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**SWILD EDIBLE MUSHROOMS OF TRIPURA: AN IMPORTANT SOURCE OF  
LIVELIHOOD****DAS G**

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9678003712**Received 25<sup>th</sup> Nov. 2020; Revised 29<sup>th</sup> Dec. 2020; Accepted 10<sup>th</sup> Jan. 2021; Available online 1<sup>st</sup> Oct. 2021<https://doi.org/10.31032/IJBPAS/2021/10.10.5672>**ABSTRACT**

Tripura is well known for its rich vegetation, especially wild edible plants and underutilized vegetables for the local utilization. Different climatic and physiographic conditions favour the abundance of biodiversity making the forest rich in productivity which is hallowed with high rainfall. Wild Mushrooms are very vital source of protein rich nourishment for the people of ethnic groups of Tripura. The ethnic communities use to collect good quantity of wild mushrooms are mainly the species of *Lentinus edodes*, *Lentinus squarrosulus*, *Pleurotus citrinopileatus*, *Pleurotus pulmonarius*, *Tricholoma giganteum*, *Macrolepiota procera*, *Termitomyces eurhizus*, *Termitomyces heimii* etc. These mushrooms are wildy available and collected from the adjacent forest areas during monsoon season and sold in the nearby village markets of Tripura in large quantities. The ethnic people of this area revealed an extensive expertise on the identification of non poisonous edible mushrooms and the places where these diverse mushroom species grow naturally, especially those which were reported to be sold regularly. This study revealed the distribution, biodiversity and mode of utilization of wildy available edible mushrooms of this state. The current study is an attempt to identify and document of wildy available edible mushrooms and continual utilization of the lesser known wild edible species of Tripura. This study comprises monograph of 35 important and commonly consumed wild edible species of mushrooms from forest areas of Tripura, India.

**Keywords: Wild mushroom, Biodiversity, Edible, Ethnic people, Tripura**

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## INTRODUCTION

Mushrooms are non-green fleshy fruiting bodies of certain fungi occurring seasonally all over the world which may be gathered wild or grown under cultivation. Mushrooms comprise of large heterogeneous groups with various habitats, appearance, colour and edibility criteria. Edible mushrooms have high content of proteins, vitamins, minerals, fibers, trace elements and low/no calories and cholesterol [1]. There are about eight varieties of mushrooms, which are predominantly consumed in the world. The most commonly cultivated mushroom species are *Agaricus bisporus*, commonly known as white button mushrooms and *Pleurotus ostreatus* which is known as Oyster mushroom though many other species are now gaining recognition in India due to the widespread consumption of Asian cuisine. The medicinal uses of mushrooms possess a very long tradition in Asian countries, where as their use in the Western hemisphere has been increasing slightly only since the last decade [2]. Oyster mushroom grows naturally in the temperate and tropical forests on decaying organic matter, wooden logs or sometimes on dying trunks of deciduous or coniferous woods. Wild edible forest mushrooms are among the special forest products and are of great food and nutritional value and it also helps generating income among the ethnic people of Tripura. The present study

aimed not only at identifying the wild edible mushrooms but also focused at collection and sustainable utilization for the lesser known wild edible mushrooms of Tripura. Mushrooms occur in flushes during the rainy season from June to November in the forests of Tripura and several mushroom species are harvested by the local tribes. Although many indigenous communities have substantial knowledge on the sites and season for the harvest of certain mushrooms.

## MATERIALS AND METHODS

During the work regular visit in the selected areas and collection of wild mushrooms were accomplished in different districts and market areas of Tripura from June 2018– June 2020 during the rainy season as it is the peak mushroom season of the state and studied the macroscopic and microscopic characters [3, 4]. The collected specimens were identified according to Das and Sharma [5] and Purkayastha and Chandra [6]. Forest areas and market places of Agartala, Toidu, Ompi, Sepahijila, Khowai, Jirania, Dharmanagar, Sonamura, Udaypur, Belonia were surveyed during this period. The local village markets were visited to explore the different wild species sold during the monsoon season and the mushroom collectors were interviewed to gain more data about the collected areas. The survey method was carried out

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according to the procedure adopted by Natrajan *et al.*, 2005 [7-9].

