

Curriculum Vitae



Personal Data

Name: **Prof. Dr. Muhammad Arif Ali**
Nationality: Pakistani
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Professional address: Department of Environmental Science, Faculty of Sciences, Bahauddin Zakariya University, Multan.

Ecosystems

Professional Experience

1. **Professor**, in Department of Environmental Science, Faculty of Sciences, Bahauddin Zakariya University, Multan, Pakistan (w.e.f. 27-03-2023 - to date).
2. **Associate Professor**, in Department of Soil Science, Faculty of Agricultural Sciences & Technology, Bahauddin Zakariya University, Multan, Pakistan (w.e.f. 25-10-2015 – 27-03-2023).
3. **Assistant Professor**, in Department of Soil Science, Faculty of Agricultural Sciences & Technology, Bahauddin Zakariya University, Multan, Pakistan (02-03-2010 – 25-10-2015).
4. **Assistant Professor**, in Institute for Biotechnology and Genetic Engineering (NIBGE), Faisalabad, Pakistan (18-01-2010 to 01-03-2010).
5. **Research Associate**, in Soil Bacteriology Section Ayub Agriculture Research Institute Faisalabad, Pakistan. (Jan 2004 to Dec 2004).

Academics:

2015-2016 **Post Doctorate** from University of Massachusetts, Amherst (Umass), Massachusetts, USA. (Fulbright Scholarship Award for post doctorate)

2014-2015 **Post Doctorate** from Swiss Federal Institute of Technology (ETH), Zurich, Switzerland. (Swiss Government Excellence Scholarship, Award for post doctorate)

2006-2009 **Ph. D.** from Centre Internationale d'Etudes Supérieures en Sciences Agronomiques (SupAgro), Montpellier France. UMR Functional

Ecology and Biogeochemistry of Soil and Agro-systems, National Institute for Agronomic and Environmental Research (INRAE) Montpellier France, Formation: Integrated System of Biology, Agriculture, Geosciences, Hydro sciences and Environment, *specialty*: Ecosystems

2005-2006 **Master in Research (M2)**, from University Montpellier 2 (UM2) France. Formation: Biodiversity & Microbial and Parasitic Interactions (BIMP), *specialty*: Microbial System from Gene to Ecosystem (SMGE).

2003-2005 **M. Sc. (Hons), Soil Science** from Institute of Soil and Environmental Sciences, University of Agriculture Faisalabad, Pakistan. Formation: Soil Science, *specialty*: Soil Microbiology and Biochemistry.

1999-2003 **B. Sc. (Hons), Soil Science** from Institute of Soil and Environmental Sciences, University of Agriculture Faisalabad, Pakistan. Formation: Soil Science, *specialty*: Soil Microbiology and Biochemistry.

Awards/Funding/Research Grants (PI and Co-PI)

1. HEC-NRPU Research Grant entitled “*Up and down regulation of zinc uptake in plants by arbuscular mycorrhizal fungi for improving crop productivity*”. Session 2017-18, Worth: **2.82 million**. My role as PI.
2. HEC-PBAIRP Funded research Grant entitled “*Exploring the spatial extent, causes, composition and intensity of winter smog over plains of Punjab*”, Session 2017-18. Worth **8.0 million**. My role as Co-PI.
3. HEC-NRPU Research Grant entitled, “*Physiological and molecular determinants of salt and water deficit stress in citrus: Study on diploid and corresponding autotetraploid volkameriana lemon and sour orange rootstocks and their compatibility with Kinnow*” Session 2017-17. Worth **3.46 million**. My role as Co-PI.
4. PARC-ALP Research Grant entitled “*Improving Mango Productivity and Fruit Quality by Integrated Plant Nutrition, including Micronutrients, in Mango Growing Areas of Multan, Muzafargarh, Rahim Yar Khan and Mirpur Khas districts*” session 2017-18, Worth **5.08 million**. My role as Co-PI.
5. Bahauddin Zakariya University Multan, research grant entitled “*Arbuscular mycorrhizal fungi help plants to regulate zinc nutrition under toxic and deficient conditions*” session 2017-2018, Worth **0.303 million**, My role as PI.

6. Fulbright Scholar Award for Post Doctorate, Session, 2015-2016 for one year at University of Massachusetts, Amherst (Umass), USA. Worth ca. **4.6 million**
7. Swiss Government Excellence Scholarship award for Post Doctorate, Session, 2014-2015 for one year at Swiss Federal Institute of Technology (ETH), Zurich, Switzerland. Worth ca. **4.2 million**
8. Bahauddin Zakariya University Multan, research grant entitled “*Arbuscular mycorrhizal fungi help plants to regulate zinc nutrition under toxic and deficient conditions*” session 2017-2018, Worth **0.125 million**, My role as PI.
9. Higher Education Commission, Start-up Research Grant (SRGP) entitled “*One way to review our thinking over ecological intensification for management of crops nutrition*” **0.5 million**, My role as PI.

Administrative Experience/Responsibilities

1. Director Student Affairs (DSA), Faculty of Agricultural Sciences and Technology, Bahauddin Zakariya University, Multan (2017 to 2023)
2. Superintendent, Hamza Hall (Students Hostel), Bahauddin Zakariya University, Multan (January 2019 -2022)
3. Incharge Examination Department of Soil Science, BZU, Multan (2012-2014 and 2017- 2023)
4. Focal Person for Corresponding with National Agricultural Education Accreditation Council, Pakistan and Quality Enhancement Cell, BZU, Multan from October, 10, 2019- 2023.

