089> (IF: 4.141)

- Mazhar, H. S.-U.-D., Shafiq, M., Ali, H., Ashfaq, M., Anwar, A., **Tabassum, J.**, Ali, Q., Jilani, G., Awais, M., Sahu, Ravi and Javed, M. A. (2023). Genome-Wide Identification, and In-Silico Expression Analysis of YABBY Gene Family in Response to Biotic and Abiotic Stresses in Potato (*Solanum tuberosum*). *Genes*, 14(4), 824. <https://doi.org/10.3390/genes14040824> (IF: 4.141)
- Javed, M. A., Ali, S. W., Ashfaq, M., **Tabassum, J.**, Ali, M., IhsanUllah, M., Nayab, S F., Kaya Y., Khalili E., Ali Q., and Yau, T. E. (2022). Molecular profiling of bacterial blight resistance in Malaysian rice cultivars. *Brazilian Journal of Biology*, 82, e256189. [doi:10.1590/1519-6984.256189](https://doi.org/10.1590/1519-6984.256189) (IF: 1.32)
- Raza, A., **Tabassum, J.**, Fakhar, A Z., Sharif, R., Chen, H., Zhang, C., Ju, L., Fotopoulos, V., Siddique, K H M., Singh, R K., Zhuang, W., and Varshney, R K. (2022). Smart reprogramming of plants against salinity stress using modern biotechnological tools. *Critical Reviews in Biotechnology*. p. 1-28. [doi. 10.1080/07388551.2022.2093695](https://doi.org/10.1080/07388551.2022.2093695) (IF: 8.429)
- Aqib, Z., Ahmad, S., **Tabassum, J.**, Zhonghua, S and Peisong, H. (2022). Rice grain yield and quality improvement via CRISPR/Cas9 system: an updated review. *Notulae Botanicae Horti Agrobotanici Cluj-Napoca*, 50 (3). [DOI:10.15835/nbha50312388](https://doi.org/10.15835/nbha50312388) (IF: 1.44)
- Raza, A., **Tabassum, J.**, Zahid, Z., Charagh, S., Bashir, S., Barmukh, R., Khan, R., Sohail, A., Barmosa, J., Zhang, C., & Chen, H. (2021) Advances in ‘omics’ approaches for improving toxic metals/metalloids tolerance in plants. *Frontiers in Plant Science*. [10.3389/fpls.2021.794373](https://doi.org/10.3389/fpls.2021.794373) (IF: 5.44)
- Raza, A., **Tabassum, J.**, Mubarik, M., Anwar, S., Zahra, N., Sharif, Y., Hafeez, M., Zhang, C., Corpas, F., & Chen, H. (2021). Hydrogen sulphide: an emerging component against abiotic stress in plants. *Plant Biology*. [doi:10.1111/plb.13368](https://doi.org/10.1111/plb.13368) (IF=3.081)
- Haider, S., Rehman, S., Ahmad, Y., Raza, A., **Tabassum, J.**, Javed, T., Osman, H., & Mahmood, T. (2021). In Silico Characterization and Expression Profiles of Heat Shock Transcription Factors (HSFs) in Maize (*Zea mays L.*). *Agronomy*, 11(11), 2335. [https://doi.org/10.3390/11\(11\), 2335](https://doi.org/10.3390/10.3390/11(11), 2335). (IF: 3.417)
- Raza, A., **Tabassum, J.**, Kudapa, H., & Varshney, R. K. (2021). Can omics deliver temperature resilient ready-to-grow crops? *Critical Reviews in Biotechnology*, 1-24. <https://doi.org/10.1080/07388551.2021.1898332> (IF: 8.429)
- Mawia, A. M., Hui, S., Zhou, L., Li, H., **Tabassum, J.**, Lai, C., Wang, J., Shao, G., Wei, X., & Tang, S. (2020). Inorganic arsenic toxicity and alleviation strategies in rice. *Journal of Hazardous Materials*, 124751. <https://doi.org/10.1016/j.jhazmat.2020.124751> (IF: 10.588)

Papers in preparation:

Tabassum, J., et al. (2025). Knockout analysis of *FLO2* gene via CRISPR/Cas9-targeted mutagenesis in rice (Under review)

