

Dr. Umar Zeb (Ph.D. Botany)

HEC Approved Supervisor

Specialty: (Plant Molecular Genetics)



Current position: Postdoctoral Fellow, School of Food and Biological Engineering, Jiangsu University, Zhenjiang 212013, China

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Education

Postdoc (Botany)	2024	Jiangsu University China	4/4
Advisor	Professor. Cui Fengjie		
PhD (Botany)	Sep-2016-July-2019	Northwest University China	3.89/4.00
Dissertation Title	Evolution of chloroplast genome and phylogeny of <i>Pinus</i> species		
Advisor	Professor. LI Zhong- HU		
M.Phil. (Botany)	Mar-2013-Dec-2015	The University of Agriculture, Peshawar, Pakistan	3.72/4.00
Thesis Title	Floristic composition and phytosociological studies of Hazar Nao Hills, District Malakand, Khyber Pakhtunkhwa, Pakistan		
Advisor	Professor. Haroon Khan		
BS Hons (Botany)	Nov-2008-Dec-2012	University of Malakand KPK	3.25/4.00
Thesis Title	Plant disease survey of Agra Tehsil Batkhela, District Malakand, Khyber-Pakhtunkhwa Pakistan		
Advisor	Dr. Farooq Khan		
F.sc	Sep-2006-Aug-2008		670/1100
Matric	2006		689/1050

Research Area

- Plant Molecular Genetics: Plastid genome, Phylogeny, Divergence time, Molecular evolution
- DNA and RNA extraction, Cloning, plasmid construction

Research Projects Secured/Completed

- Project Title: *Phylogenetic relationships based on whole chloroplast genome of gymnosperm species.* Funded by HEC Pakistan (1 Million PKR) (AS Pi)

- Project title: Biosynthesis Pathway and Molecular Regulation of Aromatic Octenals in Edible Mushroom *Grifola frondosa*. Funded by Chinese Postdoctoral Science Foundation, 73rd Batch. (800,00 RMB) (AS Pi)
- Project Title: Investigation of Chloroplast Genome and Phylogeny of *Pinus* species. Funded by Open Foundation of Key Laboratory of Resource Biology and Biotechnology in Western China (Ministry of Education, Northwest University China). (200,000 RMB) (AS Co-Pi)

Peer Review Research publication (*Corresponding author)

