



Sumbal Khan

Home : Mohallah: Poswal, Village: Gujar Garhi, Tehsil/ District: Mardan, 23200, Mardan, Pakistan

Email: sumbalkhan5785@gmail.com **Phone:** (+92) 3143938376

Website: <https://www.researchgate.net/profile/Sumbal-Khan>

Website: <https://scholar.google.com/citations?hl=en&authuser=1&user=pl4oE8UAAAAJ>

Gender: Female **Date of birth:** 05/05/1999 **Nationality:** Pakistani

ABOUT ME

As a passionate plant biotechnologist, I am dedicated to leveraging biological systems to drive advancements in agriculture and environmental sustainability. With a strong foundation in molecular biology, I am committed to translating scientific research into practical solutions that address critical global issues. My enthusiasm for this field motivates me to engage in innovative research that addresses pressing challenges. I am eager to join a forward-thinking organization where I can apply my knowledge, pursue my passion and further develop my skills through hands-on experience.

EDUCATION AND TRAINING

- [11/09/2022 – 12/06/2024] **Master of Science in Plant Biotechnology**
National University of Sciences and Technology
City: Islamabad | Country: Pakistan |
- [16/12/2021 – 15/07/2023] **Bachelor of Education**
Allama Iqbal Open University Islamabad
City: Islamabad | Country: Pakistan |
- [15/09/2017 – 21/12/2021] **Bachelors of Studies in Botany**
University of Peshawar
City: Peshawar | Country: Pakistan |
- [10/09/2015 – 01/08/2017] **Higher Secondary School Certificate**
Peshawar Model Degree College (for Girls) Mardan
City: Mardan | Country: Pakistan |
- [01/04/2013 – 20/06/2015] **Secondary School Certificate**
Danish Public School Gujar Garhi Mardan
City: Mardan | Country: Pakistan |

LANGUAGE SKILLS

Mother tongue(s): Pashto **Other language(s):** English , Urdu

PATENT

Extraction Process of Natural Colors from Fruits of *Monotheca buxifolia* (Falc.) A. DC. (Sapotaceae)

PUBLICATIONS (BOOK CHAPTERS)

[2025] **Veracity of Bioplastic Degradation**

Authors: Rida Naseer, **Sumbal Khan**, Ayesha Imran, Swaira Rafique, Ishmal Eman, Zeeshan Khan, Tariq Shah

Book: Handbook of Microplastic Pollution in the Environment

Edition 1st Edition

eBook ISBN 9781003487593

PUBLICATIONS

- [2025] **Ethnobotanical Uses, Diversity, and Palatability of Weeds in the Tobacco Crop, Yaqubi Field, Tehsil Razar, District Swabi**
Authors: Ismail Ijaz, Samar Mushtaq, Lal Badshah, **Sumbal Khan**, Asad Ullah
Journal: Ethnobotany Research and Applications
Status: Under Review
- [2025] **Phytochemical and Biological Characterization of Extracted Natural Colors from Fruits of *Monothea buxifolia* (Falc.) A. DC. (Sapotaceae)**
Authors: **Sumbal Khan**, Muhammad Qasim Hayat, Khurram Yousaf, Sara Iftikhar, Marwa Amin, Aamra Imtiaz, Aneela Javed
Journal: Scientific Reports
Status: Accepted
- [2025] **Farmers' Perceptions of Climate Change and Its Impact on Tobacco Cultivation in Swabi District, Khyber Pakhtunkhwa**
Authors: Muhammad Abbas, Faisal Khan, Marwa Amin, **Sumbal Khan**, Asim Haider
Journal: Agricultural Research
- [2022] **Quantitative study of the food flavoring spice mixtures used in the traditional markets of District Bannu, Khyber Pakhtunkhwa, Pakistan**
Authors: Adnan Ali Shah, Lal Badshah, Rainer W. Bussmann, Murad Muhammad, Abdullah Abdullah, Farman Ullah, **Sumbal Khan**, Naushad Khan
Journal: Ethnobotany Research and Applications
- [2021] **Quantitative study on the trade and ecological aspect of spice plants in the markets of District Bannu, Khyber Pakhtunkhwa, Pakistan**
Authors: Adnan Ali Shah, Lal Badshah, Murad Muhammad, **Sumbal Khan**, Muhammad Abbas, Abdullah Jan, Naushad Khan, Rainer W. Bussmann
Journal: Ethnobotany Research and Applications
- [2021] **Ecological, Ethnobotanical and Phytochemical Evaluation of Plant Resources of Takht Bhai, District Mardan, KPK, Pakistan**
Authors: Naushad Khan, Lal Badshah, Syed Mukarram Shah, **Sumbal Khan**, Adnan Ali Shah, Murad Muhammad, Bushra Gul, Lubna Kattak, Muhammad Ali Shah, Khurshaid Ali
Journal: Turkish Journal of Physiotherapy and Rehabilitation
- [2021] **The antimicrobial Potentiality Of *Tetranthera macrophylla* (ROXB.) flower**
Authors: Saqib Ullah, Khushnood Ur Rehman, Sayyar Muhammad, Muhammad Noor, Saleena Khan, Tabassum Yaseen, **Sumbal Khan**, Murad Muhammad
Journal: Bioscience Research

