

Government Degree College for Boys, Khanabad, Anantnag

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EDUCATION

PhD, 2012

Thesis title: "Developmental and metabolic changes in *Psoralea corylifolia* L. with reference to ionising radiation". Department of Botany, Jamia Hamdard, New Delhi, India 110062

MSc, 2007

MSc Thesis: "Physiochemical assessment and antioxidant response of impact of chromium stress in *Brassica juncea* L." Department of Botany, Jamia Hamdard, New Delhi, India 110062

BSc (General Science), 2006

Government Degree College

Anantnag, Jammu and Kashmir, India

AWARDS

- MHRD Korean Government Scholarship (2007)
- DBT Postdoctoral Research Associate (2012)
- BioCARE Early Career Scientist Award (2014)
- DST Fast track Young Scientist Award (2015)
- ASRB NET (2017)
- CSIR Senior Research Associate/Pool Scientist Scheme (2018)

RESEARCH & TEACHING EXPERIENCE

1. Worked as Young scientist on project entitled:
 - "Ecological significance of UV screens in the distribution of UV-B flux and PAR within genus *Rumex* across North Western Himalaya." Funded by Department of Biotechnology, Ministry of Science and Technology. Govt. of India.
 - "Genetic, agro-morphological and phytochemical characterization of *Origanum vulgare* L. for marker assisted improvement of pharmaceutical quality." Funded by Science &

Engineering Research Board (SERB), Department of Science and Technology, Ministry of Science and Technology. Govt. of India.

- *In vivo* regeneration and quality analysis of diverse ecotypes of *Kalazeera Bunium persicum* (Boiss.) Fedtsch for enhancing livelihood security of Tribal framers in Jammu and Kashmir” funded by Council of Scientific & Industrial Research (CSIR), Govt. of India.
- Worked as Academic arrangement in SP College Srinagar from March 2021-December 2022).
- Worked as Academic arrangement in Government Degree College Kokernag from April, 2022- December 2022).

CITATION INDICES SINCE, 2010

Citations: 3573

h-index: 28

i10- index: 54

PUBLICATIONS

Research Articles

1. Tawseef Ahmad, Anshula Sharma, Gaganjot Gupta, Sheikh Mansoor, **Sumira Jan**, Baljinder Kaur, Bilal Ahmad Paray, Ajaz Ahmad. A. Ahmad, Response surface optimization of Cellulase Production from *Aneurinibacillus aneurinilyticus* BKT-9: An Isolate of Urban Himalayan Freshwater, *Saudi Journal of Biological Sciences* (2020), doi: [https://doi.org/ 10.1016/j.sjbs.2020.04.036](https://doi.org/10.1016/j.sjbs.2020.04.036)
2. Mudasir A Mir, Shabir Ahmad Ganai, Sheikh Mansoor, **Sumira Jan**, P Mani, Khalid Z Masoodi, Henna Amin, Muneeb U Rehman, Parvaiz Ahmad. Isolation, purification and characterization of naturally derived Crocetin beta-d-glucosyl ester from *Crocus sativus* L. against breast cancer and its binding chemistry with ER-alpha/HDAC2. *Saudi Journal of Biological Sciences*, 2020, 27(3), 975-984.
3. **Sumira Jan**, Megna Rashid, Elsayed F Abd_Allah, Parvaiz Ahmad. Biological Efficacy of Essential Oils and Plant Extracts of Cultivated and Wild Ecotypes of *Origanum vulgare* L. *BioMed research international*, 2020, 8751718.

