

## CV for the Post of Assistant Professor (Biotechnology) CURRICULUM VITAE



**Muhammad Shakeel**, Ph.D Biosciences (Biotechnology)

Title: Ph.D

E-mail: [shakeelimperial611@gmail.com](mailto:shakeelimperial611@gmail.com)

Gender: male

Marital status: single

Telephone:

+92 3477724021, 03354269452

Permanent address:

Village Ratta Matta P.O same Tehsil & District Jhang, Pakistan

Present Address:

Gomal Center of Biochemistry and Biotechnology (GCBB), Gomal University,  
D.I.Khan

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### **Profile:**

Assistant Professor at Gomal Center of Biochemistry and Biotechnology (GCBB), Gomal University, D.I Khan-Pakistan. Eight years research and teaching experience at well reputed institutions i.e. COMSATS Institute of Information Technology (CIIT), Imperial College London (ICL) and Gomal University, D.I Khan-Pakistan.

### **Education and Qualification**

<b>Degree</b>	<b>Institutions</b>	<b>Dissertation Title/Subjects</b>
Ph.D (2017)	<i>COMSATS Institute of Information Technology Islamabad, Pakistan</i>	Plant Growth Promoting Rhizobacteria Mediated Zinc Translocation in Rice
M.Sc (Hons) (2011)	<i>University of Agriculture Faisalabad, Pakistan</i>	Weed dynamics in wheat ( <i>Triticum aestivum</i> L.) As affected by tillage and Weed management
B.Sc (Hons) (2009)	<i>PMAS-Arid Agriculture University Rawalpindi Pakistan</i>	Tissue culturing and production technology of sugarcane
Intermediate (2004)	<i>BISE, Faisalabad Pakistan</i>	Science group
Matriculation (2002)	<i>BISE, Faisalabad Pakistan</i>	Science group

### **Professional Experience:**

06-05-2019 to till date	Working as <b>Assistant Professor (on Contract and Fixed pay)</b> at Gomal Center of Biochemistry and Biotechnology, Gomal University, D.I Khan-Pakistan.
18-03-2015 to date 18-09-2015	Working as <b>Visiting Researcher</b> in project "Expression analysis of <i>PqqC</i> operon associated with zinc solubilizing ability of <i>Serratia marcescens</i> " at Division of Cell and Molecular Biology Imperial College London, UK

09.04.2012 to date  
08.04.2016 Working as a **Research Associate** in a project “Exploring the mechanism of wheat biofortification through zinc mobilizing rhizobacteria” at department of Biosciences, CIIT, Islamabad-Pakistan

17.08.2011 to date  
31.03.2012 Working as a **Research Associate** in a project “Identification and characterization of ACC deaminase containing rhizobacteria” at department of Biosciences, CIIT, Islamabad-Pakistan

### **Tools & Technologies Expertise:**

- ❖ Bacterial isolation from rhizosphere, endosphere and entophytic parts of plants
- ❖ Basic Microbiological Techniques
- ❖ Morphological and biochemical characterization of bacteria
- ❖ DNA extraction
- ❖ PCR techniques
- ❖ Primer designing
- ❖ Gene cloning
- ❖ Development of an expression reporter by fusing GFP with the promoter region of the operon
- ❖ Proteomics Techniques (SDS-PAGE)
- ❖ Field Crop Experimentation

### **Training:**

1. Optics and Photonics workshop at Department of Physics at COMSATS Institute of Information Technology Islamabad, August 15 to August 19, 2016.
2. EHS Training on Chemical Hygiene and Laboratory Safety Hazardous Waste Initial at Imperial College London, UK April 14, 2015.
3. Training Course on Advances in Collection of Microorganisms and Cell Cultures at COMSATS Institute of Information Technology Islamabad, March 11, 2014.
4. Biomedical Materials Workshop (Materials in Orthopaedics, Dentistry and Tissue Engineering) at PAK-China Business Forum Islamabad, March, 23 to March 26, 2013.
5. Joint International Workshop on Nanotechnology: Policy Ethics and Science, Islamabad, Pakistan March 25 to March 27, 2013.

