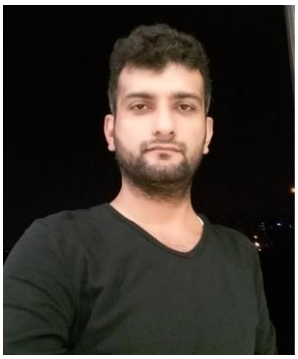
MUHAMMAD WASEEM



PhD, Biology (Biology)
Post doc (Horticulture)
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Research interests

Plant transcription factors play critical roles in plant development. I focus on genetic, molecular analysis and investigating the regulation tomato transcription factors (TFs) in fruit development, ripening and related signal transduction systems with an emphasis on nutrient quality. The cloning and isolation of candidate ripening regulatory genes based on expression pattern or relationship to ripening-related signal transduction systems (e.g. ethylene, light), and functional analysis in transgenic plants. Moreover, utilization of tools for functional genomics with current targets of exploration including genome-wide expression profiling during ripening and under stress conditions. Recently, focused in the genome editing like CRISPR/Cas9 system to generate transcription factor mutants, to develop tomato plants that are capable of withstanding adverse conditions.

Personal details

Date of Birth: *12th April 1988*
Nationality: *Pakistani*
Address: *CMH Institute of Medical Sciences, Multan Cantt, Punjab, Pakistan, 60000*

Academic Education

- **Biology, PhD** 3rd Sep 2015 to 16th July 2019

School of Life Sciences, **Chongqing University, Shapinbga, Chongqing, China**

Research work

1. Bioinformatics identification of gene families in tomato and pepper genome.
2. Functional characterization of a basic-helix-loop-helix Transcription factor in tomato growth, fruit development and ripening by over expression and RNA inference.
3. To generate (CRISPR/CAS9) transcription factor mutants, to develop tomato plants with alter fruit ripening and enhanced capability of transgenic tomato plants to withstand adverse environmental conditions either biotic or abiotic.

Thesis title

Functional identification tomato SlbHLH22transcription factor gene and FK506 gene family analysis

- **Botany, Master of Philosophy (M.Phil.)** 28th Jan 2013 to 16th Aug 2015

Institute of Pure and Applied Biology. **Bahauddin Zakariya University, Multan, Pakistan.**

Thesis title

Changes in species abundance of mixed coniferous forest, an ordination approach

- **Botany, Master of Science (M.Sc.)** 18th Aug 2009 to 25th June 2012

Institute of Pure and Applied Biology. **Bahauddin Zakariya University, Multan, Pakistan.**
Obtained Percentage 69.83%.

- **Bachelor of Science (B.Sc.)** 20th Aug 2007 to 30th June 2009

Government Emerson College, Multan, Pakistan.

Obtained Percentage: 56.37%

Professional Education

Bachelor of Education in Science (B.Ed. Science). 23rd Aug 2012 to 26th Nov 2013.
Allama Iqbal Open University, Islamabad, Pakistan.
Obtained Percentage: 67.66%

Professional Experience

Post-doctoral Researcher 28th November 2019 - to a date
College of Horticulture, South China Agriculture University, China

