

Fatima Umar

Research Assistant

CAS-AFS,

University of Agriculture, Faisalabad

Nationality: Pakistani

Contact No.: (+92) 3077819957

✉ fatimaumer33@gmail.com

📍 444-B Peoples Colony no. 1, 03822, Faisalabad (Pakistan)



ACADEMICS

PhD. Plant Breeding and Genetics

University of Agriculture (Current)

Address: Faisalabad (Pakistan)

Research work title: Genetic diversity assessment for iron and zinc and molecular characterization of putative phytic acid gene in wheat germplasm

MSc. (HONS) in Plant Breeding and Genetics

University of Agriculture [09/2018 - 12/2020]

Address: Faisalabad (Pakistan)

Final grade: 3.84/4

Thesis: Screening of wheat genotypes on the basis of Morpho-physiological and molecular analysis under drought stress

BSc. (HONS) in Agricultural Sciences

University of Agriculture [09/2014 - 07/2018]

Address: Faisalabad (Pakistan)

Field(s) of study: Plant Breeding and Genetics

Final grade: 3.85/4

LANGUAGE SKILLS

Mother tongue(s): Urdu

Other language(s):

English

LISTENING C2 READING C2 WRITING C2

SPOKEN PRODUCTION C2 SPOKEN INTERACTION C2

WORK EXPERIENCE

Research Assistant (National Centre for Crop Genome Editing, CAS-AFS)

University of Agriculture [Current]

City: Faisalabad

Country: Pakistan

Teaching Assistant

University of Agriculture [09/2023- 06/2024]

City: Faisalabad

Country: Pakistan

Researcher (Wheat Biotechnology Lab CAS-AFS)

University of Agriculture [01/2021- 06/2023]

City: Faisalabad

Country: Pakistan

Internee in Biotechnology Department

Ayub Agricultural Research Institute (AARI) [02/2018 - 04/2018]

City: Faisalabad

Country: Pakistan

RESEARCH WORK

Title: Genetic diversity assessment for iron and zinc and molecular characterization of putative phytic acid genes in wheat germplasm

[On going]

Title: Screening of wheat genotypes on the basis of Morpho-physiological and molecular analysis under drought stress

[09/2018 - 07/2020]

SKILLS

In the course of study and research, comprehensive training was obtained on:

Bioinformatic Analysis

- a) Knowledge on different plant sequence, expression databases and search criteria
- b) Phylogenetic structure formation and analysis by MEGA
- c) Gene structure and promoter analysis
- d) Motif and domain analysis
- e) Primer designing
- f) gRNA construction for CRISPR/Cas9 system

Plant Molecular Biology

- a) DNA/RNA/Plasmid/ extraction
- b) All PCR techniques
- c) Agarose-gel electrophoresis
- d) Plant media Preparation and Tissue culture of wheat
- e) Real time PCR for gene expression
- f) Preparation of E. coli competent cells
- g) Transformation of Plasmid DNA in E.coli
- h) Transformation via Agrobacterium
- i) Colony PCR

Field Experience

- a) Screening of wheat lines for drought and salt stress tolerance at seedling level
- b) Screening of wheat lines for biofortification purpose using agronomic practices
- c) Screening of wheat lines for measuring phytic acid content
- d) Maintained wheat genetic stocks

Software Skills

CLUSTALW , NCBI, STATISTIX 8.1 , Ensemble Plant, Mega 11, R-Studio,

PUBLICATIONS

Book Chapters

Saeed, S., S. U. Khan, R. Afzal, **F. Umar**, and Ahmed Ali. 2024. CRISPR-Cas technologies for food and nutritional security. In: Kamel, A., A. Elslam (ed.), CRISPRized Horticulture Crops. Elsevier Publication.

Poster Presentation/Conferences

Bibi, Z., A. Naeem, M. Jameel, **F. Umar**, T. A. Naqvi, Z. Ahmed, S. H. Khan and R. Maqbool. 2023. Morphological and Bioinformatic analysis for improving Resistant Starch in Wheat. BRI Sino-Pakistan Agriculture Forum. November, 9th-10th at University of Agriculture, Faisalabad, Pakistan.

Amin, J., **F. Umar**, T. A. Naqvi, A. Saddiqa and R. Maqbool. 2023. BRI Sino-Pakistan Agriculture Forum. November, 9th-10th at University of Agriculture, Faisalabad, Pakistan

Umar, F., S. M. Taseer Abbas Navi, M. Jamil, U. Irfan, K. Dost, M. Umar, J. Amin and R. Maqbool. 2024. CRISPR/Cas 9 mediated downregulation of phytic acid to improve iron and zinc absorption in wheat grains. In . International conference on Emerging technologies for crop improvement in Pakistan. January, 19th-20th. At University of Agriculture, Faisalabad, Pakistan.

HONOURS AND AWARDS

Received University merit-based Scholarship in BSc. (HONS) and MSc. (HONS)

University of Agriculture, Faisalabad

Participated in International Hands on training on CRISPR Cas-mediated genome editing as a “member organizing committee” [2024]

Participated in International Hands-on Training Workshop on Hybrid Wheat Breeding” -University of Agriculture Faisalabad as a “member organizing committee” [2024]

Participated in International Hybrid Wheat Conference-University of Agriculture Faisalabad as a “member organizing committee” [2023]

Participated in Poster Competition in International Wheat Conference-University of Agriculture Faisalabad [2022]

Participated in International Wheat Conference-University of Agriculture Faisalabad as a “member of organizing committee” [2022]

Participated in 3-Days workshop on Python [2022]

Attended Workshop on Biosafety, Biological waste management and Responsible Science [2022]

Participated in 2nd Hands on training on CRISPR Cas9 mediated genome editing as a “member organizing committee” [2022]

Participated in Seminar on "Biosafety Measures in Agriculture: Issues and Options" [2019]

Participated in 2nd International Colloquium: Challenges and Opportunities of Maize Production [2018]

REFERENCE

Dr. Rizwana Maqbool

Associate Professor

Dept. of Plant Breeding and Genetics

University of Agriculture, Faisalabad, CAS-AFS

Phone: +92 333 5360536

rizwana .maqbool@ uaf.edu.pk

Dr. Zaheer Ahmed

Associate Professor

Dept. of Plant Breeding and Genetics

University of Agriculture, Faisalabad, CAS-AFS

Phone: +92 300 5127165

zaheer.ahmed@uaf.edu.pk