

# Dr. Shahbaz Khan

[shkhan@gudgk.edu.pk](mailto:shkhan@gudgk.edu.pk) [shahbaz2255@gmail.com](mailto:shahbaz2255@gmail.com)  
<https://www.gudgk.edu.pk/member/dr-shahbaz-khan/>  
[+92-333-6739834](tel:+92-333-6739834)

**Department of Agronomy, Ghazi University, DG Khan (32200), Punjab-Pakistan**

## **OBJECTIVES:**

To secure a challenging career with a dynamic progressive organization in order to utilize my abilities, knowledge and personal acumen with integrity to contribute in the development of the organization and prosperity of human.

## **QUALIFICATION:**

|                                              |                                                                      |
|----------------------------------------------|----------------------------------------------------------------------|
| <b>PhD</b> (Oct 2013 – Dec 2016)             | <b>Crop Physiology</b><br>University of Agriculture, Faisalabad.     |
| <b>MSc (Hons)</b> (Sep 2011 – Sep 2013)      | <b>Agronomy</b><br>University of Agriculture, Faisalabad.            |
| <b>BSc (Hons)</b> (August 2007 – July 2011 ) | <b>Agriculture-Agronomy</b><br>University of Agriculture, Faisalabad |

## **RESEARCH WORK:**

- **PhD research:** “Impact of growth promoters on the storage life of moringa leaf extract as biostimulant in wheat”.
- **MSc research:** “Improving productivity of camelina (*Camelina sativa* L.) by boron application”.

## **RESEARCH PROJECTS:**

- **Principal Investigator:** “Exploring the growth enhancing potential of leaf extracts from local and exotic moringa landraces for rice” worth of Pak rupees = **0.394810** Million
- **Research Associate:** “Exploring the potential of *Moringa oleifera* as a crop growth enhancer and forage crop” worth of Pak rupees = **8.67215** Million

## **DISTINCTIONS:**

- **Indigenous Scholarship** for PhD from Higher Education Commission (HEC), Pakistan (Oct 2013 – Dec 2016)
- **Punjab Educational Endowment Fund Scholarship** in master studies (Sep 2011 – Sep 2013)
- **Received a laptop based on academic achievements** from Punjab Government on Merit Basis. (2012)
- **Merit Scholarship** holder in BSc (Hons) Agriculture. (August 2007 – July 2011 )

## RESEARCH AND PROFESSIONAL EXPERIENCES:

|                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| November 2018 – Present         | <b>Assistant Professor</b><br>Department of Agronomy,<br>Ghazi University, Dera Ghazi Khan, Pakistan                                                                                                                                                                                                                                                                                                                                         |
| October 2018 – Present          | <b>Project Advisor/Consultant</b><br>Herbyzone Private Limited, Lahore-Pakistan. <ul style="list-style-type: none"><li>▪ Team leader for cultivation of moringa crop</li><li>▪ Production and processing of biomass</li><li>▪ Biochemical analysis and quality assurance of product</li></ul>                                                                                                                                                |
| February 2018 – September 2018  | <b>Project Director</b><br>Moringa Oleifera Limited, Lahore Pakistan. <ul style="list-style-type: none"><li>▪ Team leader for cultivation of moringa crop</li><li>▪ Processing and production of biostimulant</li><li>▪ Interlinked with agrochemical industry</li><li>▪ Interaction with public and private fertilizer departments</li><li>▪ Biochemical analysis and quality assurance of product</li></ul>                                |
| January 2017 – June 2017        | <b>Visiting Scholar/Researcher</b><br>Institute of Agricultural Biosciences, Oklahoma State University, 3210 Sam Noble Parkway, Ardmore, OK, USA<br>Advisor: Dr. Million Tadege <ul style="list-style-type: none"><li>▪ Cultivation of sorghum in green house and field</li><li>▪ Characterization of WOX9 gene in sorghum</li></ul>                                                                                                         |
| October 2013 – July 2016        | <b>Doctoral Research</b><br>Department of Agronomy,<br>University of Agriculture, Faisalabad<br>Supervisor: Dr. Shahzad MA Basra<br><u>Thesis title:</u> Impact of growth promoters on the storage life of moringa leaf extract as biostimulant in wheat.                                                                                                                                                                                    |
| December 2013 – July 2016       | <b>Research Associate</b><br>Department of Agronomy,<br>University of Agriculture, Faisalabad<br>Advisor: Dr. Shahzad MA Basra<br><u>Project:</u> <i>Exploring the potential of Moringa oleifera as a crop growth enhancer and forage crop.</i> <ul style="list-style-type: none"><li>▪ Designing and conducting the experiments</li><li>▪ Data recording and analyzing</li><li>▪ Interpretation of results and report preparation</li></ul> |
| March 2014 – July 2016          | <b>Teaching Assistant</b><br>Department of Agronomy,<br>University of Agriculture, Faisalabad<br>Advisor: Dr. Shahzad MA Basra <ul style="list-style-type: none"><li>▪ Lectures to under graduate and post graduate students</li><li>▪ Conducting exams and results preparation</li><li>▪ Field visits and field work</li></ul>                                                                                                              |
| September 2011 – September 2013 | <b>Masters Research</b><br>Department of Agronomy,                                                                                                                                                                                                                                                                                                                                                                                           |