Publications

2019

- Muhammad Naeem, **Muhammad Waseem**, Zhiguo Zhu, and Lincheng Zhang. 2019. Down regulation of SlGRAS15, manipulates plant architecture in tomato (*Solanum lycopersicum*). Development genes and evolution. 230, 1–12 doi:10.1007/s00427-019-00643-7(**IF: 2.18)**
- Fiaz Ahmad*, Kiran Farman, **Muhammad Waseem***, Rashid Mehmood Rana, Mmmad Amjad Nawaz, Hafiz Mamoon Rehman, Tanveer Abbas, Faheem Shehzad Baloch, Ahmed Akrem, Ji Huang and Hongsheng Zhang. *2019. Genome-wide identification, classification, expression profiling and DNA methylation (5mC) analysis of stress-responsive ZFP transcription factors in rice (Oryza sativa L.).* Gene, accepted July 26, 2019, in press **(IF = 2.63)**
- Muhammad Naeem*, Rafia Muqarab, **Muhammad Waseem**. 2019. *The Solanum melongena COP1 delays fruit ripening and influences Ethylene signaling in tomato*. *Journal of Plant Physiology*. 240: 152997. doi: 10.1016/j.jplph.2019.152997 **(IF = 2.85)**
- **Muhammad Waseem**, Xiongyi Rong, Zhengguo Li.* 2019. *Dissecting the role of a basic Helix-Loop-Helix transcription factor, SlbHLH22, under dalt and drought stresses in transgenic Solanum lycopersicum L. Front. Plant Sci*. 10:734. doi: 10.3389/fpls.2019.00734 **(IF = 4.10)**
- **Muhammad Waseem**, Ning Li, Deding Su, Jingxuan Chen, Zhengguo Li*. 2019. *Overexpression of a basic helix-loop-helix transcription factor gene, SlbHLH22, promotes early flowering and accelerates fruit ripening in tomato (Solanum lycopersicum L.). Planta*. 250:173-185 doi: 10.1007/s00425-019 -03157-8 **(IF = 3.06)**
- Sidra Habib, **Muhammad Waseem**, Ning Li, Lu Yang, and Zhengguo Li*. 2019. *Overexpression of SlGRAS7 affects multiple behaviours leading to confer abiotic stresses tolerance and impacts gibberellin and auxin signaling in Tomato. International Journal of Genomics* doi: 10.1155/2019/4051981 **(IF = 2.30)**
- **Muhammad Waseem**, Zhengguo Li*. 2019. *Overexpression of tomato SlbHLH22 transcription factor gene enhances fruit sensitivity to exogenous phytohormones and shortens fruit shelf-life. Journal of Biotechnology*. 299: 50-56, doi: 10.1016/j.jbiotec.2019.04.012 **(IF = 3.16)**

2018

- **Muhammad Waseem**, Fiaz Ahmad, Sidra Habib, and Zhengguo Li*. 2018. *Genome-wide identification of the auxin/indole-3-acetic acid (Aux/IAA) gene family in pepper, its characterisation, and comprehensive expression profiling under environmental and phytohormones stress.* Scientific Reports, 8(1), 12008. doi:10.1038/s41598-018-30468-9 **(IF = 4.01)**
- **Muhammad Waseem**, Fiaz Ahmad, Sidra Habib, Yanqiang Gao* and Zhengguo Li*. 2018. *Genome-wide identification of FK506-binding domain protein gene family, its characterization, and expression analysis in tomato (Solanum lycopersicum* L.). Gene, 678, 143-154. **(IF = 2.63)**
- **Muhammad Waseem***, Fiaz Ahmad. 2018. *The Phosphoenolpyruvate Carboxylase gene family identification and expression analysis under abiotic and phytohormone stresses in Solanum*

lycopersicum L. Gene, 690, 11-20 **(IF = 2.63)**
2017

- Fiaz Ahmad*, Ayesha Akram, Kiran Farman, Tanveer Abbas, Asma Bibi, Sobia Khalid and **Muhammad Waseem**. 2017. *Molecular Markers and Marker Assisted Plant Breeding: Current Status and their Applications in Agricultural Development. Journal of Environmental and Agricultural Sciences*. 11: 35-50. **(HEC recognized)**

Conferences

- Volunteered**, The 10th international conference on plant hormone: Ethylene 2015**, 14-18th November 2015, School of Life Sciences, Chongqing University, Chongqing, China

Honors and Achievements

- As Participant, Spring Sports Meeting 2017, **Chongqing University**, Shapingba, China.
  Dates: 14th April 2017
- Worked as Executive Member of botanical society (**Zakariyan Association of Botany**) at Institute of Pure and Applied Biology, **Bahauddin Zakariya University**, Multan, Pakistan.
  Dates: 28th April 2011 to 25th June 2012.

Research Skills

- PCR (qPCR, qRT-PCR)
- Gel Analysis and Extraction
- Gene Identification and cloning
- Tissue Culture
- Nuclei Acid Extraction
- RNA seq. Analysis
- Bioinformatic analysis
- Bacterial culture preparation and extraction
- Histological analysis
- Light Spectroscopy
- Nucleic Acid quantification
- Applications of approaches in gene identification and characterization

Statistical Skills

- Mini TAB
- MATLAB R2009a
- MVSP (Multivariate Statistical Analysis Package) v3.2
- Ms. Office professional (Ms. Excel and Ms. PowerPoint)
- Origin pro
- Sigma plot
- Graph prism
- Bio-Rad CFX-One
- Quantity One

Reference

Prof. Dr. Zhengguo Li (Ph.D. Supervisor)
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