

# UMARA SAHAR RANA

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## SUMMARY

Breeder and Geneticist with extensive experience in trait phenotyping, genotyping, genetic mapping, breeding methodologies, germplasm development and screening, data analysis.

## EDUCATION

2020 **PhD** – Agronomy. USDA Hard Winter Wheat Genetic Research Center. Kansas State University  
2018 **Graduate Certificate** – Genetics, Genomics and Biotechnology, Kansas State University  
2012 **Master of Science (Hons.)** – Plant Breeding and Genetics, University of Agriculture Faisalabad  
2010 **Bachelor of Science (Hons.)** – Agriculture (Major: PBG), University of Agriculture Faisalabad

## EXPERIENCE AND SKILLS

Since 2021 **Assistant Professor.** University of Agriculture Faisalabad  
2019-20 **Graduate Research Assistant.** Dept. of Agronomy, Kansas State University  
2013-16 **Lecturer/Research Associate.** Sub Campus Burewala, University of Agriculture Faisalabad  
2011-12 **Graduate Research Assistant.** University of Agriculture Faisalabad  
2010 **Undergraduate Research Assistant.** University of Agriculture Faisalabad

**Skills-** Next generation sequencing data handling, Data analysis, R and Unix programming, Wide hybridization and germplasm development, Genotyping-by-Sequencing (GBS), Biparental and genome wide association studies, Genotyping and phenotyping of wheat diseases particularly Fusarium head blight and rust, Linkage map construction, QTL mapping, Marker development, KASP assaying, Experimental design, Yield trials, Scientific writing

## SELECTED PUBLICATIONS

1. Ghaffar, S., M.A. Khan, M.A. Khan, **U.S. Rana**, M. Nadeem, H.S.B. Mustafa, M. Zulfiqar, M. Ghias, S. Habib, S. Rauf and M.R. Bashir. 2025. Influence of salt stress on growth of brassica seedling. *Insight-J. Life Social Sci.* 3:137-146.
2. Chattha, W.S., H. Saleem, S. Raja, M.Z. Ihsan, A.H. Ghazy, T. Gul, F. Siddique, M. Afzal, **U.S. Rana** and J.A. Junaid. 2024. *Xylem-phloem cell area aid in salinity tolerance of tomato plant.* *Scientia Horticulturae.* 328:112919.
3. **Rana, U.S.**, M.O. Farooq, W. Abbas, B. Nasir, M.S. Ahmad and M. Imtiaz. 2024. Assessment of combining ability for yield and yield related traits in spring wheat (*Triticum aestivum* L.). *Biol Clinic. Sci. Res. J.* 857
4. Junaid, J.A., H. Saleem, K. Jamshaid, I. Sharif, M.A. Khan, **U.S. Rana** and S. akram. 2024. *Effect of chromium and lead on seedling and yield contributing parameters of maize (Zea mayz L).* *World J. Biol. Biotechnol.* 9(2):15-19.
5. **Rana, U.S.**, M.A. Azmat and A.S. Khan. 2023. *Genetic analysis of yield related traits in 5 × 5 diallel crosses of spring wheat (Triticum aestivum L.).* *J. Agric. Biol.* 1(2):71-77.
6. Rashid, K., **U.S. Rana**, M.A. Khan, M.A. Khan, J.A. Junaid, H. Saleem, W. Abbas, M.S. Ahmad, M. Imtiaz, S. Sardar. 2023. *Identification of brown leaf rust (Puccinia triticina) tolerant spring wheat genotypes and favourable environment supporting disease incidence.* *J. Xi'an Shiyou University, Natural Science Edition.* 19(12):635-645.

7. Rashid, K., **U.S. Rana**, A. Ullah, M.S. Saeed, H. Rauf, M. Khan, M. Imtiaz, M.S. Ahmad, A. Sher and M. Majid. 2023. *Assessment of spring wheat on physio-morphic attributes under water deficit conditions at seedling stage and maturity*. J. Xi'an Shiyu University, Natural Science Edition. 19(11):739-750.

#### LEADERSHIP, COMMUNITY & MEMBERSHIP

- 2024 **Co-organizer**. International Conference on Emerging Technologies for Crop Improvement
- 2023 **Organizer**. International Hands-on-Training Workshop on Data Analysis with RStudio
- 2023 **Organizer**. International Wheat Webinar, University of Agriculture Faisalabad (UAF)
- 2023 **Co-organizer**. International Hybrid Wheat Conference University of Agriculture Faisalabad
- 2022 **Co-Organizer**. International Wheat Conference, University of Agriculture Faisalabad
- 2021 **Co-organizer**. Farmer Convention, University of Agriculture Faisalabad
- 2019 **Co-organizer**. 4<sup>th</sup> K-State Biennial Plant Breeding and Genetics Symposium
- 2017 **Social Coordinator**. Pakistan Student Association, Kansas State University

#### AWARDS, HONORS & SCHOLARSHIPS \*

\*Full list is available upon request

- 2023 Asian Scientist 100, Most Outstanding Researcher
- 2022 Jeanie Borlaug Laube Women in Triticum (WIT) Early Career Award
- 2018 Bernard E. and Estelle L. Foote Graduate Student Award
- 2016 Faculty Development Overseas Scholarship for PhD in USA, Government of Punjab
- 2012 Outstanding Student Award, Plant Breeding and Genetics Club
- 2006-12 Merit Scholarship, University of Agriculture Faisalabad

#### SELECTED PRESENTATIONS \*

\* Full list is available upon request

##### Oral

1. Umara Sahar Rana. *High-resolution mapping of quantitative trait loci for Type-I FHB resistance in winter wheat cultivar 'Everest'*. **International Wheat Congress**. Perth, Australia, Sep. 2024.
2. Umara Sahar Rana. *Identification of genomic regions associated with Fusarium head blight (FHB) resistance in native winter wheat cultivars using winter wheat cultivars*. **International Wheat Conference**. University of Agriculture Faisalabad. Pakistan. Oct 2022.
3. Umara Sahar Rana. *Identification of genomic regions associated with Fusarium head blight (FHB) resistance in native winter wheat cultivars using genotyping-by-sequencing*. 2<sup>nd</sup> **International Wheat Congress**. Beijing, China, Sep 2022.

##### Posters

1. Umara Sahar Rana, Muhammad Ahsan Khan, Haris Bilal and Asif Ali Khan. *Physiological and biochemical response of mutated M3 cotton (Gossypium hirsutum L.) to different levels of salt stress*. **First International Conference Revamped Scientific Outlook of 21<sup>st</sup> Century**, Rawalpindi Women University, Rawalpindi, Pakistan. Oct. 2022.
2. Umara Sahar Rana and Guihua Bai. Mapping Quantitative Trait Loci for Fusarium head blight resistance in Winter Wheat. **6<sup>th</sup> Annual Plant Breeding Symposium**, Iowa State University. Ames, IA. Mar. 2019.

3. Umara Sahar Rana and Guihua Bai. *Mapping quantitative trait loci for Fusarium head blight in wheat recombinant inbred lines (RILs) derived from hard winter wheat Everest × Overland. **Plant and Animal Genome Conference XXVII 2019***, San Diego, CA. Jan. 2019.
4. Umara Sahar Rana and Guihua Bai. *Mapping quantitative trait loci for Fusarium head blight resistance in winter wheat. **National Fusarium Head Blight Forum***. St. Louis. MO. Dec. 2018.
5. Umara Sahar Rana and Guihua Bai. *Mapping quantitative trait loci for Fusarium head blight resistance in hard winter wheat. **Research and the State Poster Session***. K-State, Manhattan, KS. Nov. 2018.