

Dr. KAMLESH KUMAR SHUKLA

Research Area

Applied mycology, deals with Agaricales, Endophytes, Arbuscular mycorrhizal fungi and their application in the field of agriculture, food production and environment .

Working Profile

- **As Assistant Professor** (15th September 2008- continue) in School of study in Biotechnology, Pt Ravishankar Shukla University, Raipur (C.G.)
- **As Research Scientist** (June 2002 – September 2008) in Biotechnology and Management of Bioresources Division at Tata Energy and Research Institute (TERI) New Delhi
- **As Project Fellow** (June 1997 to March 2002) in a DBT sponsored research project, entitled “ Screening and Identification of edible tribal mushroom species: Development of database and protocol for their large scale production. Department of Bioscience Rani Durgawati University Jabalpur (MP)
- **As Research Fellow** (six months, January 1997 to June 1997) in a ICFRE sponsored research project, entitled “Development and use of mycoherbicides from indigenous strains of fungal pathogens for management of *Lantana camara* serious threat to resurgence of forest trees in Madhya Pradesh” ICMR sponsored project

Project Coordinator in TERI

1. Development of hyphal fusion mechanism in Arbuscular Mycorrhizal Fungi *in vitro*. Funded by: **Department of Biotechnology, (DBT) (2002-2005)**
2. Demonstration of technology package for bamboo plantation with soil enrichment and amendments using fly ash and mycorrhizal biofertilizers in district Korba. Funded by: **Technology Information, Forecasting & Assessment Council (TIFAC) 2004-2006**

3. Field validation and product formulation of bio inoculants with particular reference to low-input wheat-rice and wheat-pulse cropping systems. . *Funded by: Indo – Swiss Collaboration in Biotechnology (ISCB) 2005-2008*

4 .Technology customization for mycorrhizal strains of Premier Tech biotechnologies. *Funded by: Pont-Rouge primer tech Canada. 2006-2008*

5. Project green- growing renewable energy for energy security Jatropha plantation . *Funded by: B P Technology Centre UK. 2007-2008*

Grant Received:

Funding Agency	Year	Sanction Amount	Duration
Chhattisgarh Council of Science & Technology	2012	1,94000=00	Two years
Department Of Biotechnology (DBT) New Delhi	2019	6127300=00	Three Years

Research Guidance

Dissertation M.Sc. (TERI)

1. **Mr Mahendra Pratap Singh** from Jiwaji University, Gwalior, (M.P), has worked entitled “*Comparison of sporulation and Infectivity potential of different In Vitro AMF Isolates*” for the period between January – June 2006
2. **Ms Monika Murarka** from BCIL, has worked with us during her Training entitled “*Development of hyphal fusion mechanism in arbuscular mycorrhizal fungi in-vitro*” for the period between 10th November 2005
3. **Ms Deepti Jain** from Rani Durgawati University, Jabalpur (MP), has worked entitled “*Extraction and optimization of Glomalin protein from Vesicular Arbuscular Mycorrhizal Fungi*” during the period between 20th January – 15th July 2005
4. **Mr Temin Payum**, Junior Research Fellow, State Forest Research Institute, has completed her training on “*Isolation and identification of Orchids mycorrhiza & VAM Fungi*” for the period between 16 – 28 August 2004.
5. **Ms Bharti Naik**, from Barkatullah University, Bhopal (MP) has worked entitled “*Investigation on the pre-requisites of root-organ culture (ROC) establishment of Arbuscular Mycorrhizal symbiosis: Optimization and evaluation of critical parameter*” between January-June 2004.

M.Phil (SoS in Biotechnology)

1. Astha Agrawal (2011) “Hairy Root induction through Transformation”
2. Roma Kurrey (2011) Screening of amylase producing fungal isolates

3. Naresh Dewangan (2012) "Screening of biological activities of isolated endophytic fungi"
4. Sonal Roy (2012) "Evaluation of infectivity potential of Arbuscular mycorrhizal fungi in *Vigna radiata* (L.) Wilczek."
5. Vandana verma (2012) "Antimicrobial assessment of Endophytic fungi in different Medicinal plants"
6. Pratima Khunte (2013) "Fungal Mediated Extracellular Biosynthesis of Silver Nanoparticles their Characterization and Biocontrol Efficacy"
7. Sudakshina Tiwari (2013) "Isolation and Screening of Endophyte from *Shorea rubusta* and *Aegle marmelos* and Preliminary Antimicrobial study".
8. Reena (2013) " Amylolytic potentiality of *Aspergillus terreus* form different habitate"
9. Preeti Madharia (2014) "Optimization of Hairy Root Culture in Different Plant Species"
10. Savitri Mishra (2014) "Isolation of Endophytic Fungi from *Phyllanthus emblica* and *Tectona grandis* and Analysis of its Enzymatic Activity"
11. Veena Sharma(2014) "Antimicrobial Activity Of Endophytic Fungi Isolated From *Butea monosperma* and *Terminalia chebula*."
12. Anuradha Tirkey (2015) "Screening of antioxidant property of some wild mushroom from Jashpur distric in CG."

