

# CV

## Muhammad Nadeem Ashraf

Ph.D. (Soil Science)

**Nationality:** Pakistani

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**Online publication link:**

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### RESEARCH INTERESTS

- Soil biogeochemistry and nutrient cycling (C and N), SOC stability mechanism
- Soil microbial biomass, its stoichiometry and enzymatic activities
- Soil organic carbon and nitrogen cycling and SOC sequestration
- Enhancing nitrogen use efficiency using enhanced efficiency fertilizers
- Changes in organic carbon fractions, its interaction to mineralization of SOC and nitrogen
- Microbial nutrient use efficiencies (CUE and NUE)
- GHG emissions under manure application in rice field

### EDUCATION AND QUALIFICATIONS

Degree	Institution	Year	CGPA/Marks
Ph.D. Soil Science	Chinese Academy of Agricultural Sciences, Beijing, China	2017-20	984/1100
M.Sc. (Hons.) Soil Science	University of Agriculture, Faisalabad, Pakistan	2013-15	3.91/4.0
B.Sc. (Hons.) Agri-Soil Sci	The University of Poonch, Rawalakot (Azad Kashmir), Pakistan	2008-12	3.95/4.0

### RESEARCH THESIS/REPORT

- **Ph.D.:** “Changes in soil carbon and nitrogen accumulation and mineralization driven by microbial biomass stoichiometry under long-term fertilization in typical paddy soils of Southern China”
- **M.Sc. (Hons.):** “Evaluating some natural material as nitrification inhibitors for improving nitrogen use efficiency in maize (*Zea mays* L.)”
- **B.Sc. (Hons.):** “Comparative nitrogen use efficiency of ordinary urea versus neem (*Azadirachta indica*) oil coated urea”.

### PROFESSIONAL EXPERIENCE

- Working as **Assistant Professor** (Teaching and Research) at Institute of Soil and Environmental Sciences, University of Agriculture Faisalabad from February 21, 2022, to date.
- A practical introduction to greenhouse gas measurements in agriculture, conducted at Geisenheim University Germany from June 23, 2024 to June 28, 2024.
- I have worked in Fauji Fertilizer Company, Farm Advisory Center, Sahiwal entitled “**Urea briquettes enhanced nitrogen use efficiency in rice cropping system**” from June 15, 2015 to July 24, 2015.

- I have worked as “**Research Associate**” in a research project under title “**Assessing and Quantifying Nutrient Flow in Indus Basin, Pakistan**” International Center for Agricultural Research in the Dry Areas (ICARDA), from 1st February 2015 to July 30, 2015.
- I have worked in research project entitle “**To evaluate the efficiency of neem (*Azadirachta indica*) oil coated urea vs. ordinary urea**” at National Agricultural Research Center (NARC), Islamabad, from July 13, 2012 to October 5, 2012.

## STATISTICAL SOFTWARE/COMPUTER LITERACY

- Canoco 5.1
- Statistix 8.1
- SigmaPlot 12.5
- SPSS
- MS Office
- Mendeley
- Origin Pro
- R programming