Trainings, Workshops and Symposium for Professional Development

1. Participated in an International hands-on-training on “Use of DSSAT, WaNuLCAS for climate change adaptation” Department of Agronomy, University of Agriculture, Faisalabad from 30th to 2nd June 2022.
2. Participated in an International Conference on “Climate change: Impacts & Solutions” hosted by the Institute of Soil and Environmental Sciences, University of Agriculture Faisalabad, during November 07-09, 2022.
3. Participated in International Webinar on “Stealth Pathogens: The Sooty Blotch and Flyspeck Fungal Complex” at Islamia University Bahawalpur on 20 April, 2021.

4. Participated in International Training Workshop on Hybrid Rice Technology at Hunan Rice Research Institute (HHRI), China, held in Changsha, China from August 07-27, 2019.
5. Attended workshop on Scientific Writing organised by Department of Soil Science and ScienceVier Canada on April 6, 2017.
6. Attended Fulbright Scholar Seminar entitled- “Baltimore's Community Awakening - The Role of Anchor Institutions and Grassroots Organizations in Addressing the City's Health and Human Rights Issues” organised by Council for International Exchange of Scholars (CIES) at Baltimore, Maryland, USA on 19-22 April, 2016.
7. Attended Annual Harvard Forest Ecology Symposium on Long Term Ecology Research (ELTR) at Harvard Forest Research Station, Harvard University, USA on 15 March, 2016.
8. Attended Pioneer Valley Microbiology Symposium at Department of Microbiology, University of Massachusetts, Amherst, USA, on 15 Jan, 2016
9. Participation in a course entitled “The use of radio-isotopes to study element dynamics in soil/plant system at Federal Institute of Technology Zurich (ETH), Switzerland from 16 Sep. 2014-19 Dec.2015.
10. Course: 3281, Beginners German Language Certificate, A1.1, at Language Centre of University of Zurich/Swiss Federal Institute of Technology Zurich (ETH), Switzerland from 16 Sep.2014 to 16 Dec., 2014
11. Post Graduate Annual Training Course on “Safety Measures in Application of Radiation and Isotope in Agriculture, Health and Industry” at Nuclear Institute for Agriculture and Biology (NIAB) Pakistan, from November 25 to November 29, 2013.
12. One-day workshop of American Society for Microbiology on “Scientific Writing and Publishing” at FAS&T, BZU, Multan on October 2, 2013.
13. Resource Person for Dissemination of HEC Faculty Development Program Phase II at Lahore College for Women University, Lahore, Lectures Delivered on Research Methodology” from 25th to 27th of March 2013.
14. Two days workshop on “Simulation Modelling: A Decision Support System for Agro-technology Transfer for Improving the Standards of Research. March 04-05, 2013 at at Bahauddin Zakariya University Multan.
15. One-day workshop on “Soil and Site Improvement” at National University of Science and Technology, Islamabad, Pakistan

16. Two months “Master Trainer training in Faculty Professional Development Program” organized by HEC, Islamabad, Pakistan, April to Jun, 2012.
17. Two days seminar on “Recent Development in Edible Oil Production and Processing with Special reference to Pakistan.
18. Three days training on “Statistical Modeling for Improving the Standards of Research and Education for University Professionals” at Bahauddin Zakariya University Multan.

List of Publications (* corresponding author)

1. Haider I, *Ali M.A., Sanaullah M., Ahmed N., Hussain S., Shakeel M.T., Naqvi S.A.H, Dar J.S., Moustafa M., Alshaharni M.O. 2023. Unlocking the secrets of soil microbes: How decades-long contamination and heavy metals accumulation from sewage water and industrial effluents shape soil biological health, *Chemosphere*. 342, 140193. (Impact factor, 8.8).
2. Ahmed N., Hussain G.S., Hussain S., Hussain R., Ahmad I., Iqbal J., Farooqi M.H., Mubashir M., Moustafa M., *Ali M.A. 2023. Effect of soil and foliar applied micronutrient consortia on alleviation of micronutrient deficiency in kinnow (*Citrus sinensis* L.). *Pakistan Journal of Botany*. 55(SI): DOI: [http://dx.doi.org/10.30848/PJB2023-SI\(8\)](http://dx.doi.org/10.30848/PJB2023-SI(8)). (Impact factor, 1.1).
3. Haider I, *Ali M.A., Sanaullah M. 2023. Change in lettuce nutrients, soil enzymes, soil microbial biomass and activities under chromium toxicity. *Pakistan Journal of Botany*. 55(SI): DOI: [http://dx.doi.org/10.30848/PJB2023-SI\(10\)](http://dx.doi.org/10.30848/PJB2023-SI(10)). (Impact factor, 1.1).
4. Mehmood H., *Ali M.A., Hussain S. 2023. Growth and yield of rice under variable application methods of zinc with and without arbuscular mycorrhizae in normal and saline soils. *Pakistan Journal of Botany*. 55(SI): DOI: [http://dx.doi.org/10.30848/PJB2023-SI\(1\)](http://dx.doi.org/10.30848/PJB2023-SI(1)). (Impact factor, 1.1).
5. Hussain S., Asif H.M., Ahmad S., Ali M.A., Ejaz S., Abbas T., Haider S., Ercisli S., Ahmed T., Sohail M., Khalid M. 2022. Seed priming alleviates salt stress in two Fenugreek (*Trigonella Foenum-Graecum* L.) cultivars. *Emirates Journal of Food and Agriculture*. 34. (Impact factor, 1.04).
6. Mehmood H., *Ali M.A., Hussain S., Baig K.S., Farooq U., Ajmal M., Naqvi A.A.H., Sultan H., Datta R., Dar J.S., Alhomaidi E., Danish S. 2022. Synchronization of arbuscular mycorrhizae fungi inoculation with different zinc application methods for