1. **Umar Zeb**, Tariq Azizb, Azizullah Azizullah, Xinyi Zan, Asif Ali Khan, Syed Asim Shah Bacha, Fengjie Cui. (2024). Complete mitochondrial genomes of edible mushrooms: features, evolution, and phylogeny. *Physiologia Plantarum* [IF. 6.4]
2. **Umar Zeb**, Wanlin Dong, Tingting Zhang, Ruonan Wang, Khurram Shahzad, Xiongfeng Ma, and Zhonghu Li. (2019). Comparative plastid genomics of *Pinus* species: insights into sequence variation and phylogenetic relationships. *Journal of systematic and evolution* [IF. 3.7]
3. **Umar Zeb**, Azizullah Azizullah, Xiukang Wang, Sajid Fiaz, Hanif Khan. (2021). Comparative genome sequence and phylogenetic analysis of chloroplast for evolutionary relationship among *Pinus* species. *Saudi Journal of Biological Sciences* [IF. 4.4]
4. **Umar Zeb**, Azizullah Azizullah, Sajid fiaz. (2021). Novel insights into *Pinus* species plastids genome through phylogenetic relationships and repeat sequence analysis. *PLOS ONE* [IF. 3.75]
5. **Umar Zeb**, Ruonan Wang, Pengbin Dong, Ning Wang, Tingting Zhang, Chenzi Lin & Xiaojuan Wang (2019) Characterization of the complete chloroplast genome sequence of *Pinus pumila* (Pinaceae), *Mitochondrial DNA Part B* [IF. 0.61]
6. **Umar Zeb**, Fazli Rahim, Azizullah Azizullah, Ibrahim A. Saleh, Sher Wali, Asif Ali Khan, Hanif Khan, Sajid Fiaz, Fengjie Cui. (2024). Effects of copper sulphate stress on the morphological and biochemical characteristics of *Spinacia oleracea* and *Avena sativa*. *BMC Plant Biology*. [IF. 5.2].
7. **Umar Zeb**, Sajjad Ali, Zhong Hu Li, Haroon Khan, Khurram Shahzad, Muhammad Shuaib, Muhammad Ihsan. (2017). Floristic diversity and ecological characteristics of weeds at Atto Khel, Mohmand Agency, KPK, Pakistan, *Acta Ecological Sinica*.
8. **Umar Zeb**, Haroon Khan, Bakhtiar Gul and Muhammad Wisal Khan. (2016). Floristic composition and phytosociological studies of Hazar Nao hills district Malakand, Khyber Pakhtunkhwa, Pakistan. *Journal of Weed Science*.
9. **Umar Zeb**, Haroon khan et al. (2021). Ethnobotanical Assessment of Hazar Nao Hills, District Malakand, Khyber Pakhtunkhwa, Pakistan. *International Journal of Applied and Experimental Biology*.
10. FengJie Cui, Yumeng Yang, Leisun, Xinyi Zan, WenJing Sun, **Umar Zeb**. (2024). *Grifola frondosa* polysaccharides: A review on structure/activity, biosynthesis and engineering strategies. *International Journal of Biological Macromolecules*. [IF. 8.2].
11. Asif Ali Khan, Muhammad Wajid Ullah, Abdul Qayum, Ibrahim Khalifa, Mazhar Ul-Islam, Syed Asim Shah Bacha, Umar Zeb, Feng-Jie Cui. (2024). Structure-property relationship of ultrasound-assisted nanoemulsion-impregnated bioactive polysaccharide films for enhanced shelf life of mushrooms. *Food Packaging and Shelf Life* [IF. 8.5].