## RESEARCH PUBLICATIONS

### CONTRIBUTIONS AS A MAIN AUTHOR/CORRESPONDING AUTHOR

1. [Muhammad Nadeem Ashraf](#), Tariq, M.S., Farooqi, Z.U.R., Rehman, S.U., Farooq, M. and Shaheen, A., (2026). Soil Nutrient Stoichiometry Improved Soil Carbon Storage and Crop Productivity Under Legume-Based Strip Intercropping System. [Soil Use and Management \(I.F: 3.70\)](#).
2. [Muhammad Nadeem Ashraf](#), Sarwar, M.A., Farooqi, Z.U.R., Farooq, M., Sanallah, M., Saqib, M., Rafiq, M., Nawaz, A., Zheng, T., & Waqas, M.A. (2025). Legume inclusion in wheat rotations increases long-term soil carbon storage via carbon management indices and microbial stoichiometry. [Soil Use and Management \(I.F: 3.70\)](#).
3. [Muhammad Nadeem Ashraf](#), Ashar Rauf, Waqar Ahmed et al. 2025. Coated Fertilizers Enhanced Nitrogen Use Efficiency Through Reducing Ammonia Volatilization While Increasing Crop Yield. [Journal of Plant Nutrition and Soil Science \(IF: 2.80\)](#).
4. [Muhammad Nadeem Ashraf](#), Mehmood, I., Farooqi, Z.U.R. et al. 2025. Long-term grass lawn management increases soil organic carbon sequestration and microbial carbon use efficiency. [Environmental Monitoring and Assessment \(IF: 3.0\)](#).
5. Ahmed, W., [Muhammad Nadeem Ashraf\\*](#), Sanallah, M. et al. 2024. Soil Organic Carbon and Nitrogen Mineralization Potential of Manures Regulated by Soil Microbial Activities in Contrasting Soil Textures. [Journal of Soil Science and Plant Nutrition \(IF: 3.10\)](#).
6. Farooqi, Z.U.R., Qadir, A.A., Khalid, S. [Muhammad Nadeem Ashraf\\*](#) et al. 2024. Greenhouse gas emissions, carbon stocks and wheat productivity following biochar, compost and vermicompost amendments: comparison of non-saline and salt-affected soils. [Scientific Reports \(IF: 3.90\)](#).
7. [Muhammad Nadeem Ashraf](#), Hu, C., Xu, X., Aziz, T., Waqas, M.A., Minggang, Xu., Wenju, Z., 2023. Long-term manure application increased soil organic carbon and nitrogen mineralization through accumulation of unprotected and physically protected carbon fractions. [Pedosphere. \(IF: 7.30\)](#).
8. [Muhammad Nadeem Ashraf](#), Waqas, M.A. & Rahman, S. Microbial Metabolic Quotient is a Dynamic Indicator of Soil Health: Trends, Implications and Perspectives (Review). (2022). [Eurasian Soil Science \(I.F:1.6\)](#).
9. [Muhammad Nadeem Ashraf](#), Guo Jusheng, Tariq Aziz, Wenju Zhang, Xu Minggang. 2021. Microbial biomass and extracellular enzyme mediated mineralization potentials of carbon and nitrogen under long-term fertilization (>30 Years) in a rice-rice cropping system. [Journal of Soils and Sediments \(IF: 3.0\)](#).
10. [Muhammad Nadeem Ashraf](#), Hu, C., Wu, L., Duan, Y., Zhang, W., Aziz, T., Cai, A., Abrar, M. M., Xu, M., 2020. Soil and microbial biomass stoichiometry regulate soil organic carbon and nitrogen mineralization in rice-wheat rotation subjected to long-term fertilization. [Journal of Soils and Sediments \(I.F: 3.0\)](#).

11. Muhammad Nadeem Ashraf, Aziz, T, Maqsood, M A, Bilal, H M, Raza, S, Zia, M, Mustafa, A, Xu, M, Wang, Y, **2019**. Evaluating Organic Materials Coating on Urea as Potential Nitrification Inhibitors for Enhanced Nitrogen Recovery and Growth of Maize (*Zea mays*). **International Journal of Agriculture and Biology (I.F: 0.82)**.

**\*corresponding author**

## MANUSCRIPTS SUBMITTED

1. Zia Ur Rahman Farooqi, Peng Xu, Muhammad Farooq, Adnan Fareed, Muhammad Shoaib Ismail, **Muhammad Nadeem Ashraf**, Muhammad Umair Ali, Zulfiqar Ali. 2026. Integrating Modern Technology and Regenerative Agriculture for Sustainable Cropland Health: Policy Interventions for achieving Sustainable Development Goals. **Journal of Cleaner Production**.
2. **Muhammad Nadeem Ashraf\***, Sana ur Rehman, Muhammad Shahzaib Tariq, Zia Ur Rahman Farooqi, Muhammad Farooq, Muhammad Aamer Maqsood, Aqeela Shaheen, Muhammad Sana Ullah. 2026. Soil stoichiometry (C:N and C:P) improved soil carbon management, fertility and crop productivity under legume-based strip intercropping system. **Soil Use and Management**.

