

Dr. Ravindra Shukla

Associate Professor

Department of Botany,
Indira Gandhi National Tribal University
Amarkantak- 484886 (MP)

Higher Education:

- Ph.D (Botany), (Banaras Hindu University, Varanasi, India).
(Thesis title: *Studies on efficacy of some plant products as botanical pesticides*)
- M.Sc. (Botany), Banaras Hindu University, Varanasi, India

Qualifications/Awards/Fellowships:

- **CSIR-NET, UP-SLET, DST-JRF, CSIR-SRF**
- ‘**Certificate of Merit Award**’ (Indian Botanical Society-2007)
- ‘**Best Paper Award**’ in Annual Meeting of Indian Phytopathological Society (IPS-2006)
- Served **Food & Drug Administration, UP** as Jr. Food Analyst (Selected by UPPSC)
- “**President Young Scientist Award**” by IGNTU, Amarkantak

Research Expertise:

Bioprospecting of Phytochemicals, Aromatic & Medicinal Plants, Herbal Pesticides, Nanobiotechnology

- PATENT:** 1. **Indian** (233/DEL/2011) A novel plant essential oil synergistic composition and its preparation
2. **Australian** (2021104511): A compound, Mn12 Benzoate and a method to synthesize the compound

Ongoing/completed Research Projects: 5

1. Ethnomedicinal study and documentation of plants used by the tribal communities of Achanakmar-Amarkantak Biosphere Reserve (AABR), 2014-2016 (PI) **(UGC-startup grant, 6 Lakhs)**
2. Use of traditional medicinal knowledge and GIS for Geo-Spatial Modeling of medicinal and anti-malarial plants of Amarkantak region (MP, India), 2015-2020 (Co-PI) **(DST-NRDMS, 19 Lakhs),**
3. Evaluation of plants of Amarkantak (M.P.) for biosynthesis of silver nanoparticles and assessment of their antioxidant activity, 2016-2019, (PI) **(DST-SERB, 26 Lakhs),**
4. Center of Excellence (Theme: Ethnomedicine), 2018-2023 (Co-PI) **(Ministry of Tribal affairs, 115 Lakhs)**
5. Scouting and documentation of grassroots innovations and herbal traditional practices in Pushparajgarh division of Anuppur district, Madhya Pradesh. 2023-2024 (PI). **(DST-National Innovation Foundation; 5.8 Lakhs)**

PhD Guidance: Awarded (02); Ongoing (04)

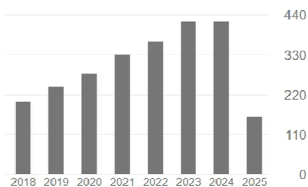
List of Publications

1. **Shukla R,** Kumar A, Singh P, Dubey NK (2009). Efficacy of *Lippia alba* essential oil and its monoterpene aldehyde constituents against fungi isolated from some edible legume seeds and aflatoxin B1 production. **International Journal of Food Microbiology**, 135: 165-170. **(IF: 5.911)**
2. **Shukla R,** Kumar A, Prasad CS, Srivastava B, Dubey NK (2008). Antimycotic and antiaflatoxinigenic potency of *Adenocalymma alliaceum* Miers. on fungi causing biodeterioration of food commodities and raw herbal drugs. **International Biodeterioration & Biodegradation**, 62:348-351. **(IF: 4.907)**
3. **Shukla R,** Kumar A, Prasad CS, Srivastava B, Dubey NK (2009). Efficacy of *Acorus calamus* L. leaves and rhizome on mortality and reproduction of *Callosobruchus chinensis* L. (Coleoptera: Bruchidae). **Applied Entomology and Zoology**, 44: 241-247. **(IF: 1.504)**
4. **Shukla R,** Srivastava B, Kumar R, Dubey NK (2007). Potential of some botanical powders in reducing infestation of chickpea by *C. chinensis* L. (Coleoptera: Bruchidae). **International Journal of Agricultural Technology** 3(1): 11-19.
5. **Shukla R,** Singh P, Prakash B, Kumar A, Mishra PK, Dubey NK (2011). Efficacy of essential oils of *Lippia alba* (Mill.) N. E. Brown and *Callistemon lanceolatus* (Sm.) Sweet and their major constituents on mortality, oviposition and feeding behaviour of pulse beetle, *Callosobruchus chinensis* L. **Journal of the Science of Food and Agriculture**, 91, 2277-2283. **(IF: 4.125)**
6. **Shukla R,** Singh P, Prakash B, Kumar A, Dubey NK (2012). Antifungal, aflatoxin inhibition and antioxidant activity of *Callistemon lanceolatus* (Sm.) Sweet essential oil and its major component 1,8-cineole against fungal isolates from chickpea seeds, **Food Control**, 25, 27-33. **(IF: 6.652)**
7. **Shukla R,** Anuradha, Singh P, Prakash B, Kumar A, Dubey NK (2012). Antifungal, aflatoxin inhibitory and free radical scavenging activities of some medicinal plant extracts, **Journal of Food Quality**, 35, 182-189. **(IF: 3.300)**
8. **Shukla R,** Singh P, Prakash B, Dubey NK (2013). Efficacy of *Acorus calamus* L. essential oil as a safe plant-based antioxidant, Aflatoxin B 1 suppressor and broad spectrum antimicrobial against food-infesting fungi, **International Journal of Food Science and Technology**, 48, 128-135. **(IF: 3.612)**
9. **Shukla R,** Singh P, Prakash B, Dubey NK (2016). Assessment of Essential Oil of *Acorus calamus* L. and its Major Constituent β -Asarone in Post Harvest Management of *Callosobruchus chinensis* L., **Journal of essential oil bearing plants**, 19(3), 542-552. **(IF: 2.400)**
10. Kumar A, **Shukla R,** Singh P, Prasad CS, Dubey NK (2008). Assessment of *Thymus vulgaris* L. essential oil as a safe botanical preservative against post harvest fungal infestation of food commodities. **Innovative Food Science and Emerging Technologies**, 9: 575-580. **(IF: 8.100)**

