



Dr. BIJENDER SINGH

Associate Professor

Department of Biotechnology
Central University of Haryana,
Jant-Pali-123031, Mahendergarh, Haryana
Phone: +91-9996983652

Email: ohlenbs@cuh.ac.in; ohlenbs@gmail.com

<http://ohlenbs.googlepages.com>

<http://orcid.org/0000-0002-2193-2910>

https://www.researchgate.net/profile/Bijender_Singh2

EDUCATIONAL QUALIFICATIONS

- ✓ **Ph. D. (2008).** Production, characterization and applications of extracellular phytase of the thermophilic mould *Sporotrichum thermophile* Apinis under the supervision of Prof. T. Satyanarayana at Department of Microbiology, University of Delhi South Campus, New Delhi, India.
- ✓ **M.Sc. (Botany) 2000.** Maharshi Dayanand University, Rohtak, Haryana, India (69.2%).
- ✓ **B.Sc. (Botany, Zoology, Chemistry) - first division with 62 % marks- 1998,** Hindu College, Sonapat, Haryana, India.

FELLOWSHIP AND AWARDS

- DST-Fast Track Young Scientist award (2011)
- Young scientist award (Industrial Microbiology) 2009 by Association of Microbiologists of India
- Senior Research fellowship MoEF project (1st July 2007 to 31st January 2008)
- Research Fellow in a DST-DAAD (Indo-German) collaborative project (2004-2006).
- Junior/Senior Research fellowship (CSIR) 2002-2007.

RESEARCH PROJECT HANDLED:

S. No	Title	Cost in Lakh	Duration	Role as PI/Co-PI	Agency
1.	Characterization of phytase from fungi isolated from soil: Search for an effective feed additive for amelioration of nutritional status	10.78	3 years 1-2-11 to 31-1-2014	PI	UGC, New Delhi
2.	Isolation and Screening of fungi for phytase production.	0.10	2011-2012	PI	Dr. R.K. Foundati on Fund, MDU, Rohtak
3.	Development of an ideal pretreatment and saccharification process for rice straw using microbial cellulases.	9.5	Feb. 2017-Jan. 2019	PI	HSCST, Panchku la
4.	Thermostable and neutral phytase from bacteria and testing their efficiency in dephytinization of food ingredients	24.20	3 years 16-6-12 to 15-6-15	PI	DST, New Delhi
5.	Production of recombinant phytase of the thermophilic mould <i>Sporotrichum thermophile</i> and its applications	48.5	3 years 29-5-13 to 30-6-16	PI	DBT, New Delhi
6.	Proteomic analysis of malaria parasite and its vector under different physiological conditions: One of the PIs in DBT-Maharshi Dayanand University, Interdisciplinary Life Science Program for Advance Research and Education	281.04	5 years 2011-2016	PI	DBT, New Delhi
7.	Concomitant production and characterization of cellulase and xylanase by a thermophilic mould <i>Sporotrichum thermophile</i> for bioethanol production	19.0	3 years+ 1-12-2013 to 31-3-17	PI	CSIR, New Delhi
8.	Development and Validation of High Throughput Methods for Screening of Antimicrobial Peptides from Lactic Acid Bacteria	44.60	Nov. 2013 to Oct. 2016	Co-PI	DBT, New Delhi
9.	Purification and molecular characterization of halocin produced by <i>Haloferax larsenii</i> strain HA/3.	42.51	07-8-2014 to 06-8-17	Co-PI	DBT, New Delhi

RESEARCH & TEACHING EXPERIENCE

- **Associate Professor** (14-08-2018-till date) Department of Biotechnology, Central University of Haryana, Mahendergarh-123031, Haryana
- **Assistant Professor** (23-02-2010-14-08-2018) Department of Microbiology, Maharshi Dayanand University, Rohtak-124001, Haryana
- **Research Scientist** (1st February 2008-22nd Feb. 2010) in Mammalian Biology, (Malaria) with Dr. Chetan Chitnis, International Centre for Genetic Engineering and Biotechnology, New Delhi-110067.
- **Senior Research Fellow** (1st July, 2007- 31st January, 2008) at Department of Microbiology, University of Delhi South Campus, Benito Juarez Road New Delhi.
- **Research Scholar** (1st Oct, 2004- 31st Dec., 2004 and 1st Oct, 2005- 31st Dec., 2005) at Yeast Genetics Group, Leibniz-Institut für Pflanzengenetik und Kulturpflanzenforschung, Corrensstr. 3, D-06466 Gatersleben, Germany in an Indo-German (DST-DAAD) collaborative project.

RESEARCH PUBLICATIONS

1. Yadav M.K., **Singh B.**, Tiwari S.K. (2018). Comparative analysis of inhibition-based and indicator-independent colorimetric assay for screening of bacteriocin-producing lactic acid bacteria. *Probiotics and Antimicrobial Proteins*. DOI:10.1007/s12602-018-9445-4. **Impact Factor: 2.345**
2. Bala A. and **Singh B.** (2019). Development of an environmental-benign process for efficient pretreatment and saccharification of *Saccharum* biomasses for bioethanol production. *Renewable Energy*. 130: 12-24. **Impact Factor: 4.900**
3. Jain J., Kumar A., Singh D. and **Singh B.** (2018). Purification and kinetics of a protease-resistant, neutral and thermostable phytase from *Bacillus subtilis* subsp. *subtilis* JJBS250 ameliorating food nutrition. *Preparative Biochemistry and Biotechnology*. DOI:10.1080/10826068.2018.1487848. **Impact Factor: 1.361**
4. **Singh B.** (2018). Engineering fungal morphology for enhanced production of hydrolytic enzymes by *Aspergillus oryzae* SBS50 using microparticles. *3Biotech*. 8(6): 283. **Impact Factor: 1.497**
5. **Singh B.**, Sharma K.K., Kumari A., Kumar A. and Gakhar S.K. (2018). Molecular modeling and docking of recombinant HAP-phytase of a thermophilic mould *Sporotrichum thermophile*