## CONTRIBUTIONS AS A CO-AUTHOR

1. Wang, Z., Yang, X., Struik, P.C., **Muhammad Nadeem Ashraf**, Carlyle, C.N., Chang, S.X., Li, Y., Zhang, W., Wu, R., Ji, B. and Jin, K., **2026**. Integrated plant-soil-microbiome responses mediate greenhouse gas emissions in the restoration of a semiarid steppe. **Applied Soil Ecology (I.F: 5.0)**, 219, p.106743.
2. Farooqi, Z.U.R., Ahmad, I., Sabir, M. **Muhammad Nadeem Ashraf et al.** Gypsum and Manure Impacts on Contrasting Textured Saline-Sodic Soils and Greenhouse Gas Emissions. **Journal of Soil Science and Plant Nutrition**. **2025**. <https://doi.org/10.1007/s42729-025-02852-8>.
3. Yousra, M., Hussain, Q., Khan, K.S., Sarwar, S., Mahmood-ul-Hassan, M., Naeem, S., Tabassum, T., Iqbal, E., **Muhammad Nadeem Ashraf**, Kamal, A. and Albasher, G. **2025**. Optimizing nutrient stoichiometry for enhanced carbon sequestration in agricultural soils. **Scientific Reports (I.F: 3.9)**, 15(1), p.36498.
4. Sana ur Rehman, Shahzada Sohail Ijaz, Atta Mohi Ud Din, Muhammad Ansar, Shroz Fatima, Ayesha Siddiq, **Muhammad Nadeem Ashraf et al.** **2025**. Combined Effects of Reduced Tillage and Strip Intercropping on Soil Carbon Sequestration in Semi-Arid Environment. **Journal of Soil Science and Plant Nutrition (I.F: 3.4)**.
5. Muhammad Hassan Bashir, Hamaad Raza Ahmed, Jianjun Han, **Muhammad Nadeem Ashraf et al.** **2024**. Dust-induced metal toxicity alleviated by the combined effect of organic and inorganic amendments on soil and plant. **Archives of Agronomy and Soil Science (I.F: 2.7)**.
6. Ghulam Yasin, Muhammad, Farrakh Nawaz, Dwaipayana Sinha, Muhammad Altaf, **Muhammad Nadeem Ashraf**, Walid Soufan et al., **2024**. Agroforestry status, services, and its role in climate change mitigation through carbon sequestration under semi-arid conditions. **Trees, Forests and People (IF: 2.9)**.