BOOK CHAPTERS

Tabassum, J., et al. (2024). Chapter 1- Advancements in Germination and Seedling Stress Tolerance in Crop Species In Advancements in Plant Stress Tolerance and Their Medicinal Use (pp. 1-9): THE RUNNING LINE LLC, USA. [ISBN# 979-8-9921800-1-5](https://doi.org/10.1016/B978-0-323-85665-2.00006-6)

Ahmad, S., Shahzad, R., Jamil, S., Nisar, A., Khan, Z., Kanwal, S., **Tabassum, J.** . . . Khan, A. A. (2022). Chapter 19 - CRISPR-mediated genome editing for developing climate-resilient monocot and dicot crops. In T. Aftab & A. Roychoudhury (Eds.), *Plant Perspectives to Global Climate Changes* (pp. 393-411): Academic Press. <https://doi.org/10.1016/B978-0-323-85665-2.00006-6>.

Ahmad, S., Shahzad, R., Jamil, S., **Tabassum, J.**, et al. (2021). Regulatory aspects, risk assessment, and toxicity associated with RNAi and CRISPR methods. In *CRISPR and RNAi Systems* (pp. 687-721): Elsevier. <https://doi.org/10.1016/B978-0-12-821910-2.00013-8>.

Ahmad, S., Sheng, Z., Jalal, R. S., **Tabassum, J.**, et al. (2021). CRISPR–Cas technology towards

- improvement of abiotic stress tolerance in plants. In CRISPR and RNAi Systems (pp. 755-772): Elsevier. <https://doi.org/10.1016/B978-0-12-821910-2.00021-7>.
- Raza, A., Hafeez, M. B., Zahra, N., Shaukat, K., Umbreen, S., **Tabassum, J.**, et al. (2020). The plant family Brassicaceae: Introduction, biology, and importance. In The plant family brassicaceae (pp. 1-43): Springer. https://doi.org/10.1007/978-981-15-6345-4_1.
- Raza, A., Mehmood, S. S., **Tabassum, J.**, et al. (2019). Targeting plant hormones to develop abiotic stress resistance in wheat. In Wheat production in changing environments (pp. 557-577): Springer. https://doi.org/10.1007/978-981-13-6883-7_22.

RESEARCH PROJECT

Project Title: ‘Morphological and Molecular Screening of Rice (*Oryza sativa* L.) Germplasm for Submergence Tolerance’ (**Amount = 0.20 million, 2024-2025**) **Continue**

Project Title: ‘Exploration of *Dof* gene family among *Oryza* species’ (**Amount = 0.20 million, 2022-2023**) **Completed**

RESEARCH STUDENT SUPERVISED

1. **Syed Ali Abbas**, MS student, Department of Plant Breeding & Genetics, Faculty of Agricultural Sciences, University of the Punjab, Lahore Pakistan. Project: Morphological and molecular screening of rice germplasm in drought tolerance (2023)
2. **Arzaf Rafique**, MS student, Department of Plant Breeding & Genetics Faculty of Agricultural Sciences, University of the Punjab, Lahore Pakistan. Project: Genetic Variations Controlling Wheat Growth Stages under Speed Breeding (2024).

TEACHING COURSES

Degree Program	Subject code	Subject Title	Credits
B.Sc. (Hons.)	PBG-306	Breeding Maize & Millets	3(2-1)
	PBG-302	Breeding Fiber Crops	3(2-1)
	PBG-305	Cytogenetics	3(2-1)
	PBG-307	Morphology and Reproductive Systems of Crops	3(2-1)
M.Sc. (Hons.)	PBG-708	Population Genetics	3(3-0)
	PBG-702	Cytogenetics of Crop Plants	3(2-1)
	PBG-713	Genetic Engineering	3(2-1)
	PBG-724	Hybrid Seed Production	3(2-1)

PROFESSIONAL TRAININGS/WORKSHOPS/CONFERENCES

- Participated in Training Workshop on "**Hands on Training on Patent Claims Drafting**" by Office of Research Innovation and Commercialization (ORIC), University of the Punjab, Lahore Pakistan on 18th December 2024.
- Completed the 13th Training Course on "**Biochemical and Molecular Techniques in Plant Breeding**" held at Nuclear Institute for Agriculture and Biology, Faisalabad November 18-22, 2024.
- Participated in Training Workshop for NAEAC Program Evaluators" by National Agriculture Education Accreditation Council, HEC, Islamabad on 14th February 2024.
- Participated in "**International Conference on Advances in Biological Sciences**" held at The School of Biological Sciences, University of the Punjab, Lahore Pakistan March 06-08, 2023.
- Participated in "**Faculty-wise Training Workshop on How to Prepare Self-Assessment Report (SAR)**" by Quality Enhancement Cell (QEC), University of the Punjab, Lahore.

