



### Curriculum Vitae of Prof. R. N. Kharwar

1. Name
2. Date of Birth
3. Departmental address

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#### **Brief writeup on area of specialization/awards/achievements:**

Working on microbial endophytes; the microorganisms which reside inside healthy plant tissues without causing any detectable negative symptoms to their concerned hosts. Endophytes are known to promote the plant growth and provide protection to their hosts against various biotic and abiotic stresses. Our current research focus is on isolation, purification and characterization of bioactive natural products from fungal and actinobacterial endophytes along with their diversity and ecology. Epigenetic modulations for cryptic and enhanced metabolites isolation from endophytes are also in area of interest. Additionally, endophytes derived biosynthesis (Green Synthesis) of metals nanoparticles, their usage, and understanding the mechanisms of induced resistance in plants against stresses through endophytes/PGPMs are also our focused research area.

#### **Awards:**

1. Junior Research Fellow and Senior Research Fellow, CSIR, New Delhi
2. BOYSCAST Fellow, DST, New Delhi-2006-07
3. Fellow, Mycological Society of India, Chennai-2011
4. Fellow, Indian Phytopathological Society, New Delhi-2013
5. Dr. S. K. Shome Memorial Award, Mycological Society of India, Chennai-2012
6. Dr. V. Agnihothrudu Memorial Award, Mycological Society of India, Chennai-2016
7. Dr. A. K. Sarbhoy Memorial Award, Indian Phytopathological Society, New Delhi-2020
8. Dr. P. C. Jain Memorial Award, Mycological Society of India, Chennai-2021
9. Sir E. J. Butler Memorial Award (18<sup>th</sup>), Indian Mycological Society, Kolkata-2022
10. INSA Teachers Award-2022, INSA, New Delhi
11. Fellow, National Academy of Sciences India (NASI)-2023, Prayagraj
12. Honor of Appreciation Award, Indian Lichenological Society, NBRI, Lucknow-2024

**Coordinators:** 1. Applied Microbiology (2024-2027); 2. Industrial Microbiology UG (2020-2023); 3. Dr. Ambedkar Centre of Excellence (DACE) BHU (2022---cont)

#### **Achievements:**

1. Member, Wild life Board, U. P. Lucknow (2010-2012)

2. Vice President, Mycological Society of India (2014-15)
2. Editor-in-Chief, Journal of Plant Science and Research (2016.....)
3. Editor (Mycology), Indian Phytopathology (2007-2010 and 2014-17)
4. Associate Editor, Archives of Phytopathology and Plant Protection (T&F 2017....)
5. Review Editor, Frontiers in Microbiology (2017....)
6. Council Member, Mycological Society of India (2012-2014)
7. Council Member, Mycological Society of India (2017-2020; 2023-2025)
8. Member, Executive Council, VBS Purvanchal University, Jaunpur (01-12-2013-30-11-2017; 01-12-2020-30-11-2021)
10. Member, Executive Council, Dr. RML Avadh University, Faizabad, Ayodhya (2015-2018)
11. Member Proctorial Board and Deputy Chief Proctor, BHU (2013-14)
12. Member, Vidyalay Management Committee, KV, BHU, Varanasi (2014.....)
13. Delivered Lecture and Chaired Sessions at several national and international conferences
14. Convened the lecture of Prof James P Stack, (USA) in a plenary session at IARI, New Delhi during 5th International Conference on "Plant Pathology in Globalized Era" during November 10-13, 2009.
15. Member, Complaints Committee, BHU, Varanasi- (2016—2019; 2022---)
16. Member, Board of Studies, Botany, Dr. RML Avadh University, Faizabad (2015-2018)
17. Member, Board of Studies, Botany, VBS Purvanchal University, Jaunpur (2015-2018)
18. Member, Board of Studies, Botany, DDU Gorakhpur University, Gorakhpur (2016-18)
19. Member, Board of Studies, Envronmtal Microbiology, BBA University, Lucknow (2017-20)
20. Member: Board of Studies, Botany, University of Madras, Chennai (2017-2020-2023)
21. Organizing Secretary, National Seminar on 'Impact of Increasing Human Population on Natural Resources' from 16-18 Oct, 2003 at BHU, Varanasi
22. Organizing Secretary, International Conference on Mycology and Plant Pathology: Biotechnological Approaches ([www.icmpb2012bhu.com](http://www.icmpb2012bhu.com)) from February 27-29, 2012, BHU, Varanasi
23. Convener, Emerging Trends and Challenges in Plant Science Research, Dept of Botany, from Feb19-20, 2015, BHU, Varanasi
24. Convener, Emerging Trends in Fungal Biology and Plant Protection 'ETFPP-2016', Dept of Botany, from Feb16-18, 2016, BHU, Varanasi
25. Convener, National Seminar on Recent Advances in Fungal Diversity, Plant-Microbes Interaction and Disease Management 'RFPIDM-2020', Dept of Botany, from Feb28-29, 2020, BHU, Varanasi
26. Convener, Refresher course in Botany (27 Dec 2008- 16 January 2009) Academic Staff College, BHU, Varanasi
27. Coordinator: Undergraduate Admission Coordination Committee (UACC), Institute of Science, BHU, Varanasi (2019---)
28. Coordinator: B. Sc. Industrial Microbiology Vocational Course (01-07-2020-30-06-2023)
29. Member Board of Studies, DDU Gorakhpur University, Gorakhpur (2020---)
30. Member Board of Studies, Rajiv Gandhi University, Itanagar, Ar.P (2020-2023)
31. Member, Research Degree Committee, RMLAU, Ayodhya (2020----)
32. Member, Review committee of Stride Project (2020-21)
33. Member, Academic Council, Sidhharth University Kapilvastu, Sidhharthnagar (2021--)
34. Member, Research Degree Committee, JNCU, Ballia (19-11-2021-18-11-2023---)
35. Member, Annual Report Committee, Inst of Science, BHU, (2020-2021.)
35. Programme Coordinator, Dr. Ambedkar Centre of Excellence, BHU, Varanasi (Feb 02, 2022--)
36. Life Member, Association of Microbiologists of India, New Delhi
37. Life Member, Indian Phytopathological Society, New Delhi
38. Life Member, Mycological Society of India, Chennai
39. Life Member, Indian Mycological Society, Kolkata

40. COURT Member, Guru Ghasidas Vishwavidyalaya, Bilaspur (11.5.2022---)
41. Member DRC, Guru Ghasidas Vishwavidyalaya, Bilaspur (06.7.2022---)
42. Member, **Academic Council, VBSPU, Jaunpur (22-10-2022-21-10-2025)**
43. Member, Compassionate Appointments Committee, BHU (2023-2024)
44. Expert Member Project Monitoring Committee, ICFRE, Dehradun
45. Member, Evaluation Committee, MJ Narasimhan Medal for Best Res Paper, IPS (2022)
46. Member, Editorial Advisory Board, Bioscience Discovery (ISSN: 2231-024X Online, ISSN: 2229-3469 Print)
47. President Elect-Mycological Society of India-2024
48. Editorial Board Member- Indian Mycological Society, Kolkata (14-02-2024----)
49. Academic Council Member, Birangana Sati Sadhani Rajyik Viswavidyalaya, Golaghat, Assam (10-12-2024-09-12-2027)
50. Member, Governor Nominee for selection committees of Science, Rabindranath Tagore University, Hojai, Assam (10-12-2024-09-12-2029-)
51. Member, Compassionate Appointments Committee, BHU (20-12-2024-19-12-2026)
52. Chairman, 'Unfairmeans Committee' for University Examination, BHU (2024-2025)

#### **Research Projects Undertaken as PI/Co-PI:**

1. Elucidation of host-parasite relations and control of leaf-spot diseases of important timbers yielding trees, UGC, New Delhi (2002-2005), Amount 8.0 Lakh INR
2. Taxonomy and documentation of fungi occurring in Varanasi region, CSIR, New Delhi (2006-2009) Amount- 8.0 Lakh INR
3. Isolation and characterization of antimicrobial compounds from endophytic fungi and actinomycetes of selected medicinal plants from rain forest of North-East India, DST, New Delhi (2010-2013) Amount-35.05 Lakh INR
4. Diversity Assessment and Characterization of Antimicrobial Compounds and Enzymes from Endophytic Fungi and Actinomycetes Isolated from Selected Plants of Uttar Pradesh, India", DST, New Delhi (2014-2018) Rs. 36.88 Lakh INR
5. Metabolic profiling of known and cryptic compounds of endophytic microbes under modulated condition and evaluation of their biopotential in metal nanoparticles (NPs) synthesis. SERB, DST, New Delhi (2020-2023) INR-44.75 Lakh
6. Exploring the potential of endophytic fungi in alleviation of abiotic stresses of wheat plant *Triticum aestivum* L.IoE, BHU, Varanasi (2021-2024) INR-10.00 + 6.0 Lakh

#### **Additional information:**

##### **International Mentorship**

1. Mr. Angelo Mark P Walag, Philippinnes has worked six months (Feb 5, 2020-July 10, 2020) under AIRT (ASEAN-India Research & Training Fellowship) by FICCI and DST, New Delhi.

## 10 best publications:

1. Singh DK, Sharma VK, Kumar J, Mishra A, Arti Singh, Puja Kumari, Verma SK, Kharwar RN (2018). Mycosynthesis of bactericidal silver and polymorphic gold nanoparticles: physicochemical variation effects and mechanism. *Nanomedicine* 13(2): 191-207 (IF-5.5)
2. Singh BN, Singh BR, Gupta VK, Kharwar RN, Pecoraro L (2018). Coating with microbial hydrophobins: A novel approach to develop smart drug nanoparticles. *Trends in Biotechnology* 36(11):1103-1106 (IF-17)
3. Singh DK, Sharma VK, Kumar J, Mishra A, Verma SK, Sieber TN, Kharwar RN (2017). Diversity of endophytic mycobiota of tropical tree *Tectonagrandis* Linn.f.: Spatiotemporal and tissue type effects. *Scientific Reports* 7: 3745 (IF-4.379)
4. Sharma VK, Kumar J, Singh DK, Mishra A, Verma SK, Gond SK, Kumar A, Singh N, Kharwar RN (2017) Induction of cryptic and bioactive metabolites through natural dietary components in an endophytic fungus *Colletotrichum gloeosporioides*. *Frontiers in Microbiology* 8: 1126 (IF-5.2)
5. Kumar J, Sharma VK, Singh DK, Mishra A, Gond SK, Verma SK, Kumar A, Kharwar RN (2016). Epigenetic activation of antibacterial property of an endophytic *Streptomyces coelicolor* strain AZRA 37 and identification of the induced protein using MALDI TOF MS/MS. *Plos One* 11(2): e0147876 (10.1371/journal.pone.0147876) (IF-3.24)
6. Mishra A, Gond SK, Kumar A, Sharma VK, Verma SK, and Kharwar RN and Sieber TN (2012). Season and tissue type affect fungal endophyte communities of the Indian medicinal plant *Tinospora cordifolia* more strongly than geographic location and their antimicrobial potential. *Microbial Ecology* 64: 388-398 (IF-3.6)
7. Kharwar RN, Mishra A, Gond SK, Stierle A and Stierle D (2011). Anticancer compounds derived from fungal endophytes: their importance and future challenges. *Natural Product Reports* 28: 1208-1228 (IF-11.9)
8. Verma VC, Kharwar RN and Gange AC (2010). Biosynthesis of antimicrobial silver nanoparticles by the endophytic fungus *Aspergillus clavatus*. *Nanomedicine* 5 (1): 33-40 (IF-5.307)
9. Kharwar RN, Verma VC, Gond SK, Kumar A and Strobel G. (2009). Javanicin, an antibacterial naphthaquinone from an endophytic fungus of Neem- *Chloridium* sp. *Current Microbiology* 58, 233-238 (IF-2.188)
10. Verma VC, Gond SK, Mishra A, Kumar A, Kharwar RN and Gange AC (2009). Endophytic actinomycetes from *Azadirachta indica* A. Juss.: Isolation, diversity and anti-microbial activity. *Microbial Ecology* 57, 749-756 (IF-4.552)

