Dr. Saleem Ur Rahman

Personal Information

Date of birth: 30/06/1988
Nationality: Pakistani
Address:
Department of Allied Health Sciences, Pak-Austria Fachhochscule-Institute of Applied Sciences and Technology (PAF-IAST), Mang, Haripur, Khyber Pakhtunkhwa, Pakistan.
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Profile

Experience in Plant Tissue Culture, Plant Genetic Transformation, Plant Genome Editing, Plant Molecular Virology and Plant breeding, I am seeking for a challenging position to contribute innovative solutions through cutting-edge research in Biotechnology. I aim to make valuable contributions and conduct impactful research in the field of Plant Biotechnology.

Work Experience

October 2023 –till date
Haripur, Pakistan

Assistant Professor

Pak-Austria Fachhochscule-Institute of Applied Sciences and Technology (PAF-IAST), Mang, Haripur, Khyber Pakhtunkhwa, Pakistan

November 2020 –June 2023
Faisalabad, Pakistan

Research Associate

National Institute for Biotechnology and Genetic Engineering (NIBGE), Faisalabad P.O. Box 577, Pakistan

- Soybean breeding for improvement of different agronomic traits
- Designing multiple molecular strategies for soybean genetic improvement
- Development of herbicide resistant transgenic soybean
- CRISPR/Cas9 vector construction and development of soybean expression lines

January 2018–December 2018
Georgia, USA

Visiting Research Scholar

Parrott Lab, Center for Applied Genetic Technologies (CAGT), University of Georgia, USA

- Development of transgenic soybean against *Mungbean yellow mosaic India virus* using tasiRNA mediated gene silencing approach
- Genome editing (using CRISPR/cas9) of soybean for resistance to potyviruses by targeting the host susceptibility genes
- Genome walking technology to identify the resistant gene for *Mungbean yellow mosaic India virus*
- Somatic embryogenesis of soybean

November 2014 – August 2022
Faisalabad, Pakistan

PhD Research Scholar

National Institute for Biotechnology and Genetic Engineering (NIBGE), Faisalabad P.O. Box 577, Pakistan

- Molecular Characterization of begomoviruses infecting legume crops in Pakistan
- Metagenomic study for the identification of viruses infecting soybean at Faisalabad, Pakistan
- Development of transgenic soybean for *Mungbean yellow mosaic India virus* using siRNA and tasiRNA approach
- Optimization of soybean tissue culture (both organogenesis and somatic embryogenesis)
- Optimization of *Agrobacterium*-mediated transformation for soybean

Skills

- During my Ph.D. studies, I focused on the genetic improvement of soybean using multiple strategies such as RNAi, CRISPR/Cas9 as well as breeding
- Plant tissue culture, *Agrobacterium*-mediated transformation, Biolistic transformation
- Sanger Sequencing and RNAseq analysis for the identification of plant viruses
- **Languages:** English, Urdu, and Pashto.

Soybean varieties/ Cultivars

- Three Soybean (*Glycine max*) lines have been submitted in Federal Seed Certification and Registration Department (FSCRD), Islamabad. The NIBGE Soya-1 is for spring cultivation, which produce high yield in long day conditions, while NIBGE Soya-2 is for autumn season that produce high yield in short day conditions. However, the NIBGE Soya-3 is for virus resistance (yellow mosaic disease) in autumn season. All these lines have been tested in National Uniform Yield Trial (NUYT).

1. **NIBGE Soya-1** submitted in 2022
   Breeders: Dr. Ghulam Raza, **Dr. Saleem Ur Rahman**, Dr. Zahid Mukhtar, Dr. Shahid Mansoor
2. **NIBGE Soya-2** submitted in 2023
   Breeders: Dr. Ghulam Raza, **Dr. Saleem Ur Rahman**, Dr. Zahid Mukhtar
3. **NIBGE Soya-3** submitted in 2023
   Breeders: Dr. Ghulam Raza, **Dr. Saleem Ur Rahman**, Dr. Shahid Mansoor

Education

2014-2022 **Biotechnology | Ph.D.**
National Institute for Biotechnology and Genetic Engineering (NIBGE)

2012-2014 **Biotechnology| MPhil.**
Department of Biotechnology, University of Malakand

2007-2011 **Biotechnology| BS (Hons)**
Department of Biotechnology, University of Malakand

Publications (IF: 81.71)