4. Mohammad Yaseen Mir, Azra N Kamili, Qazi P Hassan, Sabreena Rafi, Javid A Parray, **Sumira Jan**. In Vitro Regeneration and Free Radical Scavenging Assay of *Hypericum perforatum* L. *National Academy Science Letters*, 42(2), 161-167.
5. Sheikh Mansoor, Nazeer Ahmed, Vikas Sharma, **Sumira Jan**, Sajad Un Nabi, Javid I Mir, Mudasir A Mir, Khalid Z Masoodi. Elucidating genetic variability and population structure in *Venturia inaequalis* associated with apple scab disease using SSR markers. *PloS one*, 2019, 14(11)
6. Wajida Shafi, Sheikh Mansoor, **Sumira Jan**, Desh Beer Singh, Mohsin Kazi, Mohammad Raish, Majed Alwadei, Javid Iqbal Mir, Parvaiz Ahmad. Variability in Catechin and Rutin Contents and Their Antioxidant Potential in Diverse Apple Genotypes. *Molecules*, 2019, 24(5), 943.
7. **Sumira Jan**, Mohammed Nasser Alyemeni, Leonard Wijaya, Pravej Alam, Kadambot H Siddique, Parvaiz Ahmad. Interactive effect of 24-epibrassinolide and silicon alleviates cadmium stress via the modulation of antioxidant defense and glyoxalase systems and macronutrient content in *Pisum sativum* L. seedlings. *BMC plant biology*, 2018, 18(1), 146.
8. **Sumira Jan**, Javid Iqbal Mir, Wajida Shafi, Shafia Zaffer Faktoo, Desh Beer Singh, Leonard Wijaya, MN Alyemeni, Parvaiz Ahmad. Divergence in tissue-specific expression patterns of genes associated with the terpenoid biosynthesis in two oregano species *Origanum vulgare* L., and *Origanum majorana*. *Industrial Crops and Products*, 2018, 123, 546-555.
9. Talat Parween, **Sumira Jan**, Tasneem Fatma. Variation in elemental composition as influenced by chlorpyrifos application in mung bean (*Vigna radiata* L.). *Saudi Journal of Biological Sciences*, 2018, 25(7), 1439-1445.
10. **Sumira Jan**, Javid Iqbal Mir, Desh Beer Singh, Shafia Zaffar Faktoo, Anil Sharma, Mohammad Nassar Alyemeni, Parvaiz Ahmad. Effect of environmental variables on phytonutrients of *Origanum vulgare* L. in the sub-humid region of the northwestern Himalayas. *Environmental monitoring and assessment*, 2018, 190(10), 571.
11. Javid Iqbal Mir, Sajad Un Nabi, OC Sharma, Anil Sharma, Shiv Lal, Desh Beer Singh, Wasim H Raja, KL Kumawat, Muneer A Sheikh, Wajida Shafi, **Sumairah Jan**, Aadil Afzal. Effect of Different media supplemented with Plant Growth Regulators for

- Enhancement of Corm multiplication in Saffron (*Crocus sativus* L.) under protected conditions. *Bull. Env. Pharmacol. Life Sci*, 2018, 7(36).
12. Uzma Noor Shah, Javid Iqbal Mir, Nazeer Ahmed, **Sumira Jan**, Khalid Majid Fazili. Bioefficacy potential of different genotypes of walnut *Juglans regia* L. *Journal of food science and technology*, 2018,55(2), 605-618.
 13. Javid A Parray, Azra N Kamili, **Sumira Jan**, Mohammad Yaseen Mir, Nowsheen Shameem, Bashir A Ganai, Elsayed Fathi Abd_Allah, Abeer Hashem, Abdulaziz A Alqarawi. Manipulation of Plant Growth Regulators on Phytochemical Constituents and DNA Protection Potential of the Medicinal Plant *Arnebia benthamii*. *BioMed research international*, 2018.
 14. Muneer Ahmad Sheikh, K Bhat, J Mir, M Mir, Sajad Un Nabi, Hilal Ahmad Bhat, Wajida Shafi, Shafia Zaffer, **Sumaira Jan**, Waseem H Raja. Phenotypic and molecular screening for diseases resistance of apple cultivars and selections against apple scab (*Venturia inaequalis*). *IJCS*,2017, 5(4), 1107-13.
 15. **Sumira Jan**, Azra N Kamili, Javid A Parray, Yashbir S Bedi, Parvaiz Ahmad. Microclimatic variation in UV perception and related disparity in tropane and quinolizidine alkaloid composition of *Atropa acuminata*, *Lupinus polyphyllus* and *Hyoscyamus niger*. *Journal of photochemistry and photobiology. B, Biology*, 2016, 161, 230-235.
 16. Javid A Parray, Azra N Kamili, Zafar A Reshi, Raies A Qadri, **Sumira Jan**. Interaction of rhizobacterial strains for growth improvement of *Crocus sativus* L. under tissue culture conditions. *Plant cell, tissue, and organ culture*, 121(2), 325-334.
 17. Javid A Parray, Rehana Hamid, Azra N Kamili, Nowsheen Shameem, **Sumira Jan**, Bashir A Ganai. Biological efficacy and radical scavenging potential of shikonin in *Arnebia benthamii* (Wall ex. G Don) Johnston. *Industrial Crops and Products*, 2015,74, 434-439.
 18. **Sumira Jan**, Azra N. Kamili, Javid A. Parray, Yashbir S. Bedi. Differential response of terpenes and anthraquinones derivatives in *Rumex dentatus* and *Lavandula officinalis* to harsh winters across north-western Himalaya. *Natural product research*, 2016, 30(5), 608-612 .
 19. **Sumira Jan**, Talat Parween, Rehana Hameed, Tariq O. Siddiqi . Mahmooduzzafar. Elemental, biochemical and essential oil modulation in developing seedlings of *Psoralea corylifolia* L. exposed to different presowing gamma irradiation treatment. *Journal of Essential Oil Research*, 2015,27(6).