(Source: Google Scholar)

Cited by [VIEW ALL](#)

| | All | Since 2020 |
|-----------|------|------------|
| Citations | 4113 | 1984 |
| h-index | 31 | 24 |
| i10-index | 46 | 42 |



Research Papers (47)

International: 42, National: 5;
(Original Research: 43; Article/Editorial: 04)

Cumulative Impact Factor: (153.170)

Book Chapters (7)

International: 5; National: 2

11. Singh P, **Shukla R**, Kumar A, Prakash B, Dubey NK (2010). Chemical profile, antifungal, antiaflatoxicogenic and antioxidant activity of *Citrus maxima* Burm. and *Citrus sinensis* (L.) Osbeck essential oils and their cyclic monoterpene, *DL*-limonene. [Food and Chemical Toxicology](#), 48, 1734-1740. (IF: 5.572)
12. Prakash B, **Shukla R**, Singh P, Kumar A, Dubey NK (2010). Efficacy of chemically characterized *Piper betle* L. essential oil against fungal and aflatoxin contamination of some edible commodities and its antioxidant activity. [International Journal of Food Microbiology](#), 142, 114-119. (IF: 5.911)
13. Prakash B, **Shukla R**, Singh P, Mishra PK, Kumar A, Dubey NK (2011). Efficacy of chemically characterized *Ocimum gratissimum* L. essential oil as an antioxidant and a safe plant based antimicrobial against fungal and aflatoxin B₁ contamination of spices. [Food Research International](#), 44, 385-390. (IF: 8.100)
14. Srivastava B, Singh P, **Shukla R**, Dubey NK (2008). A novel combination of the essential oils of *Cinnamomum camphora* and *Alpinia galanga* in checking aflatoxin B₁ production by a toxigenic strain of *Aspergillus flavus*. [World Journal of Microbiology and Biotechnology](#), 24: 693-697. (IF: 4.253)
15. Kumar A, **Shukla R**, Singh P, Prasad CS, Dubey NK (2010). Efficacy of extract and essential oil of *Lantana indica* Roxb. against food contaminating moulds and aflatoxin B₁ production. [International Journal of Food Science and Technology](#), 45, 179-185. (IF: 3.612)
16. Prasad CS, **Shukla R**, Kumar A, Dubey NK (2009). *In vitro* and *In vivo* antifungal activity of *Cymbopogon martini* and *Chenopodium ambrosioides* essential oils and their synergism against dermatophytes. [Mycoses](#), 53, 123-129. (IF: 4.931)
17. Dubey NK, Kumar A, Singh P, **Shukla R** (2008). Microbial contamination of raw materials: a major impediment preventing India from becoming a herbal giant. [Current Science](#), 95, No. 6, 25 September 2008. (IF: 1.169)
18. Kumar A, **Shukla R**, Singh P, Dubey NK (2009). Biodeterioration of some herbal raw materials by storage fungi and aflatoxin and assessment of *Cymbopogon flexuosus* essential oil and its components as antifungal. [International Biodeterioration & Biodegradation](#), 63, 712-716. (IF: 4.907)
19. Srivastava B, Singh P, **Shukla R**, Dubey NK (2009). Efficacy of *Artabotrys odoratissimus* oil as a novel plant based antimicrobial against storage fungi and aflatoxin B₁ secretion. [International Journal of Food Science and Technology](#), 44, 1909-1915. (IF: 3.612)
20. Kumar A, **Shukla R**, Singh P, Dubey NK (2009). Assessment of *Mentha arvensis* L. essential oil in controlling post harvest contamination of chickpea by fungi, insects and aflatoxin. [Journal of the Science of Food and Agriculture](#), 89, 2643-2659. (IF: 4.125)
21. Kumar A, **Shukla R**, Singh P, Dubey NK (2009). Chemical composition, antifungal and antiaflatoxicogenic activities of *Ocimum sanctum* L. essential oil and its safety assessment as plant based antimicrobial. [Food and Chemical Toxicology](#), 48, 539-543. (IF: 5.572)
22. Dubey NK, **Shukla R**, Kumar A, Prasad CS (2009). Ethnobotany: problems and prospects in Indian context. [Proceedings of the National Academy of Sciences, India](#), Sec-B 79, 336-338.
23. Dubey NK, **Shukla R**, Kumar A, Singh P, Prakash B (2010) Prospects of botanical pesticides in sustainable agriculture. [Current Science](#), 98 (4), 25 February, 2010. (IF: 1.169)
24. Singh P, **Shukla R**, Kumar A, Prakash B, Dubey NK (2010). Effect of *Citrus reticulata* and *Cymbopogon citratus* essential oils on *Aspergillus flavus* growth and aflatoxin production on *Asparagus racemosus*. [Mycopathologia](#), 170, 195-202. (IF: 3.785)
