**Mohd Saleem Wani,** MSc. CSIR NET, Ph.D.

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I am a dedicated researcher with a passion for understanding the complexities of plant biology. My research portfolio includes 25 peer-reviewed journal articles, 11 book chapters, and 1 authored book, alongside presentations at 9 conferences and facilitation of 2 workshops and 3 webinars. My work on the reproductive biology, genetic diversity, and phytochemical analysis of *Betula utilis* in the North West Himalayas has led to the identification of significant habitat and altitudinal impacts on plant traits. With 111 amplified alleles and significant findings in triterpenoid quantification, my contributions are reflected in 215 citations and an h-index of 9. I am committed to advancing scientific knowledge and making meaningful contributions to the field

# RESEARCH AND EDUCATION

## Ph.D. Botany 04/12/2018

Department of Botany, Punjabi University Patiala-147002

Research focus: *Reproductive biology, genetic diversity and phytochemical analysis of Betula utilis D. Don from North West Himalaya*

## Project Fellow (DBT Major Project) 30/06/2017

Department of Botany, Punjabi University Patiala-147002

Research focus: *Phytochemistry of Medicinal Plants from Northwest Himalayas.*

## M.Sc. Botany 19/70/2011

Department of Botany, University of Kashmir- 190006 Specialization: *Aerobiology.*

# FUNDED GRANT AWARDS

## Project Fellow in DBT Major Project

Funded by: DBT, New Delhi

Grant Period: 1st October 2015 to 30th June 2017

# HONORS AND ACHIEVEMENTS

# CSIR-NET-2010-AIR rank-156

# PEER-REVIEWED PUBLICATIONS

1. Kaur R., Devashree, Y., Kumar, R., Gupta, Saurabh., **Wani, M.S**., Vijay Singh. 2022. Genotoxic effect of fruit extract of wild and cultivated cucurbits using *Allium cepa* assay. *International Journal of Vegetable Science.*

**Impact Factor: 3.1/** **Cited by: 02**

1. Sharma, N., Singh, B., Gupta, R.C., **Wani, M.S.\*** 2022. Intra-specific variability in anti-diabetic activity and UPLC quantification of oleanolic acid from two morphotypes and three cytotypes of *Achyranthes* *aspera*. *Journal of Biologically Active Products from Nature.*

**Impact Factor: 0.9/ Cited by:01**

1. Tantray, Y.R., Jan, I., **Wani, M.S**., Singhal, V.K., Gupta, R.C. 2021. Chromosome numbers and meiotic behavior in some species of Asteraceae from high altitudinal regions of Kashmir Himalayas. *Journal of Asia-Pacific Biodiversity.*

**Impact Factor: 1.7/ Cited by:06**

1. Tantray, Y.R., **Wani, M.S**., Saroj Kumar, Ishrat Jan., Singhal, V.K., Gupta, R.C. 2021 Variation in phytochemical content in polyploid populations of *Hyoscyamus pusillus* thriving at different altitudes in cold deserts of Ladakh, India. 2021. *Analytical Chemistry Letters*.11, 1-14.

**Impact Factor: 1.0/ Cited by:06**

1. Sharma, N., Singh, B., **Wani, M.S**.,\* Gupta, R.C., Habeeb, Talaat H. 2021. Determination of the volatile composition in essential oil of *Azadirachta indica* A. Juss from different areas of North Indian Plains by Gas Chromatography/Mass Spectrometry (GC/MS). *Analytical Chemistry Letters*. 11, 73-82. **Cited by:14**
2. Tantray, Y.R., **Wani, M.S.,** Pradhan, S.K., Hamid, M., Jan, I., Singhal, V.K., Gupta, R.C., Habeeb, T.H., 2020. Morphological, cytological and phytochemical studies in naturally occurring diploid and tetraploid populations of *Physochlaina praealta* from high altitudes of Trans-Himalaya. *JPC–Journal of Planar Chromatography–Modern TLC*. 33: 567-577.

**Impact Factor: 1.1/ Cited by:04**

1. Sharma, N., Singh, B., **Wani, M.S**., Gupta, R.C., Habeeb, T.H., 2020. Morphological, cytological, and chemotypic variation of essential oils in *Syzygium cumini* (L.) Skeels. *Analytical Chemistry Letters*, 10: 609-619. **Cited by:04**
2. **Wani, M.S**., Hamid, M., Tantray, Y.R., Gupta, R.C., Munshi, A.H., Singh, V. (2020). In vitro pollen germination of *Betula utilis*, a typical tree line species in Himalayas. *South African Journal of Botany*. 131: 214-221.

