



Plant Archives

Journal homepage: <http://www.plantarchives.org>
DOI Url : <https://doi.org/10.51470/PLANTARCHIVES.2021.v21.no2.067>

HABITAT DIVERSITY OF EDIBLE WILD MUSHROOMS IN SEMARSOT WILDLIFE SANCTUARY, CHHATTISGARH, INDIA

Bhavna Dixit¹ and Reshma Ekka^{2*}

¹Department of Forestry, Guru Ghasidas Central University, Bilaspur, India

²Department of Farm Forestry, Sant Gahira Guru University, Surguja Ambikapur, India

*Corresponding Author : reshmaekka18@gmail.com

(Date of Receiving : 21-08-2020; Date of Revision : 10-05-2021; Date of Acceptance : 11-07-2021)

ABSTRACT

The number of mushroom species documented in India is about 1,200, out of which 300–315 species are considered edible. The tropical forests of Semarsot provide favorable growth conditions for wild edible mushrooms. Extensive surveys and interviews conducted in the Semarsot sanctuary forest reveals 41 wild mushrooms in the forest area of sanctuary. Out of these 20 are edible wild mushrooms, most common of them are *Asteraus hygrometricus*, *Russula* spp. and *Termitomyces* spp. 05 are medicinal of which *Ganoderma lucidium* is the important one, 02 fairly edible, 13 non edible and 01 poisonous Species of wild mushroom. Of these 20 edible wild mushrooms

Keywords : Semarsot sanctuary, edible mushrooms, habitat.

INTRODUCTION

India being a tropical country shows diversity climatic conditions making it a natural habitat of a wide variety of wild mushrooms. Wild edible mushrooms play an important role in ecological process. Most of them are symbiotically associated with trees of tropical forests. In India, 232 genera have been reported out of the 357 genera of Basidiomycetes in the world. The number of mushroom species documented in India is about 1,200, out of which 300–315 species are considered edible. Chhattisgarh a state in central India has 44.215% of its geographical area under forest. Forests in northern Chhattisgarh are tropical forests, which favor the growth conditions for wild edible mushroom.

Mushrooms comprise largely the group of fleshy fungi. The saprophytic wild edible mushrooms are very crucial in nutrient recycling and also providing economical benefits to rural/tribal people by collecting them from wild and selling in the markets. They are the traditional collectors and consumers of varieties of wild mushrooms. Even though, wild edible mushrooms contribute towards livelihood and economy of the rural and tribal folks, information on their diversity and demand are very limited in Northern Chhattisgarh.

MATERIALS AND METHODS

Semarsot is a wildlife sanctuary situated in balrampur district of northern Chhattisgarh. Semarsot is about 50 kms from Ambikapur district headquarters of Surguja district. The area is situated in the northern extension of Ramgarh hills in a north-easterly direction. The area has a border with Bihar state in the east. Tropic of Cancer passes through the area. The area of the sanctuary is 430.36 Sq. Kms. It is

located at Latitude : 22° 45' (N), Longitude: 84° (E). The forest types found in the sanctuary are Sal forest, Mixed deciduous forest and Riverine forest. The tree species that generally occur are *Shorea robusta*, *Terminalia alata*, *Terminalia chebula*, *Terminalia arjuna*, *Terminalia bellerica*, *Lagerstroemia parviflora*, *Anogeissus latifolia*, *Adina cordifolia*, *Madhuca indica*, *Embllica officinalis*, *Butea monosperma*, *Pterocarpus marsupium* and *Grewia* species etc.

Frequent visits to Semarsot forest, Balrampur were made in pre monsoon, monsoon and late monsoon times from July to September 2019. The survey for occurrence of wild mushrooms was made on both sides of road and extending 1 km inside the forest along the road in the sanctuary. The survey was made in the morning 7:00am to 9:00 am. Visit to local markets in Ambikapur, Rajpur, and Balrampur were undertaken and interview was conducted on sellers and collectors of wild mushrooms about their edibility and economic values. Necessary equipments for collection of mushrooms such as digging tools, knife, paper for wrapping mushrooms, camera for photography.