## Full List of Publications:

### A. Research Articles in Journals of Repute

1. Kharwar RN\*, Singh PN and Singh RK (1996). New species of *Mycovellosiella* species associated with foliar spots in Nepal. *Mycological Research* 100, 689-692

2. Singh PN, Kharwar RN and Rao HSG (1997). Additions to hyphomycete genus *Pseudocercospora*. *Indian Phytopathology* 50, 7-15.
3. Meenu, Kharwar RN and Bhartiya HD (1998). Some new forms of genus *Corynespora* from kathmandu valley, Nepal. *Indian Phytopathology* 51, 146-151.
4. Kharwar RN\* and Narayan S (1999). Some novel species of genus *Mycovellosiella* from forest flora of Nepal and India. *Journal of Living World* 7, 10-20.
5. Narayan S, Kharwar RN, Singh RK and Bhartiya HD (1997). Some New *Cercospora* sensu stricto causing leaf spots on vegetable plants from Indian sub-continent. *Kavaka* 25, 87-92. (Late addition)
6. Narayan S, Kharwar RN\* and Singh RK (2001). Some novel taxa of hyphomycete genus *Cercospora* causing foliar spots in India. *Indian Phytopathology*. 54, 351-357.
7. Narayan S, Kharwar RN\*, Singh RK and Rao HSG (2001). Four New taxa of genus *Cercospora* causing foliar spots on Horticultural and Medicinal Plants from India. *J.I.B.S.* 80, 213-217.
8. Narayan S, Kharwar RN\* and Singh RK (2001). Some additions to *Cercospora* from Indian Subcontinent. *Kavaka* 28&29, 59-72.
9. Kharwar, RN\*, Singh R. K. (2003). Two new species of *Mycovellosiella*. *Indian Phytopathology* 56, 50-53.
10. Kharwar RN\* and Singh RK (2004). Additions to the hyphomycete genus *Veronaeas* phytoparasitic species. *Microbiological Research* 159, 103-111.
11. Kumar A, Kumar Anuj and Kharwar RN\* (2006). Two new phytoparasitic hyphomycetes from Varanasi, India. *Indian Phytopathology* 59, 85-90.
12. Verma VC, and Kharwar RN (2006). Efficacy of neem leaf extract against its own fungal endophytes *Curvularia lunata*. *Journal of Agricultural Technology* 2, 329-335.
13. Kumar V, Kumar A and Kharwar RN\* (2007). Antagonistic potential of fluorescent Pseudomonads and control of charcoal rot of chickpea caused by *Macrophomina phaseolina*. *Journal of Environmental Biology* 28, 15-20.
14. Verma VC, Gond SK, Kumar A, Kharwar RN\* and Strobel G (2007). The Endophytic Mycoflora of bark, leaf and stem Tissues of *Azadirachta indica* A. Juss (Neem) from Varanasi (India). *Microbial Ecology* 54, 119-125. 0095-3628
15. Kumar V, Kumar A, Verma VC, Gond SK and Kharwar RN\* (2007). Induction of Defense enzymes in *Pseudomonas fluorescens* treated chickpea roots against *Macrophomina phaseolina*. *Indian Phytopathology* 60, 289-295.
16. Gond SK, Verma VC, Kumar A and Kharwar RN\* (2007). Study of endophytic fungal community from different parts of *Aegle marmelos* Correa (Rutaceae) form Varanasi (India). *World Journal of Microbiology and Biotechnology* 23, 1371-1375.
17. Verma VC, Gond SK, Misra A, Kumar A and KharwarRN\*(2008). Selection of Natural Strains of Fungal Endophytes from *Azadirachta indica* A. Juss, with Anti-Microbial Activity Against Dermatophytes. *Current Bioactive Compounds* 4, 36-40.

18. Kharwar RN\*, Verma VC, Strobel G and Ezra D (2008). Endophytic Fungal Complexes of *Catharanthus roseus* (L.) G. Don. *Current Science* 95, 228-233.
19. Kumar A, Verma VC, Gond SK, Kumar V and Kharwar RN\* (2009). Biocontrol potential of *Cladosporium* sp. (MCPL-461), against obnoxious weed *Parthenium hysterophorus* L. *Journal of Environmental Biology* 30, 307-312.
20. Verma VC, Gond SK, Mishra A, Kumar A, Kharwar RN\* and Gange AC (2009). Endophytic Actinomycetes from *Azadirachta indica* A. Juss.: Isolation, Diversity and Anti-microbial Activity. *Microbial Ecology* 57, 749-756.
21. Kharwar RN\*, Verma VC, Gond SK, Kumar A and Strobel G. (2009). Javanicin, an Antibacterial Naphthaquinone from an Endophytic fungus of Neem- *Chloridium* sp. *Current Microbiology* 58, 233-238.
22. Verma VC, Kharwar RN\* and Gange AC (2010). Biosynthesis of antimicrobial silver nanoparticles by the endophytic fungus *Aspergillus clavatus*. *Nanomedicine* 5 (1): 33-40.
23. Kharwar RN\*, Gond SK, Verma VC, Kumar A and Mishra A (2010). A comparative study of endophytic and epiphytic fungal association with leaf of *Eucalyptus citriodora* Hook, and their antimicrobial activity *World Journal of Microbiology and Biotechnology* 26, 1941-1948.
24. Prakash B, Shukla R, Singh P, Mishra PK, Dubey NK and Kharwar RN (2011). Efficacy of chemically characterized *Ocimum gratissimum* L. essential oil as an antioxidant and a safe plant based antimicrobial against fungal and aflatoxin B1contamination of spices. *Food Research International* 44, 385-390.
25. Verma VC, Kharwar RN\*, Singh SK, R Solanki and Prakash S (2011). Biofabrication of anisotropic gold nanotriangles using extract of as dual functional reductant and stabilizer. *Nanoscale Research Letters* 6:16 (6:261).
26. Chand R, Shroff S, Kushwaha C, Kharwar RN\* and Singh AK (2011). Infection biology and aeciospores of *Uromyces viciae-fabae* under humid conditions. *Indian Phytopathology* 64, 235-239.
27. Verma VC, Gond SK, Kumar A, Kharwar RN\* et al. (2011).Endophytic fungal flora of roots and fruits of an Indian neem plant *Azadirachta indica* A. Juss., and impact of culture media on their isolation. *Indian Journal of Microbiology* 51(4):469-476.
28. Kharwar RN\*, Verma SK, Mishra A, Gond SK, Sharma VK, Kumar J, Singh DK and Afreen T (2011). Assessment of diversity, distribution and antibacterial activity of endophytic fungi isolated from a medicinal plant *Adenocalymma alliaceum* Miers. *Symbiosis* 55: 39-46
29. Gond SK, Verma VC, Mishra A, Kumar A, and Kharwar RN\* (2012). Antibacterial activity of endophytic fungi isolated from *Nyctanthes arbortrinitatis* L. *Mycoscience* 53: 113-121.
30. Verma VC, Singh SK and Kharwar RN\* (2012). Histological Investigation of Fungal Endophytes in Healthy Tissues of *Azadirachta indica* A. Juss. *Kassabart Journal of Natural Science* 46:229-237.
31. Mishra A, Gond SK, Kumar A, Sharma VK, Verma SK, and Kharwar RN\* and Sieber TN (2012). Season and tissue type affect fungal endophyte communities of the Indian

medicinal plant *Tinospora cordifolia* more strongly than geographic location and their antimicrobial potential. *Microbial Ecology* 64: 388-398.

32. Kharwar RN\*, Kumar A, Bhat DJ and Nakashima C (2012). *Asperisporium pongamae-pinnatae* a new filiicolous fungus from India. *Vegetos* 25:334-337.
33. Kharwar RN\*, Maurya AL, Verma VC, Kumar A, Gond SK and Mishra A (2012). Diversity and antimicrobial activity of endophytic fungal community isolated from medicinal plant *Cinnamomum camphora*. *Proceedings of the National Academy of Sciences, India* (Section-B) 82:557-565.
34. Singh A and Kharwar RN\* (2012). Additions to hyphomycete genus *Jusmidium* species from Indian sub-continent. *Indian J Mycology and Plant Pathology* 42: 417-422.
35. Srivastava A, Singh P, Kumar R, Verma SK and Kharwar RN (2013). Indole-based polymer and its silver nanocomposite as advanced antibacterial agents: synthetic path, kinetics of polymerization and applications. *Polymer International* 62: 210-218.
36. Kumar A, Gond SK, Mishra A, Sharma VK and Kharwar RN\* (2013). Role of different variables on site-specific isolation and distribution patterns of soil mycoflora from Varanasi. *Vegetos* 26:88-95.
37. Gond SK, Mishra A, Sharma VK, Verma SK and Kharwar RN\* (2013). Isolation and characterization of antibacterial naphthlene derivative from *Phoma herbarum* an endophytic fungus of *Aegle marmelos*. *Current Science* 105: 167-169.
38. Verma SK, Mishra A, Sharma VK, Gond SK, Kumar A and Kharwar RN\* (2014). Impact of environmental variables on the isolation, diversity and antimicrobial activity of endophytic fungal communities from *Madhuka indica* Gmel. At different location of India. *Annals of Microbiology* 64:721-734.
39. Gangwar M, Dogra S, Gupta UP and Kharwar RN (2014). Diversity and biopotential of Actinomycetes from three medicinal plants in India. *African Journal of Microbiology Research* 8(2): 184-191.
40. Kushwaha SK, Dani RK, Bharty MK, Chaudhary UK, Sharma VK, Kharwar RN and Singh NK (2014). Studies on N-picolinoyl-N'-benzothiolyhydrazide and its Zn(II) complex: Synthesis, structure, antibacterial activity, thermal analysis and DFT calculation. *Journal of Molecular Structure* 1063:60-69.
41. Goutam J, Sharma VK, Verma SK, Singh DK, Kumar J, Mishra A, Kumar A, Kharwar RN\* (2014). Optimization of culture conditions for enhanced production of bioactive metabolites from *Emericella quadrilineata* an endophyte of *Pteris pellucida* with its antimicrobial and antioxidant activity. *J App & Pure Microbiol* 8: 2059-2073.
42. Dani RK, Bhartya MK, Kushawaha SK, Prakash O, Sharma VK, Kharwar RN, Singh RK and Singh NK (2014). Synthesis, spectral and structural characterization of trinuclear and mononuclear Zn(II) complexes of N'-benzoyl hydrazine carboperthioate and 5-phenyl-1,3,4-oxadiazole-2-thione: An approach to DFT calculation, antibacterial and thermal studies. *Polyhedron* 81:261-272.
43. Singh A, Kharwar RN, Singh, R and Kumar S (2014). A new species of *Zasmidium* (Mycosphaerellaceae) from India. *Sydowia* 66: 0309-0312.

