

## FACULTY PROFILE

### Dr. PRAGYA KULKARNI

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| <b>Designation</b>                    | Assistant Professor (Sr. Scale), Prof. In Charge, Dept. of Microbiology  |
| <b>College</b>                        | Govt. V.Y. T. PG Autonomous College, Durg (Accredited 'A' grade by NAAC)   |
| <b>Affiliated University</b>          | Pt. Ravishankar Shukla University, Raipur, Chhattisgarh  |
| <b>Date of Birth</b>                  | 29.04.69   |
| <b>Residential Address</b>            | Lotus, 55, Talpuri, Bhilai, Dist. Durg, (C.G.)   |
| <b>Phone No.</b>                      | 07882971055; 09826142086 (Mob.)  |
| <b>Mailing Address</b>                | pragya.mic@gmail.com   |
| <b>Academic Qualification</b>         | M.Sc. Botany (Plant Pathology) Pt. RSU Raipur, 1989 (Gold Medal)<br>Ph.D. Bioscience (Microbiology) 1994   |
| <b>Teaching Experience</b>            | From October 1993, UG and PG (23 years)  |
| <b>Subject Taught</b>                 | Plant Pathology, Plant Biotechnology, Microbial Biotechnology, Microbial Genetics, Bioinstrumentations and Techniques, Biostatistics, Genetic Engineering. and Environmental microbiology                                  |
| <b>Research Experience</b>            | 23 years, Mushroom Biotechnology, Bio-fertilizers and Microbial Metabolites, Bioremediation of soil and water  |
| <b>Publications</b>                   | Full length Papers in National and International Journals – 28   |
| <b>Seminars / Workshops/Trainings</b> | Participated - 31<br>Organized – 04  |
| <b>Project works</b>                  | Research Project Completed – 02 (UGC MRP) ;<br><br>Ongoing – 01(CG COST)   |
| <b>Project Guidance</b>               | M.Sc. Microbiology Projects – 18   |
| <b>Member of Editorial Board</b>      | Biologists Forum of India (2011)   |
| <b>Fellowship</b>                     | Society of Life Sciences (2011)  |
| <b>Administrative Experience</b>      | 1. Member College Autonomous Examination Cell for 07 years.<br>2. Prof. In-Charge – Dept. of Microbiology since 2009.<br>3. Member College IQAC since 2013.  |
| <b>Field of Interest</b>              | Organizing Science Quiz, Improving Presentation Skill, Research Methodology, Designing new exercises using Latest Equipment's. Formulation of handouts on Practical's for UG & PG classes, Environment awareness campaigns |

### **Seminars / Workshops/ Trainings (Attended/ Participated)**

1. National Symposium on Biotechnology for rural areas. Govt. Science College, Raipur, 1991.
2. 7<sup>th</sup> MP Young scientist congress 7-10 Feb, Indore, 1992.
3. National seminar on Botany, National Academy of Sciences, Udaipur, 1993.
4. National Symposium on Mushrooms, Solan, 1994.
5. National Seminar on Medicinal and Aromatic Plants- Biodiversity, Conservation, Cultivation and Processing, 26-27 Feb. Raipur, 2005.
6. National Symposium on Plant diversity and its Conservation, 11-12 Nov., Bhilai, 2005.
7. Demonstration on DNA Technology, Pt. RSU, 23-24 November, Raipur, 2005.
8. Annual Session on Mining and Environment, 21-22 March, Raipur.2006.
9. National Science Day Seminar, 27 April, Durg, 2006.
10. 14<sup>th</sup> National Conference on Aerobiology, 15-17 January, Raipur, 2007.
11. National Conference on Species Diversity: Measurement, Magnitude, Gradients Uses and Conservation, 26-27 February, Rajnandgaon, 2007.
12. National Seminar on Botanical Researches: Present Scenario and Future Prospects, 29-30 January, Raipur, 2008.
13. Workshop on Microbial Technology and Molecular Biology 10-19 March, Sagar, 2008.
14. Workshop on “Hands on Training in Enzymology” (Rennet and Bromolain), 20-23 December, Durg, 2010.
15. National Seminar on Recent Trends in Bio-Geo Sciences, 14 October, Nagpur, 2010.
16. National Conference on Frontiers of New Biology, 9-10 December, Bhilai, 2010.
17. National Conference on Climate change and its effect on Biodiversity. 5-6 February, Bhilai, 2011.
18. Workshop on Genomics 13-15 April, Durg, 2011.
19. National Seminar on Ecosystem and Biodiversity: Bank of Natural Capital 27-28 March, Jamshedpur, Jharkhand, 2012.
20. International Conference on Technology Enabled Organizational Transformation, Bhilai. 21-23 June, 2012
21. National Conference on Biological science in current scenario. St Thomas College, Bhilai, 10-11 October, 2012.