- reveals insights into molecular catalysis and biochemical properties. *International Journal of Biological Macromolecules*. 115: 501-508. **Impact Factor: 3.909**
6. Sapna and **Singh B.** (2017). Free and immobilized *Aspergillus oryzae* SBS50 producing protease-resistant and thermostable phytase. *3Biotech*. 7: 213. **Impact Factor: 1.361**
 7. Sapna and **Singh B.** (2017). Purification and characterization of a protease-resistant phytase of *Aspergillus oryzae* SBS50 whose properties make it exceptionally useful as a feed supplement. *International Journal of Biological Macromolecules*. 103: 458–466. **Impact Factor: 3.909**
 8. Bala A. and **Singh B.** (2017). Concomitant production of cellulase and xylanase by thermophilic mould *Sporotrichum thermophile* in solid state fermentation and their applicability in bread making. *World Journal of Microbiology and Biotechnology*. 33: 109. **Impact Factor: 1.658**
 9. **Singh B.**, Bala A., Dahiya S. and Satyanarayana T. (2017). Production, characteristics and potential applications of the cellulolytic enzymes of thermophilic moulds. *Kavaka*. 48(2): 47-58.
 10. Kumar V., Yadav A.N., Verma P., Sangwan P., Saxena A., Kumar K. and **Singh B.** (2017). β -Propeller phytases: Diversity, catalytic attributes, biotechnological improvements and applications. *International Journal of Biological Macromolecules*. 98: 595-609. **Impact Factor: 3.909**
 11. Bajpai A., **Singh B.**, Joshi S. and Johri B.N. (2017). Production and characterization of an antifungal compound from *Pseudomonas protegens* strain W45. *Proceedings of the National Academy of Sciences, India Section B: Biological Sciences*. doi: 10.1007/s40011-017-0844-1. **Impact Factor: 0.396**
 12. Yadav M.K., Kumar V., **Singh B.**, Tiwari S.K. (2017). Phospholipid/polydiacetylene vesicle-based colorimetric assay for high-throughput screening of bacteriocins and halocins. *Applied Biochemistry and Biotechnology*. 182:142–154. **Impact Factor: 1.751**
 13. Jain J. and **Singh B.** (2017). Phytase production and development of an ideal dephytinization process for amelioration of food nutrition using microbial phytases. *Applied Biochemistry and Biotechnology*. 181(4): 1485-1495. **Impact Factor: 1.751**
 14. **Singh, B.**, Satyanarayana, T., (2016). Thermophilic Mould *Sporotrichum thermophile*: Biology and Potential Biotechnological Applications. *Kavaka*. 47: 99-106.

15. **Singh B.**, Poças-Fonseca M.J., Johri B.N. and Satyanarayana T. (2016). Thermophilic Molds: Biology and Applications. *Critical Reviews in Microbiology*. 42(6): 985–1006. **Impact Factor: 6.281**
16. **Singh B.** (2016). *Myceliophthora thermophila* syn. *Sporotrichum thermophile*: a thermophilic mould of biotechnological potential. *Critical Reviews in Biotechnology*. 36(1):59-69. **Impact Factor: 6.542**
17. Jain J., Sapna and **Singh B.** (2016). Characteristics and biotechnological applications of bacterial phytases. *Process Biochemistry*. 51(2): 159-169. **Impact Factor: 2.497**
18. Bala A. and **Singh B.** (2016). Cost-effective production of biotechnologically important hydrolytic enzymes by *Sporotrichum thermophile*. *Bioprocess and Biosystems Engineering*. 39(1): 181-191. **Impact Factor: 1.870**
19. Kumari A., Satyanarayana T. and **Singh B.** (2016). Mixed substrate fermentation for enhanced phytase production by thermophilic mold *Sporotrichum thermophile* and its application in beneficiation of poultry feed. *Applied Biochemistry and Biotechnology*. 178(1): 197-210. **Impact Factor: 1.751**
20. **Singh B.**, Gupta P.K., Chauhan V.S. and Chitnis C.E. (2015). Novel and cost-effective refolding of a recombinant receptor binding domain of *Plasmodium falciparum* EBA-175. *Process Biochemistry*. 50: 2177-2181. **Impact Factor: 2.497**
21. **Singh, B.**, Satyanarayana, T., 2015. Fungal phytases: characteristics and amelioration of nutritional quality and growth of non ruminants. *Journal of Animal Physiology and Animal Nutrition* 99: 646-660. **Impact factor: 1.244**
22. Ranjan B., **Singh B.** and Satyanarayana T. (2015). Characteristics of recombinant phytase (rSt-Phy) of the thermophilic mould *Sporotrichum thermophile* and its applicability in dephytinizing foods. *Applied Biochemistry and Biotechnology*. 177: 1753-1766. **Impact Factor: 1.751**
23. Chitnis C.E., Mukherjee P., Mehta S., Yazdani S.S., Dhawan S., Shakri A.R., Bharadwaj R., Gupta P.K., Hans D., Mazumdar S., **Singh B.**, Kumar S., Pandey G., Parulekar V., Imbault N., Shiviyogi N., Godbole G., Mohan K., Leroy O., Singh K. and Chauhan V.S. (2015). Phase I clinical trial of a recombinant blood stage vaccine candidate for *Plasmodium falciparum* malaria based on MSP1 and EBA175. *PLOS ONE* 10(4): e0117820. **Impact Factor: 2.806**

