

Dr. Kamlesh Kumar Shukla

Associate Professor

School of Study in Biotechnology

Pt. Ravishankar Shukla University

Raipur- 492010 (C.G.)

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BACKGROUND

Academic

Doctor of Philosophy (1998—2002)

Major in Biodiversity of Agaricales

(Rani Durgawati University, Jabalpur MP)

Title of Ph.D. : “Studies on Agaricales of Madhya Pradesh with Special Reference to Cultivation of Tribal Edible Mushrooms.”

Master of Science (*Botany*) 1994 – 1996

Specialization in Plant Pathology

Guru Ghasidas University, Bilaspur (Chattisgarh)

Bachelor of Science (1992—1994)

Major in Biology

CMD College, Guru Ghasidas University, Bilaspur

Research Interest

My research work based on in the field of applied mycology such as mushroom biology, Arbuscular mycorrhizal fungi and Endophytic fungi. In the field of mushroom biology exploration of biodiversity of wild edible mushrooms in Central India, Develop In vitro mass production and customization technology of Arbuscular mycorrhizal fungi, Evaluation bioactivity and their biopropect of endophytic fungi.

Working Profile

- **As Associate Professor** (15th September 2020- continue) in School of Study in Biotechnology, Pt Ravishankar Shukla University, Raipur (C.G.) continue...
- **As Assistant Professor** (15th September 2008- 2020) in School of Study in Biotechnology, Pt Ravishankar Shukla University, Raipur (C.G.)
- **As Research Scientist** (June 2002 – September 2008) in **Tata Energy and Research Institute (TERI) New Delhi**

- **As Project Fellow** (June 1997 to March 2002) in a DBT sponsored research project project, entitled “ Screening and Identification of edible tribal mushroom species: Development of database and protocol for their large scale production.
- **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* L. A serious threat to resurgence of forest trees in Madhya Pradesh” ICMR sponsored project

Member in Academic Bodies:

1. Governor nominee central board of studies in biotechnology (2014-2017)
2. Governor nominee central board of studies in Microbiology (2014-2017)
3. Vice-Chancellor nominee examination in Biotechnology (2012-13, 2014-15)
4. Member, Board of studies in Biotechnology Pt. RSU, Raipur 2010-13, 2014-17)

Administrative Responsibilities:

1. Assistant Coordinator, Central Valuation Unit, Pt. RSU, Raipur (2009,2013,2023)
2. Assistant Coordinator, Revaluation Unit, Pt. RSU, Raipur (2011, 2012)
3. Assistant Coordinator, Revaluation , RDVV, Jabalpur MP (2011-12)
4. Assistant Coordinator, paper distribution Unit, Pt. RSU, Raipur (2010)
5. Assistant Coordinator, Copy collection Center, Pt. RSU, Raipur (2011, 2012)
6. Assistant Supritandant Annual examination, Pt. RSU, Raipur (2010, 2012)
7. Secretary, staff council in Biotechnology Pt. RSU, Raipur (2022)
8. UTD NSS In –charge July 2020 continue

Life Membership in Professional Bodies

- Life member of Association of Microbiologists of India.
- Life member of Indian Mushroom Growers' Association.India.
- Life member of Society for Basic & Applied Mycology India.

Areas of Research Interest:

Fungal Biodiversity Conservation and Bioprospecting of Mushroom, In vitro mass production Technology of Arbuscular mycorrhizal, and Endophytic fungi

Project Coordinator in TERI

1. Development of hyphal fusion mechanism in Arbuscular Mycorrhizal Fungi *in vitro*. **Funded by: Department of Biotechnology**
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**
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

4 .Technology customization for mycorrhizal strains of Premier Tech biotechnologies.

Funded by: Pont-Rouge primer tech Canada.

5. Project green- growing renewable energy for energy security Jatropha plantation .

Funded by: British Petroleum Technology UK

Grant Received:

Funding Agency	Year	Sanction Amount	Duration
1. Chhattisgarh Council of Science & Technology	2002	1,94000=00	Two years
2. Department Of Biotechnology (DBT) New Delhi	2019	6127300=00	Three Years
3. Department Of Biotechnology (DBT) New Delhi	2023	Approved for financial support (64 lakhs)	

Project entitled:

1. Biodiversity of endophytic fungi in tropical forest Chhattisgarh
2. Diversity and bioactivity of fungi from Achanakmar- Amarkantak Biosphere Reserve with Emphasis on Conservation.”
3. Evaluate ectomycorrhizal diversity in mining-disturbed and undisturbed forest ecosystems in Bastar region,generate metaboloc activity profiles of forest ectomycorrhizal and propose best performing isoltes for soil restoration.