Surveys were conducted in the different forest areas of Tripura and tribal markets to gain knowledge on various types of wild edible mushrooms, which grows in various areas in the time of rainy seasons, wild edible species were collected in silver foil/collection bottles and kept carefully in the departmental laboratory for identification. Mushrooms were preserved using 4% (v/v) formaldehyde solution and well kept as herbarium specimens for future study.

Identification of specimens was based on different characteristics of mushrooms. The macroscopic characteristics used under consideration were: the pileus shape, size, color, surface texture, color of gill, the size of stem, surface texture, shape, surface moisture, the presence or absence of veils, color and texture of flesh. Microscopic characteristics were studied using standard microscopic methods for mushroom study.

## RESULT AND DISCUSSION

A diverse variety of wild edible mushrooms are available in Tripura forests but only very few of them are consumed by the tribal people as well as local communities.

The increasing demand in local markets and coupled with unscientific collection of these edible mushrooms from the wild leading to unsustainable removal and loss of diversity in mushrooms. Again lack of adequate and appropriate scientific information on the edibility of wild mushrooms impacted the formulation of policy guidelines and conservation priorities. A documentation of lesser known edible mushroom in Tripura was executed to restore the information. Photographs were taken during field collection and market survey (**Figure 1**). This study has listed 36 of the wild edible mushrooms from Tripura, falling under 12 families (**Table 1**) whereas 12 numbers of wild edible mushrooms (**Table 2**) are reported from different tribal markets. Availability of different wild edible mushrooms in various market places of Tripura were recorded (**Figure 2**) in respect with their season of occurrence and availability (**Figure 3**). With this as a starting point, it is hoped that more studies will be done on their taxonomic status so that more of the known edible fungi can be correctly identified. Some may perhaps be cultivated on a commercial basis.

Table 1: Wild edible mushrooms collected from the different locations of Tripura

Name of Species (Family)	Habitat	Season of collection
<i>Agaricus bisporus</i> <i>Quell</i> (Agaricaceae)	In clusters on rotten and decaying stumps and twigs	June-October
<i>Agaricus silvatica</i> ( <i>Schaeff.</i> ) (Agaricaceae)	Sporophores grow on soil	June-November
<i>Armillaria ostoyae</i> (Physalacriaceae)	In clusters on rotten or dead and decaying stumps and twigs	August-September
<i>Auricularia delicata</i> (Auriculariaceae)	In clusters on degraded stumps and twigs	August-September
<i>A. polytricha</i> (Mont.) Sacc (Auriculariaceae)	In clusters on rotten or dead and decaying stumps and twigs	September-November
<i>Boletus luteus</i> Linn (Boletaceae)	grows under some deciduous tree	June-October
<i>Boletus edulis</i> Bull. (Boletaceae)	Under semi-evergreen forest types	August-September
<i>Craterellus cornucopioides</i> (Lyophyllaceae)	In soil or dead wood logs or living deciduous trees	August-November
<i>Calocybe indica</i>	Found to grow on termite mounds and clayey soil	June-August
<i>Coprinellus disseminates</i> (Psathyrellaceae)	On dead wood logs	August-November
<i>Craterellus cornucopioides</i> (Lyophyllaceae)	In soil or dead wood logs or living deciduous trees	August-November
<i>Ganoderma lucidum</i> (Leys ex Fr.) Karsten	In soil or dead wood logs or living deciduous trees	June-October
<i>Gerronema strobodes</i>	dead wood logs	August-November
<i>Hericium cirrhatum</i> (Pers.) Nikol (Hericaceae)	On trunks of semi-evergreen and temperate trees	June-August
<i>Lactarius piperatus</i> (L.) Pers. (Russulaceae)	Under sub-tropical semi-evergreen forests	June-October
<i>Lactarius volemus</i> (Fr.) (Russulaceae)	Under sub-tropical semi-evergreen forests including pine	June-October
<i>Laetiporus sulphureus</i> (Bull.) Murr. (Polyporaceae)	Grows on dead stumps as well as living tree trunk of hardwoods and oaks	July-September
<i>Lentinus edodes</i> (Berk) Pelger (Polyporaceae)	On dead wood logs	August-November
<i>Lentinus squarrosulus</i> Mont. Singer (Polyporaceae)	On dead stumps of trees	June-August
<i>Lentinus sp.</i> (Polyporaceae)	Grows on tree trunks and dead barks of Oaks	End May-June
<i>Termitomyces eurhizus</i> (Berk.) R. Heim (Lyophyllaceae)	Grows in groups on ground in termite mount soil	July-August
<i>Lycoperdon perlatum</i> Pers. (Agaricaceae)	Grows in fields, roadsides, in woods and amongst fallen leaf litter	End April-September
<i>Macrolepiota procera</i> (Agaricaceae)	Grows on trunks of hardwood	June-September
<i>Pleurotus pulmonarius</i> (Fr.) Quél. (Pleurotaceae)	In clusters on cut timber and fallen logs	June-September
<i>Pleurotus citrinopileatus</i> Singer (Pleurotaceae)	Grows on trunks of hardwood	June-August
<i>Russula heterophylla</i> (Fr.) (Russulaceae)	Under sub-tropical forests	October-January
<i>Schizophyllum commune</i> Fr. (Schizophyllaceae)	On branches of dead wood and cut timber	June-October
<i>Suillus luteus</i> (L.) Roussel (Suillaceae)	Under coniferous especially pine	September-November
<i>Suillus pictus</i> (Peck) A.H. Sm. & Thiers (Suillaceae)	Under sub-tropical semi-evergreen forests	June-November
<i>Tremella fuciformis</i> Berk. (Tremellaceae)	On dead or fallen branches of broadleaved trees	September-November
<i>Termitomyces heimii</i> Natarajan (Lyophyllaceae)	Found to grow on termite mounds and clayey soil	May-August
<i>Termitomyces eurhizus</i> (Lyophyllaceae)	Found to grow on fallen leaf litter	August-November
<i>Volvariella volvacea</i> (Pluteaceae)	Found to grow on fallen leaf litter	August-November
<i>Tricholoma giganteum</i> (Tricholomataceae)	Found to grow on fallen leaf litter	August-November
<i>Xerocomellus chrysenteron</i> (Boletaceae)	Under sub-tropical semi-evergreen forests including pine	July-November