**Impact Factor:3.1/ Cited by:09**

1. Sharma, N., Singh, B., Bhatia, A., Gupta, R.C., **Wani, M.S**. (2020). Morphological and cytogenetic analysis of different cytotypes of *Boerhaavia diffusa* L. and their evaluation for biological activity. *Advances in Traditional Medicine*. DOI 10.1007/s13596-020-00518-7.

**Impact Factor:1.8/ Cited by:03**

1. **Wani, M. S**., Gupta, R. C., Munshi, A. H., Sharma, V. (2018). Development and characterization of SSR markers in Himalayan species *Betula utilis*. *Journal of Forestry Research*. pp. 1-8.

**Impact Factor:3.4/ Cited by:10**

1. **Wani, M. S**., Gupta, R. C., Munshi, A. H., Sharma, V. (2018). Genetic diversity and structure of *Betula utilis* accessions of North-western Himalaya based on RAPD and ISSR Markers. *The Nucleus*, 61(2), 145-152.

**Impact Factor:2.1/ Cited by:07**

1. **Wani, M. S**., Gupta, R. C., Munshi, A. H., Saroj Kumar. (2018). Estimation of four triterpenoids, betulin, lupeol, oleanolic acid, and betulinic acid, from bark, leaves, and roots of *Betula utilis* D. Don using a validated high performance thin-layer chromatographic method. *Journal of Planar Chromatography*, 31(3): 220- 229.

**Impact Factor: 1.1/ Cited by:09**

1. **Wani, M.S**., Gupta, R.C., Munshi, A.H., Pradhan, S.K. (2018). Phytochemical screening, total phenolics, flavonoid content and antioxidant potential of different parts of *Betula utilis* D. Don from Kashmir Himalaya. *International Journal of Pharmaceutial Sciences and Research*, 9(6): 2411-2417. **Cited by:14**
2. Sharma, V., **Wani, M. S**., Singh, V., Kaur, K., Gupta, R. C. (2017). Development and Characterization of Novel Microsatellite Markers in *Trillium govanianum*: A Threatened Plant Species from North-Western Himalaya. *3 Biotech*, 7(3), 190.

**Impact Factor:2.6/ Cited by:09**

1. Tantray, Y. R., **Wani, M. S**., Hussain, A. Genus *Quercus*: An Overview. (2017). *International Journal of Advance Research in Science and Engineering*, 6(8), 1880-1886. **Cited by: 34**
2. Kaur, K., Sharma, V., Singh, V., **Wani, M. S**., Gupta, R. C. (2016). Development of Novel SSR Markers for Evaluation of Genetic Diversity and Population Structure in *Tribulus terrestris* L.(Zygophyllaceae). *3* *Biotech*, 6(2), 156.

**Impact Factor: 2.6/ Cited by: 18**

1. **Wani, M. S**., Hussain, A., Yaqoob, U., Wani, A. M., Munshi, A. H. (2016). Distribution Pattern, Population Density, Phenological Episodes and Morphometric Analysis of *Salix babylonica*. *Research & Reviews*: *Journal of Botany*, 2(3), 5-11.
2. Lone, A. H., Lal, E. P., Munshi, A. H., **Wani, M. S**., Mir, Z. A., Malik, Z. A., Jan, N. Distribution pattern, Population Density and Conservation by Vegetative Propagation of *Ulmus villosa* in Temperate Conductions of Kashmir. *The Bioscience* 2016; 11: 2471-2474.
3. Lone, A. H., Lal, E. P., Ganie, S. A., **Wani, M. S**., Khare, A. Effect of Sewage and Tubewell Water on Physiological and Biochemical Parameters of Vegetables. *Asian Journal of Biochemical and Pharmaceutical Research* 2016; 6: 2231-2560.
4. **Wani, M. S**., Hussain, A., Ganie, S. A., Munshi, A. H., Lal, E. P., Gupta, R. C. (2016). *Juglans regia*–A Review. *International Journal of Latest Research in Science and Technology*, 5(1): 90-97.
5. Lone, A. H., Ganie, S. A., **Wani, M. S**., Munshi, A. H. Wind Pollination: A Review. *International Journal of Modern Plant & Animal Sciences*, 2015, 3(1): 45-53.
6. Wani, A. M., **Wani, M. S**. (2014). Study on Heritability and Genetic Gain in Plus Tree Families of Bau*hinia variegata* L. in Western Himalayas. *International Journal*, 2(8), 938-946.
7. **Wani, M. S**., Lone, A. H., Yaqoob, U., Munshi, A. H., Wani, A. M., Ganie, S. A. (2014). Effect of Altitude on the Morpho-phenological Parameters of *Juglans regia* L. from Different Sites of Kashmir Himalaya. *International Journal*, 2(7), 97-110. **Cited by:03**
8. Lone, A. H., Lal, E. P., Thakur, S., Ganie, S. A., **Wani, M. S**., Khare, A. Wani, F. A. (2013). Accumulation of Heavy Metals on Soil and Vegetable Crops Grown on Sewage and Tube Well Water Irrigation. *Scientific Research and Essay*s, 8(44), 2187-2193. **Cited by**: 28
9. A. H, Lone., Lal, E. P., Munshi, A. H., **Wani, M. S**., Ramteke, P. W., Mir, Z. A., Ganie, S.A., Malik, Z. A. (2013). Vegetative and Reproductive Phenophases in *Aesculus indica* Colebr at Different Altitudes in Temperate Kashmir Valley. *Annals of Plant and Soil Research* 19(1): 80 – 84.