- **Saleem Ur Rahman**, Ghulam Raza, Rubab Zahra Naqvi, Evan McCoy, Muhammed Hammad, Peter LaFayette, Wayne Allen Parrott, Imran Amin, Zahid Mukhtar, Abdel-Rhman Z. Gaafar, Mohamed S. Hodhod and Shahid Mansoor (**2023**). A source of resistance against yellow mosaic disease in soybeans correlates with a novel mutation in a resistance gene. *Frontiers in Plant Science*. 14. https://doi.org/10.3389/fpls.2023.1230559 **IF=5.67**
- Muhammad Ismail Buzdar, Nasim Ahmed, Muhammad Jawad A. Awan, **Saleem Ur Rahman**, Muhammad A. B. Waqas, Ghulam Raza, Fathia Mubeen, Shahid Mansoor and Imran Amin (**2023**). Occurrence and Characterization of Alternaria alternata causing Leaf Spot of Soybean (*Glycine max*) in Pakistan. *Journal of Plant Pathology*. 1-9, https://doi.org/10.1007/s42161-023-01464-4 **IF=2.64**
- Reena Rani, Muhammad Arif, **Saleem Ur Rahman**, Muhammad Hammad, Zahid Mukhtar, Muhammad Rizwan, Hussein Shimellis and Ghulam Raza (**2023**). Field Screening of Diverse Soybean Germplasm to Characterize their Adaptability under Long-Day Condition. *Agronomy*. 13(9), 2317. https://doi.org/10.3390/agronomy13092317 I**F=3.7**
- **Saleem Ur Rahman**, Muhammad Omar Khan, Rahim Ullah, Fayaz Ahmad and Ghulam Raza (**2023**). *Agrobacterium*-mediated transformation for the development of transgenic crops; present and future prospects. *Molecular Biotechnology*. https://doi.org/10.1007/s12033-023-00826-8. **IF=2.86**

- **Saleem Ur Rahman**, Leslie L. Domier, Ghulam Raza, Nasim Ahmed, Nancy K. McCoppin, Imran Amin and Shahid Mansoor (**2023**). Metagenomic study for the identification of viruses infecting soybean in Pakistan. *Australasian Plant Pathology.* https://doi.org/10.1007/s13313-023-00909-9. **IF=1.40**
- Muhammad Ismail Buzdar, Muhammad Jawad Akbar Awan, **Saleem Ur Rahman**, Rubab Zahra Naqvi, Ghulam Raza, Shahid Mansoor, Imran Amin (**2023**). Seed-borne Curvularia lunata deteriorating seed health and germination of soybean. *Biologia. 1-8.* https://doi.org/10.1007/s11756-023-01400-y. **IF=2.22**
- Muhammad Arslan Mahmood, Rubab Zahra Naqvi, **Saleem Ur Rahman**, Imran Amin and Shahid Mansoor (**2023**). Plant Virus-Derived Vectors for Plant Genome Engineering. *Viruses. 15(2), 531.* https://doi.org/10.3390/v15020531. **IF= 5.81**
- **Saleem Ur Rahman**, Ghulam Raza, Muhammad Zubair, Nasim Ahmed, Leslie L. Domier, Nousheen Jamil, Shahid Mansoor and Imran Amin (**2023**). Multiple begomoviruses infecting soybean; a case study in Faisalabad, Pakistan. *Biologia*. 1-12. https://link.springer.com/article/10.1007/s11756-022-01290-6 **IF=1.65**
- **Saleem Ur Rahman**, Evan McCoy, Ghulam Raza, Zahir Ali, Shahid Mansoor and Imran Amin (**2023**). Improvement of Soybean; A way forward transition from Genetic Engineering to New Plant Breeding Technologies. *Molecular Biotechnology*. 1-19. https://doi.org/10.1007/s12033-022-00456-6. **IF=2.86**
- Nasim Ahmed, Imran Amin, Syed Shan-e-Ali Zaidi, **Saleem Ur Rahman**, Muhammad Farooq, Claude Maurice Fauquet and Shahid Mansoor (**2021**). Circular DNA Enrichment Sequencing reveals the viral/satellites genetic diversity associated with the third epidemic of cotton leaf curl disease. *Biology Methods and Protocols*. 6, 1, bpab005, https://doi.org/10.1093/biomethods/bpab005. **IF=NA**
- Maddiha Riaz, Muhammad Zubair, **Saleem Ur Rahman***,* and Shahid Mansoor (**2021**). Identification of *Cotton leaf curl Kokhran-Kokhran virus* associated with Cotton leaf curl Multan betasatellite from soybean (*Glycine max*) in Pakistan. *Journal of Plant Pathology* 103, 1323–1324. *https://doi.org/10.1007/s42161-021-00755-y.* **IF=2.64**
- Muhamad Zubair, **Saleem Ur Rahman***,* Ishtiaq Hassan, Azhar Hussain Shah, Imran Amin, Shahid Mansoor (**2020**). Diversity and recombination analysis of *Cotton leaf curl Multan betasatellite* associated with cotton leaf curl begomovirus disease complex. *Australasian Plant Pathology.*1-4*. https://doi.org/10.1007/s13313-020-00759-9.* **IF=1.40**
- **Saleem Ur Rahman***,* Muhamad Zubair, Nasim Ahmed, Ghulam Raza, Muhammad Zuhaib Khan, Shahid Mansoor and Imran Amin (**2020**). *Cotton leaf curl Kokhran virus* in association with *Chili leaf curl betasatellite* infecting mungbean (*Vigna radiata*.) and black gram (*Vigna mungo*.) in Pakistan. *Australasian Plant Pathology.* https://doi.org/10.1007/s13313-020-00719-3. **IF=1.40**
- **Saleem Ur Rahman***,* Muhamad Zubair, Nasim Ahmed, Muhamamd Zuhaib Khan, Ghulam Raza, Imran Amin, Shahid Mansoor (**2020**). First report of pepper leaf curl Bangladesh virus (PepLCBV) associated with cotton leaf curl Multan betasatellite on kidney bean (Phaseolus vulgaris) in Pakistan. *Journal of plant pathology*, https://doi.org/10.1007/s42161-020-00494-6. **IF=2.64**
- **Saleem Ur Rahman***,* Muhamad Zubair, Nasim Ahmed, Muhamamd Zuhaib Khan, Ghulam Raza, Imran Amin, Shahid Mansoor (**2019**). Identification of "*Malvastrum yellow vein Lahore virus*" a proposed new species of begomovirus in association with cotton leaf curl Multan betasatellite infecting green bean (*Phaseolus vulgaris*) in Pakistan. *Australasian Plant Disease Note. 14-38. https://doi.org/10.1007/s13314-019-0369-y.* **IF=NA**
- Alem Zeb, **Saleem Ur Rahman** (**2017**). Protective effects of dietary glycine and glutamic acid toward the toxic effects of oxidized mustard oil in rabbits. *Food and Functions. 8, 429.* https://doi.org/10.1039/c6fo01329e . **IF=6.31**