Publications:

- Identification, Germplasm Collection and Commercial Cultivation of Edible Mushrooms at Rural Women Sites in Madhya Pradesh. In proceedings on the National Workshop on Role of Biotechnology in Upliftment in the New Millennium, Agra (UP) 51-55.(2002)
- Nutritional profile of prominent wild edible mushroom genera of central India: *Russula* & *Lactarius*. In: *Indian J. Mushrooms* 20 (1&2) : 21-23 (2002).
- Nutritional Potential of *Termitomyces heimii* : An Important Wild Edible Tribal Mushroom Species of M.P. *J. Basic Appl. Mycol.* 1(1) 36-38.(2002)
- Diversity and Systematics of Agaricales of Central India. In *Frontiers of Fungal Diversity in India* (Eds. G. P. Rao, C. Manoharachari, D. J. Bhat, R. C. Rajak & T. N. Lakhanpal) International Book Distributing Company Lucknow 297-312 (2002).
- Mushroom Poisoning: Diagnosis and Treatment. In *Recent Advances in Forensic Biology* (Eds. A. K. Guru & P. Shrivastava) Sagar (M. P.) Published by Forensic Science Laboratory & Anmol Publications Pvt. Ltd. PP. 35-67 (2002).
- Shelf life studies of *Pleurotus florida* sing In : *Proc. Nat. Acad. Sci* 73(3&4) : 1-7. (2003).
- Agaricales of Central India-I : Two New Species In : *Indian J Mushroom* 21(1&2):29-31(2003)
- Investigation on In vitro Fruiting of an Indigenous Species of *Lentinus cladopus* Len.In : *Indian J Mushroom* 21(1&2): 25-28. (2003).

- *In-vitro* cultivation of a indigeneous species of *Lentinus cladopus*. Indian. J.Mushrooms. 21: 25-28. (2003).
- Mushrooms and Their Sustainable Utilization.In: *Everyman's Science* 38 (6): 357-365. (2004).
- Studies on spawn production of an indigenous edible species of *Lentinus cladopus* (LEN). J Microbial Wld 7(2), 182-7. (2005).
- Diversity and Nutriceutical potential of wild edible mushrooms of Central India. In; Microbiol diversity:current perspectives and potential applications (Ed. T. Satyanarayana & B.N. Johri). I.K. International Pvt. Ltd., New Delhi. pp. 967-980. (2005).
- Optimization of physico-chemical parameters for mycelial growth of an indigenous species of *Pleurotus florida*(Sing.) *J. Microb. World* 7(2) : 216-226. (2005).
- Mushrooms in Central India. In : Plant Biodiversity, Microbial Interactions and Environmental Biology (Eds. S.N. Chaturvedi & K.P. Singh) Avishkar Publishers, Jaipur, India, pp 37-51 (2005).
- Investigations on *in vitro* fruiting of an edible facultative ectomycorrhizal species of *Lactarius* J. Tropical Forestry, Vol. 24(1&2), 65-69. (2008).
- Prevalence of tribal Mushroom in Sal Forests of Chhattisgarh. *J.Mycopathol.Res. Vol 47 (2) 111-117* (2009).
- Diversity of Agarics in Achanakmar-Amarkantak Biosphere reserve, Chhattisgarh. *J. of Mushroom Research* Vol.19 (1) 2010
- Red - Wood tree species and their endemicity in Chhattisgarh, Central – India”, *International Journal of Research in Biosciences*, 3 (3); 30-38, 2014.
- Agrobacterium rhizogenes mediated hairy root induction in *Daucus carota*”, *Indian Journal of Tropical Biodiversity*. Vol 22 (1): 82-85p, 2014.
- Efficient synthesis of plant-mediated silver nanoparticles and their screening for antimicrobial activity, *Plant Science Today*. 4(3): 143-150 ,2017.

S. No	Books, chapters	ISBN No.
1.	Deepak Rahi, Kamlesh Shukla , R.C. Rajak and A.K.Pandey (2002). “Mushroom Poisoning: Diagnosis and Treatment”, <i>In Recent Advances in Forensic Biology</i> (Eds. A. K.Guru & P. Shrivastava) Sagar (M. P.) Published by Forensic Science Laboratory & Anmol Publications Pvt. Ltd. pp. 35-67.	ISBN: 8126112808 9788126112807
2.	R.C. Rajak Deepak Rahi, Kamlesh Shukla ,and A.K.Pandey (2002). “Diversity and Systematics of Agaricales of Central India.”, <i>In Frontiers of Fungal</i>	ISBN: 8185860920, 9788185860923

	<i>Diversity in India</i> (Eds. G. P. Rao, C. Manoharachari, D. J. Bhat, R. C. Rajak & T. N. Lakhanpal) International Book Distributing Company Lucknow, pp 297-312	
3.	Rahi D.K., Rajak, R.C. Shukla, Kamlesh & Pandey, A.K.(2005) “Diversity and Nutraceutical potential of wild edible mushrooms of Central India”, In; Microbiol diversity: current perspectives and potential applications (Ed. T. Satyanarayana & B.N. Johri). I.K. International Pvt. Ltd., New Delhi. pp 967-980.	ISBN-10: 8188237434 ISBN-13: 978-8188237432
4.	Rahi, DK, Rajak, RC, Shukla, Kamlesh & Pandey, AK (2005). “Mushrooms in Central India”, In: <i>Plant Biodiversity, Microbial Interactions and Environmental Biology</i> (Eds.S.N. Chaturvedi & K.P. Singh) Avishkar Publishers, Jaipur, India, pp 37-51.	ISBN10: 8179101312 ISBN13: 9788179101315
5.	Bhawna Saxena, Kamlesh Shukla, and Bhoopander Giri (2017) Arbuscular Mycorrhizal Fungi and Tolerance of Salt Stress in Plants, Springer	67-98 DOI 10.1007/978-981-10-4115-0 ISBN: 978-981-10-4114-3 Citation :9
6.	Kamlesh Shukla, Bhoopander Giri and R. V. Shukla (2017) Occurrence and distribution of mushrooms in semi-ever green Sal (<i>Shorea robusta</i>) forest Chhattisgarh, Springer	501-524 https://doi.org/10.1007/978-981-10-4768-8 ISBN: 978-981-10-4768-8