Conference Organized:

1. International Conference on Vedic Science and its Application 20th to 21st November 2010 Pt. Ravishankar Shukla University Raipur CG (**As a Treasurer ICVSA**).
2. National Conference on Interaction between traditional and modern technology organise by Chhattisgarh Council of Science and Technology CGCOST , 24th to 25th March 2012, Nimora Raipur. (**As a joint secretary**)
3. National Conference on “ Biotechnology and Traditional Knowledge” held on 22 to 24 Nov 2014. School of Studies in Biotechnology, Pt. Ravishankar Shukla University, Raipur CG. (**As a joint secretary**)
4. National Seminar on Innovations & prospespect in Biotechnology held on 2nd to 4th January 2016 organized by School of Studies in Biotechnology, Pt. Ravishankar Shukla University, Raipur CG. (**As a joint secretary**)

Papers in Journals:

S. No	Research Papers	ISBN No.
1.	Deepak Rahi, Kamlesh Shukla , R.C. Rajak and A.K.Pandey (2002). “Nutritional profile of prominent wild	ISSN: 0972-4885

	edible mushroom genera of central India: <i>Russula & Lactarius</i> ”, <i>Indian J. Mushrooms</i> , 20 (1&2); 21-23.	
2.	Deepak Rahi, Kamlesh Shukla , A.K.Pandey and R.C Rajak (2002). “Nutritional Potential of <i>Termitomyces heimii</i> : An Important Wild Edible Tribal Mushroom Species of M.P.”, <i>J. Basic Appl. Mycol.</i> 1(1); 36-38.	ISSN: 0972-7167
3.	Deepak Rahi, Kamlesh Shukla , R.C. Rajak and A.K.Pandey (2003). “Shelf life studies of <i>Pleurotus florida sing</i> ”, <i>Proc. Nat. Acad. Sci</i> , 73(3&4);1-7	ISSN: 0370-0046
4.	Deepak Rahi, Kamlesh Shukla , R.C. Rajak and A.K.Pandey (2003). “Agaricales of Central India-I: Two New Species”, <i>Indian J Mushroom</i> , 21(1&2); 29-31.	ISSN: 0972-4885
5.	Kamlesh Shukla , Deepak Rahi, R.C. Rajak and A.K.Pandey (2003). “Investigation on In vitro Fruiting of an Indigenous Species of <i>Lentinus cladopus</i> Len.”, <i>Indian J. Mushroom</i> 21(1&2); 25-28.	ISSN: 0972-4885
7.	Deepak Rahi, Kamlesh Shukla , R.C. Rajak and A.K.Pandey (2004). “Mushrooms and Their Sustainable Utilization”, <i>Everyman's Science</i> , 38 (6); 357-365.	ISSN: 2010-3638
8.	Shukla, K. K. , Rahi, D. K, Rajak, R. C. and Pandey A. K.(2005). “Studies on spawn production of an indigenous edible species of <i>Lentinus cladopus</i> (LEN)”, <i>J Microbial World</i> , 7(2); 182-187.	ISSN: 1752-3389
9.	Rahi, DK, Shukla, Kamlesh , Rajak, RC & Pandey, AK (2005). “Optimization of physico-chemical parameters for mycelial growth of an indigenous species of <i>Pleurotus florida</i> (Sing.)”, <i>J.Microbial. World</i> 7(2); 216-226.	ISSN: 1752-3389
10.	Rahi, DK, Shukla, Kamlesh , Rajak, RC & Pandey, AK (2008) “Investigations on <i>in vitro</i> fruiting of an edible facultative ectomycorrhizal species of <i>Lactarius</i> ”, <i>J. Tropical Forestry</i> , 24(1&2); 65-69.	ISSN: 0970-1494
11.	Mahesh Tiwari, Kamlesh Shukla , R.V. Shukla and Arpita Mani Tripathi	ISSN: 0971-3719