RESULT AND DISCUSSION

During the survey of the Semarsot forest, Balrampur 41 mushrooms fungi were observed and collected during monsoon and late monsoon. These mushrooms were found in a variety of habitats. Soil, dead wood logs, tree trunks and organic matter are some common habitats. The most common species observed are *Russula*, *Termitomyces* and *Astreaus hygrometricus*. Former being observed from monsoon to late monsoon period in leaf litter and termite mounds respectively whereas the latter is generally observed

during early monsoon on soil under Sal tree. The details of the identified edible mushrooms are given in Table. 1. Out of these 21 mushrooms observed 05 medicinal mushrooms,

The *Ganoderma lucidium* is the most commonly and widely used medicinal mushroom and found on dead tree logs and it belongs to family Polyporaceae of order Polyporales. It possesses immune stimulating, anti inflammatory and anti allergic properties.

The most common edible mushrooms among the local people are: *Astreaus hygrometricus* commonly known as 'Puttu', is an ectomycorrhizal mushroom. In central India it is found in nutrient poor lateritic soils associated with *Shorea robusta*. They are found in scattered groups. The immature fruit bodies are consumed. This mushroom is very valuable as it costs 250-500 rupees per kg. in northern Chhattisgarh. Thus are important sources of income for the rural tribal families in the forest of Semarsot.

Russula an ectomycorrhizal mushroom, various species of it were observed during the survey in forest leaf litter. It is available from august to early October in the local markets; it belongs to family Russulaceae of order Russulales. They are found in various colours red, brown, black, purple etc. They can bioaccumulate toxic metals like zinc, lead, mercury. The *R. autopurpurea* species is capable of accumulating zinc and is non edible.

Termitomyces species are found associated with termite mounds. The edible species *Termitomyces heimii*, *T. clypeatus*, *T. letestui*, *T. microcarpa* are found in Semarsot forest of northern Chhattisgarh.

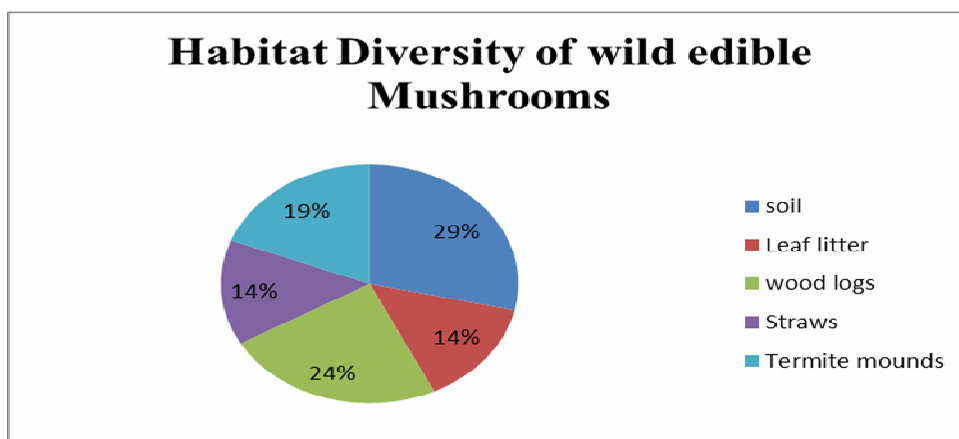
The collection of these wild edible mushrooms is done by the women and children of tribal communities dwelling in the Semarsot sanctuary. They collect these mushrooms early in the morning and sell them on roadside of the forest. Thus these wild edible mushrooms of the Semarsot sanctuary are the valuable source of nutrition, medicine and income to the rural / tribal communities in the sanctuary.

CONCLUSION

The wild edible mushrooms are the source of food, medicine and income to the rural communities. These mushrooms are also ecologically important part of Semarsot forest ecosystem as they are found in wide variety of habitats. Habitats such as leaf litter, wood logs indicate that these mushrooms play important role in decomposition in forest floor. These mushrooms are facing threat Due to loss of natural habitats, soil and air pollution, expansion of mono-cropping and loss of genetic diversity. Biotechnology and *in vitro* methods can be utilized for conservation of these mushroom species. This region of northern Chhattisgarh has a rich mycodiversity and is yet to be explored.