### **Distinctions/Awards:**

1. Research Productivity Award 2015 and 2016 by COMSATS Institute of Information Technology, Islamabad, Pakistan.
2. Award of scholarship under International Research Support Initiative Program (Higher Education Commission) Government of Pakistan (2015).
3. 2nd prize in Poster Presentation in DAAD-HEC International Summer School “Food Security in times of climate change” Nov. 2-5, 2013. COMSATS Institute of Information Technology, Islamabad, Pakistan.
4. Award of USAID Need Based Scholarship (Higher Education Commission) during BSc (Hons) (2005-2009).

### **Research Grants/Projects Awarded:**

“Distribution of zinc solubilizing bacteria under different zinc content of soil” Awarded under SRGP by **Higher Education Commission**, Pakistan. Duration. June 2020-June 2021. Funded amount Rs. 0.5 Million.

### **Supervision of Research Students:**

#### **M. Phil Students**

<b>Student Name</b>	<b>Institute</b>	<b>Status</b>
Sana Ghaffar	Gomal Center of Biochemistry and Biotechnology, Gomal University, D.I Khan-Pakistan	Completed

#### **BS Students**

<b>Student Name</b>	<b>Institute</b>	<b>Status</b>
Muhammad Usman	Gomal Center of Biochemistry and Biotechnology, Gomal University, D.I Khan-Pakistan	Completed
Zahra Shahzeen	Gomal Center of Biochemistry and Biotechnology, Gomal University, D.I Khan-Pakistan	Completed

### **List of Publications:**

#### **Thesis:**

1. **Shakeel, M.** (2017). Plant Growth Promoting Rhizobacteria Mediated Zinc Translocation in Rice (*Oryza sativa* L.). PhD diss., *COMSATS Institute of Information Technology*. Islamabad.

2. **Shakeel, M.** (2011). Weed dynamics in wheat (*Triticum aestivum* L.) as affected by tillage and weed management. MSc (Hons) diss., *University of Agriculture*. Faisalabad.

### Papers:

1. **Shakeel, M.**, Hafeez, F.Y., Malik, I.R., Rauf, A., Jan, F., Khan, I., Ijaz, I., Elsadek, M.F., Ali, M.A., Rashid, K. and Muzammal, M et al. (2023). Zinc solubilizing bacteria synergize the effect of zinc sulfate on growth, yield and grain zinc content of rice (*Oryza sativa*). *Cereal Research Communications*, pp.1-11.
2. **Shakeel M.**, Hafeez, F. Y., Malik I. R., Farid, A., Ullah, H., Ahmed I., Gul H., Mohibullah M., & Yasin, M. (2023). *Serratia marcescens* strain FA-4 enhances zinc content in rice grains by activating the zinc translocating enzymes. *SABRAO Journal of Breeding and Genetics*. 55(2): 495-507. <http://doi.org/10.54910/sabrao2023.55.2.21>.
3. Abbas G., Gul H., **Shakeel M.**, Ullah, H., Ahmed I., Khan, M. M., & Yasin, M. (2023). Prevalence of type2 diabetes, its associated complications and risk factors in District Dera Ismail Khan-Pakistan. *Pure and Applied Biology*. 12 (2):1111-1119. <http://dx.doi.org/10.19045/bspab.2023.120113>
4. Yasin, M, Ali GM, Riaz M, Ali S, Rehman HU, Iqbal A, Khan SU, Shakeel, M, Munir, M, Mohibullah M, Khan MR (2023). Genome-wide analyses of core regulatory module shattering cascade genes in canola (*BRASSICA NAPUS* L.). *SABRAO Journal of Breeding and Genetics*.55 (3): 681-694.<http://doi.org/10.54910/sabrao2023.55.3.7>.
5. Hussain, M. M., Saeed, A., Shakeel, M., Rauf, A., Jan, F., Gul, S., Munir, M., Khan, I., and Yasin, M. (2023). Dynamics of lead tolerance in tobacco (*nicotiana tabacum* l.) Genotypes. *SABRAO Journal of Breeding and Genetics*, 55(4), pp.1321-1331.
6. Rais, A., **Shakeel, M.**, Malik, K., Hafeez, F. Y., Yasmin, H., Mumtaz, S., & Hassan, M. N. (2018). Antagonistic *Bacillus* spp. reduce blast incidence on rice and increase grain yield under field conditions—Bio control effects on blast disease suppression on rice crop. *Microbiological Research*, 208: 54-62.
7. Rais, A., **Shakeel, M.**, Hafeez, F. Y., & Hassan, M. N. (2016). Plant growth promoting rhizobacteria suppress blast disease caused by *Pyricularia oryzae* and increase grain yield of rice. *BioControl*, 61:769-780. doi: 10.1007/s10526-016-9763-y.
8. **Shakeel, M.**, Rais, A., Hassan, M. N., & Hafeez, F. Y. (2015). Root associated *Bacillus* sp. improves growth, yield and zinc translocation for basmati rice (*Oryza sativa*) varieties. *Frontiers in microbiology*, 6:1-12. doi: 10.3389/fmicb.2015.01286.
9. Khaliq, A., **Shakeel, M.**, Matloob, A., Hussain, S., Tanveer, A., & Murtaza, G. (2013). Influence of tillage and weed control practices on growth and yield of wheat. *Philippine Journal of Crop Science (PJCS)* December, 38 (3): 54-62.

