

AFTAB TABASUM

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EDUCATION

1. **M.Sc. (Hons) SOIL SCIENCE** at PMAS-Arid Agriculture University Rawalpindi, Pakistan (2023-2025)

Thesis: **Potential of Rhizo-bacteria to Combat Salt Stress in Canola (*Brassica napus*)** | Grade: 4.00/4.00

Main modules: Soil Physic, Precision Agriculture, Soil Microbiology and Biochemistry, Soil and Water Management, Fertilizer marketing and technology, Experimental Statistic, Soil fertility and Plant Nutrition

Conducted a controlled pot experiment to evaluate the effectiveness of indigenous salt-tolerant PGPR strains (B1, B2, B3) in enhancing canola (*Brassica napus* L.) tolerance to salinity, assessing their impact on antioxidant enzyme activity, photosynthetic pigments, osmotic adjustment, and soil properties.

2. **B.Sc. (Hons) SOIL AND ENVIRONMENTAL SCIENCES** at Agriculture University Peshawar Pakistan (2018-2023)

Thesis: **Comparative Analysis of Soil Phosphorus Determination methods and their Correlation with Plant Phosphorus in Standing Wheat Crop** | Grade: 3.85/4.00

Main modules: Soil Physical and Chemical Properties, Soil Salinity, Soil Genesis, Municipal Wates Management, Soil and Water Conservation, Land Degradation, Trace element in Agriculture, Analytical techniques in Soil.

Conducted a comparative study on soil phosphorus assessment methods to evaluate their accuracy in estimating short-term plant-available phosphorus, involving field sampling, plant analysis, and testing multiple extraction techniques (resin, AB-DTPA, NaHCO₃, water-soluble, and paste methods), identifying resin and AB-DTPA as the most reliable indicators of plant phosphorus availability.

SKILLS

Experimental Skills: Soil sampling and analysis, Plant tissue and nutrients analysis, Isolation, Culturing and characterization of PGPRs, DNAExtraction, Spectrophotometers, PCR, Enzyme tests, Gel Electrophoresis, Landscape designing.

Engineering Skills: Irrigation design system. (drip and Sprinkler) soil and land surveying, Water resource engineering, drainage system design, Iot-based monitoring, waste water treatment, Soil Erosion design, soil testing, **Programming skill:** Python, R Studio

Digital Skills: AutoCAD, SPSS, Statistix, Microsoft Office (Word, Excel, Power point), Correlation and Regression Analysis, GIS ANOVA, Google Engine

WORK EXPERIENCE

- **LAND RESOURCE MANAGEMENT OFFICER.** SARHAD RURAL SUPPORT PROGRAM(SRSP), UPPER CHITRAL, PAKISTAN. **01/01/2026 - Current**
Land Resource Management professional with experience in climate adaptation initiatives. Afforestation/reforestation campaigns, and small-scale infrastructure development including check dams and protection walls. Expertise in community engagement, and sustainable land management.
- **CLIMATE SMART AGRICULTURE** — NATIVE YOUTH CLIMATE CHANGE-(NYCCC) ISLAMABAD, PAKISTAN **20/09/2024 – 15/12/2025**

Experienced in water resource management, irrigation system design, and conservation strategies. Skilled in coordinating sustainability-focused events, providing expert advice to communities and organizations, and promoting climate change adaptation and sustainable development goals

- **HORTICULTURIST. US EMBASSY ISLAMABAD PAKISTAN 20/06/2023 – 10/09/2024**
Expert in landscaping, water conservation, irrigation management, and integrated pest management (IPM). Skilled in sustainable landscape design, efficient irrigation systems (drip, rainwater harvesting, xeriscaping), and eco-friendly pest control methods to create resilient, resource-conscious outdoor environments.
- **Researcher — (NARC) National AGRICULTURAL RESEARCH CENTER, ISLAMABAD, PAKISTAN (02/25/2023) – (03/15/2025)** Conducted research on soil salinity management, plant–microbe interactions, and sustainable crop production; developed rhizobacterial bioinoculants, evaluated plant physiological responses under stress, and designed controlled pot experiments to enhance soil health, crop yield, and food security.

PUBLICATIONS

- Biochar for Soil Acidity Mitigation and Agricultural Sustainability: A Review in Agricultural Chemistry and Soil Fertility. Published 12 March 2026 <https://link.springer.com/article/10.1134/S1064229325603099>. Z.khan, j. Hassan,A. Tabasum
- “Enhancing Canola (Brassica napus) Growth Under Salinity Stress: The Role of Salt-Tolerant Rhizobacteria in Sustainable Agriculture and Food Security”. 2nd International Conference on Climate Change Impacts on Agriculture and Food Security (IC3AF-2025). 22–24 April 2025 at the University of Swabi, Khyber Pakhtunkhwa, Pakistan. Aftab Tabasum*, Muhammad Akmal, Munazza Yusra. (2025).
- “Biochar for Soil Acidity Mitigation and Agricultural Sustainability: A Comprehensive Review”. Journal of Soila and Sediments (2025) Zaryab Khan; Javad Hassan; Aftab Tabasum; Mehdi Rahimi
- “Comparative Analysis of Soil Phosphorus Determination Methods and Their Correlation with Plant Phosphorus in Standing Wheat Crops. Turkish Journal of Agriculture” - Food Science and Technology for review <https://www.agrifoodscience.com/index.php/TURJAF/about>. Zaryab Khan, Aftab Tabasum, Dost Muhammad, Maria Mussarat , Javaid Hassan. (2023)
- “Vermicompost; Inevitable carrier for next generation biofertilizer biotechnology”. 20th International CONGRESS Conference 20-22 Feb Rawalpindi PASS UAAR, Aftab Tabasum, Mian Inayat Muhammad Muzamil, Muhammad Akmal, Rifat Hayat (2024).
- Published a Reflection paper on exchange experiences in Eduling international. (2023) <https://www.eduling.org/post/its-time-to-fly>
- Reflection Newsletter published In FAC Global Magazine U.S Embassy Islamabad (2025).

