



Dr. BIJENDER SINGH OHLAN

Assistant Professor

Department of Microbiology

Maharshi Dayanand University,

Rohtak-124001, Haryana

Phone: +91-9996983652, 01262-393587

Email: ohlanbs@gmail.com &

bijendrasingh.microbiology@mdurohtak.ac.in

Webpage: <http://ohlanbs.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.

FELLOWSHIPS AND AWARDS

- Best poster award in *International Conference on “Mycology and Plant Pathology Biotechnological Approaches”* from February 27-29, 2012 held at CAS Botany, Banaras Hindu University, Varanasi.
- Best poster award (2011, Third Prize) in *National Seminar on Recent Advances in Fungal Biotechnology* held at Forest Research Institute, Dehradun, UP.
- 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:

1. UGC major research project [F.No. 39-203/2010(SR)]: Characterization of phytase from fungi..... nutritional status' for three years (~13 lakhs). **Completed**
2. DST-Fast Track Young Scientist award: Thermostable and neutral phytase food ingredients' for three years (~24.2 lakhs). **Completed**
3. Minor Research Project: Isolation and Screening of fungi for phytase production. Sanctioned by Dean Student Welfare, M.D. University, Rohtak from Dr. Radha Krishnan Foundation Fund (2011-2012). **Completed**
4. Production of recombinant phytase of the thermophilic mould *Sporotrichum thermophile* and its applications (Collaborated project with University of Delhi South Campus New Delhi) Funded by DBT, New Delhi -: 3 years (Total grant Rs. 48.4 lakhs). **Completed**
5. 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*. Funded by DBT, New Delhi -: 5 years (Total Grant Rs. 281.04 lakhs). **Ongoing**
6. Concomitant production and characterization of cellulase and xylanase by a thermophilic mould *Sporotrichum thermophile* for bioethanol production. Funded by CSIR, New Delhi:- 3 years (~Rs. 18.0 lakhs). **Ongoing**
7. Development and Validation of High Throughput Methods for Screening of Antimicrobial Peptides from Lactic Acid Bacteria (Co-PI). Funded by DBT, New Delhi -: 3 years (Rs. 44.6 lakhs). **Ongoing**
8. Purification and molecular characterization of halocin produced by *Haloferax larsenii* strain HA/3 (Co-PI). Funded by DBT, New Delhi, India: 3 years (Rs. 42.51 lakhs). **Ongoing**
9. Development of an ideal pretreatment and saccharification process for rice straw using microbial cellulases. Funded by Haryana DST, 2 years (Rs. 9.5 lakhs) **Ongoing**

RESEARCH & TEACHING EXPERIENCE

- **Assistant Professor** (23rd Feb. 2010-continuing), Department of Microbiology, M. D. University, Rohtak-124001
- **Research Scientist** (1st February 2008-22nd Feb. 2010) in Mammalian Biology, (Malaria) with Dr. Chetan Chitnis, ICGEB, New Delhi on malarial vaccine development.

- **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. 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*. **In press**. **Impact Factor: 1.532**
2. Sapna and **Singh B.** (2017). Free and immobilized *Aspergillus oryzae* SBS50 producing protease-resistant and thermostable phytase. *3Biotech*. **In press**. **Impact Factor: 0.992**
3. 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: 3.138**
4. 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**
5. Yadav M.K., Kumar V., **Singh B.**, Tiwari S.K. (2016). Phospholipid/polydiacetylene vesicle-based colorimetric assay for high-throughput screening of bacteriocins and halocins. *Applied Biochemistry and Biotechnology*. doi:10.1007/s12010-016-2316-0. **Impact Factor: 1.606**
6. 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: 1.606**
7. **Singh, B.**, Satyanarayana, T., (2016). Thermophilic Mould *Sporotrichum thermophile*: Biology and Potential Biotechnological Applications. *Kavaka*. 47: 99-106.
8. **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: 8.192**

