

RESUME



Dr. Rashid Mahmood
Associate Professor (Soil Science)

CONTACT

Permanent Address: Anjum street Muhallah Rasoolpura, Farooqabad,
Tehsil and District Sheikhupura.
Postal Address: Department of Soil Science, Faculty of
Agricultural Sciences, University of the Punjab,
new campus, Lahore, Punjab, Pakistan.
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PERSONNAL PROFILE

Father's Name: Muhammad Younas
Date of Birth: 08-03-1979
Nationality: Pakistani
Gender: Male
Marital Status: Married
C.N.I.C #: 35404-1624512-9
Passport #: XH0155121

EDUCATION

2004 - 2009 (5 years)
UNIVERSITY OF AGRICULTURE FAISALABAD, PAKISTAN
Doctor of philosophy (Soil Science)
Thesis title: Effectiveness of calcium carbide for improving nutrient use
efficiency and yield of wheat crop.

2003 - 2004 (2 years)
UNIVERSITY OF AGRICULTURE FAISALABAD, PAKISTAN
Master of Science (Honours) Agriculture
Result: 73.58 % Marks with 3.48 CGPA
Thesis title: Effect of rate and time of application of encapsulated calcium carbide
on growth and N uptake of wheat

1998 - 2002 (4 years)
UNIVERSITY OF AGRICULTURE FAISALABAD, PAKISTAN
Bachelor of Science (Honours) Agriculture
Result: 74.47 % Marks with 3.56 CGPA

1996 - 1998 (2 years)
BOARD OF INTERMEDIATE AND SECONDARY EDUCATION,
LAHORE
Intermediate in Science (Pre-medical group)
Result: 69.63% Marks Grade "B"

1994 - 1996 (2 years)
BOARD OF INTERMEDIATE AND SECONDARY EDUCATION,
LAHORE
Matriculation
Result: 76.70 % Marks Grade “B”

PROFESIONAL EXPERIENCE

March 2021 – Continue
Tenured Associate Professor (Soil Science)/Chairman
Department of Soil Science, Faculty of Agricultural Sciences,
University of Punjab, Lahore, Pakistan

December 2020 – March 2021
Tenured Associate Professor (Soil Science)
Institute of Agricultural Sciences,
University of Punjab, Lahore, Pakistan

January 2012 – December 2020
Assistant Professor (Soil Science) under TTS
Institute of Agricultural Sciences,
University of Punjab, Lahore, Pakistan

2009 – 2012
Agriculture Officer (Laboratory)
Soil and Water Testing Laboratory, Sheikhpura
Government of Punjab, Pakistan

1. Soil and irrigation water sampling.
2. Soil analysis for the determination of fertility status and to diagnose soil problems.
3. Water analysis to classify it as fit or unfit for irrigation purpose.
4. Fertilizer and other soil amendment materials analysis for quality assurance.
5. Advisory service to farmers on the basis of laboratory results.

PUBLICATIONS IN IMPACT FACTOR JOURNALS

(Cumulative Impact Factor: 43.482)

1. Nadeem F, **Mahmood R**, Sabir M, Khan W, Haider MS, Wang R, Zhong Y, Ishfaq M and Li X. (2022). Foxtail millet [*Setaria italica* (L.) Beauv.] over-accumulates ammonium under low nitrogen supply. *Plant Physiology and Biochemistry*. 185: 35–44. <https://doi.org/10.1016/j.plaphy.2022.05.031> (IF 5.437)
2. Rana MA, **Mahmood R**, Nadeem Faisal, Wang Y, Jin C and Liu X (2022) Enhanced nitrogen use efficiency, growth and yield of wheat through soil urea hydrolysis inhibition by *Vachellia nilotica* extract. *Front. Plant Sci*. 13:1039601. doi: 10.3389/fpls.2022.1039601 (IF 6.627)
3. Riaz, M., **Mahmood, R.**, Antar, M., Akhtar, N., Khan, S. N., Anjum, M. A., & Smith, D. L. (2022). A Bacterial Consortium and Synthetic Fertilizer Based Biocontrol Approach Against Potato Rot Disease “*Neocosmospora rubicola*”. *Front. Agron*. 4:828070. doi: 10.3389/fagron.2022.828070
4. Ahmad, MN., Zia, A., van den Berg, L., Ahmed, Y., **Mahmood, R.**, Dawar, K. M., ... & Ashmore, M. (2022). Effects of soil fluoride pollution on wheat growth and

