

Dr. Faisal Saeed Awan

Curriculum Vitae

CURRENT POSITION

Associate Professor

Centre of Agricultural Biochemistry and Biotechnology (CABB)

University of Agriculture

Faisalabad, Pakistan

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EDUCATION

University of Agriculture, Department of Plant Breeding and Genetics: 2003-2008

Ph.D., March 2008. Advisor: Prof. Dr. Iftikhar Ahmad Khan.

Dissertation: Tagging of Photosynthetic relevant genes based on mutants in Arabidopsis

University of Agriculture, Department of Plant Breeding and Genetics: 2000-2002

M.Sc. (Hons), December 2002. Advisor: Prof. Dr. Iftikhar Ahmad Khan.

Dissertation: Development of Sequence Characterized Amplified Regions (SCAR) Markers in Cotton.

University of Agriculture, Department of Plant Breeding and Genetics: 1996-2000 B.Sc. (Hons), December 2002.

PROFESSIONAL EXPERIENCE

Associate Professor, University of Agriculture Faisalabad, Pakistan, Centre of Agricultural Biochemistry and Biotechnology, August 2019 to date

Post Doc Fellow: Agronomy Department, Plant Molecular and Cellular Biology Program, University of Florida, IFAS, PO Box 110300, 2191 McCarty Hall, Gainesville, FL32611-300. April 2011- March 2012.

Assistant Professor, University of Agriculture Faisalabad, Pakistan, Centre of Agricultural Biochemistry and Biotechnology, April 2009 – August 2019.

Biotechnology Specialist, Food and Agriculture Division, Planning Commission, Government of Pakistan, March 2008 – April 2009.

Lecturer, University of Agriculture Faisalabad, Pakistan, Centre of Agricultural Biochemistry and Biotechnology, September 2004 – May 2006.

Research Officer, University of Agriculture Faisalabad, Pakistan, Centre of Agricultural Biochemistry and Biotechnology, September 2003 – September 2004.

Senior Research Officer, University of Agriculture Faisalabad, Pakistan, Centre of Agricultural Biochemistry and Biotechnology April 2002 – September 2003

MEMBERSHIP OF LEARNED BODIES

- Member of Pakistan Botanical society.
- Member of Genetic Society in the University of Agriculture, Faisalabad.
- The International Society for Plant Molecular Biology ISPMB, Department of Biochemistry and Molecular Biology University of Georgia, Athens, GA 30602, USA.

Awards and Honor

- Research Productivity Award 2012 by Pakistan Council of Science and Technology
- Letter of Appreciation form Vice Chancellor University of Agriculture Faisalabad

International Publications

- Javaid, Amna, Humera Razzaq, Farooq Ahmed Khan, and Faisal Saeed Awan. "Correlation and Path Coefficient Analyses of Different Morpho-Physiological Traits In Doubled Haploid Maize Hybrids Under Normal And Drought Stress." PAK. J. BOT 56 (2024): 3.
- Hameed, Kiran, Madiha Habib, Faisal Saeed Awan, Bushra Sadia, Shabbir Hussain, Zia-ul Qamar, and Hind AS Alzahrani. "Detection of genetic divergence among putative ethyl methane sulfonate mutants of super basmati using microsatellite markers." Molecular Biology Reports 50, no. 11 (2023): 8799-8808.
- Zafar, Ummul Buneen, Muhammad Shahzaib, Rana Muhammad Atif, Sultan Habibullah Khan, Muhammad Zeeshan Niaz, Khalid Shahzad, Nighat Chughtai, Faisal Saeed Awan, Muhammad Tehseen Azhar, and Iqrar Ahmad Rana. "De novo transcriptome assembly of Dalbergia sissoo Roxb.(Fabaceae) under Botryodiplodia theobromae-induced dieback disease." Scientific Reports 13, no. 1 (2023): 20503.
- Asim, Muhammad, Muhammad Saif-ur Rehman, Faiz-ul Hassan, and Faisal Saeed Awan. "Genetic variants of CSN1S1, CSN2, CSN3, and BLG genes and their association with dairy production traits in Sahiwal cattle and Nili-Ravi buffaloes." Animal Biotechnology 34, no. 7 (2023): 2951-2962.
- Sesay, Abdul Rahman, Mohammad Saif-ur-Rehman, Faisal Ramzan, and Faisal Saeed Awan. "Genome-wide assessment of runs of homozygosity in Sahiwal cattle of Pakistan." bioRxiv (2023): 2023-11.
- Javaid, A., H. Razzaq, F. A. Khan, and F. S. Awan. "Evaluation of Maize Accessions for Drought Tolerance through Principal Component Analysis." SABRAO Journal of Breeding & Genetics 55, no. 2 (2023).
- Aziz, Safia, Javaria Altaf, Abdullah Khalil, Hassan Khalil, Kiran Jehangir, and Faisal Saeed Awan. "Human cancer risk due to chromium and its bioaccumulation in physids in Central Punjab, Pakistan." Environmental Science and Pollution Research (2023): 1-13.