March 2011 – June 2011

University of Agriculture, Faisalabad  
Supervisor: Dr. Muhammad Ashfaq Wahid  
Thesis title: Improving productivity of camelina (*Camelina sativa* L.) by boron application  
**Undergraduate Internee**  
Shakarganj Sugar Research Institute, Jhang-Punjab,  
Pakistan  
Advisor: Dr. Shahid Afghan

### Research Papers Published / Accepted in International/National Journals

1. Bashir, S., M. Adeel, A.B. Gulshan, J. Iqbal, **S. Khan**, M. Rehman, M. Azeem. 2019. Effects of organic and inorganic passivators on the immobilization of cadmium in contaminated soils: A Review. Environmental Engineering Science. (*Accepted*).
2. Bashir, S., A. Salam, M. Rehman, **S. Khan**, A.B. Gulshan, J. Iqbal, M. Shaaban, S. Mehmood, H. Hu and A. Zahra. 2019. Effective role of biochar, zeolite and steel slag on leaching behavior of Cd and its fractionations in soil column study. Bulletin of Environmental Contamination and Toxicology. (*Accepted*).
3. **Khan, S.**, S.M.A. Basra, I. Hussain and N. Foidl. 2019. Combined application of moringa leaf extract and chemical growth-promoters enhances the plant growth and productivity of wheat crop (*Triticum aestivum* L.). South African Journal of Botany. (*Accepted, extracted from PhD thesis*).
4. Hassan, N., S. Irshad, M.S. Saddiq, S. Bashir, **S. Khan**, M.A. Ashfaq, R.R. Khan and M. Yousra. 2019. Potential of zinc seed treatment in improving stand establishment, phenology, yield and biofortification of wheat. Journal of Plant Nutrition. (*Accepted*).
5. Mazhar, S.A., M. Nawaz, **S. Khan** and S. Irshad. 2018. [Impact of urea and farm yard manure on nitrate concentration in soil profile and productivity of wheat crop](#). Journal of Plant Nutrition. 41(20): 2683-2691.
6. **Khan, S.**, S. Irshad, F. Mehmood and M. Nawaz. 2018. [Combined application of sorghum and mulberry water extracts is effective and economical way for weed management in wheat](#). Asian Journal of Agriculture and Biology. 6(2):221-227.
7. **Khan, S.**, S.M.A. Basra, I. Afzal, M. Nawaz and H.U. Rehman. 2017. [Growth promoting potential of fresh and stored \*Moringa oleifera\* leaf extracts in improving seedling vigor, growth and productivity of wheat crop](#). Environmental Science and Pollution Research. 24(35): 27601-27612. (*Extracted from PhD thesis*)
8. **Khan, S.**, S.M.A. Basra, I. Afzal and A. Wahid. 2017. [Screening of moringa landraces for leaf extract as biostimulant in wheat](#). Int. J. Agri. Bio. 19:999-1006. (*Extracted from PhD thesis*)
9. Nawaz, M., M.U. Chattha, S. Khan, M.B. Chattha, M. Ijaz, **S. Khan**, H. Muneer, M.U. Hassan and M.U. Chattha. 2017. [Assessment of distillery spent wash water as a potential bionutrient supplement for spring-planted sugarcane \(\*Saccharum officinarum\* L.\)](#). The Philippine Agricultural Scientist. 100(4): 239-246.
10. **Khan, S.**, S. Irshad, J.U. Rehman, M.A. Ghafoor, M. Saeed and A. Hassan. 2017. [Impact of combined application of sorghum and mulberry water extracts on broad leaf weeds and yield attributes of wheat](#). International Journal of Biosciences. 11(5): 245-252.
11. **Khan, S.**, S. Irshad, F. Mehmood, M.A. Wahid, J.U. Rehman and M.H. Babaer. 2017. [Impact of sorghum and mulberry water extracts on narrow leaf weeds and yield of wheat](#).