- biomass production, leaf injury index, powdery mildew infestation and trace metal uptake. *Environmental Pollution*, 118820 (Impact factor 8.071).
5. Haider, T., Farid, M. S., **Mahmood, R.**, Ilyas, A., Khan, M. H., Haider, S. T. A., ... & Gul, M. (2021). A Computer-Vision-Based Approach for Nitrogen Content Estimation in Plant Leaves. *Agriculture*, 11(8), 766 (Impact factor 3.408).
 6. Rana, M. A., **Mahmood, R.**, & Ali, S. (2021). Soil urease inhibition by various plant extracts. *Plos one*, 16(10), e0258568 (Impact factor 3.24).
 7. Javaid, A., Ahmad, S. R., **Mahmood, R.**, Mahmood, K., Qadir, A., & Batool, R. (2021). Depletion risks of essential trace metals in a transboundary drain and its surrounding soil using GIS techniques. *Pakistan Journal of Agricultural Sciences*, 58(4), 1215-1221 (Impact factor 0.748).
 8. Abbas, H. M. K., **Mahmood, R.**, Khan, S. N., & Ali, A. (2021). Effects of Fertilizers on Growth and Sclerotia Formation of *Macrophomina Phaseolina* (Tassi) Goid. *Bangladesh Journal of Botany*, 50(2), 413-416 (Impact factor 0.308).
 9. Haider, T., Farid, M. S., **Mahmood, R.**, Ilyas, A., Khan, M. H., Haider, S. T. A., ... & Gul, M. (2021). A Computer-Vision-Based Approach for Nitrogen Content Estimation in Plant Leaves. *Agriculture*, 11(8), 766 (Impact factor 2.925).
 10. Shakeel, S., **Mahmood, R.**, Fatima, A., & Ali, S. (2020). Application of Response Surface Methodology to Optimize Ammonia Volatilization Determination by Enclosure Method. *Communications in Soil Science and Plant Analysis*, 51(15), 2038-2044 (Impact factor 0.767).
 11. Riaz, M., **Mahmood, R.**, Khan, S. N., Haider, M. S., & Ramzan, S. (2020). Onion tip burn: Significance, and response to amount and form of nitrogen. *Scientia Horticulturae*, 261, 108773 (Impact factor: 1.961).
 12. Ali, A., ul Haq, T., **Mahmood, R.**, Jaan, M., & Abbas, M. N. (2019). Stimulating the anti-oxidative role and wheat growth improvement through silicon under salt stress. *Silicon*, 11(5), 2403-2406 (Impact Factor: 1.210).
 13. Javaid, A., Anjum, F., **Mahmood, R.**, & Akhtar, N. (2019). Relationship between soil chemical characteristics and soil-borne fungi in tomato tunnels of Punjab, Pakistan. *Bangladesh journal of botany*, 48(3), 409-416 (Impact factor: 0.214).
 14. Siddique, S., **Mahmood, R.**, & Khan, S. N. (2018). Correlation of curd-associated fungi with NPK and Na concentrations in cauliflower. *Journal of Food Safety*, 38(6), e12559 (Impact factor: 1.257).
 15. Amin, M., Ahmad, R., Ali, A., Hussain, I., **Mahmood, R.**, Aslam, M., & Lee, D. J. (2018). Influence of silicon fertilization on maize performance under limited water supply. *Silicon*, 10(2), 177-183 (Impact factor: 1.246).
 16. Fatima, A., Ali, S., Ijaz, M., **Mahmood, R.**, Sattar, S., Khan, J., ... & Ahmad, M. (2018). Boron application improves the grain yield and quality of fine grain rice cultivars in Punjab, Pakistan. *Pakistan Journal of Agricultural Sciences*, 55(4), 761-766 (Impact factor: 0.677).
 17. Kanwal, A, A. Javaid, **R. Mahmood** and N. Akhtar. 2017. Correlation between soil nutrients and soil-borne mycoflora in wheat-rice cropping system of Punjab, Pakistan. *The Journal of Animal & Plant Sciences*, 27(4), 1256-1263 (Impact factor: 0.448).
 18. Qudsia, H., A. Javaid, **R. Mahmood**, and N. Akhtar. 2017. Correlation between soil chemical characteristics and soil-borne mycoflora in cucumber tunnels. *Pakistan Journal of Botany*, 49(4), 1579-1583.
 19. Shakar, M., M. Yaseen, **R. Mahmood** and I. Ahmad. 2017. Effect of soil-applied CaC₂ on gas exchange characters, nitrogen metabolism and fruit yield in cucumber (*Cucumis sativus*). *New Zealand Journal of Crop and Horticultural Science*, 45(4) 251-262 (Impact factor: 0.605).
 20. Khan, H. A. A., W. Akram, T. Khan, M. Arshad, S. Ali, **R. Mahmood** and F. Hafeez. 2017. Correlation of biochemical leaf traits and gall formation in six cultivars of mango, *Mangifera indica* L. *Pakistan Journal of Agricultural Sciences*, 54(1), 91-96 (Impact factor: 1.049).

