

Dr. Shachi Singh

Assistant Professor

Botany Section, Mahila MahaVidyalaya,
Banaras Hindu University,
Varanasi-221005

Phone: 9414675102

Email: singhshachi@gmail.com; shachi.botmmv@bhu.ac.in

**EDUCATIONAL QUALIFICATION**

- **Ph.D.** from Department of Biological Sciences, Birla Institute of Technology and Sciences (BITS), Pilani, 2012
- **M.E.** in Biotechnology from Department of Biological Sciences, Birla Institute of Technology and Sciences (BITS), Pilani, 2005
- **M.Sc.** in Botany (2002) from Banaras Hindu University, 2002
- **B.Sc.** in Botany (Hons.) from Banaras Hindu University, 2000

AREA OF SPECIALIZATION

- Extraction, isolation and functional characterization of natural products
- Metabolomic study of bioactive compounds through analytical techniques
- Secondary metabolite production in plants through biotic and abiotic elicitors
- Study of induced systemic resistance in plants through stress signals

AWARDS

- Senior Research Fellow (SRF) of Council of Scientific and Industrial Research (CSIR), New Delhi (2010-2012).
- Junior Research Fellow (JRF) of Council of Scientific and Industrial Research (CSIR), New Delhi (2007-2010).
- Cleared National Eligibility Test for Lecturership (NET), jointly conducted by Council of Scientific and Industrial Research (CSIR) and University Grant Commission (UGC), India, 2003.

EXPERIENCE IN ADMINISTRATION

Working as Warden of SwastiKunj hostel, MMV, BHU

RESEARCH PROJECT

Principle investigator of DST-SERB (New Delhi, India) project under “Young scientist” scheme, entitled “Enhancing phytochemical production by the use of elicitors”, (2013-2016), amount of project- 23 lakh

PAPERS IN PEER REVIEWED JOURNALS

1. Nagappan, S., Kumar, R.R., Balaji, J.R., Singh, S. and Verma, S.K. 2018. Direct saponification of wet microalgae by methanolic potassium hydroxide using acetone as co-solvent, *Bioresource Technology Reports*
2. Singh, S. and Verma, S.K. 2016. Synergistic Effects of the Alkaloids of *Prosopisjuliflora*, Causing Multiple Organ Toxicity in Mouse Model. *Journal of Biologically Active Products from Nature*, 6(4), 323-336.
3. Singh, S. 2016. Enhancing phytochemical levels, enzymatic and antioxidant activity of spinach leaves by chitosan treatment and an insight into the metabolic pathway through DART-MS technique. *Food Chemistry*, 199, 176–184.
4. Singh, S. 2014. A review on possible elicitor molecules of cyanobacteria: their role in improving plant growth and providing tolerance against biotic or abiotic stress. *Journal of Applied Microbiology*, 117, 1221-1244.
5. Singh, S. and Verma, S.K. 2012. Study of the distribution profile of piperidine alkaloids in various parts of *Prosopisjuliflora* by the application of Direct Analysis in Real Time Mass Spectrometry (DART-MS). *Natural Product and Bioprospecting*, 2 (5): 206-209.
6. Singh, S. and Verma, S.K. 2012. Application of direct analysis in real time mass spectrometry (DART-MS) for identification of an epiphytic cyanobacterium, *Nostoc* sp. *Analytical Letters*, 45(17): 2562-2568.
7. Singh, S. 2012. Phytochemical analysis of different parts of *Prosopisjuliflora*. *International Journal of Current Pharmaceutical Research*, 4(3), 59-61
8. Singh, S. 2012. Isolation and identification of pigment molecules from leaves of *Prosopisjuliflora*. *International research journal of pharmacy*, 3(4), 150-152
9. Singh, S. 2012. Antimitotic activity of a New Compound Isolated from the Flower of *Prosopisjuliflora*. *Research Journal of Recent Sciences*, 1(6), 1-8.
10. Singh, S., Swapnil and Verma, S.K. 2011. Antibacterial properties of Alkaloid rich fractions obtained from various parts of *Prosopisjuliflora*. *International Journal of Pharma Science and Research*. 2(3):114-120.

BOOK CHAPTER

11. Singh, S. 2016. “Role of non-pathogenic fungi in inducing systemic resistance in crop plants against phytopathogens” in “Microbial Inoculants in Sustainable Agricultural Productivity”, pp, 69-83, Springer

CONFERENCES

1. Singh, S. and Verma, S.K. 2018. Investigating chemical diversity in cyanobacteria through DART-MS. Symposium on Advances in Biology of Algae and Cyanobacteria, BHU

2. Singh, S. 2018. Effect of chemical elicitors on the metabolite profile of spinach plant. Trends in Biochemical and Biomedical Research: Advances and Challenges, BHU (13.2.2018)
3. Singh, S. 2016. Elicitation of spinach plant with chitosan causes an increase in its phytochemical levels and enzymatic activity. BITS Conference on Gene and Genome Regulation . BITS, Pilani (18.2.2016)
4. Singh, S. 2014. Elicitation of plants by the application of cyanobacterial metabolites. International Conference on Beneficial Microbes, Penang, Malaysia (26.5.2014)
5. Singh, S. and Verma S.K, 2011. Antibacterial and cytogenotoxic potential of the alkaloids extracted from various parts of *Prosopis juliflora*. National Conference on Contemporary Trends in Biological and Pharmaceutical Research, BITS, Pilani, p50 (15.4.2011)
6. Singh, S. Swapnil and Verma S.K. 2009. Toxicology study of *Prosopis juliflora*. Emerging Trends in Biotechnology, BHU, Varanasi, p81 (2.12.2009)
7. Singh, S. and Verma, S.K. 2009. Antiinflammatory effect of phycocyanin on arachidonic acid induced inflammation in rabbit eye. Emerging Trends in Life Sciences Research. BITS, Pilani, p45.(6.3.2009)
8. Singh, S., Runthala, A. and Verma, S.K. 2008. Antibacterial activity of partially purified leaf extract of *Prosopis juliflora* collected from regions near to pilani. International Conference on the interface of chemistry-biology in Biomedical Research, BITS, Pilani, p89.(22.2.2008)
9. Singh, S., Singh, P. and Verma, S.K. 2007. *In vitro* antibacterial activity and phytochemical analysis of some Indian desert plants. International Symposium on Applied Phycology and Environmental biotechnology, BITS, Pilani.(29.10.2007)
10. Singh, S. and Verma, S.K.2007. Evaluation of *invitro* antioxidant capacities of phycocyanin and phenolic compounds from cyanobacterial strains. International Symposium on Applied Phycology and Environmental biotechnology, BITS, Pilani, p75.(29.10.2007)