Table 2: Wild Edible mushrooms found in different tribal markets of Tripura

Name of Species (Family)	Habitat	Season of collection	Availability of the mushroom in different market areas ( Number of occurrence)
<i>Agaricus bisporus</i> Quell (Agaricaceae)	Found to grow on termite mounds and clayey soil	June-October	17
<i>Auricularia delicata</i> (Auriculariaceae)	On dead stumps and branches of sub-tropical and temperate trees especially <i>Alnus</i> species.	End May-November	10
<i>Calocybe indica</i>	Found to grow on termite mounds and clayey soil	June-August	25
<i>Lactarius volemus</i> (Russulaceae)	On dead stumps of trees	June-October	15
<i>Lentinus edodes</i> (Polyporaceae)	On dead wood logs	August-November	12
<i>Lentinus squarrosulus</i> (Polyporaceae)	On dead stumps of trees	June-August	8
<i>Macrolepiota procera</i> (Agaricaceae)	Grows on trunks of hardwood	June-September	15
<i>Pleurotus pulmonarius</i> (Pleurotaceae)	On dead stumps of trees	June-September	22
<i>Pleurotus citrinopileatus</i> (Pleurotaceae)	Grows on trunks of hardwood	June-August	18
<i>Schizophyllum commune</i> (Schizophyllaceae)	On dead stumps of trees	April-August	17
<i>Termitomyces heimii</i> (Lyophyllaceae)	Found to grow on termite mounds and clayey soil	May-August	20
<i>Termitomyces eurhizus</i> (Lyophyllaceae)	Found to grow on fallen leaf litter	August-November	18
<i>Volvariella volvacea</i> (Pluteaceae)	Found to grow on fallen leaf litter	August-November	15
<i>Tricholoma giganteum</i> (Tricholomataceae)	Found to grow on fallen leaf litter	August-November	12