25. Kumar A, **Shukla R**, Singh P, Prakash B, Dubey NK (2011). Chemical composition of *Ocimum basilicum* L. essential oil and its efficacy as a preservative against fungal and aflatoxin contamination of dry fruits. [International Journal of Food Science and Technology](#), 46, 1840-1846. (IF: 3.612)
26. Mishra PK, **Shukla R**, Singh P, Prakash B, Dubey NK (2011). Antifungal and antiaflatoxicogenic efficacy of *Caesulia axillaris* Roxb. essential oil against fungi deteriorating some herbal raw materials, and its antioxidant activity. [Industrial Crops and Products](#), 36, 74-80. (IF: 6.449)
27. Mishra PK, **Shukla R**, Singh P, Prakash B, Kedia A, Dubey NK (2012). Antifungal, anti-aflatoxicogenic, and antioxidant efficacy of *Jamrosia* essential oil for preservation of herbal raw materials, [International Biodeterioration & Biodegradation](#), 74, 11-16. (IF: 4.907)
28. Dwivedi MK, Shyam BS, Mishrilal, Singh PK, Sharma NK, **Shukla R** (2019) Geospatial mapping of antimalarial plants used by the ethnic groups of Anuppur district (Madhya Pradesh, India). [Indian Journal of Traditional Knowledge](#), 18 (2), 261-271 (IF:1.091)
29. Ghosh MK, Chandraker SK, **Shukla R**, Mandal M, Mandal V, Ghorai TK (2019) Molecular Interaction, Antimicrobial, Antioxidant, Cytotoxic and Magnetic Properties of Mn12 Benzoate, [Journal of Cluster Science](#), 31, 575-589, (IF:3.477).
30. Chandraker SK, Mishri Lal, **Shukla R** (2019) DNA-binding, antioxidant, H₂O₂ sensing and photocatalytic properties of biogenic silver nanoparticles using *Ageratum conyzoides* L. leaf extract, [RSC Advances](#), 9, 23408-23417 (IF:4.036).
31. Chandraker SK, Ghosh MK, Mishri Lal, Ghorai TK, **Shukla R** (2019) Colorimetric sensing of Fe³⁺ and Hg²⁺ and photocatalytic activity of green synthesized silver nanoparticles from the leaf extract of *Sonchus arvensis* L., [New Journal of Chemistry](#), 43(46), 18175-18183 (IF:3.925).
32. Dwivedi MK, Shyam BS, **Shukla R**, Sharma NK, Singh PK (2020): GIS Mapping of Antimalarial Plants Based on Traditional Knowledge in Pushparajgarh Division, District Anuppur, Madhya Pradesh, India, [Journal of Herbs, Spices & Medicinal Plants](#), 26:4, 356-378.
33. Chandraker SK, Mishri Lal, Ghosh MK, Tiwari V, Ghorai TK, **Shukla R** (2020), Green synthesis of copper nanoparticles using leaf extract of *Ageratum houstonianum* Mill. and study of their photocatalytic and antibacterial activities [Nano Express](#), 1 (2020) 010033. (IF: 3.00)
34. Dwivedi MK, **Shukla R**, Singh PK, Sharma NK (2021), Prevalance and associated factors of malaria in Pushprajgarh block of district Anuppur (Madhya Pradesh), [International Journal of Community Medicine and Public Health](#) 8(3):1221-1229.
35. Chandraker SK, Lal M, Dhruve P, Singh RP, **Shukla R** (2020), Cytotoxic, Antimitotic, DNA binding, Photocatalytic, H₂O₂ sensing, and Antioxidant, properties of bioengineered silver nanoparticles using leaf extract of *Bryophyllum pinnatum* (Lam.) Oken, [Frontiers in Molecular Biosciences](#), 7:593040, (IF : 6.113)
36. Dwivedi MK, **Shukla R**, Sharma NK, Manhas A, Srivastava K, Kumar N, Singh PK (2021), Evaluation of ethnopharmacologically selected *Vitex negundo* L. for *In vitro* antimalarial activity and secondary metabolite profiling, [Journal of Ethnopharmacology](#), 275, 114076. (IF: 5.195).
37. Chandraker SK, Ghosh MK, Lal M, **Shukla R** (2021), A review on plant-mediated synthesis of silver nanoparticles, their characterization and applications, [Nano Express](#) 2, 022008 (IF: 3.00)
38. Lal, M., Chandraker, S. K., Parshant, A. T., & **Shukla, R.** (2021), Phytochemical Composition and In Vitro Antioxidant Activity of the Essential Oil of *Colebrookea oppositifolia* Smith, An Ethnomedicinal Plant of Amarkantak Region. [Mekal Insights](#), 5(1)
39. Chandraker SK, Lal M, Kumar A, **Shukla R** (2021), *Justicia adhatoda* L. mediated green synthesis of silver nanoparticles and assessment of their antioxidant, hydrogen peroxide sensing and optical properties, [Materials Technology](#), 37, 1355-1365 (IF:3.297).
40. Dubey NK, **Shukla R**, Prakash B, Dwivedi AK (2022) Mycotoxin Contamination of Food: Plant-Based Preservatives as Safer Alternatives to Synthetics, [International Journal of Food Science & Technology](#), 57(4). 2138-2139. (IF: 3.612)