24. Sapna and **Singh B.** (2015). Biocatalytic potential of protease-resistant phytase of *Aspergillus oryzae* in ameliorating food nutrition. *Biocatalysis and Biotransformation*. 33(3): 167-174. **Impact Factor: 0.836**
25. Singh N., Kumari A., Gakhar S.K. and **Singh B.** (2015). Enhanced cost-effective phytase production by *Aspergillus niger* and its applicability in dephytinization of food ingredients. *Microbiology+* 84(2): 219-226. **Impact Factor: 0.856**
26. Arora H., **Singh B.** and Satyanarayana T. (2014). Potential biotechnological applications of phytases from thermophilic moulds. *Kavaka* 42: 69-77.
27. **Singh B.** and Satyanarayana T. (2014). Thermophilic fungi: Their ecology and biocatalysts. *Kavaka* 42: 37-51.
28. Bala A, Sapna, Jain J., Kumari A and **Singh B.** (2014). Production of an extracellular phytase from a thermophilic mould *Humicola nigrescens* in solid state fermentation and its application in dephytinization. *Biocatalysis and Agricultural Biotechnology*. 3(4): 259-264.
29. Sapna and **Singh B.** (2014). Phytase production by *Aspergillus oryzae* in solid state fermentation and its applicability in dephytinization of wheat bran. *Applied Biochemistry and Biotechnology* 173(7): 1885-1895 **Impact Factor: 1.751**
30. Sapna and **Singh B.** (2013). Improved production of protease-resistant phytase by *Aspergillus oryzae* and its applicability in the hydrolysis of insoluble phytates. *Journal of Industrial Microbiology and Biotechnology*, 40: 891–899. **Impact Factor: 2.810**
31. Siddiqui F.A., Dhawan S., Singh S., **Singh B.**, Gupta P., Pandey A., Mohammed A., Gaur D., Chitnis C.E. (2013). A thrombospondin structural repeat containing rhoptry protein from *Plasmodium falciparum* mediates erythrocyte invasion. *Cellular Microbiology* 15(8):1341-56. **Impact Factor: 4.554**
32. Pandey A., Reddy K., Sahar T., Gupta S., Singh H., Reddy E., Asad M., Siddiqui F., Gupta P., **Singh B.**, More K., Mohammed A., Chitnis C.E., Chauhan V.S. and Gaur D. (2013) Identification of a potent combination of key *Plasmodium falciparum* merozoite antigens that elicit strain transcending parasite neutralizing antibodies. *Infection and Immunity* 81(2): 441-451. **Impact factor: 4.165.**
33. Mayor A., Singh U., Bardají A., Gupta P., Jiménez A., Hamad A., Sigauque B., **Singh B.**, Quintó L., Kumar S., Gupta P.K., Chauhan V.S., Dobaño C., Alonso P.L., Menéndez C. and Chitnis C.E. (2013). Improved pregnancy outcomes in women exposed to malaria with high

- antibody levels against *Plasmodium falciparum*. *Journal of Infectious Disease* 207(11): 1664-1674. **Impact factor: 6.273**
34. **Singh, B.** and Satyanarayana, T. (2012). Production of phytate-hydrolyzing enzyme by thermophilic moulds. *African Journal of Biotechnology* 11(59): 12314-24.
35. Dobaño C., Quelhas D., Quintó L., Puyol L., Serra-Casas E., Mayor A., Nhampossa T., Macete E., Aide P., Mandomando I., Sanz S., Puniya S.K., **Singh B.**, Gupta P., Bhattacharya A., Chauhan V.S., Aponte J.J., Chitnis C.E., Alonso P.L. and Menéndez C. (2012). Age-Dependent IgG Subclass Responses to *Plasmodium falciparum* EBA-175 are Differentially Associated with Incidence of Malaria in Mozambican Children. *Clinical and Vaccine Immunology* 19: 157-166. **Impact factor: 2.47**
36. **Singh, B.** and Satyanarayana, T. (2011c). Microbial phytases in phosphorus acquisition and plant growth promotion. *Physiology and Molecular Biology of Plants*. 17(2): 93-103. **Impact factor: 0.883**
37. **Singh, B.** and Satyanarayana, T. (2011b). Phytases from thermophilic molds: Their production, characteristics and multifarious applications. *Process Biochemistry*. 46 (7): 1391-1398. **Impact factor: 2.497**
38. **Singh, B.**, Kunze, G. and Satyanarayana, T. (2011a). Developments in biochemical aspects and biotechnological applications of microbial phytases. *Biotechnology and Molecular Biology Reviews* 6(3): 69-87.
39. Cassan S., Hill A., Douglas S., Milicic A., **Singh, B.**, Gupta, P., Gilbert S., Chauhan, V.S., Chitnis C.E. and Draper S.J. (2011). The requirement for potent adjuvants to enhance the immunogenicity and protective efficacy of protein vaccines can be overcome by prior immunization with a recombinant adenovirus. *The Journal of Immunology* 187: 2602-2616. **Impact factor: 4.985**
40. Mayor A., Rovira-Vallbona E., Machevo S., Bassat Q., Aguilar R., Quintó L., Jiménez A., Sigauque B., Dobaño C., Puniya S.K., **Singh B.**, Gupta .P, Chauhan V. S., Chitnis C.E., Alonso P.L., Menéndez C. (2011). Parity and placental infection affect antibody responses against *Plasmodium falciparum* during pregnancy. *Infection and Immunity* 79(4): 1654-1659. **Impact factor: 4.165**
41. **Kaur P.**, Singh B., Böer E.; Straube E., Piontek M., Satyanarayana T. and Kunze G. (2010). Pphy - a cell-bound phytase from the yeast *Pichia anomala*: molecular cloning of the gene