20. **Sumira Jan**, Talat Parween, Rehana Hameed, Tariq O Siddiqi. Effects of presowing gamma irradiation on the photosynthetic pigments, sugar content and carbon gain of Cullen corylifolium (L.) Medik. *Chilean journal of agricultural research*, 2013, 73(4), 345-350.
21. Talat Parween, **Sumira Jan**, Mahmooduzzafar, Tasneem Fatma. Differential response of *Vigna radiata* L. to varied doses of chlorpyrifos. *Journal of plant nutrition*, 2013,36(10), 1565-1577.
22. Qurratul, **Sumira Jan**, Riyazzuddin Khan, TO Siddiqi. Soil amendments of fly ash: effects on function and biochemical activity of *Carthamus tinctorius* L. plants. *Israel Journal of Plant Sciences*, 2013,61(1-4), 12-24.
23. **Sumira Jan**, Azra N Kamili, Rehana Hamid, Javid A Parray. Variation in adaptation mechanisms of medicinal herbs to the extreme winter conditions across the North Western Himalaya. *Israel Journal of Plant Sciences*, 2013,61(1-4), 1-11.
24. **Sumira Jan**, Talat Parween, TO Siddiqi. Anti-oxidant modulation in response to gamma radiation induced oxidative stress in developing seedlings of *Psoralea corylifolia* L. *Journal of environmental radioactivity*,2012, 113, 142.
25. Talat Parween, **Sumira Jan**, T Fatma. Evaluation of oxidative stress in *Vigna radiata* L. in response to chlorpyrifos. *International Journal of Environmental Science and Technology*, 9(4),2012, 605-612.
26. **Sumira Jan**, Talat Parween, TO Siddiqi. Enhancement in furanocoumarin content and phenylalanine ammonia lyase activity in developing seedlings of *Psoralea corylifolia* L. in response to gamma irradiation of seeds. *Radiation and environmental biophysics*, 2012, 51(3), 341-347.
27. Talat Parween, **Sumira Jan**, Tasneem Fatma. Alteration in nitrogen metabolism and plant growth during different developmental stages of green gram (*Vigna radiata* L.) in response to chlorpyrifos. *Acta physiologiae plantarum*, 2011, 33(6), 2321.
28. **Sumira Jan**, Talat Parween, TO Siddiqi. Gamma radiation effects on growth and yield attributes of *Psoralea corylifolia* L. with reference to enhanced production of psoralen. *Plant Growth Regulation*, 2011. 64(2), 163-171.
29. Talat Parween, **Sumira Jan**, MP Sharma, Abdul Mujib, Tasneem Fatma. Genotoxic impact of cadmium on root meristem of *Vicia faba* L. *Russian Agricultural Sciences*, 2011, 37(2), 115-119.