- Participated in "**International Symposium on Climate Smart Sustainable Rice-Wheat Production System**" by Faculty of Agricultural Sciences, University of the Punjab, Lahore on 11th August 2022.
- Participated in the "**Best of Entrepreneurship Series Program**" organized by the Islamic Chamber of Commerce, Industry & Agriculture (ICCIA) at the University of Central Punjab, Lahore on 28th July 2022.
- Participated in live webinar on "**CRISPR-Cas Precision Genome Engineering.**" organized by *Bioingene.com* on 24th July 2020.
- Participated in 5th International Symposium on "**Genomics and Crop genetic Improvement-Heterosis**" presented by the National Key Laboratory of Crop Genetic Improvement, Huazhong Agricultural University, Wuhan, China. (October 22-25, 2018).
- Attended and participated in 1st hands-on training workshop on "**Adobe Illustrator for Scientists**" from August 24-26, 2018.
- Certificate of appreciation and participation in "**The First International Congress of Biological Control**" May14-16, 2018 Beijing, China.
- Training course in English Typewriting including MS Office & Email/Internet organized by Secretariat Training Institute, Islamabad, Pakistan
- Attended workshop on "Prospects of modern bee keeping in Pakistan" held at PMAS, Arid Agriculture University, Rawalpindi.
- Training workshop on Kitchen gardening "A way to safe and nutritious vegetables" held at NARC auditorium, Islamabad, Pakistan.
- Attended One-Day Seminar 'LEADERSHIP SKILLS-LEAD BY EXAMPLE' on April 2, 2014.
- Certificate on "**Hands-on Training on Application of Genomics in Plant Breeding**" held at the Department of Plant Breeding and Genetics, University of Agriculture, Faisalabad, Pak. (24th – 28th Feb 2014).
- Participated in making '**Miniature Garden**' at Spring Festival PMAS-Arid Agriculture University, Rawalpindi.
- Participated in 'National Youth Tax Film Festival' as a Volunteer arranged by Indus Consortium for Humanitarian, Environmental & Development Initiatives, Islamabad.
- Actively Participated in Celebration of WORLD FOOD DAY & GROW FESTIVAL at PMAS-UAAR.
- Attended seminars on Global change and climatology, NARC Islamabad.

EXPERTISE/SKILLS:

- Hands on expertise in CRISPR vector construct, agrobacterium-mediated transformation, mutant screening and characterization, Confocal Microscopy, Scanning Electron Microscopy (SEM) and Transmission Electron Microscopy (TEM), Prom-GUS assay, Subcellular localization (protoplast and tissue based), ELISA, Y2H, Western blotting.
- Molecular biology (Marker assisted breeding) including DNA Extraction, RNA Extraction, Polymerase Chain Reactions (PCR), Agarose and Polyacrylamide Gel Electrophoresis (PAGE), Plant Tissue Culture and Gene and vector cloning.
- Hands-on experience of different bioinformatics tools such as TB Tools, Bio-Edit, MEGA, Cluster-X, CLC workbench, JustBio, EMBL, PlantPAN, UniPort, NCBI and Phytozome genomic databases.
- Excellent scientific writing (Research and Review articles, Book, etc.) and presentation skills.

HONORS AND AWARDS

- Awardee of Excellent Performance in the Department of Plant Breeding & Genetics for the year 2022-2023
- Awardee of GSCAAS Scholarship for Ph.D. in China
- Accredited Punjab Educational Endowment Fund PEEF during M.Sc. (Hons.)

- Awardee of Prime Minister Laptop Scheme
- Awardee of Vice Chancellor Talent Scholarship
- Selected as an Internee at The Prime Minister's Youth Internship Scheme

ATTRIBUTES AND DEMONSTRATED ABILITIES

- Leadership Qualities
- Exceptional versatility and adaptabilities
- Team building
- Work effectively independently and as a part of team
- Confident to face and solve problems.
- Writing research papers, articles, and other documents
- Having fluency in spoken English