FUNDED PROJECTS

1. **Challenges and Opportunities of Fresh Fruit Supply Chain in District Chitral.**
Granted 2.5 million (Pkr) Research Grant Awards under the RASTA Competitive Grants Program (CGP) for Policy-Oriented Research Round 7.0 Funded by the Pakistan Institute of Development Economics (PIDE). Working as a Principle Investigator (PI).
2. **Empowering Young Minds: Metal Wellness and Career Counseling.** 2 Days Community Action Project at District Khyber, Peshawar. Granted 250k (pkr) by Shaoor Foundation.
3. **Career Counseling and Academic Scholarship Campaign in the region of Chitral.**
400\$ online granted project sponsored by the US-States Department for Community Development Initiatives.
4. **Breaking the Chain of Gender Inequality and Empowering Girls through Education, and Combating Early Marriage** at Injigan Ideal Public School Beshqeer payeen, Garam Chashma Chitral.
400\$ granted project sponsored by the US-States Department for Community Development Initiatives.

AWARDS AND HONORS

5. **Gold Medal** – Soil Science Society of Pakistan. Honored with the Soil Science Society of Pakistan Gold Medal, recognizing as a shining young soil scientist award in the country-based performance in B.Sc. (Hons) Agriculture with a major in Soil and Environmental Sciences. **(20/02/2024)**.
6. **Global UGRAD** - Undergraduate Exchange Program – United States
Finalist in Global UGRAD - Exchange Program fall 2021. **(10/12/2021)**
7. **Distinction Certificate** - The University of Agriculture Peshawar.
Awarded distinction certificate for getting 1st position (session 2018-2022) in the Department of soil and Environmental Sciences Faculty of crop production sciences. 04/08/2023
8. **Award letter 3-month training** in (High Efficiency Irrigation System) at Shanxi A&F Technology University, Yangling, China. (04/04/2025)
9. **USAID - Scholarship** - The University of Agriculture Peshawar
Awarded Merit and Need basis USAID Scholarship in B.S Program **(2020 - 2022)**
- **Appreciation - Certificate** International symposium presenter – Chatham University office of international affairs U.S
10. Poster Presentation = Cultural Food Presentation **(18/11/2021)** at Chatham University, USA.

PROFESIONAL TRAININGS

1. **3-Month training on High Efficiency Irrigation Systems** under Ministers Initiative for Capacity Building of 1,000 Agricultural Graduates in China at Shaanxi Agriculture and Forestry Technology University, China.

gained hands-on experience in water resource engineering, advanced irrigation systems, rural water supply and drainage, soil erosion control, under-film drip irrigation for cotton, crop water requirement assessment, and the use of AutoCAD and Revit for designing drip and sprinkler systems, along with practical installation training and an overview of China's Water Code for achieving high agricultural productivity

2. **3-month training on Smart Iot in Agriculture NAVTTC-PMYSDP** at (PMAS) Arid Agriculture University, Rawalpindi.

Completed NAVTTC–PMYSDP training on Smart IoT in Agriculture, covering smart agriculture concepts, agricultural sensors, data collection, IoT platforms, cloud integration, and precision agriculture systems. Gained hands-on experience in installing, configuring, and operating IoT devices to monitor soil moisture and temperature for irrigation control, along with exposure to challenges, future trends, and project presentations.

3. 3 days training workshop on **Eco-tourism for Sustainable Development** at Akhtar Hamed National Centre for rural development Islamabad.

CONFERENCES

11. Hosted International Conference collaboration of Pak-Mission Society and NYCCC at Islamabad hotel.
12. Hosted First National Youth **Climate Submit, Road to COP29** at Islamabad Regalia hotel.
13. 3 days international conference on “**The Climate Change Emergency: Pakistan in the 21st Century and the road to COP-28** conference at Marriott Hotel Islamabad

14. Pre COP29 Stakeholders conference **Global Climate resilience Action** Plan at Islamabad hotel.

LANGUAGE SKILLS

15. Urdu: First language
16. English: Proficient Advanced (C1)

ONLINE COURSES

17. Has successfully completed Online Course on “**Sustainable Soil Management Practices: Foundation Level**”
(24/08/2025)
18. 2-month Online Course on “**Empowering Youth for Climate Action**” from 02/25/2025 to 04/25/2023
19. 2- month Online Course on “**Faith and Gender in Climate Action**” from 04/15/2024 to 06/25/2024
20. 2-month Online Course on “**Green jobs and skills**” from 07/05/2025 to 09/05/2025
21. Key Essentials: the Paris Agreement, **Sustainable Development and the Law** short course
Cambridge University (20/10/2024)
22. Key Essentials: **The Global Biodiversity Framework, Sustainable Development and the Law**
Cambridge University (07/10/2024)
23. Completion of **English Language Program** – Chatham University Office of International Affairs U.S
Chatham University (02/12/2021)

RECOMMENDATIONS

24. **Dr. Muhammad Akmal** (Thesis Supervisor)
Associate professor at (PMAS) Arid Agriculture University, Rawalpindi.
Email: akmal@uaar.edu.pk |Phone: (+92) 3455973793
25. **Malik Emran Shakir** (Internship Supervisor)
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