9. **Singh B.** (2016). *Myceliophthora thermophila* syn. *Sporotrichum thermophile*: a thermophilic mould of biotechnological potential. *Critical Reviews in Biotechnology*. 36(1):59-69. **Impact Factor: 7.51**
10. Jain J., Sapna and **Singh B.** (2016). Characteristics and biotechnological applications of bacterial phytases. *Process Biochemistry*. 51(2): 159-169. **Impact Factor: 2.529**
11. 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: 1.901**
12. 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: 1.606**
13. **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: 2.529**
14. **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: 1.212**
15. 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: 1.606**
16. 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: 3.057**
17. 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: 0.892**

18. 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: 0.796**
19. Arora H., **Singh B.** and Satyanarayana T. (2014). Potential biotechnological applications of phytases from thermophilic moulds. *Kavaka* 42: 69-77.
20. **Singh B.** and Satyanarayana T. (2014). Thermophilic fungi: Their ecology and biocatalysts. *Kavaka* 42: 37-51.
21. 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.
22. 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: 1.606**
23. 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: 2.745**
24. 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 rho-1 protein from *Plasmodium falciparum* mediates erythrocyte invasion. *Cellular Microbiology* 15(8):1341-56. **Impact Factor: 4.46**
25. 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.**
26. Mayor A., Singh U., Bardají A., Gupta P., Jiménez A., Hamad A., Sigaúque 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: 6.344**

27. **Singh, B.** and Satyanarayana, T. (2012). Production of phytate-hydrolyzing enzyme by thermophilic moulds. *African Journal of Biotechnology* 11(59): 12314-24.
28. 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**
29. **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: 1.351**
30. **Singh, B.** and Satyanarayana, T. (2011b). Phytases from thermophilic molds: Their production, characteristics and multifarious applications. *Process Biochemistry*. 46 (7): 1391-1398. **Impact factor: 2.529**
31. **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.
32. 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**
33. 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**
34. **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: 2.667**

35. **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: 1.606**
36. **Singh, B.** and Satyanarayana, T. (2010). Multifarious 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**
37. **Singh, B.** and Satyanarayana, T. (2009). Characterization of a HAP-phytase of a thermophilic mould *Sporotrichum thermophile*. *Bioresource Technology* 100: 2046-2051. **Impact factor: 4.917**
38. **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: 2.156**
39. **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: 4.917**
40. **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: 4.917**
41. 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: 1.944**
42. **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: 2.156**
43. **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: 1.606**
44. 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.

CONFERENCE PROCEEDINGS:

1. 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.
2. 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.

BOOKS EDITED:

- Tiwari, S.K. and **Singh, B.** (2012). *Current Trends in Biotechnology*. Lambert Academic Publishing GmbH & Co. KG, Germany, pp. 1-441 (ISBN: 978-3-659-15773-8).

CHAPTERS IN BOOKS:

1. **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.
2. **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.
3. **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.
4. Sapna, Jain J. and **Singh B.** (2014). Production of extracellular phytate hydrolyzing enzymes by soil fungi. R.N. Kharwar R.S. Upadhyay, N.K. Dubey, Richa Raghuvanshi (eds.), *Microbial Diversity and Biotechnology in Food Security*, Springer publishers. pp. 431-437.
5. **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.

6. Sapna, **Singh B.**, Singh D. and Sharma K.K. (2013) Microbial phytases in skirmishing 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).
7. 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.
8. **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.
9. **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.
10. **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.
11. **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.
12. **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.
13. **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.
14. **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.

15. **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.
16. **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.
17. 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.
18. **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.
19. 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.

PRESENTATION IN SYMPOSIA AND CONFERENCES

A. Poster/oral presentations

1. **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, pp..
2. **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.
3. **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 J.N.U., New Delhi. BPBE 56.

4. **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.
5. **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.
6. **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.).
7. **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.
8. **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.
9. **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)**.
10. **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.
11. **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.

12. **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 M.D. University, Rohtak.
13. **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 M.D. University, Rohtak.

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.** (2012). 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.

Abstract published:

1. Singh B. (2011). HAP-phytase of thermophilic mould *Sporotrichum thermophile* Apinis: a novel enzyme with multifarious applications. In: *International Conference on “Microorganisms in Environmental Management and Biotechnology”* from July 1-3, 2011 held at Deptt. of Biotechnology and Bioinformatics Centre, Barkatullah University, Bhopal-462026 p. 142.
2. **Singh B.** and Satyanarayana T. (2011). Ca-alginate entrapped conidiospores of *Sporotrichum thermophile*: Optimization of culture conditions for phytase production and application in bread making. In: “6th National Conference on Thermodynamics of Chemical and Biological Systems (NCTCBS-2011)” from 2-4 November, 2011 held at Department of Chemistry, M.D. University, Rohtak, p. 177-178.