- PPHY and characterization of the recombinant enzyme. *Journal of Biotechnology* 149(1-2): 8-15. **Impact factor: 2.599**
42. **Singh, B.** and Satyanarayana, T. (2010). Plant growth promotion by an extracellular HAP-phytase of a thermophilic mould *Sporotrichum thermophile*. *Applied Biochemistry and Biotechnology* 160(5): 1267-1276. **Impact factor: 1.751**
43. **Singh, B.** and Satyanarayana, T. (2010). Applications of the phytase of a thermophilic mould *Sporotrichum thermophile*: A Review. *Journal of Scientific and Industrial Research* 69: 411-414. **Impact factor: 0.385**
44. **Singh, B.** and Satyanarayana, T. (2009). Characterization of a HAP-phytase of a thermophilic mould *Sporotrichum thermophile*. *Bioresource Technology* 100: 2046-2051. **Impact factor: 5.651**
45. **Singh, B.** and Satyanarayana, T. (2008c). Phytase production by a thermophilic mould *Sporotrichum thermophile* in cost-effective cane molasses medium and its application in bread. *Journal of Applied Microbiology* 105: 1858-1865. **Impact factor: 2.099**
46. **Singh, B.** and Satyanarayana, T. (2008b). Phytase production by a thermophilic mould *Sporotrichum thermophile* in solid state fermentation and its potential applications. *Bioresource Technology* 99: 2824-2830. **Impact factor: 5.651**
47. **Singh, B.** and Satyanarayana, T. (2008a). Improved phytase production by a thermophilic mould *Sporotrichum thermophile* in submerged fermentation due to statistical designs. *Bioresource Technology* 99: 824-830. **Impact factor: 5.651**
48. Kaur, P., Lingner, A., **Singh, B.**, Böer, E., Polajeva, J., Steinborn, G., Gellissen, G., Satyanarayana, T. and Kunze, G. (2007). APHO1 from the yeast *Arxula adenivorans* encodes an acid phosphatase of broad substrate specificity. *Antonie Van Leeuwenhoek International Journal of General and Molecular Microbiology* 91(1): 45-55. **Impact factor: 1.795**
49. **Singh, B.** and Satyanarayana, T. (2006b). A marked enhancement in phytase production by a thermophilic mould *Sporotrichum thermophile* using statistical designs in a cost-effective cane molasses medium. *Journal of Applied Microbiology* 101(2): 344-352. **Impact factor: 2.099**
50. **Singh, B.** and Satyanarayana, T. (2006a). Phytase production by a thermophilic mold *Sporotrichum thermophile* in solid-state fermentation and its application in dephytinization of sesame oil cake. *Applied Biochemistry and Biotechnology* 133(3): 239-250. **Impact factor: 1.751**

51. Kaur, P., **Singh, B.**, Vohra, A., and Satyanarayana, T. (2003). Fabulous phytases: Diverse functions in the living world and commercial prospects. *The Botanica* 53: 35-42.

BOOKS EDITED:

1. Tiwari, S.K. and **Singh, B.** (2012). Current Trends in Biotechnology. Lambert Academic Publishing GmbH & Co. KG, Germany **ISBN: 978-3-659-15773-8**

CHAPTERS IN BOOKS AND PROCEEDING OF CONFERENCES/SEMINAR:

1. Dahiya S. and **Singh B.** (2018) Microbial xylanases in bread making. *Encyclopedia of Food Chemistry*, <https://doi.org/10.1016/B978-0-12-814026-0.21644-2>.
2. Sharma K.K., Singh D., **Singh B.**, Gill S.S., Singh A. and Shrivastava B. (2018). Plant-Microbe Interaction and Genome Sequencing: An Evolutionary Insight. In: New and Future Developments in Microbial Biotechnology and Bioengineering (Eds. Parasad R., Gill S.S. and Tuteja N.). Elsevier, Radarweg 29, PO Box 211, 1000 AE Amsterdam, Netherlands, pp. 427-449. (ISBN: 978-0-444-63987-5).
3. **Singh, B.** and Satyanarayana, T. (2017). Basic Microbiology. In: Current Developments in Biotechnology and Bioengineering' Foundations of Biotechnology and Bioengineering (Eds. Pandey A. and Teixeira J.A.C.). Elsevier, Radarweg 29, PO Box 211, 1000 AE Amsterdam, Netherlands, pp. 1-31. (ISBN: 978-0-444-63668-3).
4. **Singh, B.** and Satyanarayana, T. (2016). Potential biotechnological applications of thermophilic moulds. In: 'Fungi: Applications and Management Strategies' (Eds. S.K. Deshmukh, J.K. Mishra, J.P. Tewari and T. Papp). CRC Press Boca Raton, London & New York, pp. 220-244. (ISBN: 9781498724913).
5. **Singh, B.** and Satyanarayana, T. (2014). Ubiquitous occurrence of thermophilic molds in various substrates. In: Fungi from different substrates (Eds. J.K. Mishra, J.P. Tewari, S.K. Deshmukh, and V. Csaba). CRC Press Boca Raton, London & New York, pp. 201-216. (ISBN: 9781482209600).
6. Sapna, Jain J. and **Singh B.** (2014). Production of extracellular phytate hydrolyzing enzymes by soil fungi. In: Microbial Diversity and Biotechnology in Food Security by R.N. Kharwar R.S. Upadhyay, N.K. Dubey, Richa Raghuwanshi (eds.), Springer publishers. pp. 431-437. (ISBN: 978-81-322-1800-5).