21. Shakar, M., M. Yaseen, A. Niaz, **R. Mahmood**, M. M. Iqbal and T. Naz. 2016. Calcium Carbide-induced changes in germination, morpho-phenological and yield traits in cucumber (*Cucumis sativus*). *International Journal of Agriculture & Biology* 18(4): 703-709. (Impact factor: 0.758).
22. Shakar, M., M. Yaseen, **R. Mahmood**, I. Ahmad. 2016. Calcium carbide induced ethylene modulates biochemical profile of *Cucumis sativus* at seed germination stage to alleviate salt stress. *Scientia Horticulturae* 213: 179–185. (Impact factor: 1.538).
23. **Mahmood, R.** and M. Yaseen. 2016. Influence of calcium carbide formulations on growth, yield and nitrogen uptake of wheat under field conditions. *Journal of Plant Nutrition*. 39(5): 609-619. (Impact factor: 0.510)
24. Amin. M, R. Ahmad, A. Ali, I. Hussain and **R. Mahmood**, M. Aslam and D.J. Lee. 2016. Influence of Silicon Fertilization on Maize Performance Under Limited Water Supply. *Silicon* (Impact factor: 0.86).
25. Ali. A, T. Haq, **R. Mahmood**, M. Jaan and M.N. Abbas. 2016. Stimulating the Anti-Oxidative Role and Wheat Growth Improvement Through Silicon Under Salt Stress. *Silicon* (Impact factor: 0.86).
26. Ali. A, W. Ahmad, **R. Mahmood**, T. Haq and M.N. Abbas. 2016. Salinity tolerance in rice as affected by application of abscisic acid and salicylic acid. *Bangladesh Journal of Botany* 45(1): 93-98. (Impact factor: 0.301).
27. Akhtar, S., A. Shoaib, N. Akhtar and **R. Mahmood**. 2016. Separate and combined effects of *macrophomina phaseolina* and copper on growth, physiology and antioxidative enzymes in *vigna mungo* L. *The Journal of Animal & Plant Sciences* 26(5): 1339-1345. (Impact factor: 0.422).
28. Siddiq. S, M. Yaseen and **R. Mahmood**. 2015. Impact of calcium carbide induced nitrogen uptake and ethylene related response on fruit quality of three Tomato (*Lycopersicon esculentum* Mill.) Cultivars. *Philippine Agricultural Sciences* 98(4): 368-373 (Impact factor: 0.260).
29. **Mahmood, R.** and M. Yaseen. 2014. Effectiveness of calcium carbide formulations in emergence stimulation and growth of wheat seedlings. *Pakistan Journal of Agricultural Sciences* 51(3): 579-584 (Impact factor 1.05).
30. **Mahmood, R.**, A. A. Shahid, A. Usmani, M. S. Haider and S. Ali. 2014. Nitrification inhibition potential of various leaf extracts. *Philippine Agricultural Scientist* 97(3): 287-293 (Impact factor 0.260).
31. **Mahmood, R.** and M. Yaseen. 2014. Calcium carbide based formulations cause a slow release of acetylene and ethylene in the soil and inhibits nitrification. *Communications in Soil Science and Plant Analysis* 45: 2277-2288 (Impact factor 0.42).
32. **Mahmood, R.**, A. Ali and M. Ahmad. 2014. Role of encapsulated calcium carbide in nitrogen economy, growth and yield of crops- a review. *The Journal of Animal and Plant Sciences* 24(2): 354-361 (Impact factor 0.45).
33. **Mahmood, R.**, M. Yaseen, A. Ali, J. Iqbal, M. Sarwar and S. Hussain. 2011. Effect of rate and application depth of matrix-I calcium carbide based formulation on growth, yield and nitrogen uptake of wheat. *African Journal of Agricultural Research* 6(30): 6363-6368 (Impact factor; 0.263).
34. **Mahmood, R.**, M. Yaseen and M. Arshad. 2007. Effect of rate and time of calcium carbide application on nitrogen use efficiency of applied urea and growth of wheat. *Pakistan Journal of Botany* 39(2): 497-502 (Impact factor; 0.82).