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 Deptt. of Microbiology, M.D. University, Rohtak
- Organizing Secretary, 2nd National Seminar on “Microbes in Human Welfare” on 24th March, 2012 at Deptt. of Microbiology, 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

SEQUENCE SUBMITTED

- ❖ *Aspergillus oryzae* SBS50 ITS1, 5.8S rRNA gene and ITS2, 502 bp linear DNA, Accession no.: JX163902
- ❖ *Aspergillus flavus* SBS65 ITS1, 5.8S rRNA gene and ITS2, 502 bp linear DNA, Accession no.: JX163903
- ❖ *Bacillus subtilis* subsp. *subtilis* JJBS250 16SrDNA gene, 646 bp linear DNA, Accession no.: KC609372
- ❖ *Bacillus subtilis* subsp. *subtilis* JJBS300 16SrDNA gene, 587 bp linear DNA, Accession no.: KC609373

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.

Ph. D. GUIDANCE:

S. No.	Candidate's Name	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 a thermophilic mould <i>Sporotrichum thermophile</i> for saccharification of lignocellulosic biomass	Registered 09-02-16
4.	Ms. Seema Dahiya	Production and characterization of endoxylanase by <i>Myceliophthora thermophila</i> and its applicability in food and feed nutrition	Registered 17-09-2016

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.	Ameliorating the nutritional quality of various food ingredients using phytase of <i>Aspergillus oryzae</i>	2015	Rinki
10.	Optimization of conditions for plant growth promotion using phytase of <i>Sporotrichum thermophile</i>	2016	Pragati Verma
11.	Purification and characterization of amylase from <i>Bacillus subtilis</i> subsp. <i>subtilis</i>	2016	Komal
12.	Production and characterization of xylanases from different strains of <i>Sporotrichum thermophile</i>	2016	Manisha
13.	Production, characteristics and biotechnological applications of pigments from bacteria	2016	Yogesh

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)

Research Work:

1. Research at MDU, Rohtak: Currently our laboratory is funded from various funding agencies like UGC, DST, DBT, HSCST and CSIR in the form of research projects. Research work involves the production, characteristics and applications of microbial phytases, xylanases and cellulases in improving food and feed nutrition. Biofuels production from lignocellulosic biomass using microbial enzymes.

2. Research Scientist at ICGEB, New Delhi

I am working as a research scientist on the European Malaria Vaccine Initiative (EMVI) project on the development of a vaccine against malaria in the Malaria group at ICGEB, New Delhi. We are interested in understanding the molecular interactions that mediate erythrocyte invasion by malaria parasites. My work comprises fermentation, process development and characterization of purified antigenic proteins and checking the immunogenicity of the purified protein against *Plasmodium falciparum*, by checking their entry into the host cells.

3. Ph. D. in Microbiology at UDSC, New Delhi**Production, characterization and applications of extracellular phytase of the thermophilic mould *Sporotrichum thermophile* Apinis**

I worked on phytase production by a thermophilic mould *Sporotrichum thermophile* BJTLR50. The phytase synthesis in the mould is inducible, whose production was found substantial both in submerged as well as solid state fermentations. My work mainly comprised of process development, purification, characterization and applications of phytase of this mould. The phytase production was studied in 22L capacity airlift and stirred tank bioreactors. The enzyme was purified by ion exchange and gel filtration chromatography. The enzyme dephytinized efficiently sesame oil cake, wheat flour and soymilk and also promoted the growth of wheat seedlings.

4. Research at Yeast Genetics Group, Leibniz-Institut für Pflanzengenetik und Kulturpflanzenforschung, Corrensstr. 3, D-06466 Gatersleben, Germany

I worked on the isolation, cloning and expression of the phytase gene from two non-conventional yeasts (*Pichia anomala* and *Arxula adenivorans*). The recombinant proteins were purified and characterized as well.