44. Bharty MK, Dani RK, Kushwaha SK, Singh NK, Kharwar RN and Butcher RJ (2015). Mn(II), Ni(II), Cu(II), Zn(II), Cd(II), Hg(II) and Co(II) complexes of 1-phenyl-1H-tetrazole-5-thiol: Synthesis, spectral, structural characterization and thermal studies. *Polyhedron* 88:208-221.

45. BhartyMK, Dani RK, Kushwaha SK, OmPrakash, Singh RK, Sharma VK, Kharwar RN, Singh NK (2015). Synthesis, spectral characterization, thermal behavior, antibacterial activity and DFT calculation on N'-[bis(methylsulfanyl) methylene]-2-hydroxybenzohydrazide and N'-(4-methoxy benzoyl)-hydrazinecarbodithioic acid ethyl ester. *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy* 145: 98-109 1386-1425

46. Srivastava PK, Singh M, Gupta M, Singh N, Kharwar RN, Tripathi RD, Nautiyal CS (2015) Mapping of arsenic pollution with reference to paddy cultivation in the middle Indo-Gangetic Plains. *Environ Monit Assess* 187(4): 187-198. doi: 10.1007/s10661-015-4418-5 0167-6369

47. Kharwar RN\*, Dubey SK, Pandey J and Rai LC (2015) Plant Science Research. *Current Science* 109: 14-15. 0011-3891

48. Kharwar RN\*, Singh A, Singh, R and Kumar S (2015). Two new species of *Zasmidium* (Mycosphaerellaceae) from Nepal. *Mycotaxon* 130: 241-246. 0093-4666

49. Singh M, Srivastava PK, Verma PC, Kharwar RN, Singh N, Tripathi RD (2015). Soil fungi for mycoremediation of arsenic pollution in agriculture soils. *Journal of Applied Microbiology* 119: 1278-1290, doi: 10.1111/jam.12948 1364-5072

50. Gond SK, Bergen MS, Torres MS, White JF Jr, Kharwar RN (2015). Effect of bacterial endophyte on expression of defence genes in Indian popcorn against *Fusarium moniliforme*. *Symbiosis* 66: 133-140, DOI 10.1007/s13199-015-0348-9 2582-9009

51. Kumar A, Gond SK, Mishra A, Sharma VK, Verma SK, Singh DK, Kumar J and Kharwar RN\* (2015). Salicylic acid and its role in systemic resistance induced by *Pseudomonas fluorescens* to early blight disease of tomato. *Vegetos* 28(3): 12-19. 2229-4473.

52. Patel JS, Sarma BK, Singh HB, Upadhyay RS, Kharwar RN and Ahmad M (2016). *Pseudomonas fluorescens* and *Trichoderma asperellum* enhance expression of *Ga* subunits of the pea heterotrimeric G-protein during *Erysiphe pisi* infection. *Frontiers in Plant Science* 6 online doi: 10.3389/fpls.2015.01206 1664-462X

53. Kumar J, SharmaVK, Singh DK, Mishra A, Gond SK, Verma SK, Kumar A, Kharwar RN\* (2016). Epigenetic activation of antibacterial property of an endophytic *Streptomyces coelicolor* strain AZRA 37 and identification of the induced protein using MALDI TOF MS/MS. *PlosOne* 11(2): e0147876 (10.1371/journal.pone.0147876) 1932-6203

54. Patel JS, Upadhyay RS, Singh HB, Kharwar RN, Ahmad M and Sarma BK (2016). A simple and efficient protocol for isolation of RNA from different tissues of chickpea and pea. *Int. J Agri. Environ and Biotechnol* 9(1): 39-43 (10.5958/2230-732X.2016.00006.1) 2456-1878

55. Goutam J, Kharwar RN, Tiwari VK, Mishra A, Singh S (2016). Isolation and Identification of Antibacterial Compounds Isolated from Endophytic Fungus *Emericella quadrilineata*. *Nat Prod Chem Res* 4: 205. doi:10.4172/2329-6836.1000205 2329-6836

56. Goutam J, Singh S, Kharwar RN, Ramarai VK (2016). *In vitro* potential of endophytic fungus *Aspergillus terrus* (Jas-2) associated with *Achyranthus aspera* and study on its culture conditions. *Biology and Medicine* 8:7 09748369

57. Verma SK, Gond SK, Mishra A, Sharma VK, Kharwar RN (2016) Biofabrication of antibacterial and antioxidant silver nanoparticles (AgNPs) by an endophytic fungus *Pestalotia* sp., isolated from *Madhuca longifolia* var. *Latifolia*. *J Nanomat. Mol. Nanotechnol.* 5:4 <http://dx.doi.org/10.4172/2324-8777.1000189> 2324-8777

58. Bharty, M. K., Paswan, S., Dani, R. K., Singh, N. K., Sharma, V. K., Kharwar, R. N., Butcher, R. J. (2017) Polymeric Cd(II), trinuclear and mononuclear Ni(II) complexes of 5-methyl-4-phenyl-1,2,4-triazole-3-thione: Synthesis, structural characterization, thermal behaviour, fluorescence properties and antibacterial activity. *J Mol. Structure* 1130: 181-193 (DOI: 10.1016/j.molstruc.2016.10.030) 0022-2860

59. Patel JS, Kharwar RN, Singh HB, Upadhyay RS and Sarma BK (2017) *Trichoderma asperellum* (T42) and *Pseudomonas fluorescens* (OKC)-enhances resistance of pea against *Erysiphe pisi* through enhanced ROS generation and lignifications. *Front. Microbiol.* 8:306. doi: 10.3389/fmicb.2017.00306 1664-302X

60. Verma, S. K., Kingsley, K., Irizarry, I., Bergen, M., Kharwar, R. N., White, J. F. (2017) Seed vectored endophytic bacteria modulate development of rice seedlings. *J Appl. Microbiol.* 122: 1680-1691 doi: 10.1111/jam.13463 1365-2672

61. Sharma VK, Kumar J, Singh DK, Mishra A, Verma SK, Gond SK, Kumar A, Singh N, Kharwar RN\* (2017) Induction of cryptic and bioactive metabolites through natural dietary components in an endophytic fungus *Colletotrichum gloeosporioides*. *Frontiers in Microbiology* 8: 1126 1664-302X

62. Singh DK, Sharma VK, Kumar J, Mishra A, Verma SK, Sieber TN, Kharwar RN\* (2017) Diversity of endophytic mycobiota of tropical tree *Tectona grandis* Linn.f.: Spatiotemporal and tissue type effects. *Scientific Reports* 7: 3745 2045-2322

63. Goutam J, Sharma G, Tiwari VK, Mishra A, Kharwar RN, Ramaraj V, Koch B (2017) Isolation and Characterization of "Terrein" an Antimicrobial and Antitumor Compound from Endophytic Fungus *Aspergillus terreus* (JAS-2) Associated from *Achyranthus aspera* Varanasi, India. *Front. Microbiol.* 8:1334. <https://doi.org/10.3389/fmicb.2017.01334> 1664-302X

64. Gupta PN, Kulshrestha N, Singh A, Kharwar RN, Saroj AL (2018) Studies on PVA/AgI-based polymeric membranes for exploration of antibacterial activity. *Int. J Polymeric Mat. and Polymeric Biomat.* 67:258-265 <https://doi.org/10.1080/00914037.2017.1320662> 00914037, 1563535X

65. Verma, S. K., Kingsley, K., Irizarry, I., Bergen, M., Kharwar, R. N., White, J. F. (2018) Bacterial endophytes from rice cut grass (*Leersia oryzoides* L.) increase growth, promote root gravitropic response, stimulate root hair formation, and protect rice seedlings from disease. *Plant and Soil.* 422:223-238 (<https://doi.org/10.1007/s11104-017-3339-1>) 0032079X, 15735036

66. Singh DK, Sharma VK, Kumar J, Mishra A, Arti Singh, Puja Kumari, Verma SK, Kharwar RN\* (2018). Mycosynthesis of bactericidal silver and polymorphic gold nanoparticles: physicochemical variation effects and mechanism. *Nanomedicine*. 13(2): 191-207(<https://doi.org/10.2217/nmm-2017-0235>) 1178-2013.

67. Verma SK, Mishra A, Sharma VK, Gond SK, Kumar A and Kharwar RN (2018). Leaf segment size and culture media influence the recovery and diversity of fungal endophytes isolated from *Madhuca Longifolia* with their enzymes activity. *Vegetos*. 31: 10-19, DOI: (<https://10.5958/2229-4473.2018.00002.2>) 2229-4473.

68. Singh BN, Singh BR, Gupta VK, Kharwar RN and Pecoraro L (2018). Coating with microbial hydrophobins: A novel approach to develop smart drug nanoparticles. *Trends in Biotechnology*. 36(11):1103-1106 <https://doi.org/10.1016/j.tibtech.2018.03.006> 01677799, 18793096

69. Mishra A, Sharma VK, Singh DK, Kumar J, Pandey P and Kharwar RN (2019). Characterization of *Pseudofusicoccum adansoniae*, an Endophytic Fungus Residing in Photosynthetic Root of *Tinospora cordifolia*, a Medicinal Plant. *Proceeding of National Academy of Sciences Sec-B*.89: 1319-1326 <https://doi.org/10.1007/s40011-018-1046-1> 0369-8211 (print) 2250-1746 (web)

70. Sharma S, Kumari P, Kharwar RN, Yadav A, Srikrishna S, Kumar R (2019). Mechanically magnified chitosan-based hydrogel as tissue adhesive and antimicrobial candidate. *Int. J. Biol. Macromol.* 125: 109-115 (<https://doi.org/10.1016/j.ijbiomac.2018.12.018>) 0141-8130

71. Shukla D, Pandey FP, Kumari P, Basu N, Tiwari MK, Lahiri J, Kharwar RN, Parmar AS (2019). Label-Free Fluorometric Detection of Adulterant Malachite Green Using Carbon Dots Derived from the Medicinal Plant Source *Ocimum tenuiflorum*. *Chemistry Select*4: 4839-4847<https://doi.org/10.1002/slct.201900530> 2365-6549

72. Singh M, Srivastava PK, Yadav HK, Kharwar RN (2019). Phylogenetic Assessment of *Trichoderma* (fungi) isolates from Arsenic contaminated soils. International Journal of Research and Analytical Reviews 6(1): 102-116 [www.ijrar.org](http://www.ijrar.org) (E-ISSN 23481269, P-ISSN 2349-5138) 2348-1269

73. Goutam J, Kharwar RN, Tiwari VK, Singh R, Sharma D (2020). Efficient Production of the Potent Antimicrobial Metabolite "Terrein" From the Fungus *Aspergillus terreus*. *Natural Product Communications* 15(3): 1-5. <https://doi/10.1177/1934578X20912863> 1555-9475

74. Gond SK, Mishra A, Verma SK, Sharma VK, Kharwar RN (2020). Synthesis and characterization of antimicrobial silver nanoparticles by an endophytic fungus isolated from *Nyctanthes arbor-tristis*. *Proceeding of National Academy of Sciences Sec-B* *Proceeding of National Academy of Sciences Sec-B* 160: 641-645 (<https://doi.org/10.1007/s40011-019-01137-2>) 0369-8211 (print) 2250-1746 (web)