PUBLICATIONS IN HEC RECOGNISED NON-IMPACT FACTOR JOURNALS

1. Ali, A., N. Abas, M. M. Maqbool, T. Haq, M. Ahmad, **R. Mahmood**. 2015. Influence of soil applied moringa leaf extract on vegetative growth of *Cyperus Rotundus*. *Asian Journal of Agricultural Biology* 3(2):79-82.
2. Mahmood, A., A. J. Wahla, **R. Mahmood**, L. Ali and M. Nawaz. 2014. Impact of sowing time on yield parameters of selected wheat cultivars under rice-wheat

- cropping system of district Sheikhpura, Punjab, Pakistan. *Biologia (Pakistan)* (Y-category).
3. Sarwar, M, A. Ali¹, M. M. Maqbool, M. Ahmad, **R. Mahmood**, T. U. Haq. 2013. Suppressing impact of *Avena fatua* and *Phlaris minor* on the growth and yield in wheat. *Pakistan Journal of Nutrition* 12 (10): 912-916 (Y-category).
 4. Maqbool M. M., M. Ahmad, A. Ali, **R. Mahmood**, M. Ahmad and M. Sarwar. 2012. Optimizing the Method and Source of Phosphatic Nutrition for Wheat (*Triticum aestivum* L.) Under Agro-Climate of Dera Ghazi Khan. *Pakistan Journal of Nutrition* 11 (9): 787-792 (Y-category).
 5. **Mahmood, R.**, M. Yaseen, A. Ali, J. Iqbal, S. Hussain and M. A. A. H. A. Bukhsh. 2012. Nutritional and Physiological Response of Wheat to Soil Applied Matrix-I Formulated Calcium Carbide with and Without Nitrogen Fertilizer. *Pakistan Journal of Nutrition* 11 (2): 154-159 (Y-category).
 6. **Mahmood, R.**, M. Yaseen, M. Arshad and A. Tanvir. 2010. Comparative effect of different calcium carbide based formulations on growth and yield of wheat. *Soil and Environment* 29(1): 33-37 (Y-category).
 7. **Mahmood, R.**, M. Yaseen, S. Kashif and M. Arshad. 2005. Effect of rate and time of application of encapsulated calcium carbide on growth and N uptake of wheat. *Pakistan Journal of Agricultural Sciences* 42(1-2):48-55 (Y-category).
 8. Yaseen, M., M. Sohail, **R. Mahmood**, S.A. Hussain, A. Rahim, W. Ahmad and S. R. Kashif. 2004. Phosphorus use efficiency in wheat genotypes: II. Chemical composition. *Pakistan Journal of Life and Social Sciences* 2(2): 159-162 (Y-category).

PUBLICATIONS IN OTHER LOCAL JOURNALS

1. Mahmood, A., A. J. Wahla, **R. Mahmood** and L. Ali. 2013. Influence of flat and bed sowing methods on growth and yield parameters of wheat in rice-wheat cropping system. *Mycopath* 11(1): 33-37.
2. Mahmood, A., G. S. Azhar, J. Iqbal, A. J. Wahla and **R. Mahmood**. 2013. Effects of herbicides on weed density and wheat yield. *Mycopath* 11(2): 103-108.
3. Kanwal, A., F. Anjum, H. Qudsia, A. Javaid and **R. Mahmood**. 2012. Evaluation of tebuconazole and thiophanate-methyl against some problematic soil-borne plant pathogens. *Mycopath* 10(1): 17-20.
4. **Mahmood, R.** and U. Bashir. 2011. Relationship between soil physicochemical characteristics and soil-borne diseases. *Mycopath* 9(2): 87-93.