12. Asif Ali Khan, Feng-Jie Cui, Umar Zeb et al (2024). Fabrication and characterization of bioactive curdlan and sodium alginate films for enhancing the shelf life of *Volvariella volvacea*. *Food Bioscience* [IF.4.8].
13. Amina Bato, Azizullah Azizullah, Kamran Ullah, Salma Shad, Farman Ullah Khan, Mahmoud F. Seleiman⁵, Tariq Aziz and **Umar Zeb*** (2024). Green synthesis of Zn-doped TiO₂ nanoparticles from *Zanthoxylum armatum*. *BMC Plant Biology*. [IF. 5.2].
14. Shahzad Khurram, Ali Waqar Shoukat, Muhammad Shoaib, Junhu Dai, **Zeb Umar** and Mengyao Zhu (2024) Assessment of plant biodiversity in tropical dry forests of Sialkot, Pakistan; insight into environmental, anthropogenic influence and conservation strategies. *Frontiers in Forest Global Change* [IF. 3.2].
15. Khurram Shahzad, Azizullah Azizullah, Fengjie Cui, **Umar Zeb***. (2023). Novel structures and evolution of tRNA genes: Insight into the chloroplast tRNAs of family Sapindaceae. *Genetic Resources and Crop evolution* [IF. 2].
16. Hanif Khan, **Umar Zeb***, Sadaf Gul, Azizullah Aziziullah, Naushad Ali. (2023). Genome-wide identification and expression analysis of U-box gene family in *Juglans regia* L. *Genetic Resources and Crop evolution* [IF. 2].
17. Hanif Khan, Irfan Ullah and **Umar Zeb***. (2023). Population genetics informs new insights into the phylogeographic history of *Juglans regia* L. *Genetic Resources and Crop evolution* [IF. 2].
18. Muhammad Ishaq, Muhammad Nauman, **Umar Zeb***. (2023). Facile One-Step Synthesis of Gold Nanoparticles using *Viscum Album* Linn and Evaluation of their Anti-Bacterial Potential. *Functional Plant Biology* [IF. 3.57].
19. Hafiz Ullah, Bakhtiar Gul, Haroon Khan, Khushnoodur Rehman, Ishfaq Hameed, **Umar Zeb**, Sohaib Roomi, Zill-E-Huma. (2023). Impact of pH on the growth and nutritional profile of *Lemna minor* L. as a sustainable alternative for Pakistan's feed sector. *Aquaculture International* [IF. 2.95]
20. Hafiz Ullah, Bakhtiar Gul, Haroon Khan, Naveed Akhtar, Khushnood Ur Rehman and Umar Zeb. (2022). Effect of growth medium nitrogen and phosphorus on nutritional composition of *Lemna minor* (an alternative fish and poultry feed). *BMC Plant Biology* [IF. 5.26]
21. Khurram Shahzad, Yun Jia, Fulin Chen, Umar Zeb and Zhonghu Li .(2017). Effects of Mountain Uplift and Climatic Oscillations on Phylogeography and Species Divergence in Four Endangered Notopterygium Herbs. *Frontier in Plant science*. [IF. 6.62]
22. Khurram Shehzad, Ejaz Hussain Siddiq, Shakeel Ahmad, Umar Zeb, Muhammad Ihsan, Hanif Khan, Guifang Zhao, Zhonghu Li. (2021). Exogenous Application of Indole-3-Acetic Acid to Ameliorate Salt Induced Harmful Effects on Four Eggplants (*Solanum melongena* L.) Varieties. *Scientia Horticulture*. [IF. 4.34]
23. Hafiz Ullah, Bakhtiar Gul, Haroon Khan, Umar Zeb. (2021). Effect of salt stress on proximate composition of duckweed (*Lemna minor* L.). *Heliyon*. [IF. 4]
24. Ijazul Haq, **Umar Zeb** et al. (2021). Prevalence of micronutrient deficiencies among preschool and school-going children in flood-hit areas of Pakistan. *American Journal of tropical medicine & hygiene* [IF. 3.70]
25. Hanif Khan, **Umar Zeb** et al. (2021). Identification, Characterization and Expression profiles of Dof Transcription Factor in common Walnut (*Juglans Regia* L). *Polish journal of environmental studies* [IF. 1.87]