- improvement in BASMATI rice growth and yield in alkaline calcareous soil. *Journal of King Saud University – Science*. 34 (5). (**Impact factor, 3.825**).
7. Ilyas F., ***Ali M. A.**, Abdulaah M., Ahmed N., Hussain S., Bilal M., Arshad M., Danish S., Ghoneim A. M., Ilyas A., Akram A., Fahad S., Ansari M. J., Datta R. 2022. Synchronisation of zinc application rates with arbuscular mycorrhizal fungi and phosphorus to maximise wheat growth and yield in zinc-deficient soil. *Crop & Pasture Science*. <https://doi.org/10.1071/CP21042>. (**Impact factor, 2.25**).
 8. Ahmed N., Ehsan A., Danish S., **Ali M.A.**, Fahad S., Dawar K., Taban S., Akça H., Shah A.A., Ansari M.J., Babur E., Uslu O.S., Datta R., Glick. B.R. 2022. Mitigation of lead (Pb) toxicity in rice cultivated with either ground water or wastewater by application of acidified carbon. *Journal of Environmental Management*. 307. 114521. (**Impact factor, 8.91**).
 9. Ahmad N., Hussain S., **Ali M.A.**, Minhas A., Waheed W., Danish S., Fahad S., Ghafoor U., Baig K.S., Sultan H., Hussain M.I., Ansari M.J., Marfo T.D., Datta R. 2022. Correlation of soil characteristics and citrus leaf nutrients contents in current scenario of Layyah district. *Horticulturae*. 8(1):61. <https://doi.org/10.3390/horticulturae801006>. (**Impact factor, 2.923**)
 10. Wahid F., Sharif M., Fahad S., Ali A., Adnan M., Rafiullah, Saud S., Danish S., **Ali M.A.**, Ahmed N., Arslan H., Arslan D., Erman M., EL Sabagh A., Gholizadeh F., Datta R. 2022. Mycorrhiza and phosphate solubilizing bacteria: potential bioagents for sustainable phosphorus management in agriculture. *Phyton International Journal of Botany*. 91 (2). (**Impact factor, 1.039**)
 11. Ahmed N., Hussain H.Z., **Ali M.A.**, Rahi A.A., Saleem M., Ahmad F. 2022. Effect of zinc on chlorophyll contents, gas exchange attributes and zinc concentration in rice. *Pakistan Journal of Botany*. 54(1), DOI: [http://dx.doi.org/10.30848/PJB2022-1\(14\)](http://dx.doi.org/10.30848/PJB2022-1(14)). (**Impact factor, 0.80**).
 12. Saboor A, ***Ali M.A.**, Husain S., Tahir M.S., Irfan M., Bilal M., Baig K.S., Datta R., Ahmed N., Danish S., Glick B.R. 2021. Regulation of phosphorus and zinc uptake in relation to arbuscular mycorrhizal fungi for better maize growth. *Agronomy*. 11(11):2322. (**Impact Factor 2.603**).
 13. Khan M.M.H., Ahmed N., Irfan M., Ali M., **Ali M.A.**, Irfan M., Hussain S., Fahad S., Agarwal V. Abdel-Hafez S.H., Ali R., Asdaq S.M.B., Alabdallah N.M., Zuan A.T.K., Danish D., Datta R. 2021. Synchronization of boron application methods and rates is

- environmentally friendly approach to improve quality attributes of *Mangifera indica* L. on sustainable basis. *Saudi Journal of Biological Sciences*. **(Impact Factor, 4.21)**
14. Alam F., Khan A., Fahad S., Nawaz S., Ahmed N., Ali M.A., Adnan M., Dawar K., Saud S., Hassan S., Raza M.A.S, Naveed K., Arif M., Datta R., Danish S. 2021. Phosphate solubilizing bacteria optimize wheat yield in mineral phosphorus applied alkaline soil, *Journal of the Saudi Society of Agricultural Sciences*.
 15. Mustafa G., *Ali M.A., Smith D., Masood S., Qayyum M.F., Ahmed N., Rehman A., Ahmad S., Hussain S., Arshad M., Muneer S., Khan A.H.A., Fahad S., Datta R., Iqbal M., Schwinghamer T.D. 2021. Formalin fumigation and steaming of various composts differentially influence the nutrient release, growth and yield of muskmelon (*Cucumis melo* L.). *Scientific Reports* 11, 21057. <https://doi.org/10.1038/s41598-021-99692-0>. **(Impact Factor, 4.120)**
 16. Ahmed N., Basit A., Bashir S., Bashir S., Bibi I., Haider Z., Ali M.A., Aslam Z., Aon M., Alotaibi S.S., El-Shehawi A.M., Samreen T., Li Y. 2021. Effect of acidified biochar on soil phosphorus availability and fertilizer use efficiency of maize (*Zea mays* L.), *Journal of King Saud University – Science*. 33 (8): 101635. **(Impact Factor, 4.01)**
 17. Rahi A.A., Younis U., Ahmed N., Ali M.A., Fahad S., Sultan H., Zarei T., Danish S., Süleyman Taban S., El Enshasy A.A., Tamunaidu P., Abdel-Hafez S.H., Alminderej F.H., Datta R. 2021. Toxicity of Cadmium and Nickel in the Context of Applied Activated Carbon Biochar for Improvement in Soil Fertility. *Saudi Journal of Biological Sciences*. **(Impact Factor, 4.219)**
 18. Saboor A., *Ali M.A., Danish S., Ahmed N., Fahad S., Datta R., Ansari M.J., Nasif O., Habib ur Rahman M., Glick B.R. 2021. Effect of arbuscular mycorrhizal fungi on the physiological functioning of maize under zinc-deficient soils. *Scientific Reports*. 11, 18468. <https://doi.org/10.1038/s41598-021-97742-1>. **(Impact Factor, 4.120)**
 19. Saboor A., *Ali M.A., Hussain S., El Enshasy H.A., Hussain S., Ahmed N., Gafur A., Sayyed R.Z., Fahad S., Danish S., Datta R. 2021. Zinc nutrition and arbuscular mycorrhizal symbiosis effects on maize (*Zea mays* L.) growth and productivity. *Saudi Journal of Biological Sciences*. 28(11) 6339-6351. **(Impact Factor, 4.21)**
 20. Saboor A. and *Ali M.A. 2021. Effects of arbuscular mycorrhizal fungi on maize (*Zea mays* L.) under zinc deficient and toxic field conditions. *Applied Ecology and Environmental Research*. 19(3):2151-2169. **(Impact factor, 0.712)**.
 21. Ahmed N., Shah A.R., Danish S., Fahad S., Ali M.A., Zarei T., Vranová V., Datta R. 2021. Immobilization of Cd in soil by biochar and new emerging chemically produced