- Hussain, Shabbir, Bushra Sadia, Hafeez Ahmad Sadaqat, and Faisal Saeed Awan. "Evaluation of yield components and heat susceptibility of Pakistani wheat (*triticum aestivum* L.) germplasm subjected to induced terminal heat stress." *Pak. J. Bot* 55, no. 3 (2023): 873-891.
- Ishaq, Iqra, Rizwana Maqbool, Amir Shakeel, and Faisal Saeed Awan. "Identification and characterization of morphophysiological and yield-oriented traits for drought improvement in wheat." *Pakistan Journal of Agricultural Sciences* 60, no. 4 (2023).
- Hafiza Arooj, Siddra Ijaz, Imran Ul Haq, and Faisal Saeed Awan. "In silico prediction and analysis of potential off-targets and off-target mutation detection in StERF3-gene edited potato plants." (2023): 2451-2460.
- Awan, Faisal Saeed, Hafeez Ahmad Sadaqat, and Bushra Sadia. "Comparative evaluation of different citrus cultivars for adventitious regeneration." *Pakistan Journal of Agricultural Sciences* 59, no. 4 (2022).
- Usman, M., M. Habib, M. Sathish, S. Iqbal, J. Altaf, Z. Ahmad, A. I. Khan et al. "Genomic characterization of *Puccinia triticina* using molecular marker technology." *Brazilian Journal of Biology* 84 (2022): e249472.
- Hussain, Shabbir, Madiha Habib, Zaheer Ahmed, Bushra Sadia, Amy Bernardo, Paul St Amand, Guihua Bai et al. "Genotyping-by-Sequencing Based Molecular Genetic Diversity of Pakistani Bread Wheat (*Triticum aestivum* L.) Accessions." *Frontiers in Genetics* 13 (2022): 772517.
- Kashif, Syed Zain, Muhammad Aslam, Zaheer Ahmed, Fouzia Saleem, Fahad Alghabari, Hameed Alsamadany, Hind AS Alzahrani, and Faisal Saeed Awan. "Development and genomic characterization of EMS induced mutant population of *Zea mays* L." *Plant Genetic Resources* 20, no. 3 (2022): 188-193.
- Awan, Faisal Saeed, Hafeez Ahmad Sadaqat, and Bushra Sadia. "Comparative evaluation of different citrus cultivars for adventitious regeneration." *Pakistan Journal of Agricultural Sciences* 59, no. 4 (2022).
- Khan, Rao Waqar Ahmad, Rao Sohail Ahmad Khan, Faisal Saeed Awan, Ahmed Akrem, Arslan Iftikhar, Farhana Naureen Anwar, Hind AS Alzahrani, Hameed Alsamadany, and Rana Khalid Iqbal. "Genome-wide association studies of seedling quantitative trait loci against salt tolerance in wheat." *Frontiers in Genetics* 13 (2022): 946869.
- Khan, Rao Waqar Ahmad, Faisal Saeed Awan, and Rana Khalid Iqbal. "Evaluation and identification of salt tolerant wheat through in vitro salinity induction in seeds." *Pak. J. Bot* 54, no. 6 (2022): 1987-1993.
- Nasir, Bukhtawar, Siddra Ijaz, Faisal Saeed Awan, and Imran Ul Haq. "Genome-wide probing of NBS-LRR encoding genes in red clover (*Trifolium pratense* L) for the identification of resistance gene analogs in *Trifolium alexandrinum* L." *ScienceAsia* 47, no. 4 (2021).
- Habib, Madiha, Faisal Saeed Awan, Bushra Sadia, and Muhammad Anjum Zia. "Genome-Wide Association Mapping for Stripe Rust Resistance in Pakistani Spring Wheat Genotypes." *Plants* 9, no. 9 (2020): 1056.
- Habib, Madiha, Faisal Saeed Awan, Bushra Sadia, Muhammad Anjum Zia. "Genetic Dissection of Yield Enhancing Traits In Pakistani Spring Wheat Genotypes." *Pak. J. Agri. Sci.* 57, no. 5. (2020): 1241-1249.