Figure 1: Photographs of wild edible mushrooms of Tripura

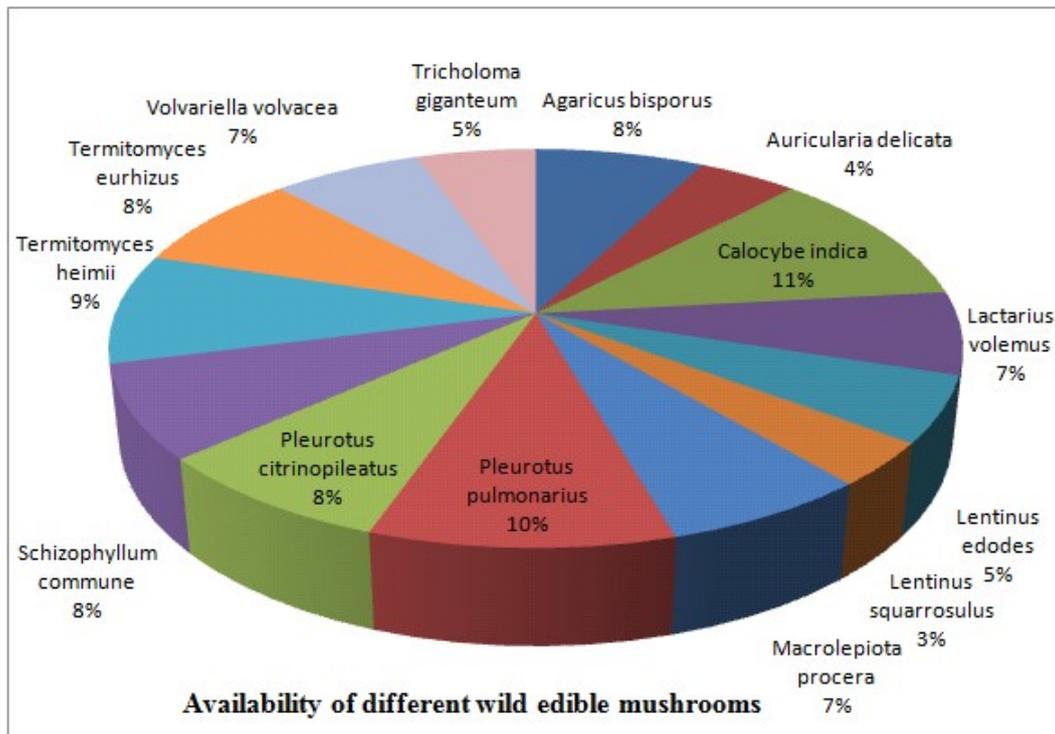


Figure 2: Availability of different wild edible mushrooms in various market places of Tripura