- carbon. *Journal of King Saud University - Science*. 33: 101472. **(Impact Factor, 3.819)**.
22. Ramzan M., Sana S., Javaid N., Shah A.A., Ejaz S., Malik W.N., Yasin N.A., Alamri S., Siddiqui M.H., Datta R., Fahad S., Tahir N., Mubeen S., Ahmed N., Ali M.A., Sabagh A.E., Danish S. 2021. Mitigation of bacterial spot disease induced biotic stress in *Capsicum annum* L. cultivars via antioxidant enzymes and isoforms. *Scientific Reports*. 11:9445. **(Impact Factor, 4.120)**
23. Shemawar, Mahmood A., Hussain S., Mahmood F., Iqbal M., Shahid M., Ibrahim M., Ali M.A., Shahzad T. 2021. Toxicity of biogenic zinc oxide nanoparticles to soil organic matter cycling and their interaction with rice-straw derived biochar. *Scientific Reports*. 11:8429. **(Impact Factor, 4.120)**
24. Saboor A., *Ali M.A., Ahmed N., Skalicky M., Danish S., Fahad S., Hassan F., Hassan M.M., Brestic M., EL Sabagh A., Datta R. 2021. Biofertilizer-based zinc application enhances maize growth, gas exchange attributes, and yield in zinc-deficient soil. *Agriculture*. 11(4): 310. **(Impact Factor, 2.072)**
25. Waani S.P.T., Irum S., Gul I., Yaqoob K., Khalid M.U., Ali M.A., Manzoor U., Noor T., Ali S., Rizwan M., Arshad M. 2021. TiO₂ nanoparticles dose, application method and phosphorous levels influence genotoxicity in Rice (*Oryza sativa* L.), soil enzymatic activities and plant growth. *Ecotoxicology and Environmental Safety*. 213: 111977. **(Impact factor, 4.872)**.
26. Shah S.H., Mirza R., Butt T.A., Bilal M., Yasser M., Ali A., Ali M.A., Baig A., Shah R.Z., Shah M.H., Amin B.A.Z., Asad M.H.H.B., Saqib M., Shaikh A.J. 2021. Nano-Porous Zirconia Membranes for Separation of Hydrogen from Carbon Dioxide. *Polish Journal of Environmental Studies*. 30(3): 1-11. **(Impact factor, 1.383)**.
27. Shah J.A., Mirza C.R., Butt T.A., Khalifa W.M.A., Gasmi H.H., Haroon H., Khan M.S., Ali M.A., Zeb I., Shah S.H., Amin B.A.Z., Bilal M. 2021. Tobacco stalk waste biomass holds multilayer and spontaneous adsorption capabilities for reactive black 5 dye: Equilibrium modelling and error function analysis. *Polish Journal of Environmental Studies*. 30(3): 1-12. **(Impact factor, 1.383)**.
28. Ahmed N., Khalil A., Gulshan A.B., Bashir S., Saleem M., Hussain R., Ali M.A., Iqbal J., Bashir S. 2021. The efficiency of magnesium (Mg) on rice growth, biomass partitioning and chlorophyll contents in alkaline soil condition. *Pure and Applied Biology*, 10(1): 325-333. **(HEC recognized Y category)**