- International Journal of Biosciences. 11(5):54-61.
12. **Khan, S.,** A. Shah, M. Nawaz and M. Khan. 2017. [Impact of different tillage practices on soil physical properties, nitrate leaching and yield attributes of maize \(\*Zea mays\* L.\)](#). J. Soil Sci. Plant Nutri. 17(1):240-252.
  13. **Khan, S.,** H.R. Rehman, M.A. Wahid, M.F. Saleem, M.A. Cheema, S.M.A. Basra and M. Nadeem. 2016. [Boron fertilization improves seed yield and harvest index of \*Camelina sativa\* L. By affecting source-sink](#). Journal of Plant Nutrition. 39:1681-1687.
  14. Nawaz, M., **S. Khan,** M.U. Chattha, M. Khan and M. Bilal. 2015. [Interactive Effect of Sowing Techniques and Weed Crop Competition Periods on the Performance of Spring Planted Sugarcane \(\*Saccharum officinarum\* L.\)](#). International Journal of Modern Agriculture. 4:49-57.
  15. Shah, M.A., **S. Khan,** S. Bibi, S. Ullah, M. Khan, Z. Aslam and M. Imran. 2014. [Performance of Maize \(\*Zea mays\* L.\) Yield Attributes under Various Tillage Strategies](#). International Journal of Modern Agriculture. 3:97-105.
  16. Hameed, S., M. Ayub, M. Tahir, **S. Khan** and M. Bilal. 2014. [Forage Yield and Quality Response of Oat \(\*Avena sativa\* L.\) Cultivars to Different Sowing Techniques](#). International Journal of Modern Agriculture. 3:25-33.