30. **Sumira Jan**, Parween Talat, TO Siddiqi, Ahmed Altaf. The antioxidative response system in Brassica juncea L. cv. pusa Jai Kisan. Exposed to hexavalent chromium. *World Journal of Agricultural Sciences*, 2010, 6(4), 425-433.

31. **Sumira Jan**, Talat Parween, TO Siddiqi. Comparative effect of Azotobacter, Mycorrhizal inoculum and nitrogen fertilizer on biochemical, growth and productivity aspects in Vicia faba l. *American-Eurasian Journal of Sustainable Agriculture*, 2009, 684-694.

2. Reviews:

1. **Sumira Jan**, Nazia Abbas, Muhammad Ashraf, Parvaiz Ahmad. Roles of potential plant hormones and transcription factors in controlling leaf senescence and drought tolerance. *Protoplasma*, 2019, 256(2), 313-329.

2. Uzma Noor Shah, Javid I Mir, Ahmed Nazeer, Abbu Zaid, **Sumira Jan**, Khalid M Fazili, Shabir H Wani. Bio-techniques for improvement of qualitative and quantitative traits in walnut (*Juglans regia*). *Advances in Horticultural Science*, 2018, 32(1), 113

3. Arafat Abdel Hamed Abdel Latef, Abeer Hashem, Saiema Rasool, Elsayed Fathi Abd_Allah, AA Alqarawi, Dilduza Egamberdieva, **Sumira Jan**, Naser A Anjum, Parvaiz Ahmad. Arbuscular mycorrhizal symbiosis and abiotic stress in plants: a review. *Journal of Plant Biology*, 2016, 59(5), 407-426.

4. Javid A Parray, **Sumira Jan**, Azra N Kamili, Raies A Qadri, Dilduza Egamberdieva, Parvaiz Ahmad. "Current Perspectives on Plant Growth-Promoting Rhizobacteria." *Journal of Plant Growth Regulation* 35, no. 3 (2016): 877.

5. Talat Parween, **Sumira Jan**, Sumira Mahmooduzzafar, Tasneem Fatma, Zahid Hameed Siddiqui. Selective effect of pesticides on plant – A review. *Critical reviews in food science and nutrition*, 56(1), 2016, 160-179.

6. **Sumira Jan**, Azra Nahaid Kamili, Talat Parween, Rehana Hamid, Javid A Parray, TO Siddiqi, Mahmooduzzafar, Parvaiz Ahmad. Feasibility of radiation technology for wastewater treatment." *Desalination and Water Treatment* 55, no. 8 (2015): 2053-2068.

7. **Sumira Jan**, Talat Parween, TO Siddiqi. Effect of gamma radiation on morphological, biochemical, and physiological aspects of plants and plant products. *Environmental Reviews*, 2012, 20(1), 17-39.