# PEER-REVIEWED BOOK CHAPTERS

1. Wani, N.A, Malik, N.A., Tantray, Y.R., Jan, Ishrat., Tawseef Ahmad, **Wani, M.S**. *Emerging Techniques for Treatment of Wastewater.*
2. **Wani, M.S**., Jan Ishrat, Tawseef Ahmad, Shoaib Ali Dar, Wani, N.A, Tantray, Y.R., Malik. Threats and consequences of untreated wastewater on freshwater environments. *In Microbial Consortium and Biotransformation for Pollution Decontamination.*
3. **Wani, M.S**., Tantray, Y.R., Malik, N.A., Mohammad Irfan Dar., Tawseef Ahmad. Microbial bioremediation of Pesticides/Herbicides in soil. In: Dar, G.H et al (eds.) *Microbiota and biofertilizers* Vol II. Springer Nature, Switzerland AG.
4. Wani, N.A., Tantray, Y.R., **Wani, M.S**., Malik, N.A., 2021. The Conservation and Utilization of Medicinal Plant Resources. In *Medicinal and Aromatic Plants* (pp. 691-715). Springer, Cham.
5. **Wani, M.S**., Malik, N.A., Wani, N.A., Tantray, Y.R., 2021. Environmental Pollutants and Their Remediation Using Medicinal and Aromatic Plants. In *Medicinal and Aromatic Plants* (pp. 545-569). Springer, Cham.
6. Malik, N.A., **Wani, M.S**., Wani, N.A., Tantray, Y.R., 2021. Unravel the Mystery of Plant-Microbe Interactions: Biotechnological Perspective. In *Plant-Microbe Dynamics: Recent Advances for Sustainable Agriculture* (pp. 25-38). CRC Press.
7. Malik, N.A., Kumar, J., **Wani, M.S**., Tantray, Y.R., Ahmad, T., 2021. Role of Mushrooms in the Bioremediation of Soil. In *Microbiota and Biofertilizers*, Vol 2 (pp. 77-102). Springer, Cham.
8. Tantray, Y.R., Wani, N.A., **Wani, M.S**., 2021. Role of Metabolomics in Deciphering the plant-microbe interaction. In *Plant-Microbe Dynamics: Recent Advances for Sustainable Agriculture*.
9. A. H, Lone., **Wani, M. S**., Bhat, N. A., Munshi, A. H., Lal, E. P. (2006). Ecology and Distribution Pattern of *Platanus orientalis* L. in Kashmir Himalaya. *Conserving Biological Diversity: A Multiscaled Approach*, 321-332.
10. *Betula*: Ecology and Uses (*Nova Science Publishers*).**Wani, M. S**, Younas Rasheed, Gupta, R.C, Ishrat Jaan
11. Genus *Lactuca*-Its Uses and Cultivation (*Nova Science Publishers*). **Wani, M. S**, Gupta, R.C, Ishrat Jaan.

# BOOK

# *Ethnobotany, Phytochemistry, and Pharmacology of Woody Angiosperms of Northwest Himalayas.* Mohammad Saleem Wani, Younas Rasheed Tantray, Afaq Majid, 2023.