22. National Workshop on Mushroom Cultivation and its post harvest management. BMM, Bhilai, 02 – 05 November, 2012.
23. National Workshop on Hands on DNA Technologies, 08-11 January, Raipur, 2013.
24. State Level Workshop on Enhancement of Communication Skills (English). 2-3 Feb. Durg, 2013.
25. International Conference Shaastrarth -2013, Bhilai, 08-09 February, 2013.
26. National Workshop of IQAC for teachers, Durg, 08-09 February, 2013.
27. Interdisciplinary National Seminar on Impact of Agrochemicals on Ecosystem, SSSM, Bhilai 23-24 August, 2013.
28. National Conference on Integrative genomics, Shri Shankaracharya Mahavidyalaya, Bhilai, 11-12 Feb. 2014
29. National workshop on isolation and Identification of Aerobiomolecules. BMM 02-04 Nov. 2015 (RP)
30. Workshop on Green Chemistry VYT, Durg, 30.11.2015
31. National Seminar on Energy Harvesting Materials and Techniques for Sustainable Development. VYT, Durg, 2-3 Dec. 2015

#### **Guest Lectures delivered / Resource Person in Seminar/ Workshop**

1. Workshop on Botany and Zoology, Education Department BSP Bhilai, (11.09.2009)  
Topic- Biodiversity and its Conservation.
2. Guest Lecture on Instrumentation and Techniques, Kalyan Mahavidyalaya, Bhilai, 2010.
3. Guest Lecture on Applications of Biostatistics in Biotechnology, Bhilai Mahila Mahavidyalaya, Bhilai, 2012.
4. Resource Person in two day state level work shop on applied aspects of Botany, Shri Shankaracharya Mahavidyalaya, Bhilai, 2013.
5. Television show - Raipur Doordarshan, Future Prospects and Job Possibilities in Microbiology. (06.12.13)
6. Lecture on Preparation of Departmental Profile, St. Vincent Peloti College, Raipur 2014
7. Guest lecture on on isolation and Identification of Aerobiomolecules in National workshop, BMM 02-04 Nov. 2015
8. Resource person in Two days Workshop on isolation and Identification of Aerobiomolecules. BMM, Bhilai (03.11.2015)
9. Guest lecture on NAAC Preparation, Govt. Digvijay college, Rajnangoan (07.11.2015)

10. Lecture on Preparation of Departmental Profile, Swami Swarupnada Saraswati College Bhilai ( 25.11.2015)
11. Guest lecture on Environment Awareness Shri Shankaracharya College, Junwani, Bhilai. (14.12.2015)
12. Guest lecture on Quality enhancement through best practices in One day state level workshop of RUSA, Govt. Bilasa Girls College, Bilaspur (13.02.2016)
13. Guest lecture on Microbial Genetics and Applications of Biostatistics, Govt. Digvijay College, Rajnandgaon (17.02,2016)
14. Lecture on Ecosystem and Biodiversity VYT, Durg (02.03.2016) (Recorded)

#### **Detail of Publications (Full Papers)**

1. Assessment of yield and Biological efficiency of *Pleurotus* spp. on two natural substrats. Biome, 4(2):129-132, 1989.
2. Studies on *Pleurotus* spp. as related to spawn production. Indian Mushrooms, 72-73, 1991.
3. Arbuscular Mycorrhizal association and diversity with some weeds of cultivated fields. Adv. Plant Sci., 20(2):69-73, 2007.
4. Mandeepkhol Cave: Nature's wonder in Rajnandgaon Dist. Chhattisgarh, India. J. Curr. Sci. 10(2) 757-762, 2007.
5. Mandeepkhol Caves: A classical site of Karst Topography, Rajnandgaon Dist. Of Chhattisgarh, India. Ultra Sci. 19(1):153-155. 2007.
6. Occurrence of Arbuscular Mycorrhizal association and diversity in field weeds. J. Bot. Soc. Sagar Uni. 43: 88-95, 2008.
7. Vesicular Arbuscular Mycorrhizal infection process in *Andrographis peniculata*. National Journal of Life Sciences. 7 (3): 2010.
8. A prevalence of sickle cell disease among various communities in Jamul area of Bhilai, Chhattisgarh, India. In, Proceedings: National seminar on Sickle Cell Disease, Kabirdham Dist. 29-30 Jan 2011, pp. 80-83.
9. Aeromycological profile of the public parks of Bhilai Township, Chhattisgarh, India. Indian Journal of Science and Technology. 4(5): 19-21, May, 2011.
10. Biodiversity of Arbuscular Mycorrhizal (AM) fungi associated with cultivated medicinal plants. Adv. Plant Sci. 24(1): 125-128, 2011. (IF- 2.7)