29. Ahmed M., Fahad S., Ali M.A., Hussain S., Tariq M., Ilyas F., Ahmad S., Saud S., Hammad H.M., Nasim W., Wu C., Liu H., 2021. Hydrogen Sulfide: A Novel Gaseous Molecule for Plant Adaptation to Stress. *Journal of Plant Growth Regulation*. 40: 2485–2501. **(Impact factor, 2.962)**.
30. Fatima Z., Ahmed M., Hussain M. Abbas G., Sami Ul-Allah, Ahmad S., Ahmed N., Ali M.A., Sarwar G., Haque E., Iqbal P., Hussain S. 2020. The fingerprints of climate warming on cereal crops phenology and adaptation options. *Scientific Reports*. 10, 18013. **(Impact Factor, 4.120)**
31. Khalid M.F., Hussain S., Anjum M.A., Ali M.A., Ahmad S., Ejaz S., Ali S., Usman M., Haque E.U., Morillon R. 2020. Efficient compartmentalization and translocation of toxic minerals leads tolerance in volkamer lemon tetraploids under moderate and high salt stress. *Fruits – the International Journal of Tropical and Subtropical Horticulture*. 75(5) 204-215. **(Impact Factor, 0.807)**
32. Zulfiqar U., Hussain S., Ishfaq M., Ali N., Yasin M.U., Ali M.A. (2020). Foliar manganese supply enhances crop productivity, net benefits, and grain manganese accumulation in direct-seeded and puddled transplanted rice. *Journal of Plant Growth Regulation*. 40: 1539–1556. **(Impact factor, 2.962)**.
33. Ahmed N., Umer A., Ali M.A., Iqbal J., Mubashir M., Grewal A.G., Butt B., Rasheed M.K., Chaudhry U.K. 2020. Micronutrient status of mango (*Mangifera indica*) orchards of multan region, Punjab, Pakistan and relationship with soil properties. *Open Agriculture*. 5; 271-279. **(Impact factor, 0.767)**.
34. Haroon H., Shah J.A., Khan M.S., Alam T., Khan R., Asad S.A., Ali, M.A., Farooq G., Iqbal M., Bilal M. (2020). Activated carbon from a specific plant precursor biomass for hazardous Cr (VI) adsorption and recovery studies in batch and column reactors: Isotherm and kinetic modelling. *Journal of Water Process Engineering*. 38; 101577. **(Impact factor, 3.370)**.
35. Mukhtar A., Manzoor M., Gul I., Zafar R., Jamil H.I., Niazi A.K., Ali M.A., Park T.J., Arshad M. 2020. Phytotoxicity of different antibiotics to rice and stress alleviation upon application of organic amendments. *Chemosphere*. 258; 127353, DOI: 10.1016/j.chemosphere.2020.127353. **(Impact factor, 5.778)**.
36. Mushtaq M.U., Iqbal A., Nawaz I., Mirza C.R., Yousaf S., Farooq G., Ali M.A., Khan A.H.A, Iqbal M. 2020. Enhanced uptake of Cd, Cr, and Cu in *Catharanthus roseus* (L.) G. Don by *Bacillus cereus*: application of moss and compost to reduce metal

- availability. *Environmental Science and Pollution Research*. 27: 39807–39818 (**Impact factor, 3.056**).
37. **Ali M.A.**, Ajaz M.M., Rizwan M., Qayyum M.F., Arshad M., Hussain S., Ahmad N., Qureshi M.A. 2020. Effect of biochar and phosphate solubilizing bacteria on growth and phosphorus uptake by maize in an aridisol. *Arabian Journal of Geosciences*. 13:333. (**Impact factor, 1.327**).
 38. Ahmad N., Khalid S., Grewal A.G., **Ali M.A.**, Anjum M.A., Rahi A.A., Danish S. 2020. Performance of mango scion cultivars under various levels of artificially induced salinity stress. *Pakistan Journal of Botany*. 52(4), DOI: [http://dx.doi.org/10.30848/PJB2020-4\(11\)](http://dx.doi.org/10.30848/PJB2020-4(11)). (**Impact factor, 0.80**).
 39. Shahzad F., Asghar H.N., Mushtaq Z., Hadayat A., Zuhra N., Ahmad R., **Ali M.A.** (2020). Role of endomycorrhizae, rhizobacteria and compost to improve phosphorus availability in onion. *Asian Journal of Agriculture and Biology*. 8(2):194-200. (**HEC-recognized**)
 40. Ahmed N., Ahsen S., **Ali M.A.**, Hussain M.B., Hussain S.B., Rasheed M.K., Butt B., Irshad I., Danish S. 2020. Rhizobacteria and silicon synergy modulates the growth, nutrition and yield of mungbean under saline soil. *Pakistan Journal of Botany*. 52(1): 9-15. (**Impact factor, 0.80**).
 41. Khalid M.F., Hussain S., Anjum M.A., Ahmad S., **Ali M.A.**, Ejaz S., Morillon R. (2020). Better salinity tolerance in tetraploid vs diploid volkamer lemon seedlings is associated with robust antioxidant and osmotic adjustment mechanisms. *Journal of Plant Physiology*, 153071. <https://doi.org/10.1016/J.JPLPH.2019.153071>. (**Impact factor, 3.013**)
 42. Haider Z., Ahmad N., Danish S., Iqbal J., **Ali M.A.**, Chaudhry U.K. 2019. Effect of foliar application of boric acid on fruit quality and yield traits of mango. *Advances in Horticultural Sciences*. 33(4): 457-464 (**Impact factor, 0.541**)
 43. Qayyum, M.F., Abdullah M.A., Rizwan M., Haider G., ***Ali M.A.**, Zafar-ul-Hye M., Abid M. 2019. Different nitrogen and biochar sources' application in an alkaline calcareous soil improved the maize yield and soil nitrogen retention. *Arabian Journal of Geosciences*. 12:664 (**Impact factor, 1.327**)
 44. Danish S., Kiran S., Fahad S., Ahmad N., **Ali M.A.**, Tahir F.A., Rasheed M.K., Shahzad K., Li X., Wang D., Mubeen M., Abbas S., Munir T.M., Hashmi M.Z., Adnan M., Saeed B., Saud S., Khan M.N., Ullah A., Nasim W., 2019. Alleviation of chromium toxicity in maize by Fe fortification and chromium tolerant ACC deaminase

