

BIO- DATA

1. **Name** : DAVINDER PAL SINGH
 2. **Designation** : Professor
 3. **Department** : BOTANY
 4. **Date of Birth** : 30.5.1964
 5. **Address for Correspondence** : 34/8, Anand Nagar-B, Patiala -
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6. **Areas of Specialisation** : Phycology (Physiology & Biochemistry of Cyanobacteria)

7. **Academic Qualifications:**

Sr. no.	Degree Held	Year of Completing	Board/University/	Subjects Taken
1	B.Sc.	1984	Punjabi University Patiala	Botany, Zoology, Chemistry
2	M.Sc.	1986	Punjabi University Patiala	Botany
3	Ph.D.	1993	Punjabi University Patiala	Life-Sciences

8. **Membership of Professional Bodies/Organisations**

- i) Indian Association of Biology Teachers (I.A.B.T.)
- ii) Biotech Research Society of India (BRSI)
- iii) Indian Botanical Society (IBS)
- iv) Association of Microbiologists of India (AMI)
- v) Counsellor, Indian Botanical Society

9. **Medals/Awards/Honours/Received** Nil

10. **Scholarships:** Nil

11. **Details of Experience:**

S. No.	Name of the Inst./Employer	Position Held	Duration	Major Job Responsibilities and Nature of Experience
1.	Mata Gujri College, Fatehgarh Sahib	Lecturer	1 Year	Teaching
2.	Guru Nanak College, Budhlada	Lecturer	1 Year	Teaching
3.	Khalsa College For Women, Sidhwan Khurd, Ludhiana	Lecturer	6 yrs. 4 months	Teaching
4.	Department of Botany, Punjabi University Patiala	Assistant Professor	7 year	Teaching & Research
5.	Department of Botany, Punjabi University, Patiala	Associate Professor	3 Years	Teaching and Research
6.	Department of Botany, Punjabi University, Patiala	Professor	20.02.2016 to Continue	Teaching and Research

12. Published Work (Please specify numbers only): 33

- a. Research Papers i) National = 10
 ii) International = 33
 b. Conference/Seminar Presentation 35
 c. Books 01
 i) Original :
 ii) Edited : 01

Title of Book: Algal Biology and Biotechnology (2009), IK International publishing House Pvt. Ltd, New Delhi. Pages 265

13. R & D Projects 04

1. Evaluation of Cyanobacterial Strains from Paddy Fields for Pesticide Degradation (2007- 10).
2. A Search for Cyanobacterial Strains Producing Novel Exopolysachharides (2008-12)
3. Diversity Analysis and Bioprospecting of Thermophilic Cyanobacteria from North Western Himalayas for Industrial Value Addition (2013-2016)
4. Optimization and Lab Scale Production of Carotenoids from Microalgae (2016 to Continue)

14. Invited Talks/Articles 05

15. Ph.D. Students under guidance (Details): 04

S. No.	Name of the Student	Title of Thesis	Year of Completion
1.	Gurdeep Kaur	Interaction of Pretilachlor Herbicide with Carbon and Nitrogen metabolism of the cyanobacterium <i>Nostoc muscorum</i>	2016
2.	Menu Gupta	Responses of the Cyanobacterium <i>Leptolyngya foveolarum</i> to Cartap Hydrochloride	2016
3.	Jeevesh Nadda	Characterization and Otimization of Chlorpyrifos Removal and Tolerance Mechanism in the Canobacterium <i>Synechocystis</i> sp. Strain PUPCCC 64	2017
4.	Shveta	Evaluation of Cyanobacteria from Diverse Habitats for Production and Stability of Phycobiliproteins	Continue
5.	Alka	Optimization, Quantification and Purification of Carotenoids from Selected Microalgae	Continue
6.	Manzoor Ahmed Bhatt	Characterization of Pendimethalin Tolerance Mechanism in the Diazotrophic Cyanobacterium <i>Desmonostoc muscorum</i> PUPCCC 405.10	Continue

16. M.Phil./Tech Students guided: 03

S. No.	Name of the Student	Title of Thesis	Year of Completion
1.	Baljinder Singh	Effect of Anilofos on Growth and Stress Enzymes of <i>Oscillatoria simplicissima</i> and <i>Anabaena torulosa</i>	2009

2.	Mandeep Kaur	Characterization of Anilofos Tolerance by Cyanobacterium <i>Synechocystis</i> sp. PUPCCC 64	2012
3	Alka	Effect of Pretilachlor on Photosynthesis, Respiration and Nitrogen Assimilation of Cyanobacterium <i>Synechocystis</i> sp. PUPCCC 64	2013

17. List of Papers/Courses taught at P.G. and U.G. Level

S. No.	Paper	Class
1.	Biology and Diversity of algae and Bryophytes, Taxonomy of Angiosperms, Plant Physiology and Plant Metabolism,	M.Sc.-I
2.	Taxonomy of Angiosperms	M.Sc-I
3.	Cyanobacteria and Algae	M.Sc.-I (FYIC)
4.	Advances in Botany-I	M.Sc. Hons (Botany) FYIC-IV)
5.	Advanced Phycology	M.Sc. Hons (Botany) FYIC-V

18. Technical Proficiency

Techniques of Physiology and Biochemistry of Cyanobacteria.