PUBLICATIONS IN OTHER FOREIGN JOURNALS

1. **Mahmood, R.**, M. Naseer, A. A. Shahid and A. Usmani. 2014. Screening of indigenous weed extracts against *Fusarium solani* with an emphasis to soil fertility related microbial activities. *Journal of Food, Agriculture & Environment* 12(2): 958-962.

BOOK CHAPTERS

1. **Mahmood, R.**, Farooq, S., Hameed, A., & Riaz, M. (2022). Agronomic and Economic Valuation of Mulches. In *Mulching in Agroecosystems* (pp. 151-160). Springer, Singapore.
2. Saleem, I., Riaz, M., **Mahmood, R.**, Rasul, F., Arif, M., Batool, A et al. (2022). Biochar and microbes for sustainable soil quality management. In *Microbiome Under Changing Climate* (pp. 289-311). Woodhead Publishing.
3. Komel Jehangir, M. R., **Mahmood, R.**, & Arif, M. (2022). Biochar for Sustainable Phosphorus Management in Agroecosystems. *Sustainable*

Agriculture Reviews 58: Phosphorus Use Efficiency for Sustainable Agriculture, 58, 93.

4. Saleem, I., Riaz, M., **Mahmood, R.**, Rasul, F., Arif, M., Batool, A., ... & Sajjad, S. (2022). Biochar and microbes for sustainable soil quality management. In *Microbiome Under Changing Climate* (pp. 289-311). Woodhead Publishing.
5. Riaz F, Riaz M, Arif MS, Yasmeen T, Ashraf MA, Adil M, Ali S, **Mahmood R**, Rizwan M, Hussain Q, Zia A, Ali MA, Arif M, Fahad S. (2020) Alternative and Non-conventional Soil and Crop Management Strategies for Increasing Water Use Efficiency BT - Environment, Climate, Plant and Vegetation Growth. In: Fahad S., Hasanuzzaman M., Alam M., Ullah H., Saeed M., Ali Khan I., Adnan M. (eds) Springer International Publishing, Cham, pp 323–338
6. Riaz, M., Arif, M. S., Ashraf, M. A., **Mahmood, R.**, Yasmeen, T., Shakoor, M. B., ... & Fahad, S. (2019). A Comprehensive Review on Rice Responses and Tolerance to Salt Stress. In *Advances in Rice Research for Abiotic Stress Tolerance* (pp. 133-158). Woodhead Publishing.

PUBLICATIONS IN CONFERENCE PROCEEDINGS

Kashif, S. U. R., M. Yaseen, **R. Mahmood** and M. Arshad. 2007. Response of okra (*Abelmoschus esculentus* L. Moench) to soil applied calcium carbide – an innovative approach. Proceedings: International Symposium on Prospects of Horticultural Industry in Pakistan. 28th to 30th March. Institute of Horticultural Sciences, University of Agriculture, Faisalabad.