7. **Singh, B.**, Kumari A. and Satyanarayana, T. (2014). Applicability of Microbial Phytases in plant growth promotion and development. In: Plant Microbe Interactions (Eds. K. Ramasamy, and K. Kumar). New India Publishing Agency, New Delhi pp. 71-85. (ISBN:9789383305834).
8. Sapna, **Singh B.**, Singh D. and Sharma K.K. (2013) Microbial phytases in skimming and management of environmental phosphorus pollution. In: Biotechnology of environmental Management and Resource Recovery (Eds. R. C. Kuhad and A. Singh). Springer Publishers London pp. 239-260 (ISBN 978-81-322-0875-4).
9. Sharma K.K., Singh, D., Sapna, **Singh B.** and Kuhad, R.C. (2013) Ligninolytic Enzymes in Environmental Management. In: Biotechnology of environmental Management and Resource Recovery (Eds. R.C. Kuhad and A. Singh). Springer Publishers, London pp. 219-238. (ISBN: 978-81-322-0875-4).
10. **Singh, B.** and Satyanarayana, T. (2013). Phytases and phosphatases of thermophiles: production, characteristics and multifarious biotechnological applications. In: Thermophilic Microbes in environmental and Industrial Biotechnology (Eds. T. Satyanarayana, J. Littlechild and Y. Kawarabayasi). Springer Publishers pp. 671-687. (ISBN: 978-94-007-5898-8).
11. **Singh B.**, Kumar A., Jain J, Sapna (2013). Phytase: An Enzyme for the Degradation of Anti-Nutritional Factor. In: *Proceedings of National Seminar on "Promising Trends in Science Galaxy", (PTSG-2013)*, Organized by Department of Zoology, M.D.U., Rohtak. (ISBN: 978-81-920945-3-3).
12. **Singh B.** and Goel N. (2012). Fermentation and fermented products. In: Pharmaceutical Microbiology (Ed. Goel N.) Narosa Publishing House, New Delhi, India, pp. 18.1-18.19. (ISBN: 978-81-8487-213-2).
13. **Singh, B.** and Tiwari, S.K. (2012). Metagenomics: A gateway for novel bio-molecules of biotechnological potential. In: Current Trends in Biotechnology (Tiwari, S.K. and Singh B.). Lambert Academic Publishing, pp. 335-350. (ISBN: 978-3-659-15773-8).
14. **Singh, B.** (2012). Thermophilic moulds: Role in Biotechnology. In: Current Trends in Biotechnology (Tiwari, S.K. and Singh B.). Lambert Academic Publishing, pp. 121-151. (ISBN: 978-3-659-15773-8).
15. **Singh, B.** and Satyanarayana, T. (2012c). Thermophilic fungal phytases. In: Biodiversity Evaluation-Botanical Perspective (Eds. N.S. Atri, R.C. Gupta, M.I.S. Saggoo and V.K. Singhal). M/s. Bishen Singh Mahender Pal Singh, Dehradun, India, pp. 95-110. (ISBN: 978-81-211-0834-8).

16. **Singh, B.** and Satyanarayana, T. (2012b). Plant growth promotion by phytases and phytase-producing microbes due to amelioration in phosphorus availability. In: *Microorganisms in Sustainable Agriculture and Biotechnology* (Eds. T. Satyanarayana, B.N. Johri and A. Prakash). Springer Publishers, pp. 3-15. (ISBN: 978-94-007-2213-2).
17. **Singh, B.**, Sapna, Jain J. and Satyanarayana, T. (2012). Fungal Phytases for combating environmental phosphorus pollution and ameliorating the nutritional status of non-ruminants. In: *Energy-Water-Waste Nexus for Environment Management* (Eds. Devi R., Kidwai M.K., Rose P.K. and Saran A.K.). Narosa Publishing House, New Delhi, India, pp. 292-301. (ISBN: 978-81-8487-206-4).
18. Sapna, Jain J., Kumar A., Sharma KK and **Singh B.** (2012). Phytic acid: An Anti-nutritional factor combating diseases. In: *Proceeding of National Seminar on Challenges in Combating Diseases: Cause to Cure*. March 23, 2012 at M.D. University, Rohtak. 303-310. (ISBN: 978-81-920945-2-6)
19. Sharma, K.K. and **Singh B.** (2010). Archaea: House keeping genes and evolutionary perspective. In: *Proceeding of National Conference on Environmental and Health Issues: In a Changing Climatic Scenario*. Oct. 14-15, 2010 at M.D. University, Rohtak. 29-42. (ISBN: N.A.)
20. **Singh, B.** and Satyanarayana, T. (2009). Thermophilic moulds in environmental management, In: *Progress in Mycological Research Vol I Fungi from different environments*. Environmental Mycology (Ed. Mishra J.K. and Deshmukh, S.). Science Publishers USA, 352-375. (ISBN: 978-1-57808-578-1).
21. **Singh, B.**, Kaur, P. and Satyanarayana, T. (2008). Thermophilic Mold and Yeast Phytases: Production, Characteristics and Applications, In: *Agriculturally Important Microorganisms Vol II, International Multi-volume Annual Review Series* (Eds. Khachatourians G.G., Arora D.K., Rajendran T.P. and Srivastava A.K.) Academic Word International Publishers, 317-345. (ISBN: 9781482209600).
22. Kaur, P., **Singh, B.** and Satyanarayana, T. (2007). Microbial phytases in combating environmental phosphorus pollution, In: *Sustainable Resource Management, Vol. I* (Eds. Singh K.K., Tomar A., Phogat V. and Phogat S.), MD Publications, New Delhi, 150-190. (ISBN:).
23. **Singh, B.**, Kaur, P. and Satyanarayana, T. (2006). Fungal phytases for improving the nutritional status of foods and combating environmental phosphorus pollution. In: *Microbes: Health and Environment* (Eds. Chauhan A.K. and Verma A.), IK International publishers, New Delhi, India, pp. 289-326. (ISBN:).