19. List of Papers Published:

1. T.A. Sarma and **D.P. Singh** (1994). Isolation and characterization of temperature– sensitive mutants of *Anabaena variabilis* impaired in nitrogen fixation. *Folia Microbiol.* 39(4):296-300.
2. T.A. Sarma and **D.P. Singh** (1995). Temperature- sensitive photosynthesis deficient mutants of the cyanobacterium *Anabaena variabilis* impaired in nitrogen assimilation. *Folia Microbiol.* 40(5): 511-515.
3. T.A. Sarma and **D.P. Singh** (1996). Temperature- sensitive photosynthesis deficient mutants of the *Anabaena variabilis* show enhanced ultra-violet sensitivity and loss of repair mechanism. *Folia Microbiol.* 41(2): 181-186.
4. T.A. Sarma and **D.P. Singh** (1996). Microaerophilic growth and nitrogen fixation by temperature sensitive mutants of the *Anabaena variabilis* at the restrictive temperature. In “Proceeding of the National Symposium On Current Research In Plant Sciences Vol. II.” Eds. T.A. Sarma, S.S. Saini, M.L. Trivedi & M. Sharma. Pp 35-41.
5. J.I.S. Khattar, T.A. Sarma and **D.P. Singh** (1999). Removal of chromium ions by agar immobilized cells of the cyanobacterium *Anacystis nidulans* in a continuous flow bioreactor. *Enzymes and Microbial Technol.* 25: 564-568.
6. J.I.S. Khattar, **D.P. Singh** and T.A. Sarma (2002). Characterization and optimization of chromium uptake by alginate immobilized cells of *Anacystis nidulans* in a continuous flow bioreactor. In: *Biotechnology in Agriculture and Environment.* Eds. J.K. Arora, S.S. Marwaha & R. Grover. Asiatic Publishers Inc., New Delhi. pp 182-189.

7. J.I.S. Khattar, **D.P. Singh**, T.A. Sarma and Anuradha Sharma (2002). Bioaccumulation of chromium ions by immobilized cells of a filamentous cyanobacterium *Anabaena variabilis*. J. Microbiol. Biotechnol. 12(1): 137-41.
8. **D.P. Singh**, J.I.S. Khattar, G. Kaur and Y. Singh (2009). Cyanobacterial diversity in rice fields of Malwa region of Punjab and their tolerance to chlorpyrifos. J. Punjab Acad. Sci. 4 (1&2): 106-113.
9. **D.P. Singh**, J.I.S. Khattar, and Y. Singh (2009). Effect of pesticides on the distribution pattern of cyanobacteria in a rice field ecosystem. J. Indian Bot. Soc. 88 (1&2): 163-169.
10. G. Kaur , J.I.S. Khattar, **D.P. Singh**, Y. Singh and J. Nadda (2009). Microalgae: A source of natural colours. In: J.I.S. Khattar, D.P. Singh and G. Kaur (Eds). Algal Biology and Biotechnology. I. K. International Publishing House Pvt. Ltd. New Delhi. pp 129-150.
11. N. Jindal, **D.P. Singh** and J.I.S. Khattar (2010). Isolation and screening of exopolysaccharides producing strains of cyanobacteria. J. Punjab Acad. Sci. 6-7: 52-58.
12. J.I.S. Khattar, **D.P. Singh**, N. Jindal, N. Kaur, Y. Singh, P. Rahi and A. Gulati (2010). Isolation and characterization of exopolysaccharides produced by the cyanobacterium *Limnothrix redekei* PUPCCC 116. J. Appl. Biochem. Biotechnol. 162:1327–1338.
13. **D.P. Singh** and B.S. Sandhu (2010). Effect of anilofos on growth, photosynthetic pigments and stress enzymes of cyanobacterium *Oscillatoria simplicissima*. ;Research J. Biotechnol. 7(1): 27-32.
14. **D.P. Singh**, J.I.S. Khattar, J. Nadda, Y. Singh, A. Garg, N. Kaur and A. Gulati (2011). Chlorpyrifos degradation by cyanobacterium *Synechocystis* sp. PUPCCC 64. Environ. Sci. Pollut. Res. 18:1351-1359.
15. N. Jindal. **D.P. Singh** and J.I.S. Khattar (2011). Kinetics and physico-chemical characterization of exopolysaccharides produced by the cyanobacterium *Oscillatoria formosa*. World J. Microbiol Biotechnol. 27 (9): 2139-46.
16. **D.P. Singh**, J.I.S. Khattar, K. Kaur, B.S. Sandhu and Y. Singh (2012). Toxicological impact of anilofos on some physiological processes of a rice field cyanobacterium *Anabaena torulosa*. Toxicol. Environ. Chem. 94 (7): 1304–18 (DOI:10.1080/02772248.2012.703203).
17. N. Jindal., **D.P. Singh** and J.I.S. Khattar (2013). Optimization, characterization and flow properties of exopolysachharides produced by *Lyngbya stagnina*. J. Basic Microbiol. 53: 902-912. DOI 10.1002/jobm.201200201.
18. **D.P. Singh**, J.I.S. Khattar, Amita, Gurdeep Kaur and P. Cheema (2012). Toxicity of herbicides to diazotrophic cyanobacterium *Nostoc muscorum*. J. Punjab Acad. Sci. 9-10 (1&2): 67-71.
19. **D.P. Singh**, J.I.S. Khattar, M. Kaur, G. Kaur, M. Gupta and Y. Singh (2013). Anilofos tolerance and its mineralization by the cyanobacterium *Synechocystis* sp. strain PUPCCC 64. PLoS ONE 10.1371/journal.pone.0053445
20. **D.P. Singh**, J.I.S. Khattar, M. Gupta and G. Kaur (2014). Evaluation of toxicological impact of cartap hydrochloride on some physiological activities of a non-heterocystous cyanobacterium *Leptolyngbya foveolarum*. Pestic. Biochem. Physiol. 110:63-70. (DOI 10.1016/j.pestbp.2014.03.002).
21. Y. Singh, J.I.S. Khattar, **D.P. Singh** and A. Gulati (2014). Limnology and cyanobacterial diversity of high altitude lakes of Lahaul-Spiti in Himachal Pradesh, India Journal of Biosciences 39(4): 1-15. DOI 10.1007/s12038-014-9458-4.