	(2009). "Prevalence of tribal Mushroom in Sal Forests of Chhattisgarh", <i>J.Mycopathol.Res.</i> , 47 (2); 111-117.	
12.	R.V. Shukla, Arpita Mani Tripathi, Kamlesh Shukla and Mahesh Tiwari (2010). "Diversity of Agarics in Achanakmar-Amarkantak Biosphere reserve, Chhattisgarh", <i>Mushroom Research</i> , 19 (1); 21 -25.	ISSN: 0972-4885
13.	Mahesh K. Tiwari, R.V. Shukla, Kamlesh Shukla , Arpita Mani Tripathi (2010). "Taxonomic studies on agaricus-the genus <i>Amanita</i> in Chhattisgarh", <i>Mushroom Research</i>	ISSN: 0972-4885
14.	Rajput Yogita, Shit Simanta, Shukla Aparna, Gupta Shraddha and Shukla Kamlesh (2011). "Screening for exopolysaccharide production from basidiomycetes of Chhattisgarh", <i>Current Botany</i> , 2(10); 11-14	ISSN: 2220-4822
15.	Gupta Shraddha, Rajput Yogita, Shit Simanta, Shukla Aparna, Shukla Kamlesh (2011). "Screening and production of bioplastic (PHAs) from sugarcane rhizospheric bacteria", <i>International Multidisciplinary Research Journal</i> , 1 (9); 30-33	ISSN: 2231-6302
16.	Gupta Shraddha, Rajput Yogita, Shit Simanta, Shukla Aparna, Shukla Kamlesh (2012). "Screening of polyhydroxyalkanoates (PHAS) producing bacteria from rhizospheric soils of Chhattisgarh", <i>Advances in Pharmacology and Toxicology</i> , 13 (3): 51-56.	ISSN: 0973-2381
17.	Aparna Shukla , Simanta Shit, Shraddha Gupta, Kamlesh shukla , Dr. Ashish Saraf ³ (2012) "Medicinal plants and their phytochemicals responding antibacterial properties", published in <i>Journal of Ecobiotechnology</i> , 4(2); 116-118	ISSN: 2077-0464
18.	Shukla R.V., Shukla Kamlesh , R. Sukumar ² (2014). "Red - Wood tree species and their endemicity in Chhattisgarh, Central – India", <i>International Journal of Research in Biosciences</i> , 3 (3); 30-38	ISSN: 2319-2844
19.	Agrawal, A., Shukla, Kamlesh. , and	ISSN: 0971-4642

	Wali, S.A. (2014). "Agrobacterium rhizogenes mediated hairy root induction in <i>Daucus carota</i> ", Indian Journal of Tropical Biodiversity. Vol 22 (1): 82-85p	
20	Devyani Sharma, Ashish Saraf, Kamlesh Shukla and Vishwaprakash Roy (2016) "Study of Physicochemical parameter for extracellular protease production by <i>fusarium oxysporium</i> . World Journal of Pharmacy and Pharmaceutical Science. Vol 5 (2); 1043-1054.	ISSN 2278 – 4357
21.	Meghna Shrivastava, Ashish Saraf, Kamlesh Kumar Shukla and Devyani Sharma (2017). Isolation of bioactive metabolites producing fungal strains from milk industries of Raipur district. World Journal of Pharmacy and Pharmaceutical Science. Vol 6 (9); 1652-1658.	ISSN 2278 – 4357
22.	Jasmeet Kaur Sohal, Ashish Saraf, Kamlesh Kumar Shukla , (2017). Green Synthesis of Silver Nanoparticles (Ag-NPs) Using Plant Extract For Antimicrobial and Antioxidant Applications : A Review. International Journal of Advance Research in Science and Engineering, Vol 6(10) 766-777.	ISSN 2219 – 8354
23	Rashmi Dwivedi, Bhoopander Giri, and Kamlesh Shukla (2017) Efficient synthesis of plant-mediated silver nanoparticles and their screening for antimicrobial activity, Plant Science Today. 4(3): 143-150	http://dx.doi.org/10.14719/pst.2017.4.3.328 SSSN: ISSN: 2348-1900
23.	Pahare S, Kamlesh Shukla , Shukla RV (2018) Keratinophilic fungi from warm, moist, cattle - house of Bilaspur Central – India, Journal of Microbiology & Experimentation, Volume 6 (2) 46-48.	10.15406/jmen.2018.06.00187 eISSN: 2373-437X
24.	Labya Prabhas, Megha Agrawal & Kamlesh Shukla . (2018) Anti-algal potential of some edible greens in Hydroponics. Vol 7 (2) 362-368.	ISSN 2319 – 8354
25.	Labya Prabhas, Megha Agrawal & Kamlesh Shukla. (2018) Hydroponics Emerging Technique of Plant Cultivation, International Journal of Engineering Technology	ISSN 2394 – 3386