#### Research Papers Submitted in International/National Journals

1. Hafeez, M.B., S. Iqbal, J. Riaz, S.M.A. Basra, M.S. Saddiq, **S. Khan,** and Jahanzaib. 2019. Mitigation of Salt Stress in Wheat through Exogenous Application of Moringa Leaf Extract. South African Journal of Botany. (*Submitted*).
2. **Khan, S.,** S. Batool. 2019. Impact of moringa leaf extract on moringa seedlings grown under low temperature conditions. International letters of Natural Sciences. (*Submitted*)
3. Rasool A, **S. Khan,** M.S. Saddiq, J. Iqbal, S. Bashir, S. Irshad and M. Nawaz. 2019. Influence of water deficit regimes on growth and productivity of normal and late sown wheat (*Triticum aestivum* L.). Crop and Pasture Science. (*Submitted*).
4. **Khan, S.,** S.A. Mazhar, M.S. Saddiq, A. Bakhsh, S. Kamran, M.I.U. Haq, M. Nawaz and S. Batool. 2019. Integrated application of urea and farm yard manure improves productivity of wheat crop and soil properties. Plant Production Science. (*Submitted*).
5. Batool, S., S.M.A. Basra, M. Hussain, S. Iqbal, M.S. Saddiq, M.B. Hafeez, S. Irshad and **S. Khan.** 2019. Foliar application of moringa leaf extract improves the growth of moringa seedlings in winter. South African Journal of Botany. (*Submitted*).
6. Haq, M.I.U., K. Mcphee, M. Maqbool, M. Sarwar, **S. Khan,** K.A. Khan, M.H. Hameed and M. Tanveer. 2019. Optimizing productivity, Profitability and Resource uSe of Efficacy through Integrated Cereal-Legume Intercropping Systems under Semi-arid Subtropical Climate. Pakistan Journal of Agricultural Science. (*Submitted*).
7. Saddiq, M.S., A.M.H. Ibrahim, I. Afzal, S. Iqbal, M.M. Maqbool, A. Ali, **S. Khan,** and Jahanzaib. 2018. Response of spring and winter wheat genotypes under salt stress on the basis of sodium exclusion, physiological and growth perspectives. Frontiers Plant Science. (*Submitted*).
8. Nawaz, M. H. Ali, M. Ijaz, M.U. Chattha, S. Khan, S. Hussain, S. Irshad and **S. Khan.** 2018. Assessment of environment friendly usage of spent wash and its nutritional potential for sugarcane production. Journal of Plant Nutrition. (*Submitted*).

#### Abstract Published/Accepted/Submitted in International/National Conferences/Workshops

1. **Khan, S.** and S.M.A. Basra. 2018. Comparative study of leaf extracts from different *Moringa* landraces and their biostimulant impact on wheat growth. *Moringa oleifera*: Recent trends and challenges in Processing and product developments. CEMB. Lahore. April 09-10, 2018. P. 16. (Extracted from PhD thesis)
2. **Khan, S.**, S.M.A. Basra, M. Nawaz and I. Afzal. 2018. *Moringa* leaf extract application improves late sown wheat productivity. *Moringa oleifera*: Recent trends and challenges in Processing and product developments. CEMB. Lahore. April 09-10, 2018. P. 24. (Extracted from PhD thesis)
3. **Khan, S.**, S.M.A. Basra and S. Irshad. 2018. Bio-efficacy of stored *Moringa* leaf extract as biostimulant in wheat productivity. Recent trends and challenges in Processing and product developments. CEMB. Lahore. April 09-10, 2018. P. 25. (Extracted from PhD thesis)
4. Rasool, A., S. Irshad, M. Nawaz and **S. Khan**. 2018. Influence of water deficit irrigation on growth and productivity of wheat (*Triticum aestivum* L.). 1st International and 2nd National Conference on Crop Production “Challenges and Opportunities to Boost Agriculture in Changing Climate”. Bahauddin Zakariya University, Bahadur Sub-Campus, Layyah, Pakistan. March 26-28, 2018. P. 43.
5. Nawaz, M., M. Ijaz1, H. Ali, **S. Khan**, M.U. Chattha and M.U. Hasssan. 2018. Effect of ascorbic acid on membrane stability and yield of Heat stressed Bt cotton. 1st International and 2nd National Conference on Crop Production “Challenges and Opportunities to Boost Agriculture in Changing Climate”. Bahauddin Zakariya University, Bahadur Sub-Campus, Layyah, Pakistan. March 26-28, 2018. P. 56.
6. Nawaz, M., S. Hussain, U. Iqbal, **S. Khan** and S. Irshad. 2018. Response of phosphate solubilizing bacteria in combination with pressmud improve growth and yield of wheat under arid climate. 1st International and 2nd National Conference on Crop Production “Challenges and Opportunities to Boost Agriculture in Changing Climate”. Bahauddin Zakariya University, Bahadur Sub-Campus, Layyah, Pakistan. March 26-28, 2018. P. 57.
7. Hassan, N., S. Irshad, **S. Khan** and M. Nawaz. 2018. Potential of zinc seed treatment in improving stand establishment, phenology, yield and grain biofortification of wheat. 1st International and 2nd National Conference on Crop Production “Challenges and Opportunities to Boost Agriculture in Changing Climate”. Bahauddin Zakariya University, Bahadur Sub-Campus, Layyah, Pakistan. March 26-28, 2018. P. 60.
8. **Khan, S.**, S.M.A. Basra, M. Nawaz and S. Irshad. 2018. Application of sorghum and mulberry water extracts suppress weeds in wheat crop. 1st International and 2nd National Conference on Crop Production “Challenges and Opportunities to Boost Agriculture in Changing Climate”. Bahauddin Zakariya University, Bahadur Sub-Campus, Layyah, Pakistan. March 26-28, 2018. P. 396.
9. Irshad, S., **Khan, S.** and M. Nawaz. 2018. *Parthenium hysterophorus*: An invasive weed needs attention. 1st International and 2nd National Conference on Crop Production “Challenges and Opportunities to Boost Agriculture in Changing Climate”. Bahauddin Zakariya University, Bahadur Sub-Campus, Layyah, Pakistan. March 26-28, 2018. P. 397.