24. Satyanarayana, T. and **Singh, B.** (2004). Thermophilic Moulds: Diversity and Potential Biotechnological Applications. In: Microbial Diversity: Opportunities and Challenges (Eds. S. P. Gautam, Anjana Sharma, S. S. Sandhu and A. K. Pandey), Shree Publishers and Distributors, New Delhi, pp. 87-110. (ISBN:).

Ph.D. Guidance

S. No.	Candidate's Name	Ph.D. Thesis title	Status
1.	Ms. Sapna	Production, Characterization and Applications of an Extracellular Phytase from Soil Fungus	Awarded
2.	Mr. Jinender Jain	Production, Characterization and Potential Applications of Extracellular Phytase from soil Bacterium <i>Bacillus subtilis</i> subsp. <i>subtilis</i>	Awarded
3.	Ms. Anju Bala	Concomitant production and characterization of cellulase and xylanase by <i>Sporootrichum thermophile</i> for saccharification of lignocellulosic biomass	Submitted 15-07-2018
4.	Ms. Seema Dahiya	Production and characterization of endoxylanase by <i>Myceliophora thermophila</i> and its applicability in food and feed nutrition	Ongoing
5.	Ms. Alokika	Production, biochemical characterization and application of an extracellular xylanase of <i>Bacillus subtilis</i> subsp. <i>subtilis</i>	Ongoing
6.	Ms. Anu	Development of pretreatment strategy and saccharification process for bioethanol production using rice straw	Ongoing

M.Sc. Dissertations supervised:

S. No	Title of Thesis	Year	Candidate
1.	Production and partial characterization of cellulase of a Thermophilic mould <i>Sporotrichum thermophile</i>	2013	Poonam Ahlawat
2.	Phytase Production by Thermophilic Mould <i>Humicola nigrescens</i> in Solid-State Fermentation	2013	Anju Bala
3.	Phytase production by <i>Aspergillus niger</i> in submerged and solid state fermentations	2014	Navneet
4.	Exploring the diversity of Haloarchaea for extracellular Extremozymes	2014	Pooja Sharma
5.	Phytase production by <i>Bacillus</i> sp. in solid state fermentation and its application in dephytinization	2014	Gurpreet
6.	Screening, selection and optimization of amylase production by <i>Bacillus</i> sp. in submerged fermentation	2014	Naveen Antony
7.	Production of Xylanase by Haloarchaea in submerged fermentation	2015	Annu
8.	Biosynthesis of silver nanoparticles using thermophilic moulds	2015	Akshay Shankar
9.	Amylase production by <i>Bacillus subtilis</i> subsp. <i>subtilis</i> in solid state fermentation	2015	Renu Devi
10.	Ameliorating the nutritional quality of various food ingredients using phytase of <i>Aspergillus oryzae</i>	2015	Rinki
11.	Optimization of conditions for plant growth promotion using phytase of <i>Sporotrichum thermophile</i>	2016	Pragati Verma
12.	Purification and characterization of amylase from <i>Bacillus subtilis</i> subsp. <i>Subtilis</i>	2016	Komal
13.	Production and characterization of xylanases from different strains of <i>Sporotrichum thermophile</i>	2016	Manisha
14.	Production, characteristics and biotechnological applications of pigments from bacteria	2016	Yogesh
15.	Enhanced phytase production by <i>Aspergillus oryzae</i> SBS50 using microparticles and mutagenesis	2017	Chetna
16.	Production, characterization and applications of keratinase of <i>Bacillus subtilis</i> subsp. <i>subtilis</i> JJBS300	2017	Deepak Kamboj
17.	Isolation, screening and optimization of acetoin production by bacteria	2017	Manjeet
18.	Degradation of lignocellulosic biomass and production of hydrolases using mixed microbial fermentation	2017	Pragya
19.	Development of dephytinization process using fungal phytases	2017	Shalini
20.	Phytase production by <i>Aspergillus oryzae</i> SBS50 in submerged fermentation	2018	Megha
21.	Optimization of culture conditions for acetoin production using bacterial culture	2018	Meenaxi
22.	Cellulase production and pretreatment of rice straw for bioethanol production	2018	Sumit Kumar
23.	Xylanase production by thermophilic mould <i>Myceliophthora thermophila</i> in cane molasses medium	2018	Pooja
24.	Pretreatment and saccharification of sugarcane bagasse	2018	Ankita Jha
25.	Production of amylase by <i>Aspergillus oryzae</i> SBS50 using wheat bran in solid state fermentation	2018	Neha Devi