Articles in Review/accepted

- **Saleem Ur Rahman**, Muhammad Arslan, Rubab Zahra Naqvi, Shahid Mansoor (**2023**). Bio-SCAN: a next-generation tool for the detection of plant viruses. *Trends in Plant Science*. **IF=22.00**
- Rahimullah, **Saleem Ur Rahman**, Hina Hasin (**2023**). First report of Cotton leaf curl disease in Okra and Chilli plants from Sheringal (Paatrak and Sawnay regions), Dir (Upper), Khyber Pakhtunkhwa, Pakistan. *Journal of plant pathology*. **IF=2.64**
- **Saleem Ur Rahman**, Haris Khurshid, Evan McCoy, Abdal Ali, Saifullah Abro, Midrar Ullah, Fayaz Ahmad, Shahid Mansoor, Ghulam Raza (**2023**). Soybean cultivation in developing countries; Challenges and opportunities. *Agricultural Research*. **IF=1.4**

- **Saleem Ur Rahman**, Reena Rani, Mudassar Ashraf, Ghulam Raza (**2023**). Agronomic Evaluation of Soybean Germplasm in different Zones of Pakistan. *Agronomy*. **IF=3.7**
- **Saleem Ur Rahman**, Rubab Zahra Naqvi, Ghulam Raza, Shahid Mansoor (**2023**). Crop wild relatives; a source of resistance against Geminiviruses; present and future perspectives. *Frontiers in Plant Science*. **IF=5.67**

BOOK CHAPTERS

- Patil, B.L., Chakraborty, S., Czosnek, H., Fiallo-Olivé, E., Gilbertson, R.L., Legg, J., Mansoor, S., Navas-Castillo, J., Naqvi, R.Z., **Saleem Ur Rahman** and Zerbini, F.M (**2020**). Plant resistance to Geminiviruses. Elsevier Limited. https://doi.org/10.1016/B978-0-12-809633-8.21565-3
- **Saleem Ur Rahman**, H. Ramzan, H. Khurshid, N. Ahmad, K. Wang, Z. Mukhtar, G. Raza (**2022**). Role of Biotechnology for improvement of sugarcane. Omics Approaches for Sugarcane Crop Improvement. CRS Press, 33-49.

Awards

IPFP Fellowship (2023-2024)

Higher Education Commission (HEC) of Pakistan
Best Poster Presenter (3rd April to 5th April, 2023)

GC-University, Faisalabad, Pakistan

IRSIP Fellowship (Jan, 2018-Nov, 2018)

Higher Education Commission (HEC) of Pakistan

Workshops and Conferences

Fall Retreat 2018, Plant Center University of Georgia, USA (27-28 September). "Developing resistance in soybean (*Glycine max*) against RNA viruses using CRISPR/Cas9 approach".

The 17th Biennial Conference on the Molecular and Cellular Biology of the Soybean (26-29 August, 2018) USA. "Development of transgenic soybean (*Glycine max*) against *Mungbean yellow mosaic India virus* (MYMIV) using RNA interference approach".

Institute of Plant Breeding, Genetics & Genomics 2018 Retreat, Callaway Gardens, USA (May 10-11). "Genetic diversity of begomoviruses infecting legume crops in Pakistan and development of transgenic resistant soybean against *Mungbean yellow mosaic India virus* (MYMIV)".

References

Prof. Dr. Shahid Mansoor (*SI*),
International Center for Chemical and Biological Sciences,
University of Karachi, Pakistan
Email Address: shahidmansoor7@gmail.com

Dr. Ghulam Raza,
Principal Scientist,
Gene Transformation Lab,
Agricultural Biotechnology Division,
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Director,
Institute of Plant Breeding, Genetics and Genomics,
Center for Applied Genetic Technologies (CAGT), University of Georgia, USA
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