11. Response of Arbuscular Mycorrhiza (AM) fungi on growth of cultivated medicinal plants. Adv. Plant Sci. 24(2): 487-490, 2011. (IF - 2.7)
12. Differential temperature and growth pattern of *Bacillus subtilis* strain isolated from different area of Bhilai (C.G.) In Proceedings National Seminar on Climate Change and its effect on Biodiversity. Bhilai, 67-71. 2011.
13. Intramural Aeromycological studies in the environment of residential colonies near social forests of Bhilai Township, Chhattisgarh. In Proceedings National Seminar on Climate Change and its effect on Biodiversity. Bhilai, 2011.
14. Airborn *Aspergillus* in different environments of Bhilai Township. In Proceedings of National Seminar on Emerging Trends in Scientific Research, 11-12 October 2011, Durg. 81-85, 2011.
15. Isolation, confirmation and amplification of  $\alpha$  amylase from *Bacillus subtilis* soil isolates. Int. Res.J. Lab to Land, 3(11): 373-375, 2011.
16. Studies on absorption tendencies of chromium & zinc from water by *Pistia stratiotes* under experimental conditions. National Journal of Life Sciences, Volume 09 (1): 128-130, 2012.
17. Studies on removal of toxic heavy metals from water by *Eichhornia crassipes* National Journal on Scientific Research, 3(2): 99- 103, 2012.
18. Evaluation of antimicrobial activity and characterization of soil Actinomycetes from Social Forest area of Bhilai Township, Chhattisgarh. Journal of Pure and Applied Microbiology, 6 (2): 1985-1990, 2012.
19. Bioabsorption of Zinc from pond water using water lettuce (*Pistia stratiotes*). Journal of Ecobiotechnology, 4 (2):145-147, 2012.
20. Screening and evaluation of soil fungal isolates for xylanase production. Recent Research in Science and Technology, 5(2): 33-36, 2013.
21. Antibacterial activity of ZnO nanoparticles obtained using Neem leaf extract as Biological Template against *Escherichia coli*. Adv. Plant Sci. 26(2): 367-370, 2013. (IF- 2.7)
22. Effect of Agro-Edaphic conditions on the association, diversity and distribution of AM fungi associated with indigenous weed flora. Indian J.Sci.Res.4 (1): 53-59, 2014 (IF 1.4)
23. Fresh Water Cyanophycean Algae from Durg and Rajnandgaon District (C.G.), India. International Journal of Science and Research (IJSR), 3(8): 1337-1341, 2014. (IF : 3.358)

24. Studies on removal tendencies of toxic heavy metals from water by *Pistia stratiotes* and *Eichhornia crassipes* under experimental conditions. *Adv. Plant Sci.* 27(2): 473-476, 2014. (IF– 2.7)
25. Heavy Metal Tolerance Studies of Cyanobacterial Species under Experimental Conditions. *Periodic Research*, 3(2): 93-95, 2014.
26. Green synthesis of ZnO nanotubes for bioapplications. *International Journal of Advanced Engineering Research and Studies*, 4(2): 280-281, 2015.
27. Study of Photocatalytic Degradation of Methyl Orange by ZnO Catalysts synthesized through biotemplates. *International Journal of Computer & Mathematical Sciences*, 4, Special Issue September: 47-52, 2015.
28. Heavy metal tolerance studies on the fresh water filamentous cyanobacterial species of Durg-Rajnandgaon dist. ,CG, India. *Adv. Plant Sci.* 28(2): 217-220, 2015. (IF– 2.7)

#### **Ongoing/ Completed Project works**

1. Establishment of pure culture, maintenance and mass inoculum production of Vesicular Arbuscular Mycorrhizal fungi and study their effects on cultivated medicinal plants. UGC Minor Research Project, 2006-08. Status- Completed. 50,000/-
2. Screening, evaluation and invitro studies on soil fungal isolates for xylanase enzyme with reference to production and characterization UGC (MRP), 2012 - 2014, Status – Completed. 2,00,000/-
3. Studies on antimicrobial properties of ZnO nanoparticles prepared from biotemplates. Sanctioned from CGCOST, Raipur. Ongoing. 6,00,000/-