**Submitted:**

1. **Shakeel, M.**, Yasin, M., & Hafeez, F. Y. Zinc solubilizing strain MS-5 increases zinc concentration in grains through activation of zinc requiring enzymes in rice. *Physiol Mol Biol Plants*. (Submitted).
2. **Shakeel, M.**, Rais, A., Hassan, M. N., & Hafeez, F. Y. Zinc solubilizing bacteria enhance the rice growth, yield and grain zinc content of rice (*Oryza sativa*). *Journal of Plant Nutrition and Soil Science*. (Submitted).
3. **Shakeel, M.**, Buck, M., Hassan, M. N., & Hafeez, F. Y. Expression analysis of *PqqC* operon associated with zinc solubilizing ability of *Serratia marcescens* (FA-4). (Submitted).

**List of Oral/Poster Presentations in Conferences:**

1. **Shakeel, M.**, Naseem, S., Hassan, M. N., & Hafeez, F. Y. (2013) Exploring the mechanism of zinc translocation in rice mediated by plant growth promoting rhizobacteria. Poster Presentation at DAAD-HEC International Summer School “Food Security in times of climate change” Nov. 2-5, 2013. COMSATS Institute of Information Technology, Islamabad, Pakistan.
2. **Shakeel, M.**, Hassan, M. N & Hafeez, F. Y. (2016). Zinc Translocation in Rice by Plant Growth Promoting Rhizobacteria (PGPR). Oral Presentation at 6th International Conference on Environmentally Sustainable Development April 25-27, 2016 at CIIT, Abbottabad.
3. Abaid Ullah, M., **Shakeel, M.**, Hassan, M. N & Hafeez, F. Y. (2017). Bio-Fortification of Cereals through Zn Solubilizing Plant Growth Promoting Rhizobacteria (PGPR): Perspective of Safe Environment and Sustainable Agriculture. Oral Presentation at 7th International Conference on Environmentally Sustainable Development August 26-28, 2017 at CIIT, Abbottabad.

**List of Participations in Conferences:**

1. 13<sup>th</sup> Biennial Conference of Pakistan Society for Biochemistry and Molecular Biology on Recent Advances & Challenges in Molecular Biology, Biochemistry & Biotechnology being hosted by Centre for Advanced Drug Research (CADR) August 25-27, 2016 at CIIT, Abbottabad.

**Official Assignments as Assistant Professor****GCBB, Gomal University, D.I Khan-Pakistan:****Teaching Assignments: Courses Taught**

BS Course **BBT-416** (Cell Biology) 3(2+1)

BS Course Special Paper-I **BBT-488** (Plant Nutrition and Growth Regulators) 3(2+1)

MS Course **MBT- 612** (Recombinant DNA Technology) 3(2+1)

BS Course **BBT-484** (Animal Biotechnology) 3(2+1)

BS Course **Special Paper-II BBT-499** (Introductory Plant Physiology) 3(2+1)

BS Course **Principles of Biochemical Engineering BBT-454** 3(2+1)

BS Course **Seminar-I BBT-472** 1(0+1)

BS Course **Seminar-II BBT-482** 1(0+1)

BS Course **Introduction to Psychology BBT-499** 3(3+0)

**References:**

1. Prof. Dr. Martin Buck  
Professor  
Department of Life Sciences  
Faculty of Natural Sciences Imperial College London, United Kingdom

2. Dr. Tayyaba Yasmin  
Associate Professor  
Department of Biosciences  
COMSATS Institute of Information Technology  
Islamabad, Pakistan.