	Science and Research, Volume 5,(2) 221-230	
26.	Jasmeet Kaur Sohal, Ashish Saraf, Kamlesh Kumar Shukla & Meghna Shrivastava.(2019) Determination of antioxidant potential of biochemically synthesized silver nanoparticles using <i>Aloe vera</i> gel extract. Plant Science Today. 6(2): 208-217.	ISSN: 2348-1900
27.	Jasmeet Kaur Sohal, Ashish Saraf and Kamlesh Kumar Shukla (2019) Antimicrobial activity of biochemically synthesized silver nanoparticles (AgNPs) using <i>Aloe vera</i> gel extract. The Pharma Innovation Journal 8(12): 376-382	ISSN (E): 2277- 7695
28.	Ashish Saraf ,Meghna and K K Shukla (2021) Structure Based Screening of Fungal Bioactive Metabolites As Potential Inhibitors of Main Protease (Mpro) of SARS-CoV.	ISSN- 2693-5015 DOI: 10.21203/rs.3.rs-552554/v1
29.	Srishti Verma , Visheshta Valvi , Kamlesh Kumar Shukla (2022). Screening Some Extracellular Enzymes of Wild Mushrooms from Pt.Ravishankar Shukla University Campus. Journal of Ravishankar University Vol (35) Issue (1) 42-52	ISSN : 0970-5910
30.	Srishti Verma , Mahesh Tiwari , R.V. Shukla , Kamlesh Shukla (2022) Species of Termitomyces (Agaricales) Occurring in Achanakmar Biosphere Reserve, Chhattisgarh. Journal of Ravishankar University Vol (35) Issue (1) 87-100	ISSN : 0970-5910
31.	Samay,Sristhi,Kushal and Kamlesh (2023) Nutritional Potential of Wild Culinary Mushroom Species Volume 12 Number 2	https://doi.org/10.20546/ijcmas.2023.1202.016 ISSN: 2319-7706
32.	Srishti Verma, Samay Tirkey, Anushruti Satra, Kamlesh Kumar Shukla (2023) Secondary Metabolites Screening of Wild Mushrooms and Assessment of their In-Vitro Anti-Diabetic Property. Vol (4) Issue (1)	http://doi.org/10.52228/NBW-JAAB.2022-4-1-6 ISSN: 2583-8105
33.	Aditi Gupta , Vineet Meshram , Mahiti Gupta , Soniya Goyal , Kamal Ahmad Qureshi , Mariusz Jaremko and Kamlesh Kumar Shukla (2023) Fungal Endophytes: Microfactories of Novel Bioactive Compounds with Therapeutic Interventions; A Comprehensive Review on the Biotechnological Developments in	https://doi.org/10.3390/biom13071038

	the Field of Fungal Endophytic Biology over the Last Decade. <i>Biomolecules</i> : 13 (7), 1038	
34.	Srishti Verma, Samay Tirkey and Kamlesh Shukla A review on therapeutic potential of wild mushrooms with their relative status in Chhattisgarh, Central India. <i>Advances in Traditional Medicine</i> (2023)	https://doi.org/10.1007/s13596-023-00713-2

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 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	ISBN: 8185860920, 9788185860923
3.	Rahi D.K., Rajak, R.C. Shukla, Kamlesh & Pandey, A.K.(2005) “Diversity and Nutriceutical potential of wild edible mushrooms of Central India”, In; <i>Microbiol diversity: current perspectives and potential applications</i> (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) <i>Arbuscular Mycorrhizal Fungi and Tolerance of Salt Stress in Plants</i> , 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
7.	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	ISBN 978-981-10-4767-1 https://doi.org/10.1007/978-981-10-4768-8 25

8.	Kamlesh Shukla and Mahiti Gupta(2020). Endophytic Fungi: A Treasure Trove of Novel Bioactive Compounds. Springer	https://doi.org/10.1007/978-981-15-1394-7_14 ISBN 978-981-15-1393-0
9.	Jasmeet Kaur Sohal, Ashish Saraf and Kamlesh Kumar Shukla .(2021). Silver Nanoparticles (AgNPs): Methods of Synthesis, Mechanism of Antimicrobial Action and Applications, Weser Books. Volume 8, 55-71	ISBN: 978-3-96492-261-8
10.		
11.		
12.		
Book Edited		
1.	S.K.Jadhav, K.K,Sahu, A.Quraishi, K.K.Shukla , and N Chandrawanshi.(2014).Publisher by Biotech Book.	ISBN: 978-81-7622-330-0