7. Zhen Wang, Kai Tang, Paul C. Struik, [Muhammad Nadeem Ashraf](#), Tongrui Zhang, Yanning Zhao, Riliga Wu, Ke Jin, Yuanheng Li. **2023**. Alteration of microbial carbon and nitrogen metabolism within the soil metagenome with grazing intensity at semiarid steppe. **Journal of Environmental Management (IF: 8.40)**.
8. Shafeeq Ur Rahman, Jing-Chen Han, Muhammad Ahmad, [Muhammad Nadeem Ashraf](#), Maryam Yousaf, Yucheng Wang, Ghulam Yasin et al. **2024**. Aluminum phytotoxicity in acidic environments: A comprehensive review of plant tolerance and adaptation strategies. **Ecotoxicology and Environmental Safety (I.F: 6.2)**.
9. Ghulam Yasin, Muhammad Farrakh Nawaz, Muhammad Zubair, Muhammad Farooq Azhar, Mator Mohsin Gilani, [Muhammad Nadeem Ashraf](#), Anzhen Qin and Shafeeq Ur Rahman. **2023**. Role of Traditional Agroforestry Systems in Climate Change Mitigation through Carbon Sequestration: An Investigation from the Semi-Arid Region of Pakistan. **Land (3.9)**.
10. Cai, A., Tang, S., Waqas, M. A., Wang, B., Tian, D., Zhang, Y., Li, Y., [Ashraf, M. N.](#), Ren, T., **2022**. Magnitude, direction, and drivers of rhizosphere effect on soil nitrogen and phosphorus in global agroecosystem. **International Soil and Water Conservation Research (IF: 6.48)**.
11. Babar Hussain., Umar, M.J., Li, J., Ma, Y., [Muhammad Nadeem Ashraf](#), Gogoi, N., Farooq, M., 2020. Strategies for reducing cadmium accumulation in rice grains. **Journal of Cleaner Production (I.F: 10.0)**.
12. Babar Hussain, [Muhammad Nadeem Ashraf](#), Aqleem, A., Farooq, M., 2020. Cadmium stress in rice: effects and management options. **Science of the Total Environment (I.F: 9.8)**.
13. Cai, A., Xu, H., Yinghua, D., Zhang, X., [Muhammad Nadeem Ashraf.](#), Wenju, Z., Minggang, Xu., 2020. Changes in mineral-associated carbon and nitrogen by long-term fertilization and sequestration potential with various cropping across China dry croplands. **Soil & Tillage Research (I.F: 6.8)**.
14. Waqas, M.A., Li, Y., Smith, P., Wang, X., [Muhammad Nadeem Ashraf.](#), Noor, M.A., Amou, M., Shi, S., Zhu, Y., Li, J., Wan, Y., Qin, X., Gao, Q., Liu, S., 2020. The influence of nutrient management on soil organic carbon storage, crop production, and yield stability varies under different climates. **Journal of Cleaner Production (I.F: 11.1)**.
15. Abrar, M.M., Xu, M., Shah, S.A.A., Aslam, M.W., Aziz, T., Mustafa, A., [Muhammad Nadeem Ashraf.](#), Zhou, B., Ma, X., 2020. Variations in the profile distribution and protection mechanisms of organic carbon under long-term fertilization in a Chinese Mollisol. **Science of the Total Environmental (I.F: 9.8)**.
16. Mustafa, A., Naveed, M., Abbas, T., Saeed, Q., Hussain, A., [Muhammad Nadeem Ashraf.](#), Minggang, X., 2019. Growth response of wheat and associated weeds to plant antagonistic rhizobacteria and fungi. **Italian Journal of Agronomy (IF: 2.2)**.
17. Maqsood, M.A., U.K. Awan, T. Aziz, [Muhammad Nadeem Ashraf](#), and M. Ali. 2016. Nitrogen management in calcareous soils: Problems and solutions. **Pakistan Journal of Agricultural Sciences (I.F: 0.81)**

## BOOK CHAPTERS

1. Muhammad Itazaz Hassan, Tayyaba Akhtar, Iqra Ghafoor, [Muhammad Nadeem Ashraf](#) et al. **2025**. Soil nutrient deficiency and nano solutions for soil health and plant productivity. *Nanomaterials for Enhanced Plant-Based Food Production*. Book chapter.
2. Musawar Hussain, Muhammad Abdullah, [Muhammad Nadeem Ashraf\\*](#), Zia Ur Rahman Farooqi, Ali Abbas, Yasira Tariq. **2025**. World Food Hunger in 2050 and Nano Solutions: Probabilities and Prospects Based on Plant-Based Food. *Nanomaterials for Enhanced Plant-Based Food Production*. Book Chapter.
3. Babar H., Luqman, R., [Muhammad Nadeem Ashraf](#) et al. **2022**. Use of nanoparticles and fertilizers in alleviating heavy metals and improving nutrients uptake in plants. *Sustainable Plant Nutrition*. AP Acad. Press. Elsevier. DOI: 10.1016/B978-0-443-18675-2.00008-0. Book chapter.
4. Mustafa, A., Naveed, M., Saeed, Q., [Muhammad Nadeem Ashraf.](#), Hussain, A., Minggang, Xu., **2019**. Application potentials of plant growth promoting rhizobacteria and fungi as an alternative to conventional weed control methods. *IntechOpen*. USA. Book Chapter.