3. Chapters

1. Javid A Parray, **Sumira Jan**, Mohammad Yaseen Mir, Nowsheen Shameem, Azra N Kamili. Quorum Sensing: Melody Beneath the Ground. In *Plant Microbiome: Stress Response* (pp. 201-215).2018, Springer, Singapore.
2. Talat Parween, Pinki Bhandari, Ranju Sharma, **Sumira Jan**, Zahid Hameed Siddiqui, PK Patanjali. Bioremediation: a sustainable tool to prevent pesticide pollution. In *Modern Age Environmental Problems and their Remediation* (pp. 215-227), 2018, Springer, Cham.
3. Talat Parween, Pinki Bhandari, Zahid Hameed Siddiqui, Sumira Jan, Tasneem Fatma, PK Patanjali. "Biofilm: A Next-Generation Biofertilizer." In *Mycoremediation and Environmental Sustainability*, pp. 39-51. Springer, Cham, 2017.
4. Talat Parween, Pinki Bhandari, **Sumira Jan**, Tasneem Fatma, SK Raza. "Role of Bioinoculants as Plant Growth-Promoting Microbes for Sustainable Agriculture." *Agriculturally Important Microbes for Sustainable Agriculture: Volume I: Plant-soil-microbe nexus* (2017): 183.
5. Dagmar Procházková, **Sumira Jan**, Elsayed Fathi Abd-Allah, Parvaiz Ahmad. Water stress in grapevine (*Vitis vinifera* L.). *Water Stress and Crop Plants: A Sustainable Approach*, 2016,2, 412-421.
6. Fabio Stagnari, **Sumira Jan**, Angelica Galieni, Michele Pisante. Sustainable agricultural practices for water quality protection. *Water Stress and Crop Plants: A Sustainable Approach*, 2016, 1, 75-85.
7. Zoya Siddique, **Sumira Jan**, Sameen Ruqia Imadi, Alvina Gul, Parvaiz Ahmad. Drought stress and photosynthesis in plants." *Water Stress and Crop Plants: A Sustainable Approach* 1 (2016): 1-11.
8. AAH Abdel Latef, **Sumaira Jan**, Elsayed Fathi Abd-Allah, Bushra Rashid, Riffat John, Parvaiz Ahmad. Soybean under abiotic stress: proteomic approach." *Plant-Environment Interaction: Responses and Approaches to Mitigate Stress*(2016).
9. Khushboo Chaudhary, **Sumira Jan**, Suphiya Khan. Genes in Hyperaccumulation Mechanism of Heavy Metals. In *Plant Metal Interaction* (pp. 545-556).2016, Elsevier.
10. **Sumira Jan**, Bushra Rashid, MM Azooz, Mohammad Anwar Hossain, Parvaiz Ahmad. Genetic Strategies for Advancing Phytoremediation Potential in Plants: A Recent Update." In *Plant Metal Interaction*, pp. 431-454. Elsevier, 2016.

11. Talat Parween, Pinki Bhandari, **Sumira Jan**, SK Raza. Interaction Between Pesticide and Soil Microorganisms and Their Degradation: A Molecular Approach." *Plant, Soil and Microbes*, 2016, 23.
12. Fozia Bashir, **Sumira Jan**. Oxidative stress and antioxidant defence systems in response to pesticide stress. *Legumes under Environmental Stress: Yield, Improvement, and Adaptations*, 2015, 103-123.
13. Talat Parween, Dewa Ram Bajya, **Sumira Jan**, SK Raza. "Pesticide Tolerance and Crop Production." *Crop Production and Global Environmental Issues* (2015): 79.
14. Qaisar Mahmood, Muhammad Bilal, **Sumira Jan**. Herbicides, pesticides, and plant tolerance: an overview. In *Emerging technologies and management of crop stress tolerance* (pp. 423-448). Academic Press.
15. Leonora M Mattos, Celso L Moretti, **Sumira Jan**, Steven A Sargent, Carlos Eduardo P Lima, Mariana R Fontenelle. Climate changes and potential impacts on quality of fruit and vegetable crops, in Ahmad P, ed., *Emerging Technologies and Management of Crop Stress Tolerance*, 2014, Volume 1. Chapter Nine
16. Aykut Sağlam, **Sumira Jan**. Importance of protective compounds in stress tolerance. In *Physiological Mechanisms and Adaptation Strategies in Plants Under Changing Environment* (pp. 265-284). 2014, Springer, New York, NY.

Books

1. **Sumira Jan**, Javid Ahmad Parray. *Approaches to heavy metal tolerance in plants*. Singapore: Springer, 2016
2. **Sumira Jan**, Nazia Abbas. *Himalayan Phytochemicals*; Jan, S., Elsevier: Amsterdam, The Netherlands, 2018.
3. Talat Parween, **Sumira Jan**. *Ecophysiology of Pesticide: Interface between pesticide chemistry and plant physiology*. 1 st Edn. Academic Press Elsevier, United Kingdom, 2019, 332.
4. **Sumira Jan**, Parvaiz Ahmad. *Ecometabolomics: Metabolic Fluxes Versus Environmental Stoichiometry*. 2019, Academic Press.
5. **Sumira Jan**, Gowhar Hussain Bhat. *Radiation Spectrum and Plant Metabolism: Interaction of Radiation Spectrum with Sub Cellular Ecosystem Level*. 2026, Academic Press.