41. Mishrilal, Chandraker SK, **Shukla R** (2022) Quantitative ethnobotanical study of therapeutic plants of Amarkantak hills in Achanakmar-Amarkantak Biosphere Reserve, Central India, *Acta Ecologica Sinica*, <https://doi.org/10.1016/j.chnaes.2022.03.002>
42. Chandraker, S.K., Lal, M., Dhruve, P., Yadav, A.K., Varma, R.S., Singh, R.P., **Shukla, R.** (2022) Bioengineered and biocompatible silver nanoparticles from *Thalictrum foliolosum* DC and their biomedical applications. *Clean Technologies and Environmental Policy*, 24, 2479-2494 (IF: 4.700)
43. Chandraker, S.K., Lal, M., Khanam, F., Dhruve, P., Singh R.P., **Shukla, R.** (2022) Therapeutic potential of biogenic and optimized silver nanoparticles using *Rubia cordifolia* L. leaf extract. *Scientific Reports* 12, 8831 (IF: 4.996).
44. Chandraker, S.K., Lal, M., Ghosh, M.K., Ram, T., Paliwal, R., **Shukla, R.** (2022) Biofabrication of spherical silver nanoparticles using leaf extract of *Plectranthus barbatus* Andrews: characterization, free radical scavenging, and optical properties. *Inorganic Chemistry Communication*, 142, 109669 (IF: 3.800).
45. Chandraker, S.K., Parshant, Tiwari, A., Ghosh, M.K., Ghorai T.K., **Shukla, R.** (2022) Efficient sensing of heavy metals (Hg²⁺ and Fe³⁺) and hydrogen peroxide from *Bauhinia variegata* L. fabricated silver nanoparticles, *Inorganic Chemistry Communication*, 146, 110173. (IF: 3.800).
46. Kumar D, Biswas JK, Mulla SI, Singh R, **Shukla R**, Ahanger MA, Shekhawat GS, Verma KK, Siddiqui MW, Seth CS (2024) Micro and nanoplastics pollution: Sources, distribution, uptake in plants, toxicological effects, and innovative remediation strategies for environmental sustainability, *Plant Physiology & Biochemistry*, 213, 108795. (IF: 6.100)
47. Goswami, S., Parshant, Rajpoot, V.S., Singh, M., Shukla, R., Tiwari, A. (2024) Phytochemical profiling and anthelmintic activity of *Manilkara zapota* L. (Chiku) Extracts: An integrated in vitro and in-silico approaches, *Biointerface Research in Applied Chemistry*, 14 (6), 146.