10. Batool, S., S.M.A. Basra, M. Nawaz, S. Irshad and **S. Khan**. 2018. Application of moringa leaf extract improves the growth of moringa seedlings under chilling stress. 1st International and 2nd National Conference on Crop Production “Challenges and Opportunities to Boost Agriculture in Changing Climate”. Bahauddin Zakariya University, Bahadur Sub-Campus, Layyah, Pakistan. March 26-28, 2018. P. 398.
11. Nawaz, M., S. Khan, H. Ali and **S. Khan**. 2017. Evaluation of sugarcane processing by product compost and fertilizers on growth and productivity of Rice. In: “International conference on climate change and biodiversity” held at Cholistan Institute of Desert Studies, The Islamia University of Bahawalpur. May 2-4, 2017. P. 250-251.
12. **Khan, S.**, Shahzad M.A. Basra, I. Afzal and A. Wahid. 2017. Evaluating the biostimulant potential of alone and blended moringa leaf extract with growth promoting substances in normal and late sown wheat crop. National Conference “Challenges and Opportunities to Boost Agriculture in Changing Climate”. March 29-30, 2017. P. 52. (*Extracted from PhD thesis*)
13. **Khan, S.**, F. Mehmood, Shahzad M.A. Basra, M. Nawaz and M. Khan. 2017. Allelopathic approaches for weed management in wheat crop. National Conference “Challenges and Opportunities to Boost Agriculture in Changing Climate”. March 29-30, 2017. P. 177.
14. Nawaz, M., H. Ali, S. Khan, M.U. Chattha, M. Ijaz and **S. Khan**. 2017. Evaluating the performance of spring planted sugarcane (*saccharum officinarum* l.) in response to different sowing techniques and weed crop competition periods. National Conference “Challenges and Opportunities to Boost Agriculture in Changing Climate”. March. 29-30, 2017. P. 38.
15. Nawaz, M., S. Khan, H. Ali, M.U. Chattha, M. Ijaz, M.B. Chattha and **S. Khan**. 2017. Assessment of sugarcane industrial byproducts for improving sugarcane productivity. National Conference “Challenges and Opportunities to Boost Agriculture in Changing Climate”. March. 29-30, 2017. P. 39.
16. Khan, S., M. Nawaz, M. Aslam and **S. Khan**. 2017. Performance of maize genotypes under stress condition imposed by heavy metals. National Conference “Challenges and Opportunities to Boost Agriculture in Changing Climate”. March. 29-30, 2017. P. 230.