75. Singh S, Mishra VK, Kharwar RN, Budhlakoti N, Ahirwar RN, Mishra DC, Kumar S, Chand R, Kumar U, Kumar S, Joshi AK (2020). Genetic characterization for lesion mimic and other traits in relation to spot blotch resistance in spring wheat. *Plos One* 15(10): e0240029 (<https://doi.org/10.1371/journal.pone.0240029>) 1932-6203

76. Wilken PM, Aylward J, Chand R, Grewe F, Lane FA, Sinha S, Ametrano C, Distefano I, Divakar PK, Duong TA, Sabine Huhndorf, Ravindra Kharwar RN et al., (2020). Draft genome sequence of *Ambrosiella cleistominuta*, *Cercospora brassicicola*, *C. citrullina*, *Physcia stellaris*, and *Teratosphaeria pseudoeucalypti*. *IMA Fungus* **11**:19 (<https://doi.org/10.1186/s43008-020-00039-7>) 2210-6359

77. Parmar S, Sharma VK, Singh V, Kharwar RN (2021). Seasonal variation of potentially toxic metal contamination in Yamuna riverine ecosystem, Delhi, India. *Environmental*

78. Kumari P, Singh A, Singh DK, Sharma VK, Kumar J, Gupta VK, Bhattacharya S, Kharwar RN (2021). Isolation and purification of bioactive metabolites from an endophytic fungus *Penicillium citrinum* of *Azadirachta indica*. South Afr J Bot 139:449-457. <https://doi.org/10.1016/j.sajb.2021.02.020> 0254-6299

79. Singh A, Kumar J, Sharma VK, Singh DK, Kumari P, Nishad JH, Gautam VS, Kharwar RN\* (2021). Phytochemical analysis and antimicrobial activity of an endophytic *Fusarium proliferatum* (ACQR8), isolated from a folk medicinal plant *Cissus quadrangularis* L. South Afr J Bot 140: 87-94. <https://doi.org/10.1016/j.sajb.2021.03.004> 0254-6299

80. Mishra A, Kumar A, Gond SK, Verma SK, Kumar J, Singh DK, Kharwar RN (2021). Seasonal distribution and biopotential of endophytic fungi recovered from photosynthetic root of *Tinospora cordifolia*. KAVAKA 56: 75-84. [www.https://doi.org/10.36460/Kavaka/56/2021/75-84](https://doi.org/10.36460/Kavaka/56/2021/75-84) 0379-5179

81. Nishad JH, Singh A, Gautam VS, Kumari P, Kumar J, Yadav M, Kharwar RN (2021). Bioactive potential evaluation and purification of compounds from an endophytic fungus *Diaporthe longicolla*, a resident of *Saraca asoca* (Roxb.) Willd. Archives of Microbiology 203:4179-4188. [www.https://doi.org/10.1007/s00203-021-02390-8](https://doi.org/10.1007/s00203-021-02390-8) 0302-8933 (print) 1432-072X (web)

82. Nishad JH, Singh A, Bharti R, Prajapati P, Sharma VK, Gupta VK, Kharwar RN (2021). Effect of histone methyltransferase specific probe BRD4770 on metabolic profiling of an endophytic fungus *Diaporthe longicolla*. Frontiers in Microbiology 12:725463. [www.https://doi.org/10.3389/fmicb.2021.725463](https://doi.org/10.3389/fmicb.2021.725463) 1664302X

83. Walag AMP, Kharwar RN (2021). Assessment of Crude Extract Yield and *In-vitro* Antioxidant Activity of Sea Stars from the Philippines. Uttar Pradesh Journal of Zoology 42(22): 68-76, ISSN: 0256-971X (P)

84. Parmar S, Singh V, Sharma VK, Yadav BK, Kharwar RN (2021). Effect of Vermiculite Soil Amendment on Immobilization of Selected Heavy Metals of Rhizospheric Zone of Maize. Communications in Soil Science and Plant Analysis 53(3): 384-394 ([www.https://doi.org/10.1080/00103624.2021.2017444](https://doi.org/10.1080/00103624.2021.2017444)) 00103624, 15322416

85. Gautam VS, Singh A, Kumari P, Nishad JH, Kumar J, Yadav M, Bharti R, Prajapati P, Kharwar RN (2022). Phenolic and flavonoid contents and antioxidant activity of an endophytic fungus *Nigrospora sphaerica* (EHL2), inhabiting the medicinal plant *Euphorbia hirta* (dudhi) L. Archives of Microbiology 204:140 (<https://doi.org/10.1007/s00203-021-02650>) 0302-8933

86. Gautam VS, Nishad JH, Kumari P, Singh A, Verma SK, Sharma VK, Kumar J, Kharwar RN (2022) Isolation and functional characterization of a fungal plant symbiont *Nigrospora sphaerica*, associated to *Euphorbia hirta* L. Indian Phytopathology 75: 345-355 (online <https://doi.org/10.1007/s42360-022-00465-0>) 22489800

87. Sinha S, Navathe S, Kharwar RN, Chand R (2022). Draft genome sequence of *Pseudocercospora cruenta* causing black leaf mould of cowpea IMA Genome-F 16F. IMA Fungus 13:3 (<https://doi.org/10.1186/s43008-022-00089-z>) 2210-6359

88. Srivastava A, Afgan S, Yadav PJ, Kumar R, Srivastava A, Kharwar RN (2022). Synthesis & characterization of tri arm Indole based ATRP Polymer and antibacterial study with its silver nanocomposite. *Journal of Polymer Research* 29: 150, <https://doi.org/10.1007/s10965-022-02957-z> 1572-8935

89. Sharma VK and Kharwar RN (2022). Editorial: Epigenetic Remodeling of Microorganisms of Pharmaceutical and Industrial Importance. *Front. Microbiol.* 13:887208. <https://doi.org/10.3389/fmicb.2022.887208> 1664-302X

90. Prajapati P, Gupta P, Kharwar RN, Seth CS (2022). Nitric oxide mediated regulation of ascorbate-glutathione pathway alleviates mitotic aberrations and DNA damage in *Allium cepa* L. under salinity stress. *Int. J. Phytoremed.*, <https://doi.org/10.1080/15226514.2022.2086215> 1522-6514

91. Bharti R, Yadav M, Singh A, Kumari P, Nishad JH, Gautam VS, Kharwar RN (2023). Evaluation of Congo red dye decolorization and degradation potential of an endophyte *Colletotrichum gloeosporioides* isolated from *Thevetia peruviana* (Pers.) K. Schum. *Folia Microbiologica* 68: 381-393. <https://doi.org/10.1007/s12223-022-01017-9> 0015-5632

92. Singh A, Singh PN, Kharwar RN, Dubey NK (2023). Morphology and phylogeny of *Pseudocercospora morigena* sp. nov. on *Morus alba* from Vindhya Range, India. *Phytotaxa* 584: 041-051 <https://www.mapress.com/pt/> 1179-3155

93. Sinha S, Navathe S, Singh S, Gupta DK, Kharwar RN\*, Chand R (2023). Draft genome sequencing and genome annotation of *Cercospora sesami*, a fungal pathogen causing leaf spot to *Sesamum indicum* L. *3 Biotech*13:55 <https://doi.org/10.1007/s13205-023-03468-4> 2190-5738

94. Kumari P, Shukla D, Pandey FP, Basu N, Lahiri J, Kharwar RN\*, Parmar AS (2023). Facile Synthesis of Graphitic Fungal Carbon Dots for Sensing of Food Adulterants and "Bio-Imaging" of Human Kidney Cell Line. *Chemistry Select* 8(39) e202302437. <https://doi.org/10.1002/slct.202302437> 23656549

95. Yadav S, SinghG, Rajwar S, VermaSK, Singh R, Kharwar RN, Kumar S (2023). *Nyssopsoraceae*, a new family under *Pucciniales* to accommodate *Nyssopsora* spp. *Current Research in Environmental & Applied Mycology (Journal of Fungal Biology)* 13(1): 523–549 <https://doi.org/10.5943/cream/13/1/20> 22292225

96. Prajapati P, Yadav M, Nishad JH, Gautam VS, Kharwar RN\* (2024). Salt tolerant fungal endophytes alleviate the growth and yield of saline-affected wheat genotype PBW-343. *Microbiological Research.* 278: 127514; <https://doi.org/10.1016/j.micres.2023.127514> 0944-5013

97. Gautam VS, Kumari P, Jaiswara PK, Kumar A, Kharwar RN\* (2024) Antioxidant and cytotoxic activity of Rutin isolated from *Nigrospora sphaerica*, an *Euphorbia hirta* based endophytic fungus. *Process Biochemistry* 142:184-193 <https://doi.org/10.1016/j.procbio.2024.04.019> 1359-5113

98. Verma A, Kumar K, Talukdar U, Pal G, Kumar D, Shukla P, Patel S, Kumar A, Kharwar RN, Verma SK (2024). Assessment of bioactive potential and characterization of an

anticancer compound from the endophytic fungi of *Ocimum sanctum*. *Microbiology* 93: 459-471. <https://Doi.org/10.1134/S002626172360252X>

99. Singh S, Sharma S, Bharti R, Kharwar RN, Srivastava P (2025). *Colletotrichum gloeosporioides* (endophytic fungi) mediated biosynthesis of TiO<sub>2</sub> nanoparticles for high-performance dye-sensitized solar cell. *Next Nanotechnology*, 7, 100122. <https://doi.org/10.1016/j.nxnano.2024.100122>

100. Sinha S, Navathe S, Anjali, Shubham Vishwakarma, Priyanka Prajapati, Ramesh Chand, Kharwar RN (2025). Whole genome sequencing and annotation of *Pseudocercospora abelmoschi*, a causal agent of black leaf mould of okra. *World J Microbiol Biotechnol*, 41:174. <https://doi.org/10.1007/s11274-025-04398-4>

101. Kharwar, R.N., Prajapati, P. & Sinha, S. Endophytic fungi mediated alleviation of salinity stress in crop plants: an insight and future prospect. *Symbiosis* (2025). <https://doi.org/10.1007/s13199-025-01060-3>

Nishad JH, Vishwakarma V, Singh A, Yadav M, Bharti R, Kharwar RN (2025). Metabolites profiling, bioactivity assessment and extracellular enzymes estimation of *Pestalotiopsis* sp. I12, an endophytic fungus recovered from *Saraca asoca* (roxb.) Willd. leaves. *Microbiology* (R3 Submitted)

Bharti R, Vishwakarma S, Yadav M, Prajapati P, Kharwar RN (2025). Illumina-based taxonomic profiling of endophytic fungal community of oleander plants *Nerium indicum* Mill and *Thevetia peruviana* (Pers.) K. Schum. with their functional attributes. *Fungal Biology* (Submitted Funbio D-25-00177)

Prajapati P, Gupta R, Vishwakarma S, Anjali, Kumar A, Kharwar RN (2025). Bioactive potential assessment, phytochemical profiling and molecular docking of the antimicrobial metabolites isolated from fungal endophytes of *Triticum aestivum* L. *Microbiology* (sumitted)

Prajapati P, Pandey P, Kumar D, Kharwar RN (2025). Fungal endophytes promote wheat (*Triticum aestivum* L.) growth (PBW-343) and enhance salt tolerance through improvement of ascorbate glutathione cycle and gene expression. *Journal of Plant Growth Regulation* (Submitted JPGR-S-25-01086)

## Submitted/Under Preparation

102. Singh A, Kumar J, Singh DK, Nishad JH, Kumari P, Gautam VS, Yadav M, Kharwar RN (2024). Green synthesized gold nanoparticles prop enhances the efficiency of antibiotics; ciprofloxacin, and tetracycline.