PRESENTATION IN SYMPOSIA AND CONFERENCES

1. **Singh B.** and Bala A. (2018). Bioethanol production from sugarcane bagasse hydrolysate obtained using enzymatic machinery of *Sporotrichum thermophile*. In: International Conference on “Sustainable Agriculture, Energy, Environment and Technology (Icsaeet-2018) on February 24-25, 2018 organized by Department of Environmental Sciences, M.D.U., Rohtak.
2. **Singh B.** and Jain J. (2018). Applicability of a neutral, protease-resistant and thermostable phytase from *Bacillus subtilis* subsp. *subtilis* JJBS250 in improving food nutrition. In: National Seminar on “Climate Change and Food Security” on January 25, 2018 organized by Centre for Biotechnology, M.D.U., Rohtak.
3. **Singh B.** and Sapna (2017). Production and application of an extracellular phytase from *Aspergillus oryzae*. In: International Conference on “Microbes for Health and Wealth” on November 14, 2017 organized by Department of Microbiology, M.D.U., Rohtak.
4. **Singh B.** and Sapna (2017). Biochemical characterization of thermostable and protease-resistant HAP-phytase of *Aspergillus oryzae* SBS50. In: National Conference on “Emerging Trends in Biochemistry” on September 15-16, 2017 organized by Deptt. of Biochemistry, M.D.U., Rohtak. pp. 35.
5. **Singh B.,** Kumari A. and Verma P. (2017). Optimization of conditions for plant growth promotion using phytase of a thermophilic mould *Sporotrichum thermophile* In: National Seminar on “Biodiversity: Status and Significance” on March 21, 2017 organized by Deptt. of Botany, M.D.U., Rohtak.
6. **Singh B.** and Bala A (2016) Production of cellulase and xylanase by a thermophilic mould *Sporotrichum thermophile*. In: National Conference on “Genetic Diversity and Therapeutic Potential of Natural Products” on September 17, 2016 organized by Deptt. of Genetics, M.D.U., Rohtak, pp. 33.
7. **Singh B.** and Bala A (2015) Concomitant production of cellulase and xylanase by a thermophilic mould *Sporotrichum thermophile* in solid state fermentation. In: International Symposium on “Emerging Discoveries in Microbiology” from December 7-10, 2015 held at School of Life Sciences, J.N.U., New Delhi. BPBE 56.
8. **Singh B.,** Kumari A. and Satyanarayana T (2015) Amelioration in poultry feed nutrition using *Sporotrichum thermophile* phytase produced under solid state fermentation. In: *International*

Conference on New Horizons in Biotechnology from November 22-25, 2015 held at CSIR-NIIST, Trivandrum. IB18 p. 150.

9. **Singh B.** and Sapna. (2014) Phytase of *Aspergillus oryzae*: An ideal phytase for food and feed applications. In: *International Conference on Emerging Trends in Biotechnology* from November 6-9, 2014 held at School of Environmental Sciences, J.N.U., New Delhi. F47.
10. **Singh B.**, Sapna, Kumari A. and Jain J. (2014) Microbial Phytases For Food And Feed Applications. In: *International Conference on Frontier Discoveries and Emerging Opportunities in Life Sciences* from February 13-15, 2014 held at School of Biological Sciences, Dr. H.S. Gour University, Sagar (M.P.) (**Invited Talk**).
11. **Singh B.** and Sapna (2013) Filamentous fungal phytases: Ideal enzymes for food and feed applications. In: *International Conference on Advances in Biotechnology and Bioinformatics* from November 25-27, 2013 held at Dr. D.Y. Patil Biotechnology and Bioinformatics Institute, Pune.
12. **Singh B.** Sapna and Jinender Jain (2012) Microbial Phytases: Ameliorating the Nutritional Status of Food/Feed and Plant Growth Promotion. In: *International Conference on Industrial Biotechnology* from November 21-23, 2012 held at Department of Biotechnology, Punjabi University, Patiala p. 47. (**Invited Talk**).
13. **Singh B.** and Satyanarayana, T. (2012). Fungal phytase for improving nutritional status of foods and plant growth promotion. In: *International Conference on "Mycology and Plant Pathology Biotechnological Approaches"* from February 27-29, 2012 held at Center of advance Study in Botany, Banaras Hindu University, Varanasi-221005, p. 235. (**Oral**).
14. Sapna, Jain J. and **Singh B.** (2012). Extracellular phytase production by soil fungi: Search for an enzyme for combating environmental phosphorus pollution. In: *International Conference on "Mycology and Plant Pathology Biotechnological Approaches"* from February 27-29, 2012 held at Center of advance Study in Botany, Banaras Hindu University, Varanasi-221005, p. (**Best poster award**).
15. **Singh B.** and Satyanarayana, T. (2011). Phytase of a thermophilic mould *Sporotrichum thermophile*: A novel enzyme with multifarious applications. In: *International Conference on "Microbial Biotechnology for Sustainable Development"* from November 3-6, 2011 held at Deptt. of Microbiology, Punjab University, Chandigarh-160014, p. 219-220.

16. **Singh, B.** (2011). Microbial Phytases in combating environmental phosphorus pollution. In: *National Conference on Multidisciplinary approach in frontier areas of environmental science and engineering*, March 4-5, 2011 at G.J. University of science and Technology, Hisar.
17. **Singh, B.** and Satyanarayana T. (2010). Production, characterization and applications of extracellular phytase of the thermophilic mould *Sporotrichum thermophile* Apinis. In: *National Conference on Environmental and Health Issues: In a Changing Climatic Scenario*. Oct. 14-15, 2010 at Department of Environmental Sciences, M.D. University, Rohtak.
18. **Singh, B.** and Satyanarayana T. (2010). Fungal phytases for ameliorating the nutritional status of feeds and combating environmental phosphorus pollution. In: *National Seminar on Environmental Challenges: Sustainable Development*. March 29-30, 2010 at Department of Environmental Sciences, M.D. University, Rohtak.
19. **Singh, B.** and Satyanarayana, T. (2007). Phytase production by a thermophilic mould *Sporotrichum thermophile* in solid state fermentation. In: *International Conference on Biology of Yeast and Filamentous Fungi (BYFF2007)*. Feb. 15-17, 2007 at Department of Biotechnology and Bioinformatics Centre, National Chemical Laboratory, Pune, Maharashtra., India. p.51.
20. **Singh, B.** and Satyanarayana, T. (2006). Phytase production by thermophilic mould *Sporotrichum thermophile* and its application in Dephytinization of sesame oil cake and wheat flour. In: *47th Annual Conference of Association of Microbiologists of India (AMI) Microbiology: The challenges ahead*. Dec. 6-8, 2006 at Department of Biotechnology and Bioinformatics Centre, Barkatullah University, Bhopal, M.P., India. p.178.
21. **Singh, B.** and Satyanarayana, T. (2005). Phytase production by a thermophilic mould *Sporotrichum thermophile* BJTLR50 in submerged and solid state fermentations. In: *Microbial Diversity-2005, International Conference Microbial Diversity: Current Perspectives and Potential Applications*, April16-18,2005 at Department of Microbiology, University of Delhi, South Campus, New Delhi, India,p. 143.
22. **Singh, B.** and Satyanarayana, T. (2004). Exploitation of thermophilic fungal diversity for phytase. In: *National Seminar, MicrobialDiversity- A source of Innovation in Biotechnology*, May 27-29, 2004 at TBGRI Thiruvananthapuram, Kerala India, p.80.
23. **Singh, B.** and Satyanarayana, T. (2003). Extracellular phytase production by thermophilic moulds. In: *44th Annual Conference of Association of Microbiologists of India (AMI) Microbes and Human*