- producing plant growth promoting rhizobacteria, *Ecotoxicology and Environmental Safety*. 185: **(Impact factor, 4.872)**
45. Hussain S., Rao M.J., Anjum M.A., Ejaz S, Umar U.D., **Ali M.A.**, Khalid M.F., Sohail M., Ercisli S., Haq M.Z., Ahmad S., Syed Atif Hasan Naqvi S.A.H. 2019. Effect of different combinations of antibiotics on fruit quality and antioxidant defense system in Huanglongbing infected Kinnow orchards. *AMB Express*. 9: 147. <https://doi.org/10.1186/s13568-019-0871-9> **(Impact factor, 2.226)**
 46. Arshad M., Javaid A., Manzoor M., Hina K., **Ali M.A.**, Ahmed I. 2019. Isolation and identification of chromium-tolerant bacterial strains and their potential to promote plant growth. *E3S Web Conf*. 96, 01005, DOI: 10.1051/e3sconf/20199601005.
 47. Raza A., Khan A.H.A., Nawaz I., Qu Z., Yousaf S., **Ali M.A.**, Sayal A.U., Iqbal M. 2019. Evaluation of arsenic-induced stress in *Dahlia pinnata* Cav.: Morphological and physiological response. *Soil and Sediment Contamination: An International Journal*. 28(7) 716-728. **(Impact factor, 1.25)**
 48. Ali M., Khan I., **Ali, M.A.**, Anjum S.A., Umair A., Waqas M.A. 2019. Integration of organic sources with inorganic phosphorus increases hybrid maize performance and grain quality. *Open Agriculture*, 4(1) 354-360. **(Impact factor, 0.767)**.
 49. Danish S., Tahir F., Rasheed M., Ahmad N., **Ali M.A.**, Kiran S., Younis U., Irshad I., Butt B. 2019. Effect of foliar application of Fe and banana peel waste biochar on growth, chlorophyll content and accessory pigments synthesis in spinach under chromium (IV) toxicity. *Open Agriculture*. 4(1)381-390. **(Impact factor, 0.767)**.
 50. Gardazi S.M.H., Shah J.A., Ashfaq T., Sherazi T.A., **Ali M.A.**, Pervez A., Rashid N., Iqbal J., Amin B.Z., Bilal M. 2019. Equilibrium, kinetics and thermodynamics study of the adsorptive removal of methylene blue from industrial wastewater by white cedar sawdust. *Environmental Protection Engineering*. 45 (3) 5-22. **(Impact factor, 0.812)**
 51. Tara N., **Ali M.A.**, Ahmed N., Danish S., Hassan W., Mubashir M., Bashir S. 2019. Evaluation of phosphate solubilizing bacteria role with biochar on the growth of wheat. *International Journal of Biosciences*. 14 (5) 349-356.
 52. Hussain H.Z., Ahmed N., **Ali M.A.**, Danish S., Gilani M., Mubashir M., Suleman M. 2019. Influence of different levels of zinc fertilizer on some growth and yield parameters of rice (*Oryza sativa* L.) crop. *International Journal of Biosciences*. 14 (5) 262-269.
 53. Haq I.U., Khurshid G., Abbasi A.Z., Nawaz I., Naqvi T., Arfan M., Shah M.M., Ahmed B., Amin Z., Hussain J., **Ali M.A.**, Rehman S.U., Ahmad R. 2019. Successful

- callogenesis from leaf and petiole of *Bergenia ciliata* (Haw.) Sternb and antibacterial activity of callus extracts. *Pakistan Journal of Botany* 51(5): DOI: [http://dx.doi.org/10.30848/PJB2019-5\(11\)](http://dx.doi.org/10.30848/PJB2019-5(11)). (**Impact factor, 0.80**)
54. Iqbal A., Mukherjee M., Rashid J., Khan S.A., Ali M.A., Arshad M. 2019. Development of plant-microbe phytoremediation system for petroleum hydrocarbon degradation: An insight from *alkb* gene expression and phytotoxicity analysis. *Science of the Total Environment*. 671: 696-704. (**Impact factor, 5.551**)
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1. Hussain S., Khalid M.F., **Ali M.A.**, Ahmad N., Hasanuzzaman M., Ahmad S. (Eds.) 2022. Citrus Production: Technological Advancements and Adaptation to Changing Climate. *CRC Press. Taylor and Francis Group*.

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1. Ilyas F., ***Ali M.A.**, Ahmed N., Arshad M., Hussain S., Ahmed S., Riaz M., Haider I., Ullah H.H., Bilal M., Nahar K., Hasanuzzaman M. 2022. Importance of Soil Microbes in Improving Citrus Production Excellence of Mycorrhizal Fungi. In Hussain S., Khalid M.F., **Ali M.A.**, Ahmad N., Hasanuzzaman M., Ahmad S. (Eds.) Citrus Production: Technological Advancements and Adaptation to Changing Climate. *CRC Press. Taylor and Francis Group*
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List of Oral Presentations in Conferences