103. Yadav M, Singh A, Nishad JH, Gautam VS, Bharti R, Kharwar RN (2024) Bioprospecting the potential and metabolites profiling of *Penicillium pimiteouiense*, a rare endophyte isolated from *Cassia fistula* L.

104. Kumar J, Singh DK, Sharma VK, Mishra A, Verma SK, Kumar A, Kharwar RN (2024). Biopotential assessment of an endophytic *Streptomyces* sp. AZRA 34 for enzymes and antimicrobial compounds. *International Microbiology*
105. Singh M, Srivastava PK, Kharwar RN (2024). A manuscript titled Understanding the strategic mechanism of arsenic detoxification exhibited by As-hypertolerant *Aspergillus oryzae* (FNBR\_L35) strain. *Paedosphere* (pedos202301038)

#### **B. Reviews published in Journals:**

1. Verma VC, Kharwar RN and Gange AC (2009). Biosynthesis of noble metal nanoparticles and its application. *CAB Reviews: Perspective in Agriculture, Veterinary Science, Nutrition and Natural Resources* 4: 1-17. <https://doi.org/10.1079/PAVSNNR20094026>
2. Verma VC, Kharwar RN and Strobel G (2009). Chemical and Functional Diversity of Natural Products from Plant Associated Endophytic Fungi. *Natural Product Communications* 4 (11):1511-1532. <https://doi.org/10.1177/1934578X090040111>
3. Kharwar RN, Mishra A, Gond SK, Stierle A and Stierle D (2011). Anticancer compounds derived from fungal endophytes: their importance and future challenges. *Natural Product Reports* 28: 1208-1228.<https://doi.org/10.1039/C1NP00008J>
4. Gond SK, Kharwar RN and JF White (2014). Will fungi be the new source of the blockbuster drug taxol? *Fungal Biology Reviews* 28: 77-84. <https://dx.doi.org/10.1016/j.fbr.2014.10.001>
5. Kharwar RN\* and Raghuvanshi R (2017). Cacti Culture: Prickles of Pride. *Current Science*. 113 (11): 2203-2204. <https://doi.org/10.18520/cs/v113/i11/2203-2204>
6. Verma SK, Kharwar RN, White JF (2019). The role of seed-vectored endophytes in seedling development and establishment. *Symbiosis* 78: 107-113 (<https://doi.org/10.1007/s13199-019-00619-1>)
7. Prateeksha, Yusuf MA, Singh BN, Sudheer S, Kharwar RN, Siddiqui S, Abdel-Azeem AM, Fraceto LF, Dashora K, Gupta VK (2019). Chrysophanol: A Natural Anthraquinone with Multifaceted Biotherapeutic Potential. *Biomolecule* 9: 68 <https://doi.org/10.3390/biom9020068>
8. Kharwar RN and Raghuvanshi R (2019). Bonsai Culture. *Current Science* 117 (10): 1734-1736.<https://doi.org/10.18520/cs/v117/i10/1734-1736>
9. Kharwar RN, Sharma VK, Mishra A, Kumar J, Singh DK, Verma SK, Gond SK, Kumar A, Kaushik N, Bharadwaj R, Kusari S (2020). Harnessing the phytotherapeutic treasure troves of the ancient medicinal plant *Azadirachta indica* (Neem) and associated endophytic microorganisms. *Planta Medica* 86:906-940 <https://doi.org/10.1055/a-1107-9370>
10. Patel JS, Selvaraj VK, Gunupuru LR, Kharwar RN, Sarma BK (2020). Plant G-protein signaling cascade and host defense. *3 Biotech* 10:219.

<https://doi.org/10.1007/s13205-020-02201-9>

11. Singh A, Singh DK, Surendra K, Gond DK, Kharwar RN, James F White (2021). Fungal Endophytes as Efficient Sources of Plant-Derived Bioactive Compounds and Their Prospective Applications in Natural Product Drug Discovery: Insights, Avenues and Challenges. *Microorganisms* 9: 197. <https://doi.org/10.3390/microorganisms9010197>
12. Verma SK, Sahu PK, Kumar K, Pal G, Gond SK, Kharwar RN, White JF (2021). Endophyte roles in nutrient acquisition, root system architecture development and oxidative stress tolerance. *J. Appl. Microbiol.* 131, 2161–2177. <https://doi.org/10.1111/jam.15111>
13. Haque S, Raina R, Afroze N, Hussain A, Alsulimanic A, Singh V, Mishra BN, Kaul S, Kharwar RN (2022). Microbial dysbiosis and epigenetics modulation in cancer development–A chemopreventive approach. *Seminars in Cancer Biology* 86:666-681 [www.https://doi.org/10.1016/j.semcan.2021.06.024](https://doi.org/10.1016/j.semcan.2021.06.024)
14. Sahu PK, Tigam J, Mishra S, Hamid S, Gupta A, Jayalakshmi K, Verma SK, Kharwar RN (2022). Surface sterilization for isolation of endophytes: Ensuring what (not) to grow. *Journal of Basic Microbiology*. 62: 647-668. [www.https://doi.org/10.1002/jobm.202100462](https://doi.org/10.1002/jobm.202100462)
15. Sinha S, Nawathe S, Kharwar RN, Wijayawardane N, Dai DQ, Chand R (2022). Current status of cercosporoid fungi of India. *Mycotaxon* 137(2):387 [www.https://doi.org/10.5248/137.387](https://doi.org/10.5248/137.387)
16. Kharwar RN (2022). An exploration of unseen fungal world and analysis of their functional attributes in crop and human health. *J. Mycopathol. Res.* 60(4): 469-485. [www.http://doi.org/10.57023/JMycR.60.4.2022.469](http://doi.org/10.57023/JMycR.60.4.2022.469)
17. Mishra N, Gupta E, Walag AMP, Kharwar RN, Singh P, Mishra P (2023). A review of marine natural product resources with potential bioactivity against SARS-COV-2. *Trop. J. Nat. Prod. Res.* 7(1): 2093-2103. <http://www.doi.org/10.26538/tjnpr/v7i1.2>
18. Goutam J, Sharma G, Yadav V, Pathak G, Kharwar RN, Sharma D (2023). A focused review of the pharmacological potentials of terrein as an anticancer agent. *Nat. Prod. Comm.* 18(5): 1–8. <https://doi.org/10.1177/1934578X231174128>
19. Kharwar RN (2024). A research journey from epiphytic to endophytic fungi: Insights into Ecology, Diversity, and Biotechnological potential. *Kavaka* 60:1-18.

## C. Books

1. Microbial Diversity and Biotechnology in Food Security (2014). Eds-RN Kharwar (Corresponding Editor), RS Upadhyay, NK Dubey and Richa Raghuvanshi. Springer

(ISBN: 978-81-322-1800-5) 610 Pages

2. Mycoremediation and Environmental Sustainability (2021). Eds. Ram Prasad, S. C. Nayak, RN Kharwar and NK Dubey. Springer, pages 387. ISBN-9783030544218
3. Microbial Inoculants: Soil Dynamics and Nutrient Bioavailability (2024). Eds-A Kumar, J Singh, AM Queijeiro López, RN Kharwar. Academic Press Inc., pages 425. ISBN-978-0443235603

#### **D. Chapters Contributed to Books**

1. Kumar A, Kumar V and Kharwar RN (2006). Induced Resistance: A biotechnological approach for induction of defense-related molecules in plant disease management. In Microbial biodiversity: Modern Trends (eds Ram and Sinha). *Daya publishing House, New Delhi* pp. 128-151.
2. Kharwar RN, Verma VC, Kumar A and Redman RS (2009). Endophytic Fungi: Better Players of Biodiversity, Stress Tolerance, Host Protection and Antimicrobial Production. In: A Text book of Molecular Biotechnology Eds. A. K. Chauhan and Ajit Verma, I K International Publishing House, New Delhi. Pp. 1033-1357.
3. Gond SK, Verma VC, Mishra A, Kumar A and Kharwar RN (2010). Role of fungal endophytes in plant protection. In: Management of Fungal Plant Pathogens Eds: Arun Arya and A. E. Perello. CABIpp. 183-197.
4. Kharwar RN and Strobel G (2010). Fungal Endophytes: An alternative source of bioactive compounds for plant protection In: Natural compounds in pest management. Ed. N K Dubey CABIpp. 218-241.
5. Mishra A, Gond SK, Kumar A, Sharma VK, Verma SK and Kharwar RN (2012). Sourcing the fungal endophytes: A beneficial transaction of biodiversity, bioactive natural products, plant protection and nanotechnology In T. Satyanarayana et al (eds), Microorganisms in sustainable Agriculture and Biotechnology (DOI 10.1007/978-94-007-2214-9\_26) pp 581-612. Springer.
6. Kharwar RN, Mishra A, Gond SK, Sharma VK, Singh DK, Kumar J, Goutam J and Kumar A (2014). Diversity and bio-potential of endophytic fungal flora of eight medicinal plants of Uttar Pradesh, India. In Microbial diversity and biotechnology in food security (eds RN Kharwar, RS Upadhyay, NK Dubey and Richa Raghubanshi) Springer (ISBN 978-81-322-1800-5).pp.23-39.
7. Mohamed A. Gad, Manab Deka, Naglaa A. Ibrahim, Sherif S. Mahmoud, R. N. Kharwar, and Tarun C. Bora (2014). Biocontrol of Phytopathogenic Fungi of Rice Crop Using Plant Growth Promoting Rhizobacteria. In Microbial diversity and biotechnology

in food security (eds RN Kharwar, RS Upadhyay, NK Dubey and Richa Raghubanshi) Springer (DOI 10.1007/978-81-322-1801-2\_19) pp 225-234.