Sustenance. Nov. 12-14, 2003 at Department of Microbiology, University of Agricultural Sciences, Dharwad, Karnataka, India. p. 234.

B. Attended and participated in the conferences/seminar etc.

1. Singh B. (2016) Attended in workshop on Save ozone layer: Protect life on 16 Sept. 2016 organized by Deptt. of Environmental Sciences, M.D.U., Rohtak.
2. Singh, B. (2016). Participated in National Research Colloquium on “Microbes in Food, Energy and Environment: Its importance and future prospect” on 2 April, 2016 organized by Department of Microbiology, M.D. University, Rohtak.
3. Singh, B. (2015). Participated in National Conference on “New Avenues in Microbiology: Challenges and Prospects” on 11 March, 2015 organized by Department of Microbiology, M.D. University, Rohtak.
4. Singh, B. (2015). Participated in 3rd International Research Colloquium on “Interdisciplinary scope of Microbiology: Present status and future directions” organized on 31 January, 2015 by Department of Microbiology, M.D. University, Rohtak.
5. Singh, B. (2014). Participated in National seminar on “Trends in Bioprocess Technology: Innovations and implications in Microbiology” on 10 March, 2014 organized by Department of Microbiology, M.D. University, Rohtak.
6. Singh, B. (2012). Participated in International Research Colloquium on “Advances in Microbial Biotechnology: Future Prospects” organized on 20 November, 2012 by Department of Microbiology, M.D. University, Rohtak.
7. Singh, B. (2012). Participated in one day National seminar on “Recent Advancements in application of Genetics” organized on 20 March, 2012 by Department of Genetics, M.D. University, Rohtak
8. Singh, B. (2011a). Participated in National conference on “Biodiversity: Challenges and Opportunities” organized on 18-19 February, 2011 by Department of Botany, M.D. University, Rohtak.
9. Singh, B. (2010b). Attended one day Colloquium on 7th August, 2010 on “Microbial Technologies for Human benefits” at Department of Microbiology and Center for Biotechnology, M.D. University, Rohtak.
10. Singh B. (2011c) One day Seminar on 23rd April, 2011 on “Intellectual Property: Creation and Protection” at Department of Microbiology, M.D. University, Rohtak.

11. Singh, B. (2010d). Attended one day Colloquium on 19th November, 2010 on “Prospects of Biotechnology” at Department of Biotechnology, D.C.R. University of Science and Technology, Murthal, Sonapat.

Conference/Seminar organized:

- Member of Organizing committee of One day Seminar on 23rd April, 2011 on “*Intellectual Property: Creation and Protection*” at Department of Microbiology, M.D. University, Rohtak.
- Organizing Secretary, 1st National Seminar on “Microbes and Resource Management” on 22nd October, 2011 at M.D. University, Rohtak
- Organizing Secretary, 2nd National Seminar on “Microbes in Human Welfare” on 24th March, 2012 at M.D. University, Rohtak
- Organizing Secretary, National Research Colloquium cum Workshop on “Microbes in Food, Energy and Environment: Its importance and Future Prospect” (MFEE-2016) on 2nd April, 2016 at Deptt. of Microbiology, M.D. University, Rohtak.

WORKSHOP/COURSES ATTENDED

- National Workshop on Emerging Biotechnological Methods in Industrial Waste Management (23st to 26th Feb. 2003) at Y.C. College of Science, Karad Maharashtra-415 124.
- DBT-CAMS Workshop on “Molecular Taxonomy of Symbiotic Fungi” (1st –21st Dec. 2003) at Jawaharlal Nehru University, New Delhi, India.
- National work shop on “Microbial Biotechnology and Bioinformatics” (24th -29th July, 2004) at CAS Botany, University of Madras, Chennai, India.
- Participated as an instructor in an international workshop’ Molecular Methods in Malaria held at International Centre for Genetic Engineering and Biotechnology (17-28 November, 2008).
- National Workshop on Environmental Problems and its Mitigations (26th March, 2010) at Department of Environmental Sciences, M.D. University, Rohtak, Haryana.
- National Workshop on Current Perspectives in Advance Material Science (8-9 February, 2012) at Pt. N.R.S. Govt. College, Rohtak.

SCIENTIFIC MEMBERSHIP

- Association of Microbiologists of India (Life Member)
- Biotech Research society of India (Life member)

PERSONAL DETAILS:

Date of Birth	:	Oct.4, 1977
Marital Status	:	Married
Nationality	:	Indian

The above information is true to the best of my knowledge and belief.

(Dr. Bijender Singh)