- ud Din, Safeer, Muhammad Jafar Jaskani, Summar Abbas Naqvi, and Faisal Saeed Awan. "Diversity and divergence in domesticated and wild Jamun (*Syzygium cumini*) genotypes of Pakistan." *Scientia Horticulturae* 273 (2020): 109617.
- Khan, Rana Arif Manzoor, Abdus Salam Khan, Hafeez Ahmad Sadaqat, and Faisal Saeed Awan. "Combining ability assessments of some morpho-physiological traits for improved grain production in bread wheat under water deficit stress conditions." *Pak. J. Agri. Sci* 57, no. 4 (2020): 1011-1019.
- Akram, Muhammad Tahir, Rashad Waseem Khan Qadri, Muhammad Jafar Jaskani, and Faisal Saeed Awan. "phenological and physicochemical evaluation of table grapes germplasm growing under arid subtropical climate of Pakistan." *Pak. J. Bot* 52, no. 3 (2020): 1011-1018.
- Ghani, Muhammad Awais, Muhammad Mehran Abbas, Muhammad Amjad, Khurram Ziaf, Basharat Ali, Tabbassum Shaheen, Faisal Saeed Awan, and Aamir Nawaz Khan. "Production and characterisation of tomato derived from interspecific hybridisation between cultivated tomato and its wild relatives." *The Journal of Horticultural Science and Biotechnology* 95, no. 4 (2020): 506-520.
- Rizwan, Muhammad, Hafeez Ahmad Sadaqat, Muhammad Ahsan Iqbal, and Faisal Saeed Awan. "Genetic assessment and combining ability analyses of achene yield and oil quality traits in *Helianthus annuus* L. hybrids." *Pakistan Journal of Agricultural Sciences* 57, no. 1 (2020).
- Ramzan, Javeria, Muhammad Aslam, Muhammad Ahsan, and Faisal Saeed Awan. "Selection of screening criteria against drought stress at early growth stages in maize (*zea mays* L.)." *pak. j. agri. sci* 56, no. 3 (2019): 633-643.
- Akram, Muhammad Tahir, Rashad Waseem Khan Qadri, Muhammad Jafar Jaskani, and Faisal Saeed Awan. "Ampelographic and genetic characterization of grapes genotypes collected from potohar region of pakistan." *pak. j. agri. sci* 56, no. 3 (2019): 595-605.
- Muhammad, S., A. Ahmad, A.I. Khan, F.S. Awan, M. Qasim, A. Rehman, A. Rehman, M.A.Javed, I. Manzoor and M. Sajjad. Genome wide association analysis for leaf rust resistance in spring wheat (*triticum aestivum* L.) germplasm. *Int. J. Agric. Biol.* 2018.
- Shahzad, U., M.J. Jaskani, F.S. Awan, M. Shahjahan, S.A. Naqvi and A. Wasaya, 2018. Genetic divergence of *Moringa oleifera*, economically important, yet an endangered species from Pakistan. *Int. J. Agric. Biol.*, 20: 1497–1504.
- Arshad, Sarmad Frogh, Bushra Sadia, Faisal Saeed Awan, and Muhammad Jafar Jaskani. "Estimation of Genetic Divergence among Sorghum Germplasm of Pakistan through Multivariate Tools." *International Journal of Agriculture and Biology* 19, no. 5 (2017): 1099-1106.
- Mateen, Irsa, Faisal Saeed Awan, Azeem Iqbal Khan, and Muhammad Anjum Zia. "Identification and lead-in characterization of novel B3 metallo- β -lactamases." *Pak. J. Pharm. Sci* 30, no. 1 (2017): 335-340.
- Maryam, Jaskani, Muhammad Jafar, Faisal Saeed Awan, Saeed Ahmad, Iqrar A. Khan. "Development of molecular method for sex identification in date palm (*Phoenix dactylifera* L.) Plantlets using novel sex-linked microsatellite markers." *3 Biotech* 6, no. 1 (2016): 1-7.