8. Singh M, Srivastava PK, Jaiswal V and Kharwar RN (2016). Biotechnological Applications of Microbes for the Remediation of Environmental Pollution. In Biotechnology: Trends and Applications, Publisher: Studium Press LLC, USA (eds: Rachana Singh and Mala Trivedi) pp.179-214
9. Sharma VK, Kumar J, Singh DK, Mishra A, Gond SK, Verma SK, Kumar A, Singh G, Kharwar RN (2017). Induction of cryptic metabolite production through epigenetic tailoring in *Colletotrichum gloeosporioides* isolated from *Syzygium cumini*. In Diversity and Benefits of Microorganisms from the Tropics (eds. JL Azevedo and MC Quecine) Springer pp. 169-18 (DOI 10.1007/978-3-319-55804-2) ISBN 978-3-319-55803-5
10. Sharma VK, Kumar J, Singh DK, Mishra A, Singh K and Kharwar RN (2017). Response of selected endophytic fungi to different abiotic stresses isolated from *Syzygium cumini* of eastern Uttar Pradesh, India. Springer
11. Verma SK, Gond SK, Mishra A, Sharma VK, Singh DK, Kumar J, Kumar A and Kharwar RN (2017). Fungal endophytes representing diverse habitat and their role in plant protection. In Development of Fungal Biology and Applied Mycology (eds. T. Satyanarayana, S. Deshmukh and BN Johri) Springer pp. 135-157 (DOI.Org. 10.1007/978-981-10-4768-8\_9)
12. Singh M, Srivastava PK and Kharwar RN (2017). Role of Rhizospheric Mycobiota in Remediation of Arsenic Metalloids. In Phytoremediation of Environmental Pollutants, Publisher: CRC Press, Tailor and Francis Group, Boca Raton, London, UK (eds: Ram Chandra, Dubey NK and Vineet Kumar) pp.137-158
13. Singh A, Nishad JH, Gautam VS, Kumari P, Singh DK, Kumar J, Verma SK and Kharwar RN (2017). Endophytic Fungi: Application for plant disease management; In Microbial Antagonists: Their role in biological control of plant diseases, Today & Tomorrow's Printers and Publishers, New Delhi - 110 002, India (Eds: Drs. R.N. Pandey, B.N. Chakraborty, Dinesh Singh and Pratibha Sharma) pp. 169-191
14. Verma SK, Kharwar RN, Gond SK, Kingsley K, White JF (2019).Exploring endophytic communities of plants: Methods for assessing diversity, effects on host development, and potential biotechnological applications. In Seed Endophytes: Biology and Biotechnology (Eds: SK Verma and JF White) Publisher: Springer, Verlag, Germany
15. Chowdhury S, Lata R, Kharwar RN, Gond SK (2019).Microbial endophytes residing in maize seeds and their potential application in crop health maintenance/or

improvement. In *Seed Endophytes: Biology and Biotechnology* (Eds: SK Verma and JF White) Publisher: Springer, Verlag, Germany

16. Nishad JH, Singh A, Gautam VS, Kumar D, Kumar J, Kharwar RN (2019). *Endophytic Fungi: A cryptic fountainhead for biodiversity, functional metabolites, host stress tolerance and myco-mediated nanoparticles (NPs) synthesis*. In *Endophytes and secondary metabolites* (Eds: Jha Sumita) Springer, Verlag, Germany (doi:10.1007/978-3-319-76900-4\_18-1)

17. Pal G, Kumar K, Verma A, Kharwar RN, Verma SK (2019). *Seed inhabiting endophytes: Their role in plant development and disease protection*. In *Phytomicrobiome for Sustainable Agriculture* (Eds. Verma JP, Macdonald C, Gupta VK and Podile AR) Elsevier BV, 1043 NX Amsterdam, The Netherlands

18. Srivastava N, Kharwar RN et al. (2021). Advances in extraction technologies-Isolation and purification of bioactive compounds from biological materials. In. *Natural Bioactive Compounds: Technological Advancements* (Eds. R. P. Sinha and D.-P. Häder) Elsevier/Academic Press;Paperback ISBN: 9780128206553 eBook ISBN: 9780128206591

19. Andrew G. Mtewa AG, Walag AMP, Muhumuza A, Kharwar RN, Ahmed O (2021). *Phytochemicals, plant toxins, and their influence in military strategies*. In *Phytochemistry, the Military and Health* (Eds. Mtewa AG and Egbuna C). Elsevier, pp. 13-25 (<https://doi.org/10.1016/B978-0-12-821556-2.00005-0>)

20. Kumari P, Singh A, Kharwar RN (2021). *Phytostimulation and ISR responses of fungi*. In *Fungi Bio-Prospects in Sustainable Agriculture, Environment and Nano-Technology* (eds Sharma VK et al.) pp. 459-473. Academic Press

21. Kharwar RN, Raghuvanshi R, Kumar A, Deshmukh S (2021). *History and Developments of Plant Pathology in India: Fungal aspects*. In *Progress in Mycology: An Indian Perspective* (Eds. Satyanarayana T, Deshmukh S and Deshpande M) Springer, Verlag

22. Gupta A, Vasundhara M, Singh A, Kharwar RN (2021). *Developments in endophytic fungal research in India*. In *Progress in Mycology: An Indian Perspective* (Eds. Satyanarayana T, Deshmukh S and Deshpande M) Springer, Verlag

23. Patel JS, Yadav SK, Kumar G, Sarkar A, Singh HB, Singh S, Kharwar RN, Sarma BK (2021). *Fungal Foliar Diseases of Chickpea and their Management*. In *Diseases of Pulse Crops and their Management* (Eds – Naimuddin R.K. Mishra Mohd. Akram). Daya Publishing House, New Delhi. ISBN 978-93-5222-134-9 pp. 29-48.

24. Deshmukh S, Kharwar RN (2022). Fungi a potential source of bioactive metabolites an Indian prospective. In Progress in Mycology: An Indian Perspective (Eds. Satyanarayana T, Deshmukh S and Deshpande M) Springer, Verlag

**Conference and Symposia:**

Attended/delivered Invited Talk/Chaired/Co-chaired sessions/Advisory Board Member- **>70**

Members in different committees of BHU, Varanasi

**Paper Presented/ attended Seminars/Symposia (National/International):**

**More than 30**

**Papers Presented/ attended at Seminars/Symposia:**

1. National Symposium on "Biodiversity and plant disease management" during Jan 18-19, 1994 at Gorakhpur.
2. National Symposium on "Plant pathogens and current trends in plant disease management" during Feb 28-29, 1996 at Gorakhpur.
3. International Conference on "Frontiers in Fungal Biotechnology and Plant- Pathogen Relations" on Some novel additions to hyphomycete genus *Veronaea* during Jan. 16-18, 1999 at Hyderabad.
4. National Symposium on "Biotechnology of Plant Protection" during Feb. 25-27, 2000 at Varanasi.
5. Delivered lecture on 'Some novel phytoparasitic hyphomycete fungi isolated from medicinal plants from India' International Conference on "Frontiers of Fungal Diversity and Diseases in South-East Asia" during Feb. 9-11, 2001 at Gorakhpur.
6. Delivered a lecture on 'Some new phytoparasitic forms of hyphomycete genus Stenella associated with foliar spots from India' during "7<sup>th</sup> Asian International Mycological Congress" from Sept. 17-20, 2001 at Karaj, Tehran (Iran).
7. National Seminar on "Frontiers of Fungal Diversity in Indian Sub-Continent during Aug. 24-25, 2002 at Gorakhpur.
8. Presented poster on 'Two new forms of hyphomycete genus Mycovellosiella causing foliar spots from India 'National Symposium on "Prospecting of Fungal Diversity and Emerging Technologies" during Feb 06-07, 2003 at Pune.
9. Presented paper on 'Some novel taxa of hyphomycete genus *Corenespora* associated with foliar spots' during National Seminar on "Plant Diseases of National Importance with Special Reference to Guava Wilt and Mango Malformation" form April 4-5, 2003 at Lucknow.
10. National Seminar on 'Impact of human population on natural resources' 16-18 October, 2003, BHU, Varanasi.
11. Delivered a lecture on 'Induced resistance and control of charcoal rot in chickpea by plant growth promoting rhizobacteria' during International Symposium on Microbial Diversity: Opportunities, Challenges & Relevance In New Millennium, November 19<sup>th</sup>-21<sup>st</sup> 2004, Jabalpur.
12. Participated and contributed with POSTER PRESENTATION in National Seminar on "Issues in Plant Sciences" in centre of advanced study in Botany, Banaras Hindu University, Varanasi during March 9<sup>th</sup>& 10<sup>th</sup> 2004.
13. Presented poster on 'Role of salicylic acid in systemic resistance induced by *Pseudomonas fluorescens* to control charcoal rot of chickpea caused by *Macrophomina*

*phaseolina* National Seminar on "Crop Surveillance: Disease Forecasting and Management" in Division of Plant Pathology, IARI New Delhi during Feb 19-21, 2004.

- 14. International Symposium on "Integrated Management of Fungal Diseases (IMF): Technology Development and Application" in Dept. of Botany, Banaras Hindu University, Varanasi-221005 (U.P) during February 24<sup>th</sup> – 27<sup>th</sup>, 2005
- 15. Delivered one lecture as a key-note speaker on 'Fungal Endophytes: A Hidden Repertoire of Bioactive natural compounds' at Gorakhpur, July 29-30, 2006
- 16. Delivered a lead lecture on 'Fungal Endophytes: A new dimension for mycodiversity and treasure of bioactive natural products' at Gorakhpur, December 18-19, 2006.
- 17. Delivered lead lecture on 'Fungal endophytes: Morphological and chemical diversity' at Allahabad Agricultural Institute, Naini, Allahabad, Nov, 17-18, 2008. (Traditional/Indigenous practices for pest management of major crops).
- 18. Presented poster at FEMS-09 at Gothenburg, Sweden, during June 28 to July 2, 2009 in International Conference.
- 19. Convened the lecture of Prof James P Stack, (USA) in a plenary session with Chairman Dr SK Sharma (Director, NBPGR), at IARI, New Delhi during 5<sup>th</sup> International Conference on "Plant Pathology in Globalized Era" during November 10-13, 2009.
- 20. Attended International Symposium on Phycological Research, at BHU, Varanasi during 25-27 Feb, 2010.
- 21. Delivered the lecture at Academic Staff College, BHU, Varanasi on 01-11-2010 on topic 'impact of Endophytes on Environment' for 1<sup>st</sup> Refresher course in Environmental Science and Technology.
- 22. Delivered lead lecture in dept of Mycology and Plant Pathology (Inst Ag Sc.) at BHU in the national conference held during 26-27 October, 2010.
- 23. Delivered invited lecture on –Fungal endophytes---- At Saraswati Vidya Mandir PG College, Gorakhpur during 21-22 January, 2011 in National seminar.
- 24. Delivered an invited Lecture on 'Endophytic Fungi: A novel and untapped mycomine for production of bioactive compounds and biosynthesis of metal nanoparticles' during national conference from 8-9 Feb, 2011 at Dept of Botany, Chennai.
- 25. National Symposium on "Emerging Trends in Plant Sciences" from March 3-4, 2011 at BHU, Varanasi.
- 26. Delivered an invited Lecture on 'Fungal Endophytes and their various usages' at Rajiv Gandhi University Itanagar (Arunanchal Pradesh) on 13-4-2011.
- 27. Participated in conference of Hindi Vijnan Lekhan held during 16-17 Feb, 2011 at BHU, Varanasi.
- 28. Delivered invited lecture on "Sourcing the fungal endophytes: A beneficial transaction of biodiversity, plant protection and bioactive natural products" during International conference at Bhopal from 1-3 July, 2011.
- 29. National Conference on "Mycodiversity with its Sustainable Exploration and Biotechnological Application" from 6<sup>th</sup> to 7<sup>th</sup> February 2012, Amravati
- 30. International Conference on Mycology and Plant Pathology: Biotechnological Approaches from February 27-29, 2012, BHU, Varanasi
- 31. Delivered lecture as resource person in winter school organized at IIVR, Varanasi on 17<sup>th</sup> November 2012
- 32. Delivered lecture as resource person in Brainstorming Session on Role of Root Endophytes in Agriculture Productivity at National Academy of Agricultural Sciences (NAAS Committee room No.1) New Delhi on July 05, 2013.
- 33. Delivered Invited Lecture During 10<sup>th</sup> International Congress of Plant Pathology at Beijing, China from August 25-30, 2013.
- 34. Delivered Inaugural Lecture in National Seminar at Narsinghpur during September 27-28, 2013.