CONFERENCES

1. **Mahmood R.**, A. Zainab, M. Shafiq. Screening of various algal extracts for growth stimulation of Brinjal seedlings. 3rd International Conference on Emerging Trends in Earth and Environmental Sciences, November 16-18, 2021, CEES, University of the Punjab, Lahore.
2. Muhammad A. R., **R. Mahmood** and S. Ali. Soil Urease Inhibition Potential of Various Plant Extracts. Poster Presentation: The International Conference of Recent Innovations in Molecular Sciences, November 6-8, 2019, University of the Punjab, Lahore.
3. Sarah S., **R. Mahmood**, A. Fatima and S. Ali. Relationship of urease activity with physical and chemical attributes of alkaline calcareous soils. Poster Presentation: The International Conference of Recent Innovations in Molecular Sciences, November 6-8, 2019, University of the Punjab, Lahore.
4. Mahmood, R., I. Attique, F. Qurat-ul-Ain. Leaf color charts for nitrogen management in five summer vegetables. Oral presentation: 1st International Conference on Soil and Crop Health in Changing Climate, November 28-29, 2018, Department of Soil and Environmental Sciences, MNS – University of Agriculture, Multan.
5. **Mahmood, R.**, M. Hashmi and M. Shafiq. Growth and yield responses of chili pepper (*Capsicum annuum*) to soil acidification. **Oral presentation:** 6th International Conference of Pakistan Phytopathological Society “Plant Health for Sustainable Agriculture” A focused approach for food security under changing climate, November 20-22, 2017, Department of Plant Pathology, Bahauddin Zakriya University and Central Cotton Research Institute, Multan.
6. **Mahmood, R.**, M. Ali and M. Shafiq. influence of nitrogen to phosphorus supply ratio on growth yield and medicinally important characteristics of linseed (*Linum usitatissimum* L.). **Oral presentation:** International Conference on “Conventional and Modern Approaches in Plant Sciences” November 27-29, 2017, Department of Botany, University of the Punjab, Lahore-54590 Pakistan.
7. **Rashid M.**, R. Hussain, S. N. Khan and S. Ramzan. Amount and form of nitrogen affect burnt leaf length of onion seedlings. **Poster presentation:** Conference on

- ‘Sustainable Crop and Animal Production Systems, December 08-10, 2016 at the University of Haripur, Haripur.
8. Sumreen S., Muhammad Y. and **R. Mahmood**. Impact of calcium carbide-influenced nitrogen uptake and ethylene related response on fruit quality of three tomato (*Lycopersicon esculentum* Mill.) cultivars. **Oral presentation:** 5th International Conference on Crop Protection for Sustainable Agriculture, November 23-25, 2015, Institute of Agricultural Sciences, university of the Punjab, Lahore.
 9. **Mahmood, R.**, S. Siddique and S. N. Khan. Correlation of curd-associated fungi with NPK and Na concentrations in cauliflower. **Poster presentation:** International Conference on Soil Sustainability for Food Security 15th -17th November, 2015, Institute of Soil & Environmental Sciences, University of Agriculture, Faisalabad, Pakistan
 10. **Mahmood, R.**, M. Yaseen. Influence of acetylene and ethylene release from calcium carbide formulations on soil nitrification; growth, yield and nitrogen economy of wheat. **Oral presentation:** International Conference on Advances in Agricultural, Biological & Environmental Sciences, October 15-16, 2014. IICBE conference Holiday Inn Dubai.
 11. **Mahmood, R.**, S. Siddique and S. N. Khan. Correlation of nitrogen, phosphorus, potassium and sodium concentrations with fungi causing postharvest discoloration in cauliflower. **Oral presentation:** 5th International Conference on Agriculture, Food Security and Climate Change, September 9-11, 2014. The University of Poonch, Rawalakot, Azad Kashmir, Pakistan.
 12. **Mahmood, R.** and M. Yaseen. Calcium carbide formulations as soil amendments stimulate emergence and growth of wheat seedlings. **Oral presentation:** International Conference on Stress Biology & Management, May 21-23, 2014. Institute of Agricultural Sciences, University of the Punjab, Lahore, Pakistan.
 13. **Mahmood, R.**, M. Naseer, A. A. Shahid and A. Usmani. Influence of soil drenching with antifungal weed extracts on microbial indices of soil fertility. **Oral presentation:** International Conference of Environmental Horizon; Greening the Blue, January 01-03, 2014. Department of Chemistry, University of Karachi, Karachi, Pakistan.
 14. **Mahmood, R.** and M. Yaseen. Influence of calcium carbide formulations on germination and biomass production of wheat. **Poster presentation:** International Conference on Sustainable Crop Productivity: Threats and Options, April 11-12, 2013. AARI, Faisalabad, Punjab, Pakistan.
 15. International conference “Crop Management in Changing Climate”. February 11-13, 2013 Department of Agronomy University of Agriculture, Faisalabad, Pakistan (Participation)

RESEARCH PROJECTS

1. Project Manager of the project “Development and Optimization of Android Smartphone Imagery Application for Real-time Nitrogen Management in Wheat, Rice and Maize Crops” (PARB 14.001 million PKR) (Continue)
2. Principal Investigator of the project “Exploration of soil urease inhibition potential of *Vachellia* and *Eucalyptus* spp., and some other plants (University of the Punjab funded; PKR 427000) (Completed)
3. Co-Principal Investigator of the project “Evaluation of millets as suitable cereals for phosphorus deficient soils” (SRGP; HEC funded worth PKR 9,99,500) (Continue)
4. Principal Investigator of project entitled “Exploration of soil urease inhibition potential of *Vachellia* and *Eucalyptus* spp., and some other plants” Funded by