- Wu, Hao, Faisal Saeed Awan, Aloisio Vilarinho, Qianchun Zeng, Baskaran Kannan, Tenisha Phipps, Jamie McCuiston, Wenling Wang, Kerry Caffall, and Fredy Altpeter. "Transgene integration complexity and expression stability following biolistic or Agrobacterium-mediated transformation of sugarcane." *In Vitro Cellular & Developmental Biology-Plant* 51, no. 6 (2015): 603-611.
- Binyamin, Rana, Muhammad Aslam Khan, Azeem Iqbal Khan, Faisal Saeed Awan, Nasir Ahmad Khan, and Sohail Akhtar. "Genetic diversity of mungbean genotypes in relation to resistance against mungbean yellow mosaic virus." *Pak. J. Bot* 48, no. 3 (2016): 1273-1277.
- Muhammad, Sher, Azeem Iqbal Khan, Faisal Saeed Awan Aziz-ur-Rehman, and Abdur Rehman. "Screening for leaf rust resistance and association of leaf rust with epidemiological factors in wheat (*triticum aestivum* L.)." *Pak. J. Agri. Sci* 52, no. 3 (2015): 691-700.
- Shahzad, Umbreen, Muhammad Jafar Jaskani, Saeed Ahmad, and Faisal Saeed Awan. "Optimization of the micro-cloning system of threatened *moringa oleifera* Lam." *Pakistan Journal of Agricultural Sciences* 51, no. 2 (2014): 459-467.
- Khawaja Muhammad Imran Bashir, Faisal Saeed Awan, Iqbal Ahmad Khan and Muhammad Usman. Identification and authentication of *rosa* species through species-specific SCAR marker(s) development. 2014. *Genet Mol Res.* 13(2):4130-4139.
- Altaf, Sadaf, Muhammad Mumtaz Khan, Muhammad Jaffar Jaskani, Iqbal Ahmad Khan, Muhammad Usman, Bushra Sadia, Faisal Saeed Awan, Asif Ali, and Azeem Iqbal Khan. Morphogenetic characterization of seeded and seedless varieties of Kinnow Mandarin (*Citrus reticulata* Blanco). 2014. *AJCS* 8(11):1542-1549.
- Minhas, Rashid, Iftikhar Ahmad Khan, Faisal Saeed Awan, Lal Hussain Akhtar, Syed Awais Sajid Shah, and M. Shahjhan Bukhari. "Estimation of genetic diversity and hybrid identification in american cotton (*gossypium hirsutum* L.) by PCR based RAPD analysis. 2014. *Pakistan J. Agric. Res.* 27(4): 265-276.
- Shah, Muhammad Azhar, Azeem Iqbal Khan, Faisal Saeed Awan, Hafeez Ahmed Sadaqat, Sultan Bahadur, Aamir Rasheed, and Faheem Shehzad Baloch. 2014. "Genetic diversity of some tomato cultivars and breeding lines commonly used in Pakistani breeding program." *Turkish Journal of Agriculture-Food Science and Technology* 3, no. 3.
- Khawaja Muhammad Imran Bashir, Faisal Saeed Awan, Iqbal Ahmad Khan and Muhammad Usman. Identification and authentication of *rosa* species through species-specific SCAR marker(s) development. 2013. *Genetics and Molecular Research*.
- Nawaz, M.A., B. Sadia, F.S. Awan, M.A. Zia and I.A. Khan, 2013. Genetic diversity in hyper glucose oxidase producing *Aspergillus niger* UAF mutants by using molecular markers. *Int. J. Agric. Biol.*, 15: 362–366.
- Jamil, M., Rana, I. A., Ali, Z., Awan, F. S., Shahzad, Z., & Khan, A. S. (2013). Estimation of Genetic Diversity in Rice (*Oryza sativa* L.) Genotypes using Simple Sequence Repeats. *Molecular Plant Breeding*, Vol. 4, No. 36, 285-291 (doi: 10.5376.04.0036).
- Khan, M.M., M. Abbas, F.S. Awan, M. Shahid, M. Ali and S. Ahmad, 2013. Physiobiochemical and genetic changes in stored pea (*Pisum sativum*) seeds. *Int. J. Agric. Biol.*, 15: 951–956.
- Azeem Akram, Azeem Iqbal Khan, Faisal Saeed Awan, Aziz ur Rehman, Faiz Ahmad, Amjad