35. Delivered lecture as resource person in winter school organized at IIVR, Varanasi on 20<sup>th</sup> December 2013.
36. Delivered lecture as resource person in Refresher Course organized at DDU, Gorakhpur University, Gorakhpur on 7<sup>th</sup> February 2014.
37. Delivered Invited Lecture on Diversity assessment and bioprospecting of endophytic fungal complex isolated from *Madhuca longifolia* at different locations of Uttar Pradesh, India' During National Conference on Fugal Diversity and Biotechnology for Food and Chemicals (FDBFC), At Annamalai University from Feb 27-28, 2014.
38. Chaired a session (Session IX -Marine Mycology/Mycopathology) During National Conference on Fugal Diversity and Biotechnology for Food and Chemicals (FDBFC), At Annamalai University from Feb 27-28, 2014.
39. Delivered Two Lectures as resource person at Academic Staff College (Dept of Botany), DDU, Gorakhpur University, Gorakhpur on Sept 23, 2014.
40. Delivered Plenary Lecture During National Conference on Mycological Research Emerging Trends, Applications and Prospects At Punjabi University, Patiala from Feb 23-24, 2015.
41. Delivered Invited Lecture During Asian Mycological Congress at Goa, from Oct 07-10, 2015. (S3-O-17)
42. Chaired a session During Asian Mycological Congress at Goa, from Oct 07-10, 2015 (S3 Non-pathogenic association of fungi with plants).
43. Delivered Dr. V. Agnihothrudu Memorial Lecture Award on November 16, 2016 during National Conference on Fungal Biotechnology (NCFB-2016) held at Birla Institute of Scientific Research, Jaipur-302001
44. Chaired a Session during National Conference on Fungal Biotechnology (NCFB-2016) during 16-18 November, 2016 held at Birla Institute of Scientific Research, Jaipur-302001.
45. Delivered an Invited Lecture on 'Fungal Endophytes: Better players of biodiversity, host protection, antimicrobial production and nanotechnology' during National Conference on 'Fungi from diverse habitat and their biotechnological applications' during December 2-3, 2016 at Satish Pradhan Dnyansadhana PG College, Thane, Mumbai
46. Chaired a session during International Conference on 'The green planet: past, present and future' during December 21-23, 2016 at University of Calcutta, Kolkata.
47. Delivered an Invited Lecture on 'Sourcing the fungal endophytes: A beneficial transaction of biodiversity, bioactive natural compounds and myconanotechnology' during International Conference on 'The green planet: past, present and future' during December 21-23, 2016 at University of Calcutta, Kolkata
48. Delivered an Invited Lecture on 'Fungal endophytes: A natural and alternative resource for biodiversity, biologically active compounds and myconanotechnology' during National Symposium on Natural Resource Management 2017 (NSNM-2017) during March 15-16 2017 at Vidyasagar University, Midnapore, West Bengal
49. Delivered an Invited Lecture on "Sourcing the fungal endophytes: A beneficial transaction of biodiversity, bioactive natural compounds and myconanotechnology during two-day national conference at Gorakhpur during 2-3 Feb 2018
50. Delivered an Invited Lecture on "Fungal endophytes: A cryptic biodiversity and alternative source of functional metabolites for human and plant health during two-day national conference on Prospects and Retrospects of Life Sciences in India, at Uday Pratap Autonomous PG College, Varanasi from 25-26, Feb 2018.
51. Delivered an Invited Lecture on "Fungal Endophytes: A hidden treasure trove of structural and functional diversity" during two-day national conference on Perspective in Natural and Applied Sciences (PNAS) at Dehradun from 9-10 March, 2018.

52. Delivered a Lecture as resource person at UGC Human Resource Centre (Interdisciplinary), BHU, Varanasi on Feb 15, 2018.
53. Invited Lecture delivered on "Fungal Endophytes: A treasure trove of biodiversity, host security, antimicrobial and myconanotechnology" during International conference at Bangkok from 21-25 Nov, 2018.
54. Co-Chaired a session during National Conference on Current Trends and Future Prospects in Plant Science Research 'CTPSR-2019' during Feb 01-3, 2019 at Banaras Hindu University, Varanasi
55. Co-Chaired a session during 71<sup>st</sup> Annual Meeting of IPS & National Symposium on 'Recent Challenges and Opportunities in Sustainable Plant Health Management During Feb 26-28, 2019 at Banaras Hindu University, Varanasi.
56. Participated in a Workshop on 'Intellectual Property Rights' organized by Intellectual Property Rights Cell, Banaras Hindu University on March 18, 2019.
57. Delivered the invited lecture on "Sourcing the fungal endophytes: A beneficial transaction of biodiversity, bioactive natural compounds and mycomediated synthesis of metal nanoparticles (NPs)" during national conference at Gulbarga University, Kalaburgi, from 29-30 March, 2019.
58. Chaired a session during National Conference on 'New horizons in biological sciences for human welfare' during March 29-30, 2019 at Gulbarga University, Kalaburgi.
59. Delivered lecture as resource person on "Food security and environmental variables" in Faculty Induction Training at Ishwar Sharan PG College, Allahabad on 25 May, 2019.
60. Delivered the invited lecture on 'Fungal Endophytes: Treasure trove of biodiversity, host protection, antimicrobial production and myconanotechnology' during national symposium on Endophytes and Their Applications in Agriculture at UAS, GVK, Bangalore from 24-26 September, 2019.
61. Delivered the Lead Lecture on "Fungal endophytes: An alternative resource for cryptic biodiversity, bioactive compounds and nanotechnology" during International Conference at Sikar, Rajasthan from -04-5 October, 2019.
62. Delivered the Lead Lecture on "Fungal endophytes: A hidden treasure trove of structural and functional diversity" during VII-Rajasthan Science Congress at Udaipur, Rajasthan from -14-16 October, 2019.
63. Delivered the Lead Lecture on "Fungal Endophytes: An untapped resource for cryptic biodiversity and bioactive compounds" during national conference and 46<sup>th</sup> annual meeting of MSI at Pondicherry University, Puducherry, from -07-9 Nov, 2019.
64. Delivered the Lead Lecture on "Fungal epiphytes to endophytes: A cryptic and potential resource for biodiversity, bioremediation and bioactive compounds" during 7<sup>th</sup> International conference at IARI, New Delhi, from -16-20 January, 2020.
65. Delivered the lecture as Chief Speaker on 'Fungal endophytes: Structural and functional diversity' through webinar lecture series organized by MSI, Mumbai Unit, on June 24, 2020.
66. Delivered lecture as Chief Speaker on Environmental variables and food security through webinar lecture series organized by DDU, Gorakhpur University, Gorakhpur, on July 11, 2020.
67. Delivered lecture as Keynote Speaker on Fungal Biotechnology; Recent trend and Future Prospects in the International virtual conference organized by Bannari Institute of Technology, Sathiamurthi, Erode, Tamilnadu during 11-12 December, 2020.
68. Delivered lecture as resource person on "Food Security and Environment" at The University of Rajasthan, Jaipur, in winter school on Quantitative Biology organized by HRDC on 07-01-2021.
69. Delivered lecture as Chief Speaker on "Unseen Microbial Flora as Friends of Plants and Humans" at Dr. RML Avadh University, Ayodhya on 25-2-2021.

70. Delivered lecture as guest of honor on "Nature and Science" at Faridul Haq Memorial at PG College, Talimabad on 28-2-2021.
71. Delivered lecture as resource person on "Different dimensions of microbial endophytes" at The University of Burdwan in refresher course on Trends in Life Sciences Industry organized by HRDC on 01-10-2021.
72. Delivered Ist Prof. PC Jain Memorial Award Lecture on "Fungal endophytes: A hidden treasure trove of structural and functional diversity" during 47<sup>th</sup> Annual meeting of Mycological Society of India and National conference on 'Biodiversity and Biotechnology of Fungi' at Patiala during Feb 22-24, 2021 through Zoom.
73. Delivered lecture as resource person on "Fungal Endophyte: A cryptic world of biodiversity, symbiosis, host protection, antimicrobial source and nanotechnology" in a 6-day workshop of Microbes for sustainable and Resilient Future at dept. of Botany, DU on 07-12-2021.
74. Delivered lecture as a resource person on the topic 'Fungi and their role in human welfare' in a 03-day lecture series at dept. of Botany, UP PG College, Varanasi on 05-1-2022.
75. Delivered lecture as resource person on 'Sourcing the fungal endophytes: A beneficial transaction of biodiversity, bioactive natural compounds, and myconanotechnology' in a Refresher Course organized by dept. of Botany, University of Jammu on 22-01-2022 (10.30 AM-12.00 Noon).
76. Delivered 18<sup>th</sup> Sir E. J. Butler Memorial Award Lecture on "An exploration of unseen fungal world and analysis of their functional attributes in crop and human health" during online meet of Indian Mycological Society, Kolkata on 22-1-2022 (4.00-5.00 PM).
77. Addressed the Students at Annual Day of Jangi PG College, Asbaranpur, Jaunpur on 19-2-2022 as a "Guest of Honor".
78. Co-Chaired a technical session VI during 48<sup>th</sup> annual meeting and National conference (Virtual) on 'Mycology and mankind: Marching ahead in new era' at ICAR Research Complex for NEH region, Umiam from March 8-10, 2022.
79. Delivered lecture as resource person on 'Investigation of endophytic fungal communities and analysis of their functional facets in plant and human health' in STUTI program of DST-FIST organized by dept. of Microbiology, Dr. RMLA University, Ayodhya on 09-06-2022.
80. Delivered lecture as resource person on 'Impact of Environmental Factors on Food Security' in a Refresher Course organized by HRDC, BHU, Varanasi on 17-6-2022.
81. Delivered lecture as resource person on 'An auditing of treasure trove of cryptic fungal world and perusal of their utilitarian traits in plant and human health' during 3-day national workshop on hands on training on biofertilizers and biopesticide technique organized by dept. of Botany, ECC (Allahabad) Prayagraj on 01-07-2022.
82. Delivered lecture as resource person on 'Potential of fungal endophytes and their usages' during refresher course organized by HRDC, Bangalore University, Bangalore, on 05-07-2022.
83. Delivered lecture as resource person on 'Utilizing the potential of endophytes in agriculture and society health' in a training program at NBAIM, Mau on 02-08-2022
84. Delivered lecture as resource person on 'An auditing the treasure trove of cryptic fungal world and perusal of their utilitarian traits in plant and human health' during refresher course organized by HRDC, University of Madras, Chennai, on 10-10-2022.
85. Delivered lecture as resource person on 'Fungal endophytes in crop health' in a training program at NBAIM (11-123-18-1-23), Mau on 17-01-2023.
86. Delivered lecture as resource person on 'Environmental Determinants and Food Security' during refresher course organized by HRDC, Banaras Hindu University, Varanasi, on 07-02-2023.