#### PROFESSIONAL TRAININGS/WORKSHOPS/COURSES:

- Certificate of participation in National Workshop on “*Organic Food and Health*” organized by Pakistan Council for Science and Technology.
- Certificate of successfully completed 4<sup>th</sup> training course on “Biochemical and Molecular Techniques in Plan Breeding” from Nuclear Institute for Agriculture and Biology (NIAB)
- Certificate in Tunnel Farming, Pakistan Society of Horticultural Sciences, UAF
- Certificate in Fruits and Vegetable Cultivation, Division of Education and Extension, UAF
- Certificate in Mushroom Cultivation, Division of Education and Extension, UAF
- Certificate in Dairy Husbandry, Division of Education and Extension, UAF
- Certificate of participation in workshop on “*Capacity Building in Seed Technology*” UAF
- Certificate from SSRI Jhang, Punjab, on Successful completion of internship during

2011.

- Certificate of “Career Development Workshop” The Agrarian Society, Faculty of Agriculture, UAF

#### **EXTRA CURRICULAR ACTIVITIES:**

- Member of Agriversity Scout Group, UAF
- Member of Society of Young Agronomists (SOYA)
- Member of Proctorial Group, FG Sci. Degree College, Wah Cantt
- Member of Moringa for Life

#### **PROFESSIONAL CERTIFICATES:**

1. Certificate of participation in “1<sup>st</sup> PAKISTAN SEED CONGRESS” UAF
2. Certificate for Excellent performance “*On eve of first national Agri-Tourism Festival*” by Agri-Tourism Development Corporation of Pakistan.
3. Certificate of participation in “International Seminar on Global Change & Pakistan Perspective” U.A.F
4. Certificate of participation in “Ph.D. Research Proposal Colloquium” ORIC, UAF
5. Certificate of participation in 2<sup>nd</sup> annual workshop on “*Scientific Writing and Plagiarism*” UAF
6. Certificate of participation in International Conference of Inst. Of Agri. Ext. and Rural Development titled as “*Emerging Horizons of Agri. Extension for Sustainable Rural Development*” UAF
7. Certificate of appreciation for dedicated services in AgMIP-Pakistan “*Mid Term Workshop & International Seminar on Climate Change Adaptation Strategies to Ensure Food Security*” UAF
8. Certificate of participation in First National Seminar of Pakistan Allelopathy Society titled as “*Allelopathy Research in Pakistan: Experiences and Opportunities*” UAF
9. Certificate for attending International Conference titled as “Crop Management in Changing Climate” Department of Agronomy, UAF
10. Certificate of Training “Magic of Success” Role Modelizing The World
11. Certificate of “2<sup>nd</sup> Young Leaders Summit” Positive Pakistan
12. Certificate of “1<sup>st</sup> Annual Iftikhar Ahmad Mian Cycle Race 2008” Agriversity Scout Group, UAF
13. Certificate in “Leadership & Communication Skills Development” Quiz Club, Art and Literary Forum (ALF) UAF

#### **SCIENTIFIC TECHNIQUES:**

- Quantitative and semi-quantitative PCR
- RNA-DNA extraction
- Protein expression
- Hormone measurements
- Mineral element measurements
- Spectrophotometer
- Flame photometer

- Statistical analysis
- Mendeley
- AmplifX
- Statistix

## REFERENCES:

1. Dr. Million Tadege, Associate Professor, Plant Functional Genomics, Institute of Agricultural Biosciences, Oklahoma State University, 3210 Sam Noble Parkway, Ardmore, OK73401  
Email: [million.tadege@okstate.edu](mailto:million.tadege@okstate.edu)  
Phone: +1-5802240629  
Link: <http://pss.okstate.edu/pass-drctry/faculty/tadege/million-tadege>
2. Dr. Shahzad MA Basra, Professor, Department of Agronomy, University of Agriculture, Faisalabad, Pakistan.  
Email: [shahzadbasra@gmail.com](mailto:shahzadbasra@gmail.com)  
Phone: +92-3336519675  
Link: <http://www.uaf.edu.pk/EmployeeDetail.aspx?userid=176>
3. Dr. Irfan Afzal, Associate Professor, Department of Agronomy, University of Agriculture, Faisalabad, Pakistan.  
Email: [irfanuaf@gmail.com](mailto:irfanuaf@gmail.com)  
Phone: +92-3009658671  
Link: <http://www.uaf.edu.pk/EmployeeDetail.aspx?userid=173>