# Plant Physiology and Metabolism. Kalyani Publishers (In Press).

# TEACHING EXPERIENCE

## Teaching Assistant Professor (Botany),

## Govt. Mohindra College, Patiala Punjab, 01/09/2017-29/01/2020

## Teaching Contractual Assistant Professor (Botany)

## Govt. Degree College, Surankote, 07/09/2020-31/05/2021

## Teaching Contractual Assistant Professor (Botany)

## Govt. women’s Degree College, Baramulla, 26/07,2021-26/12/2021

## Teaching Contractual Assistant Professor (Botany)

## Govt. women’s Degree College, Sopore,13/04/2022-26/12/2022

## Teaching Contractual Assistant Professor (Botany)

## Govt. women’s Degree College, Sopore,20/03/2023-26/12/2023

**CONFERENCES, WORKSHOPS**

1. Simultaneous Estimation of Four Triterpenoids, Betulin, Lupeol, Oleanolic Acid, and Betulinic Acid, from Bark, Leaves, and Roots of *Betula utilis* D. Don Using a Validated High Performance Thin-Layer Chromatographic Method. 2019. Plant and Microbial Research: Present Scenario, Punjabi University Patiala.
2. Genus *Quercus*: An Overview. 2nd International Conference on Recent Advances in Engineering Science and Management, 2017. IETE Institute of Electronics and Telecommunication Engineers, Chandigarh, India.
3. Development and Characterization of SSR Markers in Himalayan Birch (*Betula utilis* D. Don). Biodiversity and Climate Change: Challenges and Prospects, 2017. Department of Environmental Sciences, Govt. S.A.M. Degree College, Budgam (J & K).
4. Evaluation of Genetic Diversity in Himalayan Endangered tree species *Betula utilis* using RAPD and ISSR markers. Swarna Jayanti National Conference on Biodiversity and Sustainable Utilization of Plant Resources, 2017. Department of Botany, Kurukshetra University, Kurukshetra.
5. Evaluation of Genetic Diversity in Himalayan Endangered tree species *Betula utilis* using RAPD and ISSR markers. National Symposium on Evaluation and Conservation of Plant Germplasm, 2017. Department of Botany, Punjabi University Patiala.
6. Phytochemical Screening of Bark of *Betula utilis* D. Don. An Important Medicinal Plant of Kashmir Himalaya. Basic and Applied Research in Plants and Microbes, 2016. Department of Botany, Punjabi University Patiala.
7. Reproductive strategies of *Betula utilis* D. DON along the altitudinal gradients of Kashmir Himalaya. 11th JK Science Congress, 2015. Scientific, Social & Economic Dimensions of Climatic Changes. Department of Botany, University of Kashmir
8. Climatic change and its impact on Flowering of *Betula utilis* D. Don growing in Kashmir Himalaya. Environment and Human Health organized by National Environmental Science Academy in association with Department of Botany, Jamia Hamdard, 2012.
9. Distribution Patterns and Morphometric of *Juglans regia* at Different Altitudes of Kashmir Himalaya. 8th J and K Science Congress 2012 on Science, Technology and Regional Development: Opportunities and Challenges. University of Kashmir.
10. Attended a 3 day workshop on Reproductive Biology of Flowering Plants for their Conservation and Improvement Sponsored by Department of Science and Technology Ministry of Science and Technology and University of Delhi, 2013.
11. Basic Molecular Techniques in Biological Research-Oct, 2019, Punjabi University Patiala.

**WEBINARS**

1. Drug Discovery from Biodiversity: Targeting Iron. Department of Botany Kurukshetra University, Kurukshetra. June19th, 2020.
2. Establishing a Sustainable Entrepreneurship Ecosystem in Institutions of Higher Learning. DEPARTMENT OF BIOTECHNOLOGY. Central University of Kashmir. Ministry of HRD, Govt. of India. June 24th, 2020.
3. Forest, Environmement and Wildlife- Status and Development in the 21st Century. Sam Higginbottom University of Agriculture, Technology and Sciences. August 04, 2020.

# REFERENCES

1. **Dr. R. C. Gupta, Department of Botany, Punjabi University Patiala, India, guptarc53@rediffmail.com**
2. **Dr. V. K. Singhal. Department of Botany, Punjabi University Patiala, India, vksinghal56@gmail.com**
3. **Dr. Vikas Sharma, Department of Botany, Punjabi University Patiala, India,** **vikasam@gmail.com**