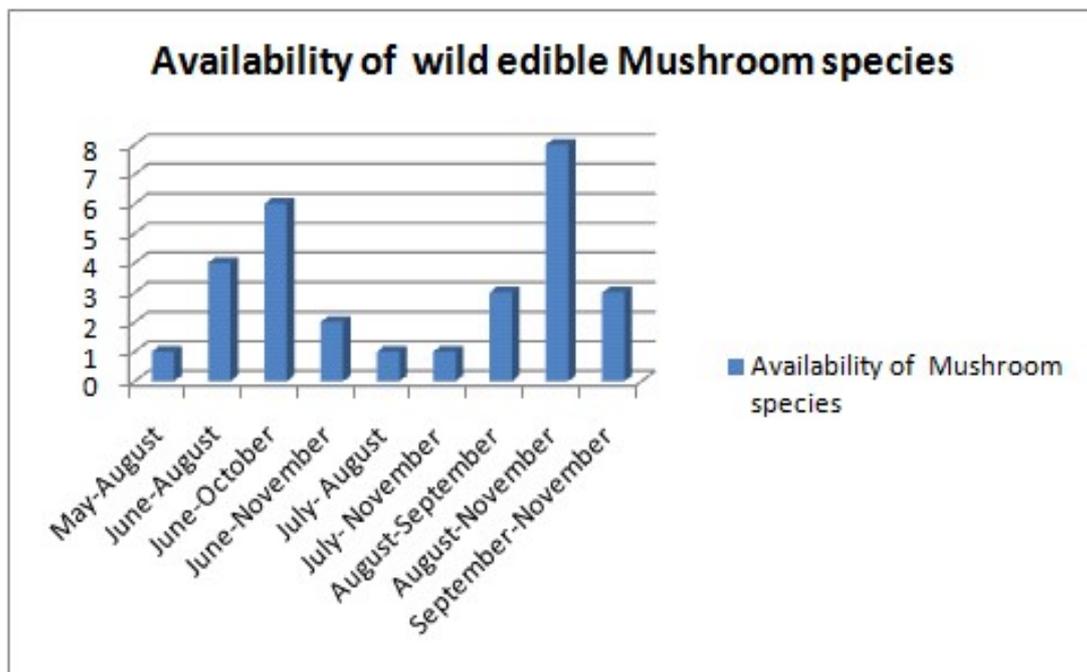


Figure 3: Availability of various wild edible mushrooms in different seasons

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**CONCLUSION**

Tripura is very rich in diverseness of wild plant species and its climate supports the growth of many wild mushrooms. Total 35 number of edible wild mushroom species belonging to *Russulaceae*, *Hericiaceae*, *Physalacriaceae*, *Schizophyllaceae*, *Auriculariaceae*, *Boletaceae*, *Tricholomataceae*, *Polyporaceae*, *Pleurotaceae*, *Tremellaceae*, *Suillaceae*, *Agaricaceae* and *Lyophyllaceae*, *Psathyrellaceae* were collected, preserved and identified with the help of various literatures and mentioned in the Table 1. Out of these 35 species of wild edible mushrooms 14 species are mostly found in the different tribal markets and recorded in the **Table 2**. The most available species are *Pleurotus pulmonarius*, *Schizophyllum commune*, *Lentinus squarrosulus*, *Termitomyces heimii*, *Auricularia delicata*, *Agaricus bisporus*, *Calocybe indica*, *Lactarius volemus*, *Macrolepiota procera*, *Termitomyces eurhizus*, *Volvariella volvacea*, *Tricholoma giganteum*, *Lentinus edodes* etc. Market studies disclosed that edible wild mushrooms are highly demanded protein based food resource in Tripura. The ethnic people prepare various recipes, soups, chutneys from mushrooms. During the season, there is high demand of edible varieties of mushrooms which are sold openly or in packets at local markets. The price of various species of wild mushrooms depends on the taste and

availability. The study enumerates the edible mushrooms of Tripura and promotes awareness on conservation of these lesser known wild available edible mushrooms which can provide employment opportunities especially to the ethnic people. Cultivated mushrooms have gained much attention for their health benefits and nutritional value. But the wild edible mushrooms of Tripura which are locally available should be brought to light so that the ethnic people along with the rest world can aware about the benefits of those wild edible mushrooms. I hope that this study would act as a reference material for those who involved in research and development in the nutrition and dietary sector, pharmacist, scientist and the local public as well its wider acceptability in India and worldwide.

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**Competing Interests**

The author declares no competing interest.

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**REFERENCES**

- [1] Ao T, Deb CR, Khruomo N. Wild Edible Mushrooms of Nagaland, India: A Potential Food Resource. *Journal of Experimental Biology and Agricultural Sciences*. 2016; 4(1): 59-65.
- [2] Lindequist U., Niedermeyer T.H.J. and Julich W.D., The pharmacological potential of mushrooms, *eCAM*, 2005, 2, 285-299.
- [3] David A (1986). *Mushrooms demystified: A comprehensive guide to the fleshy fungi*, Ten Speed Press, Berkeley, CA 406-410
- [4] Das K (2009). *Mushrooms of Sikkim I: Barsey Rhododendron Sanctuary, Sikkim State Biodiversity Board, Gangtok and Botanical Survey of India, Kolkata, India, 1-160*
- [5] Das K. and Sharma J.R., *Russulaceae of Kumaon Himalaya, Botanical Survey of India, India, 2005, 255.*
- [6] Purkayastha R.P. and Chandra A., *Manual of Indian Edible Mushrooms, Today & Tomorrow's Printers and Publishers, New Delhi, India, 1985.*
- [7] Natarajan, K., (1978). *South Indian Agaricales-VII. Kavaka. 6: 65-70.*
- [8] Natarajan, K., (1979). *South Indian Agaricales-V Termitomyces heimii. Mycol., 71: 853-855.*
- [9] Natarajan, K., Senthilarasu, G., Kumaresan, V., & Riviere, T., (2005b). *Diversity in ectomycorrhizal fungi of a dipterocarp forest in Western Ghats. Curr. Sci., 88 (12): 1893-1895.*