## E-PAPER ARTICLE

1. [Muhammad Nadeem Ashraf](#). 2017. Smog in Lahore; Causes and Solutions. *Technology Times*. Pages: 8 Vol: VIII Issue No: 48, Nov 27- Dec 03, 2017.
2. [Muhammad Nadeem Ashraf](#). Mustafa, A. 20108. Real “Gold of Soil” ecosystem and global climate change. *Technology Times*, July 03, 2018.
3. [Muhammad Nadeem Ashraf](#). A Devastating Dust Storm, Reality or Nightmare? 2018. *Technology Times*, December 03, 2018.

## EDITORIAL ROLE:

1. Serving as a review Editor of the journal “Frontiers in Plant Science” w.e.f. March 02. 2022 to present.
2. Working as a Review Editor in Spanish Journal of Soil Science from February 21, 2024, to date.
3. Peer reviewed Research Paper  $\geq 100$  Articles on soil organic carbon sequestration and nutrient cycling, climate change, microbial nutrient stoichiometry etc.

## CERTIFICATE OF TRAININGS:

1. Participation as in three days training workshop on “**Greenhouse gas measurements in alternate wetting and drying (AWD) in rice-wheat cropping system of Punjab, Pakistan**” by Asian Development Bank (ADB) conducted at University of Agriculture Faisalabad from April 14-16, 2025.
2. Participation in Summer School of Greenhouse measurement entitled “**A practical Introduction to Greenhouse Gas Measurements in Agriculture**”, conducted at Geisenheim University Germany from June 23, 2024, to June 28, 2024.
3. Online course/training entitled “**Enhancing Learner-Centered Pedagogical Skills**” Organized by University of Agriculture Faisalabad, in collaboration with AWB|USF, Canada from February 13, 2024 to February 20, 2024.

- Participation in two days training on “**ISO 17025: Laboratory Management Systems**” organized by Office of the Research Innovation & Commercialization, University of Agriculture Faisalabad, Pakistan, held on December 26-27, 2024.
- Participation in two days’ workshop in Environmental and Social Framework (ESF) training entitled “**Bridging the Gap Between Agriculture & Sustainable Development**” organized by World Bank in Collaboration with University of Agriculture Faisalabad, Pakistan held on July 18-19, 2023.

#### COMPLETES/ONGOING RESEARCH PROJECT

- Partial Research Grant out of the “*establishment of ORIC*” funds entitled “*Variations in soil organic carbon storage and stoichiometry (C:N:P) under long-term cropping systems*” vide office letter number 7851-60/ORIC, dated 05-12-2023. Status: completed.
- Partial Research Grant out of the “*establishment of ORIC*” funds entitled “*Evaluating the impact of stoichiometry (C:N:P) on carbon sequestration and nitrogen storage in land use types*” vide office letter number 7861-70/ORIC, dated 05-12-2023. Status: completed.

#### ADMINISTRATIVE SERVICES:

- Worked as Assistant Superintendent in Teepe Hall, University of Agriculture Faisalabad from 07-04-2022 to 16-08-2023.
- Working as Assistant Superintendent in Manji Hall, University of Agriculture Faisalabad from 16-08-2023 to date.