- University of the Punjab for fiscal year 2021-22, amount PKR 0.427 million (On going).
5. Co-Principal Investigator of project entitled “Evaluation of millets as suitable cereals for phosphorus deficient soils” (SRGP-234). Funded by Higher Education Commission of Pakistan for the year 2021-22, amount PKR 1.0 million (On going).
 6. Principle Investigator of Social Integration Outreach Program “Conservation tillage awareness in controlling air pollution from rice straw burning in Punjab”. Funded by Higher Education Commission of Pakistan and University of the Punjab, Lahore for the year 2018, amount PKR 1.0 million (Completed).
 7. Principal Investigator of project entitled “Influence of various fertilizer-coating materials on hydrolysis of urea in soil” Funded by University of the Punjab for fiscal year 2015-16, amount PKR 0.15 million (Completed).
 8. Principal Investigator of project entitled “Urease activity of soil for humic acid and sulfur coated urea” Funded by University of the Punjab for fiscal year 2014-15, amount PKR 0.15 million (Completed).
 9. Principal investigator of project “Effect of type and combination of phosphorus and potassium fertilizers on soil urease activity. Funded by University of the Punjab for fiscal year 2013-14, amount PKR 0.15 million (completed).
 10. Principal Investigator of project entitled “Evaluation of weed extracts in nitrification inhibition and uptake of synthetic nitrogen for yield enhancement of maize” funded by HEC, amount PKR 0.5 million, year 2012-13 (completed).

Submitted for Funding

1. Development and Optimization of Mobile-based Imaging System for Nitrogen Management in Field Crops. Submitted to Pakistan Agriculture Research Board (Under Review).

TRAINING COURSES AND WORKSHOPS

1. Burning crop residue in Punjab, Pakistan; Can farmer do better for the environment
2. Two weeks training course on “The use of nuclear and other techniques in food and agricultural research” held at “Nuclear Institute of Food and Agriculture (NIFA), Peshawar, Pakistan” dated September 16-27, 2013.
3. Two days workshop on “Faculty professional training for core modules: Teaching as a profession and communication skills” held at “Institute of Agricultural Sciences, University of the Punjab, Lahore, Pakistan” dated June 19-20, 2013.
4. Two days training course on “Research Ethics, Endnote and Turnitin” held at “Department of Library and Information Sciences, University of the Punjab, Lahore, Pakistan” dated October 2-3, 2012.
5. One week 1st National Training Course on “Bacterial Identification and Metagenomics” held at “National Institute of Biotechnology and Genetic Engineering (NIBGE), Faisalabad, Pakistan” dated March 5-9, 2012.
6. One week training course on “Office Management” held at “Punjab Institute of Management and Professional Development Department (MPDD), Lahore, Pakistan” dated January 2-6, 2012.

RESEARCH SUPERVISION

1. Mughees Aslam, M.Sc. (Hons.) Agriculture, 2021. Hydrolysis of zinc and iron coated urea in soil and its impact on nitrogen use efficiency of spinach (completed).
2. Muhammad Tamoor Anjum, M.Sc. (Hons.) Agriculture, 2020. Use *Aloe vera* extract for improving survival and sprouting of *Tabernaemontana divaricate* stem cuttings (completed).