[2021] **Floristic Composition and Phytosociological Studies of Weeds of Garlic (*Allium sativum*) Crop of District Bannu, Khyber Pakhtunkhwa, Pakistan.**

Authors: Adnan Ali Shah, Khushnood Ur Rehman, Murad Muhammad, Muhammad Abbas, Naushad Khan, **Sumbal Khan**, Lubna Kattak, Bushra Gul, Nizamuddin, Khurshaid Ali

Journal: Elementary Education Online

[2020] **Eco-Floristic Study of Weed Flora of Garlic Crop in District Bannu, Khyber Pakhtunkhwa, Pakistan**

Authors: Adnan Ali Shah, Khushnood Ur Rehman, Murad Muhammad, Naushad Khan, **Sumbal Khan**, Muhammad Ali Shah, Lubna Kattak

Journal: Elementary Education Online

[2020] **Ethnoecological appraisal, mineral and phytochemical analysis of five species of Myrtaceae in University Campus**

Authors: Sikandar Shah, Sheharyar Khan, Syed Mukaram Shah, **Sumbal Khan**, Lubna Khatak, Gul Rukh

Journal: Pure and Applied Biology (PAB)

SKILLS

Molecular Biology Skills

DNA extraction, Primer designing, DNA extraction from fungi, Antioxidant Enzymes detection, Root colonization determination, Soil Enzymes activities, Rhizosphere sampling for sequencing, Nutrient analysis, Microbial inoculation, qPCR and PCR, Bacterial isolation, Secondary and 3D protein modeling

Statistics and Bioinformatics Skills

R language, ANOVA, PCA, Heatmap, ImageJ, Sigmaplot, SPSS, Statistics 8.1, insilico analysis

Biochemistry Skills

Root exudates sampling and quantification, Hormones quantification, Histochemical assay, FTIR, XRD, Scanning electron microscopy, Minimal inhibitory concentration (MIC), Elemental analysis, Phytotoxic activity, Anthocyanin, Flavonoid, Phenolic and Carbohydrate estimation, UV-visible spectrum analysis, Antibacterial and Antifungal activity, BRIX, Extraction of natural colorant, CIE L* a* b* color analysis

MEMBERSHIP

[2018 – 2019] **Breeding and Genetics Society of Pakistan**

TRAININGS AND COMPETITIONS

Plant Tissue Culture Techniques

Breeding and Genetics Society of Pakistan, University of Agriculture, Peshawar

District Level Poster Competition Raise Your Voice, Combat Child Marriage

Blue Veins

Basic Freelancing Course, Online Training

The Directorate of Youth Affairs and Liaison Corporation

Graphic Design

Khyber Pakhtunkhwa Information Technology Board

Two Days Workshop on Research Methodology, References, Formatting and Importance of Publication

Plants Educational Forum

CERTIFICATES

Certificate of Appreciation

Organizer of ASAB Annual Sports Gala, 2024

Certificate of Appreciation

NUST Summer School 2023

International Women Day Celebration

University of Peshawar

Internatinal Day of Women and Girls in Science

The Directorate of Youth Affairs and Liaison Corporation

One Day Provincial Conference on Climate Risks and Children's Future

The Community Uplift Program (Cup) and Research and Development Foundation (Rdf)

Awareness Session/Walk on World Wetland Day

Department of Botany University of Peshawar

Covid-19: Emerging Zoonotic Diseases

The Directorate of Youth Affairs and Liaison Corporation

Climate Change Resilience and Sustainable Development in Pakistan

The Directorate of Youth Affairs and Liaison Corporation

REFERENCE

Dr. Muhammad Qasim Hayat

Professor, ASAB, NUST, Islamabad, Pakistan

Email: m.qasim@asab.nust.edu.pk