#### SUPERVISION OF RESEARCH STUDENTS:

M.Sc. (Hons.)	Produced	Currently Enrolled
Supervisor	09	06
Member of the supervisory committee	13	06

Sr. No.	Graduation year M.Sc. (Hons.)	Thesis Title (Main supervisor of MS students)
1	2023 (Soil Science)	Evaluating carbon and nitrogen mineralization potential of manures in contrasting soil texture
2	2023 (Env Sci)	Comparative effectiveness of coated urea vs. ordinary for improving nitrogen use efficiency of wheat ( <i>Triticum aestivum</i> L.) in contrasting soil texture
3	2024 (Soil Science)	Impact of strip intercropping on soil organic carbon management, carbon stock and nutrient stoichiometry

4	2024 (Env Sci)	Variations in soil organic carbon storage and stoichiometry (C: N:P) under long-term cropping systems
5	2024 (Env Sci)	Evaluating the impact of stoichiometry (C: N:P) on carbon sequestration and nitrogen storage in land use types
6	2024 (Env Sci)	Long-term contribution of turf grass in climate change mitigation through carbon sequestration
7	2025 (Soil Science)	Evaluating microbial carbon use efficiency and carbon pools under long-term ( $\geq 10$ years) cropping system
8	2025 (Soil Science)	Effects of acidified organic amendments on soil carbon pools, microbial carbon use efficiency and crop yield under degraded soil
9	2025 (Env Science)	Evaluating microbial carbon use efficiency and carbon pools to sequester carbon in land use types

## COURSES TAUGHT UNDERGRADUATE/POSTGRADUATE

Sr. No.	Code	Course Name	Credit Hours
1	ES-301	Introduction to Environmental Sciences	3(3-0)
2	ES-502	Environmental Management System	3(3-0)
3	ES-603	Preparation of Research Proposal and Scientific Writing	3(2-1)
4	SS-504	Soil Fertility and Fertilizer Use	3(2-1)
5	CC-704	Critical Readings in Climate Change	2(1-1)

## INVITED TALK

- Invited talk titled on “soil carbon biogeochemistry: Pathways to soil health and climate solution” at International Symposium on Soil Organic Carbon: Drylands to Global Perspectives, organized by Government College University Faisalabad, Pakistan held on October 28-29, 2025.

## SCIENTIFIC CONFERENCES

### YEAR

### CONFERENCES

- 2022 • International Conference on “Climate Change: Impacts and Solutions” at the University of Agriculture, Faisalabad, Pakistan, November 07-09, 2022.
- 2022 • 7th International Conference on “Climate Smart Agriculture: Innovations and Adaptations” at Faculty of Agriculture, University of Poonch, Rawalakot (A.K): Pakistan, **June 15-17, 2022.**
- 2022 • 19th International Congress of Soil Science on “Soil Health and Sustainable Development Goals” at the University of Agriculture, Faisalabad, Pakistan, **March 09-11, 2022.**
- 2017 • Attended “iSQAPER plenary meeting” held at Beijing (11th to 15th September, 2017), between China and 17 European countries. Attended more than 15 seminars of international academic exchange organized by GSCAAS and IARRP.
- 2017 • International Workshop on “Data Analysis and Future Collaborations for Soil Carbon

- 2015 Sequestration and Sustainable Agriculture based on Long-term Field Experiments”, Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences, Beijing, China, October 15-21, 2017.
- 2012
- International Conference on “ Soil Sustainability for Food Security” at Institute of Soil & Environmental Sciences, University of Agriculture, Faisalabad, Pakistan 15-17 November, 2015.
  - International Science Conference on “Agriculture & Food Security Issues in Global Environmental Perspectives” at The University of Poonch, Rawalakot (A.K): Pakistan, July 11-13, 2012.
- 2011
- International Conference on “Prospects & Challenges to Sustainable Agriculture” held at Faculty of Agriculture Rawalakot: The University of Azad Jammu & Kashmir, Pakistan 14-16 July 2011.

### Extra-Curricular Activities

Year	Activities
2022	Participated in “Annual Sports Gala” organized by Soil and Environmental Students Society, Institute of Soil and Environmental Sciences, University of Agriculture, Faisalabad, Pakistan 08-10 December, 2022.

### SCHOLARSHIPS, HONORS AND AWARDS

- ❖ Chinese Government Scholarship (Ph.D.)
- ❖ Merit Scholarship (Master)
- ❖ Merit Scholarship (Bachelor)

#### Reference (PhD Advisor)

Prof. Dr. Xu Minggang  
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