Book Chapters:

1. Dubey NK, Kumar A, Singh P, **Shukla R** (2009). Exploitation of natural compounds in eco-friendly management of plant pests. In: U. Gisi, I. Chet and M.L. Gullino (eds.), *Recent Developments in Management of Plant Diseases*, Springer, Netherlands, pp. 181-198. ISBN: 978-1-4020-8803-2
2. Dubey NK, **Shukla R**, Kumar A, Singh P (2010). Global scenario on application of natural products in Integrated Pest Management Programme. In: Dubey NK et al. (eds.) *Natural products in pest management*, CABI, UK ISBN 978-1845936716
3. Singh P, **Shukla R**, Kumar A, Prakash B, Singh S, Dubey NK (2012). Botanicals in control of microbial spoilage of food commodities, In: *Microbes Diversity and Biotechnology* Eds. S C Sati and M Belwal, Dava Publishing House, New Delhi ISBN 978-81-7035-794-0. Delhi, pp 87-98
4. Dubey NK, **Shukla R**, Singh P, Singh A, Prakash B (2012). Botanical Pesticides: An Eco- Chemical Natural Alternatives. In: D. J. Bhagyaraj, K.V.B.R. Tilak, H. K. Kehri, (eds.) *Microbes: Diversity and Functions*, New India Publishing Agency, New Delhi, pp. 403-418. ISBN: 9789381450109
5. Mishrilal, Chandraker SK, **Shukla R** (2020). Antimicrobial properties of selected plants used in Chinese traditional medicine, In *Functional and Preservative Properties of Phytochemicals* (Ed. Prakash B) ISBN 978-0-12-818593-3, Academic press (Elsevier), pp. 119-144. <https://doi.org/10.1016/B978-0-12-818593-3.00004-X>
6. Tiwari A, Parshant, **Shukla R** (2023). Essential oils: A natural weapon against mycotoxins in food, In *Plant Essential Oils From traditional to modern-day applications*, (Eds. Prakash B, Dubey NK, de Sao Jose JFB), Springer Nature, ISBN 978-981-99-4369-2; pp 125-158.
7. Mangain A, Parveen N, Kenwat R, **Shukla R**, Paliwal SR, Paliwal, R (2024) Green synthesis of nanoparticles: From protocols to applications, In *Nanomedicine, Nanotheranostics and Nanobiotechnology: Fundamentals and Applications* (Eds. Paliwal R, Paliwal SR) CRC Press, eBook ISBN 9781003130055, Pages 352-366; <https://doi.org/10.1201/9781003130055>

Books: (Under submission)

1. Flora of IGNTU: A Digital documentation
2. Ethnomedicinal Herbs of Amarkantak

Administrative/ Co-curricular Responsibilities:

- Incharge, Medicinal & Aromatic Unit (Herbal Garden) in IGNTU
- Member of Board of Studies (Department of Botany, IGNTU), 2016, 2021, 2024
- Member of Board of Studies (Department of chemistry, IGNTU), 2016
- Member of Board of Studies (Department of Home Science, IGNTU), 2024
- Secretary, Eklavya Kindergarten, IGNTU, 2019
- Nodal Officer, GeM, 2020-2024
- OSD, Recruitment Cell, IGNTU, 2020-2025
- Vice-President, District Aromatic plant cultivation Committee, Anuppur District, 2022