Paper presented in International Conference

1. Potential of In vitro based mass production technology of AM fungi International Conference on Advances in Plant and Microbes research Sponsored by UGC- SAP-DRS 6th to 8th January 2016 *Organized by:*Department of Botany & Microbiology at Acharya Nagarjuna University, Guntur AP. India.
2. Ethnopharmacological Importance of Tribal Mushrooms in Chhattisgarh Forest 3rd International Congress of the Society for Ethnopharmacology from 19 to 21st February 2016 Pt. RSU Raipur.
3. International Symposium Environment Analytical and Toxicology Issue of Speciation in Atmospheric Organic Aerosol from 6 to 8th December 2012 at pt. RSU Raipur (**participate**)

Paper presented in national Conference

1. Diversity of Pharmacological importance of tribal mushrooms in Chhattisgarh forest Advance in Pharmaceutical Research January 28-30 (2011) RSSU Raipur.
2. Agrobacterium rhizogenes mediated hairy root induction in *Daucus carota*. National Conference 11-12 October (2011). Govt. V.Y.P PG College,Durg(CG) *Sponsored by UGC*
3. In vitro based mass production technology of AM fungi National seminar on Impact of Agrochemical on ecosystem from 23rd to 24th August 2013,organize Swami Shri Swaroopanand Saraswati Mahaviyalya Bhilai.
4. Hairy root induction in *Daucus Carota* through *Agrobacterium Rhizogenes*.National conference on integrative Genomics from 11 to 12th February 2014, organize by Shri Shaqnkacharya Mahavidyalya Bhilai.
5. National Conference on “Conservation of Biodiversity in India from 16th to 17th October 2012 Arts and Commerce Girls College Raipur.

Poster presented in International Conference

1. *Agrobacterium rhizogenes* Mediated Gene Transformation in *Tagetes erecta* Develop Hairy Root culture, 7th International Conference on Mycorrhiza,6-11 January2013, TERI,New Delhi.

2. Diversity of Ecto- Mycorrhizal Mushrooms in Chhattisgarh. International conference on advances in plant & microbial biotechnology PMB 2017 Department of biotechnology JITT Noida UP

Invited Talk/Guest lecturer and Resource

1. **Resource Person** National Seminar on: “Current Trend in the field of Biodiversity and Sustainable use of Natural Resources” 16th-17th November **2009**. Jabalpur (M.P.)
topic Diversity of Medicinal Mushroom in Chhattisgarh
2. **Guest Lecturer** Cultivation of mushrooms and its economic importance Rungta college of Science & Technology Bhilai on 22nd January 2016.
3. **Invited lecture:** Pragati college Raipur 12th January 2015
4. **Chaired Session :** National workshop on current trends in mushroom cultivation and culture technique from 12-13 January 2017 at DLS PG college Bilaspur
5. **Resource Person :** Chhattisgarh Science center Raipur on 9th December 2016.
6. **Guest Lecturer:** KD Rungta college of Science & Technology Raipur on 21st December 2016.
7. **Key note Speaker:** International seminar on Emerging trends in information technology at MATS university Raipur.
8. **Key note Speaker** National Workshop on “Techniques and Processing of Mushroom Cultivation from 23rd to 29th January 2016. Govt. Rajeev Lochan College Rajim (CG)
9. **Resource Person** National seminar on investigation of ethnomedicinal plants used by ethnic group of Chhattisgarh from 19020 October 2013 Columbia Institute of Pharmacy , Raipur.
10. **Invited Lecturer:** National workshop on technique in life science in socio-economic development of mankind from 22 to 28th December 2014. Organize Govt PG college Narsinghpur MP.
11. **Guest Lecturer:** Gurukul Mahila Mahavidyalaya Raipur on 4th December 2014 .
12. **Chaired Session:** 3rd International Congress of the Society for Ethnopharmacology from 19 to 21st February 2016 Pt. RSU Raipur.
13. **Invited Lecture:** National Service Scheme UTD unit Pt. RSU on 18th January 2017