- Malik and Sajjad Rao. 2012. Genetic diversity in Indian sub-continental landrace cultivars of the genus *Triticum* L. *African Journal of Biotechnology*. 11(44). 10170-10175.
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 - Riaz Atif, Faisal Saeed Awan, Azeem Iqbal Khan, Mansoor Hameed, Adnan Younis and Atiq Raza. 2011. Assessment of biodiversity based on morphological characteristics and RAPD markers among geologically different wild rose genotypes. *African Journal of Biotechnology*. 10(59), pp. 12520-12526.
 - Azeem Iqbal Khan, Iftikhar Ahmad Khan, Faisal Saeed Awan, Hafeez Ahmad Sadaqat and Sultan Bahadur. 2011. Estimation of Genetic Distance between Eleven Cotton Accessions Varying in Heat Tolerance Using RAPD Molecular. *Genet. Mol. Res.* 10 (1): 96-101.
 - Fiaz Ahmad, Azeem Iqbal Khan, Faisal Saeed Awan, Bushra Sadia, Hafeez Ahmad Sadaqat and Sultan Bahadur. 2010. Genetic diversity of chickpea (*Cicer arietinum* L.) germplasm in Pakistan as revealed by RAPD analysis. *Genet. Mol. Res.* 9 (3): 1414-1420.
 - Aamir Iqbal, Bushra Sadia, Azeem Iqbal Khan, Faisal Saeed Awan, Riaz Ahmad Kainth and Hafeez Ahmad Sadaqat. 2010. Biodiversity in the sorghum (*Sorghum bicolor* L. Moench) germplasm of Pakistan. *Genet. Mol. Res.* 9 (2): 756-764.
 - Asif Ali Khan, Ahsan Iqbal, Faisal Saeed Awan and Iftikhar A. Khan 2010. Genetic diversity in wheat germplasm collections from Balochistan province of Pakistan. *Pak. J. Bot.*, 42(1): 89-96.
 - Azeem Iqbal Khan, Faisal Saeed Awan, Bushra Sadia, Rashid Mehmood Rana and Iftikhar Ahmad Khan. 2010. Genetic diversity studies among coloured cotton genotypes by using RAPD markers. *Pak. J. Bot.*, 42(1): 71-77.
 - M. Aslam, F.S. Awan, I.A. Khan and A.I. Khan. 2009. Estimation of genetic distance between 10 maize accessions with varying response to different levels of soil moisture. *Genet. Mol. Res.* 8 (4): 1459-1465.
 - Faisal Saeed Awan, Iftikhar Ahmad Khan, Anja Schneider, Javaria Altaf and Dario Leister. . 2008. Screening of Arabidopsis Mutants for Functional Genomic Studies. *Pak. J. Bot.*, 40(5): 2071-2080
 - Muhammad Mumutaz Khan, Rana Mazhar Abbas, Faisal Saeed Awan , Waqar Ahmed , Raheel Anwar. *Physio-Biochemical and Genetic Changes in Stored Pea (Pisum sativum L.) Seeds*. 2007. *Journal of American Society for Horticultural Science*.
 - Iqbal A., I. A. Khan, F. S. Awan, A. Ahmad and A. A. Khan. Study of Genetic divergence among wheat genotypes through RAPD. *Genet. Mol. Res.* 6 (3): 476-481 (2007).
 - A. Khan., F. S. Awan, A. Ahmad, Y. B. Fu and A. Iqbal. 2005. Genetic diversity of Pakistan wheat germplasm as revealed by RAPD markers. *Genetic Resources and Crop Evolution*. 52:239-244.
 - Khan I. A., F. S. Awan, A. Ahmad and A. A. Khan. 2004. A modified mini-prep method for economical and rapid extraction of genomic DNA in plants. 89a-89e *Plant Molecular Biology Reporter*.