1. INTERNATIONAL & NATIONAL CONFERENCES

1. Uzma Majid , **Sumira Jan**, Mahmooduzzafar and T.O.Siddiqi (2007). pact assessment of mercury on the growth an development of *Solanum melongena* L. Internationl conference on the status of biological sciences in Caribbean and Latin American Societies, Guyana held at university of Guyana, Greater Georgetown , 24-25 September, p.31.

2. **Sumira Jan**, Uzma Majid, Altaf ahmed, T O.Siddiqi and Mahmooduzzafar (2007) Impact assessment of chromium on the oxidative defence system of *Brassica juncea* L.Cv.Pusa Jai Kisan: International conference on the status of biological sciences in Caribbean and Latin American Societies, Guyana held at university of Guyana, Greater Georgetown, 24-25 september,p.19.

3. Presented paper entitled “Interactive effect of bio-fertilizers and chemical fertilizers on the growth of *Vicia faba* L.” authored by **Sumira Jan**, Uzma Majid, Altaf Ahmed, T.O. Siddiqi and Mahmooduzzafar. National Symposium on Environmental Stress and Bioresource Management and 28th Annual session of Academy of Environmental Biology, October 16-18.(2008)

4. **Sumira Jan**, Uzma Majid, Altaf Ahmed, T.O.Siddiqi and Mahmooduzzafar. Interactive effect of bio fertilizers and chemical fertilizers on the growth of *Vicia faba* L.9 2009). National Symposium on Environmental Stress and Bioresource Management and 28th Annual session of Academy of Environmental Biology.

5. **Sumira Jan**, Talat Parween, Rehana Hamid, T.O.Siddiqi and Mahmooduzzafar. Presowing gamma irradiation to enhance volatile components of *Psoralea corylifolia* L. seeds using GC-MS and SPME analysis (2012). National Seminar on Advances in Biosciences. 12th June

6. **Sumira Jan**, Talat Parween, Rehana Hamid, Javid Parray T.O.Siddiqi and Mahmooduzzafar (2014). Effect of gamma irradiation on biochemical aspects and elemental composition in developing seedlings of medicinally important herb *Psoralea corylifolia* L. JK Science congress.

7. Presented paper entitled “Presowing gamma irradiation to enhance volatile components of *Psoralea corylifolia* L. seeds using GC-MS and SPME analysis” authored by **Sumira Jan**, Talat Parween, Rehana Hamid, T.O.Siddiqi and Mahmooduzzafar . National Seminar on Advances in Biosciences. 12th June 2012.

8. Presented paper entitled "Effect of gamma irradiation on biochemical aspects and elemental composition in developing seedlings of medicinally important herb *Psoralea corylifolia* L. " authored by **Sumira Jan**, Talat Parween, Rehana Hamid, Javid Parray T.O.Siddiqi and Mahmooduzzafar. JK Science congress 16-17th September 2012.

9. Presented paper entitled "Altitudinal variation in non-enzymatic and enzymatic activities of selected North Western Himalayan herbs" authored by **Sumira Jan**, Azra N. Kamili, Rehana Hamid, Javid A. Parray, Sumira Tyub, Sana Syed, Mansoor Bhat. JK Science congress 10-13th September 2013.

10. Presented Poster entitled "Ecological significance of UV screens in the distribution of UV-B flux and PAR within genus *Rumex* across North Western Himalaya." Young Investigator's Meeting, 27th march-1st, April, 2015.

LANGUAGE PROFICIENCY AND COMMUNICATION SKILLS

1. Subject expert in development of e-contents in UGC sponsored programme to EMMRC, Kashmir University in collaboration with Centre of Research for Development.
2. Reviewer in reputed journals of Springer, Taylor and Francis and Elsevier.
3. Delivered radio talks shows on environmental issues, scientific innovations and research development.