1. **Ali M.A.**, Ilyas F., Hussain S., Ahmad N., Qayyum M.F., Abid M. 2020. Dual function of arbuscular mycorrhizal fungi under deficient and toxic zinc conditions to sustain the wheat production. 18th International Congress of Soil Science (ICSS). Sindh Agricultural University, Tandojam, Sindh, Pakistan. February 11-13.
2. **M. A. Ali**. 2017. Mycorrhizae: important bio-actors for sustainable management of phosphate fertilizers in agro-ecosystems. *Invited speaker in International Conference on Bio-approaches for Environment and Sustainability*. Institute of Environmental Science & Engineering (IESE), National University of Sciences & Technology (NUST), Islamabad. February 22-23.
3. Gamper H., **M.A. Ali**; R. Slavíková; E. Frossard. 2015. Focusing or broadening the spectrum of arbuscular mycorrhizal fungal symbionts - What is better for plant nutrition and biomass production? Rhizosphere4 conference on Stretching the Interface of Life, Maastricht, The Netherlands. 21-25 June, 2015.
4. Arshad M, M. Siddiqa, I. Hashmi, M.A. Awan, **M.A. Ali**. 2014. DNA damage assessments in blood samples from workers exposed to pesticides in industrial area. 7th International Conference on Challenges in Environmental Science & Engineering, Johar Bahru, Malaysia. 12-16 Oct. 2014.
5. **Ali M.A.**, Arshad M., Abid M., Ahmad N., Amjed M. and Ahmad M. *Azotobactor* and phosphate solubilising bacteria affect growth and yield of maize. *1st Natioanl Conference on Advancement in Science and Technology, COMSATS, Vehari (27 February 2012)*
6. Ahmad N., Abid M., **Ali M.A.**, Hussain N., Yousaf M., Rashid K. Impact of residual and commulative fertilizer Boron on cotton-wheat productivity in and irrigated Aridisol. *1st Natioanl Conference on Advancement in Science and Technology, COMSATS, Vehari (27 February 2012)*
7. Tariq N. H., **Ali M.A.**, Abid M., Ahmad N. Response of wheat (*Triticum aestivum* L.) to soil application of Zinc and Boron under irrigated conditions. *1st Natioanl Conference on Advancement in Science and Technology, COMSATS, Vehari (27 February 2012)*
8. Plassard C., Louche J., **Ali M.A.**, Duchemin M., Legname E., Cloutier-Hurteau B., Taty M.-V., El Kassis E. Ectomycorrhizal fungi and mobilisation of phosphorus:

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9. Plassard C., Louche J., Ali M. A., Sauvage F-X., Legname E., Duchemin M. Ectomycorrhizal fungi and mobilisation of organic phosphorus from forest soil: novel data and actual role. *19th Annual VM Goldschmidt Conference, Davos, Switzerland (21Jun, 2009)*.
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 11. Ali M. A., Plassard C. Rôle des phosphatases sécrétées par les populations microbiennes symbiotiques associées au Pin maritime dans la mobilisation du phosphore dans l'écosystème Landais. *Séminaire des doctorants- EFPA, Dinard, France (6-8 octobre 2008)*.
 12. Ali M. A., Plassard C. Synthesis of cDNA libraries using pool of *P. pinaster's* ECM from Pierroton. *Functional Diversity (FUNDIV) 5th plenary meeting in Montpellier, France (8-10 December, 2008)*.
 13. Ali M. A., Plassard C. Synthesis of cDNA libraries using pool of *P. pinaster's* ECM from Pierroton. *Functional Diversity (FUNDIV) 4th plenary meeting in Nancy, France (19-20 Jun, 2008)*.

Poster Presentations in Conferences

1. Khalid M.F., Hussain S., Anjum M.A., Vincent C., Ahmad S., Ali M.A., Morillon R. Water use pattern and intrinsic antioxidant machinery confer tetraploid volkamer lemon tolerance to various water-deficit scenarios. *Horticulture CSI: The Latest Clues in the Search for the Long Beach Red Radish. HortScience 55(9) S8*.
2. Saboor A., Ali M. A., Ahmad N. 2018. Effect of integrated use of phosphate fertilizers and Farm Manure on soil physical health indices and yield parameters of maize (*Zea mays* L.). Poster presentation in International Workshop on Phyto-technologies for Environmental Cleanup. Institute of Environmental Science & Engineering (IESE), National University of Sciences & Technology (NUST), Islamabad. May 08-09.

3. Slavíková, R., J. Jansa, D. Püschel, M.A. Ali, E. Frossard, H.A. Gamper. 2015. Arbuscular mycorrhizal symbiotic functioning along an experimental soil gradient. 8th International Conference on Mycorrhiza (ICOM8). Flagstaff, Arizona, USA. August 3-7, 2015.
4. Ahmed N., Abid M, Ahmad F., Ali M. A. Impact of residual and cumulative fertilizer zinc on cotton-wheat productivity in an irrigated Aridisol. *International Zn symposium, Hyderabad India* (10-14 Oct., 2011). **Won 2nd prize**
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9. Plassard C., Meredieu C., Bakker M. R., Danjon F., Trichet P., Guinberteau J., Augusto L., Saur E., Domergue O., Galiana A., Prin Y., Ali M. A., Hinsinger P., Jaillard B., Pellerin S., Loustau D. P availability, fine root properties and functional mycorrhizal diversity across *Pinus pinaster* stands with different productivity in

- South-western France. *Rhizosphere 2 international conference Montpellier, France (26 – 31 August 2007)*.
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 11. Ali M. A., Plassard C. Comparison of soil P status, functional ectomycorrhizal diversity and growth of *Pinus pinaster* in field and in rhizobox. *Rhizosphere 2 international conference Montpellier, France (26 – 31 August 2007)*.
 12. Ali M. A. Rôle des phosphatases sécrétées par les populations microbiennes symbiotiques associées au Pin maritime dans la mobilisation du phosphore dans l'écosystème landais. *Séminaire des Doctorants EFPA à Nouan Le Fuzelier France. (13 - 15 février 2007)*.
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 14. Ali M. A., Meredieu C., Bakker M., Trichet P., Guinberteau J., Augusto L., Saur E., Domergue O., Galiana A., Prin Y., Loustau D., Plassard C. Effets de la fertilisation et de l'irrigation sur le statut P du sol et les activités phosphatases des ectomycorhizes. *IXèmes Journées d'Ecologie Fonctionnelle, Biarritz France (19 – 22 mars 2007)*.