Book Chapters:

- Ali, Ammar, Zaheer Ahmed, Rizwana Maqbool, Khurram Shahzad, Akhtar Hameed, Faisal Saeed Awan, Azeem Iqbal Khan et al. "Advances in Molecular Markers to Develop Soybean Cultivars with Increased Protein and Oil Content." In *Soybean Improvement: Physiological, Molecular and Genetic Perspectives*, pp. 125-136. Cham: Springer International Publishing, 2022.
- Naqvi, Summar Abbas, Waqar Shafqat, Muhammad Salman Haider, Faisal Saeed Awan, Iqbal Ahmad Khan, and Muhammad Jafar Jaskani. "Gender determination of date palm." In *The Date Palm Genome, Vol. 1: Phylogeny, Biodiversity and Mapping*, pp. 161-177. Cham: Springer International Publishing, 2021.
- Sadia, Bushra, Faisal Saeed Awan, Fozia Saleem, Javaria Altaf, Abdullah Bin Umar, Muhammad Nadeem, Samra Hameed, Farwa Ashraf, and Mariam Nasir. "Exploring Plant Genetic Variations with Morphometric and Molecular Markers." In *Genetic Variation*. IntechOpen, 2021.
- Awan, Faisal Saeed, Bushra Sadia, Javaria Altaf, Madiha Habib, Kiran Hameed, and Shabbir Hussain. "Genetic Variability through Induced Mutation." In *Genetic Variation*. IntechOpen, 2021.
- ud Din, Safeer, Muhammad Jafar Jaskani, Summar Abbas Naqvi, and Faisal Saeed Awan. "Diversity and divergence in domesticated and wild jamun (*Syzygium cumini*) genotypes of Pakistan." *Scientia Horticulturae* 273 (2020): 109617.
- Awan, Faisal Saeed, Muhammad J. Jaskani, and Bushra Sadia. "Gender Identification in Date Palm Using Molecular Markers." In *Date Palm Biotechnology Protocols Volume II*, pp. 209-225. Humana Press, New York, NY, 2017.
- Saleem, Fozia, Bushra Sadia, and Faisal Saeed Awan. "Control of aflatoxin production using herbal plant extract." *Aflatoxin: Control, Analysis, Detection and Health Risks* (2017): 1.
- Sadia, Bushra, Faisal Saeed Awan, Fozia Saleem, Hafeez Ahmad Sadaqat, Sarmad Frogh Arshad, and Haseeb Shaukat. "Genetic Improvement of Sorghum for Biomass Traits Using Genomics Approaches." *Advances in Biofuels and Bioenergy* (2018): 23.

Proceedings/Abstracts

- 1) H. WU, F. S. Awan, Q. Zeng, T. Phipps, A. Vilarinho, J. McCuiston, W. Wang, K. Caffall, and F. Altpeter. Evaluation of Biolistic and Agrobacterium-mediated Sugarcane Gene Transfer Methods. *In Vitro Cell.Dev.Biol.—Plant* (2012) 48:428–438.
- 2) Faisal Saeed Awan, Anja Schneider, Dario Leister and Iftikhar Ahmad Khan. 2007. The pam74 mutant is caused by an insertion in a receptor-like kinase gene. 18 International Conference on Arabidopsis Research Beijing China. Locus detail on.

<http://www.arabidopsis.org/servlets/TairObject?type=publication&id=501722093>.

- 3) Muhammad Asif, Asif Ali Khan, Iftikhar Ahmad Khan, Faisal Saeed Awan and Ahsan Iqbal. The Potential for using Molecular Markers for Hybrid Identification in wheat. Presented at 1st International Conference on Biotechnology & Informatics. 10-12 April 2006.
- 4) Khansa Khakwani, Iftikhar Ahmad Khan, Ahsan Iqbal, Faisal Saeed Awan and Asif Ali Khan. Molecular and genetic Analysis of parents and F1 hybrids in *Gossypium hirsutum* L. Abstract presented in National Symposium on Biotechnology for Economic Prosperity (July 24-26, 2006).
- 5) Aftab Ahmad and Faisal Saeed Awan. 2004. Study of polymorphic microsatellite DNA markers in cotton (*G. Hirsutum* L.). Plant and Animal genome XII Conference. January 10-12. Town & Country Convention Centre San Diego, CA.