#### **Supervision of Ph.D. Programme**

1. “Cyanobacterial species of Durg-Rajnandgaon District with reference to Bioremediation of Heavy Metals” ongoing since December 2013
2. “Phytoextraction studies on some vegetables and ornamental plants with reference to soil reclamation of heavy metals” ongoing since October 2015

#### **Supervision of Dissertations of M.Sc. Microbiology**

1. Incidence of Bacteraemia and Septicemia in some patients: A case study of Pt. J.L.N. Memorial Hospital and Research Center Sec. 9 Bhilai. 2007.
2. Urinary tract infection in adult women: A case study in Pt. J.L.N. Memorial Hospital and Research Center Sec. 9 Bhilai. 2007.

3. Survey of field weeds for ArbuscularMycorrhizal (AM) association. 2008 (SonaliSarkar)
4. Studies on cultivated medicinal plants for ArbuscularMycorrhizal (AM) association. 2008.
5. Isolation and characterization of Actinomycetes from soil samples of social forest of Bhilai Township, Chhattisgarh. 2011.
6. Isolation, Screening and Impact of process parameters on fungal xylanase production from soil isolates. 2011.
7. Studies on bacterial consortium isolated from various polluted soil for hydrocarbon tolerance. 2012.
8. Isolation and characterization of Actinomycetes with reference to phytotoxic activity. 2012.
9. Studies on heavy metal toxicity and tolerance of indigenous bacterial consortium. 2012.
10. Cultural studies and screening of indigenous cyanobacterial cultures for heavy metal bioremediation. 2014.
11. Screening of *Aspergillus* species for lipase production. 2014.
12. Studies on weed plants from cultivated fields for Arbuscular Mycorrhizal fungal association, diversity and mass production. 2015
13. Studies on indigenous ray fungal isolates (Actinimycetes) for lipase and xylanase production. 2015
14. Studies on carbohydrate fermentation by Escherichia coli soil isolates. 2015
15. Studies on indigenous Keratinophilic fungi with reference to protease production, substrate degradation and control. 2015
16. Studies on Antimicrobial activity of some fruit extracts. 2015
17. Isolation of in-vitro polysaccharide producing fungi from soil samples. 2015
18. Isolation, screening and characterization of cellulase producing fungus from paper industry. 2015

**Internal Resources generated/Offered (as convener of Seminar/Workshop/Training)**

1. Hands on Training in “Enzymology – Rennet and Bromolian” 20-23 January 2010. In collaboration with Nitza Biologicals Hyderabad.
2. Workshop on “Genomics” 13-15 April 2011. In collaboration with Disha Life Sciences, Ahmadabad.

3. Training programme on Microbiological Techniques for Food Analysts of Food and Drug Administration, Chhattisgarh, Raipur. 30 Jan. - 03 Feb. 2012.
4. Hands on workshop on “rDNA Technology and Instrumentations” 08-14 March 2016. In collaboration with Nitza Biologicals Hyderabad.

### **Nomination as Expert**

1. Subject Expert (Microbiology) Pt. R.S. University, Raipur, for Interview of St.Thomas College, Bhilai 2009
2. Subject Expert (Microbiology) Pt. R.S. University, Raipur, for Interview of Shiva College, Bhilai, 2009
3. Subject Expert (Microbiology) Pt. R.S. University, Raipur, for Interview of Rungata College, Durg ,2011
4. Member of Board of Studies in Botany and Microbiology Durg University, Durg, for approval of syllabus for the session 2016-17 (30.09.2016)
5. Member for preparation of panel of examiners for semester I and III examination 2016. Durg University, Durg (05.10.2016)
6. Member of Academic Council, Kalyan PG Autonomous College, Bhilai Nagar, nominated by VC, Durg University, Durg for the sessions 2016-17 and 2017-18.

### **Work Experience at College Administration**

1. Assistant Controller, Autonomous examination cell from 2002 to 2009; from 2016 to till date
2. Prof In Charge, Dept. of Microbiology since 2010
3. Member college IQAC since 2014

### **Awards and Achievements**

1. Member of Editorial Board – Journal of Basic Biology, Biologists Forum of India, Marina Labs, 40, Anna NedumPathai, Choolaimedu, Chennai (From 2010)
2. Fellowship (F.S.L.Sc.) Society of Life Sciences (2011).
3. Runner-up Trophy for Shakti Quiz -2013. Organized by Business Excellence Dept., SAIL, Bhilai, 8<sup>th</sup> March, 2013.