26. Irfan Ullah, Umar Zeb, Zhao peng. (2019). Phenotypic Diversity and Pest Management of Potato to varieties grown at Baffa Mansehra. *Polish journal of environmental studies* [IF. 1.87]
27. Nazim Hassan, **Umar Zeb***, Asfa Batool. (2021). Quantitative Analysis of Medicinal Flora use as Herbal Remedies in Hindu Kush Mountain Range, Northern Pakistan, *Pakistan Journal of Botany*. [IF. 1.10]
28. Sher Shah, Umar Zeb et al. (2021). The Siberian pine growth dynamics in Altai Mountains, China. *Brazilian Journal of Biology*. [IF. 1.36]
29. Zahid khan, Zahid khan, Umar Zeb et al. (2021). IOT Based Smart Farming Monitoring System for Bolting Reduction in Onion Farms. *Scientific Programming* [IF. 1.85].
30. Hanif khan, **Umar Zeb***, et al (2019). PHYTOREMEDIATION OF SELECTED HEAVY METALS USING BRYOPHYLLUM DAIGREMONTIANUM (Raym-Hamet & H. Perrier) A. Berger. *Bangladesh Journal of Botany*. [IF. 0.50].
31. Tayyaba Sher Waris, M. R. Khan N. A. Shah, M. Shuaib, F. Hussain, M. Ishaq, Z. Kamal, U. Zeb, S. Ali K. Ali. S. Ahmed, F. Hussain. (2018). Hepatoprotective Role of Artemisia scoparia Waldst. and Kit Against CCl4 -induced Toxicity in Rats, *Polish Journal of Environmental Studies*. [IF. 1.96]
32. Muhammad Israr and Umar Zeb et al (2021). Immunochromatographic Test and Third Generation ELISA for Elucidating the Existence and Risk Factors of Anti-HCV Antibodies among Blood Donors from Swabi Pakistan. *Abasyn Journal of Life Sciences*. 2020, 3 (2): 138-144
33. Nazim Hassan a, Khan Sher and Umar Zeb et al. (2021). Effects and mechanism of plant litter on grassland ecosystem: A review, *Acta Ecologica Sinica*.
34. Muhammad Shuaib, Kashif Ali, Umar Zeb, Sajjad Ahmed, Sajjad Ali, Ikramullah Khan and Fida Hussain. (2017). To assess the fresh water algal diversity in relation to water from river Panjkora, district Dir lower, Pakistan. *Pure and Applied Biology*.
35. Bakhtiar Gul, Ijaz Ahmad, Haroon Khan, **Umar. Zeb***, Hafiz Ullah. (2018). Floristic inventory of wild plants of Peshawar university campus. *Acta Ecologica Sinica*.
36. Kiran Amir, Saddam Hussain, Muhammad Shuaib, Firasat Hussain, Zara Urooj, Wisal Muhammad Khan, Umar Zeb, Kashif Ali, Muhammad Aurang Zeb, Fida Hussain. (2017). Effect of gamma irradiation on OKRA (*Abelmoschus esculentus* L.). *Acta Ecologica Sinica*.
37. Muhammad Shuaib, Kashif Ali, Umar Zeb, Firasat Hussain, Muhammad Aurang Zeb, Saddam Hussain, Fida Hussain. (2017). Evaluation of Pistacia integririma; an important plant. *International Journal of Biosciences*.
38. Sajjad Ali, **Umar Zeb***, Wang Lei, Haroon Khan, Khurram Shehzad, Hanif Khan, Irfan Ullah. (2018). Floristic inventory and ecological characterization the village Sherpao, District Charsadda, Khyber Pakhtunkhwa- Pakistan. *Acta Ecologica Sinica*.
39. Sajjad Ali, Syed Zahir Shah, Muhammad Saleem Khan, Wisal Muhammad Khan, Zahid Khan, Nazim Hassan, **Umar Zeb***. (2018). Floristic list, ecological features and biological spectrum of district Nowshera, Khyber Pakhtunkhwa, Pakistan. *Acta Ecologica Sinica*.
40. Hanif Khan, Alam Zeb, Waqar Khan, Umer Zeb, Irfan Ullah, Kishwar Ali, Zahid Khan, Peng Zhao. Effects of roasting on the total phenolic contents and radical scavenging activity of fruits seeds (2019). *Journal of Biodiversity and Environmental Sciences* (JBES).

41. Nazim Hassan, Mohy Ud Din, **Umar Zeb*** et al. (2019). Identification and Quantitative Analyses of Medicinal Plants in Shahghram Valley District Swat, Pakistan. *Acta Ecologica Sinica*.
42. Mujeeb Ur Rehman, **Umar Zeb*** et al (2020). Effect of potassium and sowing time on potato yield and quality. *World Journal of Biology and Biotechnology*.
43. Muhammad Arif, Kashif Ali, Muhammad Shuaib, Umar Zeb et al. (2018). Antibacterial activity of selected medicinal plants and its economic importance of Khyber agency, Pakistan. *Pure Applied. Biology*.
44. Sajjad Ali, Muhammad Shuaib, Umar Zeb et al. (2017). Floristic list and their ecological characteristics, of plants at village Sherpao District Charsadda, KP-Pakistan. *Journal of Medicinal plant studies*.