Membership of Professional Societies/Alumni

1. Membership of Soil Science Society of Pakistan (SSSP)
2. Membership of American Society for Microbiology (ASM)
3. Life membership of Botanical Society of Pakistan (BSP)
4. Membership of French Association for Soil Science Studies (AFES)
5. Membership of Pak-France Alumni Network (PFAN)
6. Membership of Swiss Government Excellence Scholarship Alumni Association for Pakistan

7. Membership of Fulbright Alumni Association, organized by United States Education Foundation of Pakistan, Islamabad.
8. Membership of Fulbright International Exchange Alumni, organized by Bureau of Educational and Cultural Affairs, United States Department of State.
9. Elected member as Joint Secretary, Academic Staff Association 2019-2020, Bahauddin Zakariya University, Multan

Awards and Honors

1. Fulbright Scholar Award for Post Doctorate, Session, 2015-2016 for one year at University of Massachusetts, Amherst (Umass), USA.
2. Swiss Government Excellence Scholarship Award for Post Doctorate, Session, 2014-2015 for one year at Swiss Federal Institute of Technology (ETH), Zurich, Switzerland.
3. Higher Education Commission approved Master Trainer
4. Approved supervisor by Higher Education Commission of Pakistan for Ph.D. students
5. Award of scholarship by Higher Education Commission of Pakistan for Ph. D studies in Montpellier, France.
6. Award of scholarship by Higher Education Commission of Pakistan for Mater 2/M. Phil Studies in Montpellier, France.
7. Award of Merit Scholarship by Board of Intermediate Secondary Education Multan for B. Sc. (Hons.) Agriculture in University of Agriculture Faisalabad.

Ph.D. Students Supervised

Sr. #	Name of Scholar	Title of Thesis	Passing Year
1.	Mr. Hassan Mehmood	Integrated zinc and arbuscular mycorrhizal fungi application to enhance crop growth, stress tolerance and zinc availability in rice	2023
2.	Mr. Idrees Haider	Implications of chromium contamination on soil biological health	2023
3.	Mr. Abdul Saboor	Role of arbuscular mycorrhizal fungi in zinc uptake by maize at various rates of zinc and phosphorus application in alkaline calcareous soil	2021
4.	Mr. Ghulam	Evaluation and characterization of different	2018

Mustafa potting media for growth and yield of melon
(*Cucumis melo* L.)

M.Phil. Students Supervised

Sr. #	Name of Scholar	Title of Thesis	Passing Year
1.	Ms. Sunila Qayyum	Effectiveness of arbuscular mycorrhizal fungi on wheat growth and production at different levels of polyhalite application	2021
2.	Mr. Muhammad Asif	Field evaluation of titania nano-particles application on growth and yield of wheat crop	2020
3.	Mr. Muhammad Munawar Saeed	Effect of plant growth promoting regulators and arbuscular mycorrhizal fungi on growth of rice	2020
4.	Mr. Babar Bilal	Evaluation of phosphate solubilizing bacteria and arbuscular mycorrhizal fungi for acquisition of phosphorus and growth of rice	2020
5.	Mr. Hamza Dildar	Screening of phosphate solubilizing bacteria for uptake of phosphorus and growth of (<i>Zea mays</i>) maize	2020
6.	Mr. Muhammad Aqeel	Growth response of rice at various levels of zinc application with inoculation of phosphate solubilizing bacteria and arbuscular mycorrhizal fungi	2020
7.	Ms. Fariha Ilyas	Effectiveness of arbuscular mycorrhizal fungi for improving the growth and yield of wheat under various levels of Zinc and Phosphorous fertilizer	2019
8.	Mr. Abdul Qayyum Akhtar	Effect of intercropping on symbiosis of arbuscular mycorrhizal fungi (AMF) with the roots of young mango (<i>Mangifera indica</i> L.) plants	2019
9.	Ms. Memona Qamar	Effect of Titania nano-particles on phosphorus availability and uptake in rice field condition	2018
10.	Mr. Ahsan Shahbaz	Relation between phosphorus availability and phosphatase activity of ectomycorrhizal fungi	2018

- isolated from mix plantation
11. Mr. Mustansar Ijaz Effect of phosphate solubilizing bacteria and biochar on the growth of maize 2014
 12. Mr. Khalid Yaseen Optimization of composted manure application on wheat growth 2014
 13. Ms. Nain Tara Isolation and characterization of phosphate solubilizing bacteria 2014
 14. Mr. M. Zohaib Shah Estimation of different soil phosphorus fractions in maize cultivated soil amended with phosphate solubilizing bacteria 2014
 15. Mr. M. Ibrahim Effect of pesticides application on soil bacteria and phytase activity in wheat crop 2014
 16. Mr. Noor Ahmad Effect of pesticides application on soil bacteria and phosphatase activity in maize crop 2014
 17. Mr. M. Kashif Nadeem Role of phosphate solubilizing bacterial inoculation on growth and yield of maize 2013
 18. Mr. Abdul Moin Soil- plant interaction under pure and mix-culture of two wheat varieties with nitrogen application 2012
 19. Mr. Hafiz Muhammad Rashid Soil- plant interaction under pure and mix-culture of two wheat varieties with phosphorus application 2012
 20. Mr. Nazar H. Tariq Response of wheat (*Triticum aestivum* L.) to soil application of Zinc and Boron under irrigated conditions 2011