87. Delivered lecture as resource person on 'Unseen Microbial World, their exploration and utilization as friends for society' under the aegis of Botanical Society, Dept. of Botany, University of Mysore, on 24-05-2023.
88. Delivered lecture as resource person on 'Unseen microbial world: their importance in agriculture and humans' health" during refresher course organized by HRDC, NEHU, Shillong, on 15-09-2023.
89. Delivered lecture as resource person on Delivered lecture as resource person on "Do microbial endophytes help plants to improve their health including the medicinal values?" during the BAMS Induction Program of Faculty of Ayurveda, BHU, on 21-11-2023.
90. Delivered lecture as resource person on "Do Fungal endophytes help plants to improve their health including the medicinal values?" during the Refresher Course of organized by HRDC, Madurai Kamraj University, Madurai, on 07-12-2023.
91. Delivered Lead lecture on "Do Fungal endophytes help in promoting the Plant and Humans' Health? during the International conference on 'Biodiversity, Biotechnology and Bioprospects of Fungi for Agricultural, Industrial and Environmental Sustainability' on 08-3-2024 at Dept of Botany, University of Madras, Chennai.
92. Chaired a technical session during 50<sup>th</sup> annual meeting and International conference on 'Biodiversity, Biotechnology and Bioprospects of Fungi for Agricultural, Industrial and Environmental Sustainability' at Dept of Botany, University of Madras, Chennai from March 6-8, 2024.
93. Delivered the **Inaugural** Lecture on 'Exploitation of fungal endophytes for biodiversity, bioactive natural compounds and protection to plants against stress' during one day National Seminar 'Recent Advances in Fungal Diversity and Agro-Biotechnology' at Mahatma Fule Arts, Commerce & Sitaramji Chaudhary Science Mahavidyalaya, Warud, Amravati on 20<sup>th</sup> Sept, 2024.
94. Delivered Planery Lecture on 'Unseen microbial flora that contribute to fungal diversity, biologically active molecules and plant health promotion' during one day National Seminar 'Recent Trends in Plant and Microbial Sciences' at Sri Mathuradas Mohota College of Science, Nagpur on 21<sup>st</sup> Sept, 2024.
95. Delivered the Inaugural Talk on 'Mushroom Cultivation' during one day workshop organized by Govt City College Hyderabad on 01-10-2024 (Online).
96. Delivered a lecture as Resource Person during the Induction Programme of Ayurveda on "Fungal endophytes contributes in promoting the phyto-constituents of medicinal plants" on 21-11-2024, in IMS, BHU, Varanasi.
97. Delivered the Presidential Lecture on 'A Research Journey from Epiphytic to Endophytic Fungi: Insights into Ecology, Diversity, and Biotechnological Potential' during 03 days National conference on 'Fungal Frontiers: Biodiversity, Biomolecules and Bioengineering Applications for Sustainable Perspectives' at Dept of Botany, JNV University, Jodhpur during November 27-29, 2024.
98. **Chaired** a technical session during 51<sup>th</sup> annual meeting and national conference on 'Fungal Frontiers: Biodiversity, Biomolecules and Bioengineering Applications for Sustainable Perspectives' at Dept of Botany, JNV University, Jodhpur during November 27-29, 2024.
99. Delivered a **Keynote** Lecture on 'Fungal endophytes: A cryptic mycoflora for biodiversity, bioactive natural compounds and plant protection' during 03 days National conference on 'Advances and Perspectives in Cryptogam Research' jointly organized by Indian Lichenological Society and CSIR-NBRI, Lucknow during December 09-11, 2024.
100. Delivered a lecture as **Chief Speaker** during Janjatiya Gaurav Divas celebrated by Banaras Hindu University on 25-11-2024, at Swatantrata Bhavan, BHU, Varanasi.

### **Members of various committees:**

1. Warden, Broacha Hostel (1998-2004), BHU.
2. Member, University examination squad, BHU.
3. Member Departmental Research Committee (1997-1999).
4. Member Board of Studies (1998-2001), Faculty of Science, BHU.
5. Member, Karya Samiti (Chhatravriti), Faculty of Science, BHU.
6. Member, Departmental Promotion Committee, Fac. of Science, BHU.
7. Member, Admission verification Committee (UG and PG) since 1998, Faculty of Science, BHU.
8. Treasurer, National Symposium on 'Biotechnology of Plant Protection' during Feb 25-27, 2000, at BHU, Varanasi.
9. Additional Superintendent (2001-2003), Faculty of Science, BHU.
10. Organizing Secretary, National Seminar on 'Impact of Increasing Human Population on Natural Resources' from 16-18 Oct, 2003 at BHU.
11. Member, University Admission Coordination Committee (UACC), BHU.
12. Member, Ragging Prevention Committee, Faculty of Science, BHU since 2005. To 2014
13. Member, Disciplinary Committee, Faculty of Science, BHU (2010-----).
14. Member, Maintenance of Quality in Hostel Mess Committee, Faculty of Science, BHU(2010).
15. Member, Pt Madan Mohan Malviya Jee 150<sup>th</sup> Birth Anniversary Commemoration lecture organizing Committee, Faculty of Science, BHU (2010).
16. Member, **Wild life Board, U. P. Lucknow** (2010-2012).
17. Member, Prominent Citizen Committee, BHU (2010).
18. **Warden, CityDelegacies**, BHU (01-07-2010-30-06-2013; July 1, 2015- 30 June 2018; December 1, 2018- 14Dec 2021).
19. Member, '**Anti Ragging Squad**' BHU (2011-12--)
20. **Member National Advisory Committee:** National Symposium on "Biotechnology in Plant Disease Management for Sustainable Crop Protection" September 17-18 2008, Pune.
21. **Member**, Scientific Advisory Committee: International Conference on Perspective in Phyllosphere Biology 15-17 Feb -2012 Amity University, Noida. ([www.amity.edu/aib/conference](http://www.amity.edu/aib/conference))
22. **Member National Advisory Committee:** National Conference on "Current Trends Medicinal Aromatic Plants and Plant Products" 17-18 March, 2012, Hyderabad.
23. Member: **Proctorial Board**, BHU Varanasi- (2013-14)
24. Deputy Chief Proctor, BHU (2014-2014)
25. **Organizing Secretary:** International Conference on Mycology and Plant Pathology: Biotechnological Approaches ([www.icmpb2012bhu.com](http://www.icmpb2012bhu.com)) from February 27-29, 2012, BHU, Varanasi.
26. **Advisory Committee Member:** National Seminar on 'Contribution of Life Sciences in Human Welfare' 27<sup>th</sup>-28 September, 2013 at Govt PG College, Narsinghpur (MP)
27. Member: **Executive Council**, VBS Purvanchal University, Jaunpur (2013-2017)
28. Member: **Executive Council**, Dr. RMLU, Faizabad (2015-2018)
29. Member: Vidyalay Management Committee, KV, BHU, Varanasi (20014-17)
30. Member: Building Committee. VBS Purvanchal University, Jaunpur
31. **Vice-President:** Mycological Society of India (2014-15)
32. **Convener:** Emerging Trends and Challenges in Plant Science Research, Dept of Botany, BHU, Varanasi Feb19-20, 2015

33. **Advisory Committee Member:** National Conference on "Challenges and Opportunity in Mycological Research" 08-09 January, 2016 at Botany, University of Madras, Chennai.

34. **Convener:** Emerging Trends in Fungal Biology and Plant Protection 'ETFPP-2016', Dept of Botany, BHU, Varanasi Feb16-18, 2016

35. **Advisory Committee Member:** National Conference on "Microbiology in 21<sup>st</sup> Century-NSM21C-2016" 29-2-16 to 01-3-2016 in Department of Microbiology, Vidyasagar University, Midnapore, West Bengal-721102

36. **Member,** Complaints Committee, BHU, Varanasi- (2016--)

37. **Member,** Inter-Faculty Youth Festival 'SPANDAN', BHU, 2017

38. **Member,** Board of Studies, Botany, VBS Purvanchal University (2017-2019)

39. **Member Advisory Committee:** National Symposium on "Natural Resource Management (NSNMM-2017), March 15-16, 2017 at Vidyasagar University, Midnapore, West Bengal

40. **Member Advisory Committee:** National Symposium on "Natural Resource Management (NSNMM-2017), Feb 2-3, 2018 at Saraswati Vidya Mandir, Gorakhpur

41. **Member Advisory Committee:** on "4<sup>th</sup> National Conference on Plant Growth Promoting Bacteria (PGPR) for Sustainability of Agriculture and Environment, 11-12 May, 2018. Dept of Biotechnology, Mizoram University, Mizoram.

42. **Member Advisory Committee:** International Symposium on Fungal Biology: Advances, Application and Conservation. November 19-21, 2018. Agharkar Research Institute, Pune

43. **Member Advisory Committee:** National Seminar on Recent Trends in Microbial Technology. Feb. 8-9, 2018. Govt College of Arts, Science and Management, Goa

44. **Member, Advisory Committee:** Guest House Complex, BHU, Varanasi (2019---)

45. **Member Advisory Committee:** New Horizon in Biological Sciences for Human welfare" 29th -30th March -2019 at Gulbarga University, Gulbarga.

46. **Member Advisory Committee:** National conference on 'Recent Advances in Diversity, Biology and Biotechnology of Fungi' 07th -09th November -2019 at Pondicherry.

47. **Member Advisory Committee:** National conference on 'Phytochemicals and Microbial Compounds- Role in Agriculture and Human Welfare' 03-04 October-2019 at Bangalore.

48. **Member:** Annual Report Committee, Institute of Science, BHU, Varanasi (2019---)

49. **Coordinator:** Undergraduate Admission Coordination Committee (UACC), Institute of Science, BHU, Varanasi (2019-2023----)

50. **Member:** Evaluation Committee of MJ Narsimhan Medal for Best Research Paper Award (2022), Indian Phytopathological Society, New Delhi

51. **Member;** Ph. D. Ordinance Review Committee, BHU, Varanasi-2022 (11-8-22)

52. **Member Advisory Committee:** National conference on 'Plants and Microbes:Progress, Potential and Future" (PMPPF-2023) 30th September -2023 at DDU Gorakhpur University, Gorakhpur.

53. **Member Advisory Committee:** International Conference on "Biodiversity, Biotechnology and Bioprospects of Fungi for Agricultural, Industrial and Environment Sustainability" (BBBFAIES-2023) & 50<sup>th</sup> MSI Annual Meet from 14-16 Dec 2023.

54. **Member,** Award Screening Committee (2023-24), Indian Phytopathological Society, New Delhi

55. **Member**, Award Screening Committee (2024-25), Indian Phytopathological Society, New Delhi

56. **Member Advisory Committee**: National Conference on Advances and Perspectives in Cryptogam Research' during 09-11 December, 2024 at CSIR-National Botanical Research Institute, Lucknow

### **Conever/Coconvener/Org.Secretary**

1. **Org. Secretary**: National Seminar on 'Impact of human population on natural resources' 16-18 October, 2003, BHU, Varanasi.
2. **Org. Secretary**: International Conference on Mycology and Plant Pathology: Biotechnological Approaches ([www.icmpb2012bhu.com](http://www.icmpb2012bhu.com)) from February 27-29, 2012, BHU, Varanasi
3. **Convener**: Emerging Trends and Challenges in Plant Science Research, Dept of Botany, BHU, Varanasi Feb19-20, 2015
4. **Convener**: Emerging Trends in Fungal Biology and Plant Protection 'ETFP-2016', Dept of Botany, BHU, Varanasi Feb16-18, 2016
5. **Co-Convener**, National Conference on Current Trends and Future Prospects in Plant Science Research 'CTPSR-2019' during Feb 01-3, 2019 at Banaras Hindu University, Varanasi
6. **Convener**, National Seminar on Recent Advances in Fungal Diversity, Plant Microbes Interaction and Disease Management (RFPIDM-2020) during Feb 28-29, 2020.
7. **Convener**, International Conference on Fungal Biology and Plant-Microbe Interactions (ICFBPMI-2024) during Feb 16-18, 2024.



<b>Number of Research articles published</b>	<b>99</b>
<b>Number of Review articles published</b>	<b>19</b>
<b>Number of Books edited</b>	<b>03</b>
<b>Number of Book chapters published</b>	<b>23</b>
<b>Google Scholar Citations</b>	<b>6913</b>
<b>h-index</b>	<b>43</b>

Kharwar

(RN Kharwar)