Editor/Reviewer

- Guest Editor: Atmosphere
- Advisor Editor: Mitochondrial DNA Part B
- Reviewer: Gene, Gesunde pflanzen, Helion, Scientific Report, Forest, Molecule, Agronomy, BMC,genomics

Students Supervision:

M.PHIL STUDENTS SUPERVISED: Fully Supervised/Co-Supervised/In Progress: 05/05/15

Work Experience Record:

- November 2021-Till Date Assistant Professor (Contract) Department of Biology, The University of Haripur 22620, Khyber Pakhtunkhwa, Pakistan
- November 2020- November 2021 Assistant Professor-IPFP Department of Biology, The University of Haripur 22620, Khyber Pakhtunkhwa, Pakistan
- August 2019 to September 2020 as a lecturer in Botany. Government Degree College Agra District Malakand
- January 2016-August 2016. Teaching Assistant Government Degree College Agra, District Malakand, Khyber Pakhtunkhwa, Pakistan

Professional Experience

- Research Associate in the project (from August 1, 2014, to September 1, 2016) "Introduction and utilization of Moringa oleifera for sustainable intervention to address malnutrition and poverty in KPK, Pakistan" (Sponsored by Higher Education Commission, Islamabad) at Department of Weed Science, The University of Agriculture, Peshawar.
- Reviewer of the International Conference on Advances in Civil and Ecological Engineering Research (ACEER 2019)
- Reviewer of the Asian Journal of Research in Crop Science (2020).
- Editor of Mitochondrial DNA part B Resources.
- For completing one month online National Faculty Development program (HEC) (2020).
- Certificate of Completion Fundamentals of Project Management online course (15 hours) offered by NAHE, HEC in collaboration with Oxon Global from 27 March 2021 to 03 April 2021.

Conference/Workshops Attended

- Attended the international conference of Weinman Normal University in Xian Shaanxi province China (6-7 May 2017)
- Attended the first International Conference in July. 2017 organized by the Department of Life Science at Northwestern Polytechnic University, Xian China.
National workshop on awareness of weed management practice for better yield, Department of weed science, The University of Agricultural, Peshawar (December 2015).
- Attended 5th international and 12th national conference of weed science in Shaheed Benazir Bhutto University Sheringal, Dir Upper (JUNE-2015).
- Scientific writing and publication in a journal organized by climatic change Centre, The university of Agriculture, Peshawar Pakistan (April-2014).
- Attended two days' workshop on "Project Formulation" organized by Pakistan Science Foundation at The University of Haripur (29-30 September 2020).
- Attended a seminar on "Fundamental of Project Management" organized by NAHE, HEC (27 March-03 April, 2021).
- HEC Plagiarism Policy and Use of Turnitin Service organized by QEC, The University of Haripur (Nov, 18, 19, 2020).
- Dendrochronology workshop organized by the Department of Forestry and Wild Life Management, The University of Haripur (Nov 12, 2020).
- Online Business Skills Development, Start Making Money now with Amazon's E-Commerce (May 18, 2023).

Awards and Appreciation

- Second position in M. Phil (Botany).
- Merit scholarship for Ph.D. studies in China.
- Got certificate for outstanding student in 2018 at Northwest University China
- Got certificate for outstanding student in 2019 at Northwest University China

Computational and Software Skills

- | | | | |
|-----------------------------------|--------------------|---------------------|---------|
| 1) Organellar Genome DRAW v1.1 | (2) mVISTA program | 3) REPuter Analysis | 4) PAML |
| package v 4.7.1, 5) BEAST v.2.4.5 | 6) Mega 7 | 7) MS Office | |

Research achievements

Extracted DNA for the first time from the following *Pinus* species, the record of which is available in NCBI, 1) *P. Squamata* 2) *P. Pumila* 3) *P. Pariviflora* 4) *P. Morrisonicola* 5) *P. Wangii*

Language

- English
- Urdu
- Pashto

References

- **Dr. Li zhonghu (Professor)**

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- **Dr. Aziz Ullah** (Professor)

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- **Dr. Haroon Khan** (Deputy Director of Communication & Outreach)

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