Table 1 : Diversity of wild edible mushroom in Semarsot forest, Balrampur district, Chhattiagarh.

S.No.	Scientific name	Common/ local name	Habitat	Edibility
1.	<i>Agrocybe erebia</i>		soil	E
2.	<i>Armillaria mellea</i>		Decaying woods	E
3.	<i>Astreaus hygrometricus</i>	Mani puttu	Soil under sal tree	M
4.	<i>Auricularia spp.</i>		Wood logs	E
5.	<i>Boletus edulis</i>		Soil	E
6.	<i>Cantharellus spp</i>	Bans khukhdi	Bamboo trunk	E
7.	<i>Ganoderma lucidium</i>		Dead wood logs	M
8.	<i>Ganoderma spp</i>		Dead wood logs	M
9.	<i>Pleurotus florida</i>	Oyster mushroom	Straws	E
10.	<i>Pleurotus sajor caju</i>	Oyster mushroom	Straws	E
11.	<i>Podabrella microcarpa</i>	Kanki khukhdi	Termite mounds	E
12.	<i>Russula aeruginea</i>		Leaf litter	E
13.	<i>Russula delica</i>		Leaf litter	E
14.	<i>Russula fragilis</i>		Leaf litter	E
15.	<i>Termitomyces clypeatus</i>	Bhoodoo khukhdi	Termite mounds	E
16.	<i>T. heimii</i>	Bhoodoo khukhdi	Termite mounds	E
17.	<i>T. letestui</i>	Bhoodoo pihari	Termite mounds	E
18.	<i>Volvariella spp</i>		Soil rich in organic matter	E
19.	<i>Volvariella volvacea</i>	Paddy straw mushroom	Paddy straw	E
20.	<i>Xylaria longipes</i>		Soil	M
21.	<i>Xylaria polymorpha</i>	Dead man's finger	Soil	M



REFERENCES

- Karwa, A. and Rai, M.K. (2010). Tapping into the edible fungi biodiversity of Central India, *Biodiversitas*, 11(02): 97-101.
- Manoharachary, C.; Sridhar, K.; Singh, R.; Adholeya, A.; Suryanarayanan, T.S. and Rawat, S. (2005). Fungal biodiversity: distribution, conservation and prospecting of fungi from India. *Curr Sci.*; 89: 58-71.
- Panda *et al.* (2019). Wild edible mushrooms of northern odisha. *Research Journal Of Life Sciences, Bioinformatics, Pharmaceuticals, and Chemical Sciences*. 5(2): 249-268
- Thiribhuvanamala, G.; Prakasam, V.; Chandrasekar, G.; Sakthivel, K.; Veeralakshmi, S. and Velazhahan, R. (2011). "Biodiversity, conservation and utilization of mushroom flora from the Western Ghats region of India," in Proceedings of the 7th International Conference on Mushroom Biology and Mushroom Products (ICMBMP7), 155-164.
- Tripathi, N.N.; Singh, P. and Vishwakarma, P. (2017). Biodiversity of macrofungi with special reference to edible forms: A review. *Journal Indian Botanical Society*. 96: 144-187
- Verma, R.K. *et al.* (2019). Sal forest: A source of wild edible mushrooms for livelihood support of Tribal people of Dindori District Madhya Pradesh India. *international Journal of Current Microbiology and Applied Sciences*, 08(01): 563-575.
- Verma, R.K.; Rajput, P.S. and Pandro, V. (2017). Diversity of Macrofungi in Central India. *Van Sangyan*, 4(110): 18-29.
- Zotti, M.; Persiani, A.; Ambrosio, E.; Vizzini, A.; Venturella, G. and Donnini, D. (2013). Macrofungi as ecosystem resources: Conservation versus exploitation. *Plant Biosyst.*; 147: 1-7.