3. Hira Ijaz Butt, M.Sc. (Hons.) Agriculture, 2020. Influence of macronutrients to stimulate the biochemical changes in plant as mediator against insect pests of Okra (*Abelmoschus esculentus* L.)
4. Muhammad Sohaib, M.Sc. (Hons.) Agriculture, 2020. Influence of micronutrients by using foliar application on the population of wheat aphid *Diuraphis noxia* (Hemiptera: Aphididae).
5. Muhammad Arslan Ibrahim, M.Sc. (Hons.) Agriculture, 2020. Molecular characterization and population dynamics of fall armyworm (FAW), *Spodoptera frugiperda* (Noctuidae: Lepidoptera).
6. Zaryab Noor, M.Sc. (Hons.) Agriculture, 2020. Evaluation of *Aloe vera* extracts as growth stimulant of *Cordyline terminalis* stem cuttings (completed)
7. Usama Asad, M.Sc. (Hons.) Agriculture, 2018. Relationship between foliage color, nitrogen partitioning and yield of tomato for urea fertigation at various growth stages (Completed).
8. Sara Azhar, M.Sc. (Hons.) Agriculture, 2018. Effect of foliar application of urea at various growth stages on chlorophyll content and nitrogen partitioning in tomato (*Solanum lycopersicum* L.) (completed).
9. Ahtisham Arshad, M.Sc. (Hons.) Agriculture, 2018. Soil-site comparison for *Gladiolus grandiflora* cultivated in Sheikhpura and Mansehra regions.
10. Aqsa Aziz, M.Sc. (Hons.) Agriculture, 2018. Development of leaf color chart for nitrogen assessment in cucurbits.
11. Irza Attique, M.Sc. (Hons.) Agriculture, 2018, Development of leaf color chart for nitrogen assessment in various vegetables and ornamentals (completed)
12. Muhammad Muneeb Hashmi, M.Sc. (Hons.) Agriculture, 2017. Nutrient use efficiency of chillies plants cultivated with acidified irrigation water (completed).
13. Nosheen Tabassum, M.Sc. (Hons.) Agriculture, 2017. Influence of nitrogen to phosphorus supply ratio on medicinally important characteristics of kalonji (*Nigelia sativa* L.) seeds (completed).
14. Mobeen Ali, M.Sc. (Hons.) Agriculture, 2017. “Importance of nitrogen to phosphorous proportionality of nutrient solution in regulating the growth yield and biochemical characteristics of linseed (*Linum usitatissimum* L.) (completed).
15. Muhammad Rashid Khan, M.Sc. (Hons.) Agriculture, 2017. “Leaf color based nitrogen assessment of bell pepper (*Capsicum annum* L.) and deficit recovery through foliar application” (completed).
16. Sundus Akhtar, Ph.D., 2016. “Copper distribution variation in soil fractions and relationship with charcoal rot of *Vigna mungo* under organic amendments” (completed).
17. Riaz Hussain, M.Sc. (Hons.) Agriculture, 2016. Impact of nitrogen nutrition on tip burn disease of onion in hydroponics” (completed).
18. Sumra Ramzan, M.Sc. (Hons.) Agriculture 2016. “Comparison of ammonium and nitrate nutrition on growth, yield and tip burning disease of onion” (completed).
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24. Anam Usmani, M.Sc. (Hons.) Agriculture, 2013. Thesis research title “Evaluation of different weed extracts in nitrification inhibition, suppression of stem rot and yield enhancement of maize” (completed).
25. Memmona Naseer, M.Sc. (Hons) Agriculture, 2013, Thesis research title “Influence of weed extracts on charcoal rot of sunflower and soil beneficial microflora” (completed).
26. Sidra Haneef, M.Sc. (Hons.) Agriculture, 2013. Thesis research title “Effect of farm yard manure on copper partitioning in soil and Fusarium wilt of tomato” (completed).

Community and administrative Services

Sr. No.	Services	Duration
1	Managing soil, plant and water analytical services for researchers and farmers at Institute of Agricultural Sciences (IAGS).	
2	Served as member monitoring team for B.A, B.Sc. Examination-2012 of Punjab University.	2012
3	Member zonal technical committee of Adaptive Research Farm, Sheikhpura, Punjab, Pakistan.	
4	Served as member HEC Curricula Revision Committee of Agricultural Chemistry in 2014.	
5	Convener fee concession committee of IAGS.	
6	Convener tour committee of IAGS.	
7	Convener food quality/price control committee of IAGS.	
8	Member IAGS research committee.	
9	Member departmental purchase committee.	
10	Member technical specification committee.	
11	Member admission committee of undergraduate admissions in 2015, 2016 and 2017.	
12	Convener admission form verification committee for undergraduate admissions in 2016 and 2017.	
13	Member departmental curriculum committee.	
14	Member post graduate admission committee.	
15	Member of Soil Science Society of Pakistan.	

REFERENCES Will be furnished if required.