

Dr. Saira Azam

Assistant Professor

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My academic pursuits commenced with an M.Sc. in Chemistry from the University of the Punjab, followed by an M.Phil. in Biotechnology from the National Institute for Biotechnology and Genetic Engineering (NIBGE), Quaid-i-Azam University Islamabad. This was further complemented by my doctoral studies at CEMB, solidifying my expertise in the intricate domains of Molecular Biology.

In 2005, my professional journey commenced at CEMB, University of the Punjab, where I assumed the role of a Research Officer (BPS-17). This marked the inception of my scholarly contributions, and in subsequent years, I progressed to the role of Research Officer cum Lecturer (BPS-18), substantiating my commitment to research-driven academia. Currently I am serving as Assistant Professor.

Within CEMB, I have been a fervent participant in the Plant Biotechnology group, significantly impacting diverse research endeavors. My engagement has encompassed pivotal projects ranging from the transformation of salt and drought tolerant genes in Basmati rice to the meticulous scrutiny of genetically modified (GM) cotton through cutting-edge molecular techniques. My collaborative spirit has been evident in research projects funded by prestigious entities such as HEC, PARB, and USDA, culminating in my role as a co-author for research articles published in esteemed international peer-reviewed journals.

My devotion has been acknowledged through accolades including Performance Evaluation Awards (2016, 2019, 2020) and Research Incentive Awards (2018, 2020, 2021) from the University of the Punjab, a testament to my unwavering commitment to pushing scientific boundaries.

Currently, I hold the esteemed responsibility of spearheading the Biosafety group, which undertakes comprehensive risk assessment of GM crops. Concurrently, my role as a team scientist continues to be instrumental in the successful execution of various laboratory initiatives. Additionally, I have taken an active role in mentoring M.Phil. students and contributing as a resource person for workshops hosted by CEMB.

Research Interests:

My research compass is firmly oriented toward the development of insect-resistant cotton and the critical evaluation of risks associated with GM crops. These areas of focus epitomize my dedication to advancing agricultural sustainability and the prudent application of biotechnology.

Selected Publications:

1. Naeem, S., Shahid, N., Khan, M. A., **Azam, S.**, Bhutta, M. S., Latif, A., Yasmeen, A., Sami Ullah, T. R., Rao, A. Q., & Malik, K. (2023). Engineering of *Chlamydomonas reinhardtii* chloroplast for mucosal immunotherapeutic against Newcastle disease virus.

2. Batool, F., Hassan, **S., Azam, S.**, Sher, Z., Ali, Q., & Rashid, B. (2023). Transformation and expressional studies of *GaZnF* gene to improve drought tolerance in *Gossypium hirsutum*. *Scientific Reports*, 13(1), 5064.
3. Yasmeen, A., Shakoor, S., **Azam, S.**, Bakhsh, A., Shahid, N., Latif, A., ... & Rao, A. Q. (2022). CRISPR/Cas-mediated knockdown of vacuolar invertase gene expression lowers the cold-induced sweetening in potatoes. *Planta*, 256(6), 107.
4. Latif, A., **Azam, S.**, Shahid, N., Javed, M. R., Haider, Z., Yasmeen, A., ... & Rao, A. Q. (2022). Overexpression of the AGL42 gene in cotton delayed leaf senescence through downregulation of NAC transcription factors. *Scientific Reports*, 12(1), 21093.
5. Shad, M., Yasmeen, A., **Azam, S.**, Bakhsh, A., Latif, A., Shahid, N., ... & Shahid, A. A. (2022). Enhancing the resilience of transgenic cotton for insect resistance. *Molecular Biology Reports*, 49(6), 5315-5323. (IF 2.316)
6. Amat-ur-Rasool, H., Latif, A., Yasmeen, A., Shahid, N., **Azam, S.**, Bashir, A., ... & Shahid, A. A. (2022). Enhanced expression of plasma membrane intrinsic protein 2 improves cotton fiber length in *Gossypium arboreum*. *Molecular Biology Reports*, 1-8.
7. ud Din, **S., Azam, S.**, Rao, A. Q., Shad, M., Ahmed, M., Gul, A., ... & Shahid, A. A. (2021). Development of broad-spectrum and sustainable resistance in cotton against major insects through the combination of Bt and plant lectin genes. *Plant Cell Reports*, 1-15.(IF:4.570)
8. Gul, A., Hussain, G., Iqbal, A., Rao, A. Q., ud Din, S., Yasmeen, A., **Azam, S.**, ... & Husnain, T. (2020). Constitutive expression of Asparaginase in *Gossypium hirsutum* triggers insecticidal activity against *Bemisia tabaci*. *Scientific reports*, 10(1), 1-11.
a. (IF: 4.379)
9. Shahid, N., Samiullah, T. R., Shakoor, S., Latif, A., Yasmeen, A., **Azam, S.**, ... & Rao, A. Q. (2020). Early stage development of a Newcastle disease vaccine candidate in corn. *Frontiers in Veterinary Science*, 7.IF:(3.414)
10. Qamar, Z., Tariq, M., Rehman, T., Iqbal, M. S., Sarwar, M. B., Sharif, M. N., **Azam, S.**, ... & Nasir, I. A. (2019). Trackable CEMB-Klean Cotton Transgenic Technology: Affordable Climate Neutral Agri-biotech Industrialization for Developing Countries.
11. Zubair, M., Latif, A., Rao, A. Q., **Azam, S.**, Shahid, N., Samiullah, T. R., ... & Husnain, T. (2019). A combinational approach of enhanced methanol production and double Bt genes for broad spectrum insect resistance in transgenic cotton. *Molecular biotechnology*, 61(9), 663-673.(IF:2.695)
12. **Azam, S.**, Samiullah, T. R., Yasmeen, A., ud Din, S., Iqbal, A., Rao, A. Q., ... & Husnain, T. (2013). Dissemination of Bt cotton in cotton growing belt of Pakistan. *Advancements in Life Sciences*, 1(1).
13. **Azam, S.**, Rehman, A., Afzal, M., & Khalid, Z. M. (2005). Assessment of damage caused to soil and the efficiency of tannery wastewater treatment plant at Kasur, Pakistan. In *Proceedings of the first international conference on environmentally sustainable development v. 1-3*.

14. **Saira Azam**, Z.M Kahlid and Abdul Qayyum Rao. Book published on Enhanced Biodegradation of Paranitrophenol by *Pseudomonas* sp. Lamber Academic publishing.