22. J.I.S. Khattar, S. Parveen, Y. Singh, **D.P. Singh** and A. Gulati (2014). Intracellular uptake and reduction of hexavalent chromium by the cyanobacterium *Synechocystis* sp. PUPCCC 62. *Journal of Applied Phycology* 10.1007/s10811-014-0374-7.
23. R. Chaudhary, J.I.S. Khattar and **D.P. Singh** (2014). Selection of microalgal feedstock for biodiesel production based on growth, lipid productivity and lipid profile. *Intl. J. Power Renew. Energ. Sys.* 1: 62-71.
24. **D.P. Singh**, J.I.S. Khattar, Gurdeep Kaur, Meenu Gupta, Yadvinder Singh and Arvind Gulati (2015). Effect of pretilachlor on nitrogen uptake and assimilation by the cyanobacterium *Desmonostoc muscorum* PUPCCC 405.10. *Acta Physiologie Plantarum*. 37: 177 (DOI 10.1007/s11738-015-1923-7).
25. S. Parveen, **D.P. Singh** and J.I.S. Khattar (2015). The cyanobacterium *Synechocystis* sp. PUPCCC 62: a potential candidate for biotransformation of Cr(VI) to Cr(III) in the presence of sulphate. *Environ. Sci. Pollut. Res.* 22:10661–10668 (DOI 10.1007/s11356-015-4260-x).
26. J.I.S. Khattar, S. Kaur, S. Kaushal, Y. Singh, **D.P. Singh**, S. Rana and A. Gulati (2015). Hyperproduction of phycobiliproteins by the cyanobacterium *Anabaena fertilissima* PUPCCC 410.5 under optimized culture conditions. *Algal Res.* 12: 463–469.
27. **D.P. Singh**, J.I.S. Khattar, Alka, G. Kaur and Y. Singh (2016). Toxicological effect of pretilachlor on some physiological processes of cyanobacterium *Synechocystis* sp. strain PUPCCC 64. *Journal of Applied Biology and Biotechnology* DOI: 10.7324/JABB.2016.40103.
28. **D.P. Singh**, J.I.S. Khattar, G. Kaur and Y. Singh (2016). Toxicological impact of herbicides on Cyanobacteria. *Ann. Rev. Res. Biol.* 9(4): 1-39, Article no. ARRB.2261.
29. **D.P. Singh** and J.I.S. Khattar (2016). Impact of insecticides on cyanobacteria. *Seaweed Research Utilization* 38(1): 165-180.
30. J.I.S. Khattar, M. Kaur and **D.P. Singh** (2016). Role of sulfide in ameliorating thermal stress in a mesophilic cyanobacterium *Westiellopsis prolifica*. *Journal of Advances in Biology and Biotechnology* 9(4): 1-12, Article no. JABB.27501.
31. J.I.S. Khattar, Y. Singh, S. Parveen and **D.P. Singh** (2016). Microalgal biofuels: Flexible bioenergies for sustainable development. In: *Biofuels: Production and future perspectives*. R.S. Singh, A.K. Pandey and N. Gnansounou (Eds). CRC Press. Taylor & Francis Group, Boca Raton, FL
32. Shveta, Y. Singh, J.I.S. Khattar and **D.P. Singh** (2017). Phycobiliprotein production by a novel cold desert cyanobacterium *Nodularia sphaerocarpa* PUPCCC 420.1. *Journal of Applied Phycology* DOI 10.1007/s10811-017-1093-7.
33. Singh, R.S., A.K. Walia, J.I.S. Khattar, **D.P. Singh** and J.F. Kennedy (2017). Cyanobacterial lectins: characteristics and their role in antiviral agent. *International Journal of Biological Macromolecules* 102: 475-496.