



SCREENING OF EDIBLE AND POISONOUS MUSHROOMS IN THE FOREST

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ABSTRACT

A survey regarding edible and poisonous mushrooms was carried out in the Pohra and Chirodi forest in Vidarbha region of Maharashtra State in India. The screening for the mushrooms was done during rainy season and winter season. During the survey some species of edible and poisonous mushrooms were recorded. The edible mushrooms noted were *Cantharellus*, *Calvatia*, *Coprinus*, *Pleurotus* and *Laetiporus*. The number of edible fungus *Cantharellus* was found maximum in Pohra forest, while *Laetiporus* was noted more in Chirodi forest. The poisonous mushrooms recorded from the Pohra forest and Chirodi forest were *Amanita*, *Cortinarius*, *Gyromitra*, *Psilocybe*. The maximum number of *Psilocybe* was noted in Pohra forest and *Amanita* in Chirodi forest.

KEYWORDS: *Mushrooms, Wood, Edible, Poisonous, Minerals, Vitamins.*

INTRODUCTION

The mushrooms are achlorophyllous fungi getting nutrition from the dead and decaying organic matter. The nutrition is obtained with the help of hyphae. The mushrooms are from the higher group of basidiomycete. They produce distinct fruiting bodies of variable colour, shape and size. The fruiting bodies may be stalked or sessile. The mushroom grows aurally above the ground. The mushrooms are widely distributed all over the world. The edible mushrooms can be cultivated on suitable plant substrate such as straw. The edible species of mushrooms are used in diets since ancient time. They possess high nutritious contents such as proteins and minerals. They give us dietary fibre and are rich source of vitamin B and C. They are rich in folic acid, riboflavin, niacin and thiamine. They provide us potassium, sodium, phosphorus, Cu, Zn and Mg. The typical flavour, taste and fleshiness adds delicacy in human diet. The help to enhance immune function and lowers the risk of cancer. The eating of mushrooms reduces the tension in blood vessels and lowers the blood pressure. The nutritious contents in mushroom stimulate immune system and increase the ability in defeating the foreign particles and bodies. Thus it helps in detoxification due to which a person becomes less susceptible to illnesses. The medicinal properties of mushroom help in curing heart disease and diabetes. It also helps to reduce the hypertension and other metabolic disorders in the body. The cultivation of mushrooms helps to create new employment opportunities for poor people and enhances earning source of income. Thus it helps to empower rural communities. There are many

species of edible and poisonous mushrooms grow widely in nature on the dead and decaying organic substrate. The edible mushrooms are beneficial for sound health. The poisonous mushrooms are deadly poisonous and harmful to health. The identification of edible and poisonous fungi are required to use easily in human diet for enrichment of health.

By considering the significance of mushrooms attempts were made to find out edible and poisonous mushrooms in the forest.

MATERIALS AND METHODS

Study Site

The site of study is a region of forest located in Amravati city of Vidarbha region in Maharashtra state of India. The study area is present at 20°56'N 77°45'E / 20.93°N 77.75°E. The eastern part of the city is surrounded by Pohra and Chirodi forest which is rich in biodiversity. The climate of the area is tropical wet and dry hot during summer. The temperature remains mild to cool during winter season. The rainy season is favourable season for the growth of various types of edible and poisonous mushrooms. A survey of both the forest was made for search of edible and poisonous mushrooms during rainy season and winter season. The number of occurrence of mushrooms was noted in area.

Identification of Mushrooms

The identification of edible and poisonous mushroom was made on the basis of key to the identification of mushrooms. The comparative study of habits and other

characteristic features of fruiting bodies were studied. The reference books regarding mushrooms were referred. The fruiting bodies were also compared with pictures of mushrooms in google search.

RESULTS AND DISCUSSION

The edible and poisonous mushrooms were surveyed in two different regions of forest. The number of

mushrooms were counted from Pohra and Chirodi forest region separately. The mushrooms were divided into two groups on the basis of distinct characters of fruiting bodies such as stalk, colour, gills, spores etc. The colour and shape of mushrooms were found varied.

Table 1: List of edible mushrooms found in the forest.

S. N.	Name of the Genus	Total number in Pohra Forest	Total number in Chirodi Forest
1	<i>Cantharellus</i>	18	12
2	<i>Calvatia</i>	11	14
3	<i>Coprinus</i>	09	15
4	<i>Pleurotus</i>	15	17
5	<i>Laetiporus</i>	14	19

In the Pohra forest region there found maximum number (18) of edible *Cantharellus*. The minimum number (09) of *Coprinus* were recorded. In the Chirodi forest maximum number (19) of *Laetiporus* and minimum number (12) of *Cantharellus* mushrooms were noted (Table 1). The mushrooms were found on dead tissues of wood of the various trees.

1) *Cantharellus*

It is the wild species of edible mushrooms. The fruiting body varied from orange, yellow to white coloured. The shape was found funnel shaped. The fruiting body has shown rounded to forked folds all the way down the stipe. The folds are more wrinkled or rounded and randomly forked. The fruiting body emitted a peculiar fruity aroma and peppery taste. The gills were found more.

2) *Calvatia*

It is commonly called as Puffballs. It produce clouds of brown dust-like spores from fruiting body. The fruiting body do not have distinct stalk or stem. They do not have spore-bearing gills. The fruiting body produced mass of spores. The spores are produced to the basidia. The fruiting body have distinct colour and texture.

3) *Coprinus*

It is known as shaggy mane or shaggy ink cap or lawyer's wig or shaggy mane. It is found on lawn waste

areas. The fruiting body turns black and dissolves itself after picked. The fruiting body remains shaggy and with cylindrical ink cap. The cap of fruiting body is white and covered with scales. The gills beneath the cap are white to pink or black. It secretes a black liquid containing mass of spores.

4) *Pleurotus*

It is commonly known as oyster mushroom. It was found on decomposed wood. The fruiting body is broad fan shaped or oyster-shaped. It may be white to gray or tan to dark-brown. The margin of fruiting body is in rolled. It becomes smooth and somewhat lobed or wavy. The fruiting body is white and fleshy. The stipe is short and thick. The gills are white to cream and descend on the stalk or stipe of fruiting body.

5) *Laetiporus*

It is known as Sulphur shelf or chicken of the woods or chicken mushroom or chicken fungus. Its texture is same as flesh of chicken. The fruiting body constitute of shelves which are made up of tiny tubular filaments or hyphae. The fruiting body forms large brackets. The young fruiting bodies are characterized by moist, rubbery and sulphur-yellow to orange coloured body. The brackets may become pale and brittle with increase in age.

Table 2: The list of poisonous mushrooms found in the forest.

S. N.	Name of the Genus	Total number in Pohra Forest	Total number in Chirodi Forest
1	<i>Amanita</i>	16	14
2	<i>Cortinarius</i>	12	08
3	<i>Gyromitra</i>	07	11
4	<i>Psilocybe</i>	11	13

In Pohra forest region the maximum number (16) of poisonous mushroom *Amanita* and minimum number (7) of *Gyromitra* were recorded. In Chirodi forest zone maximum number (14) of *Amanita* was recorded. The minimum number (8) of *Cortinarius* was noted. The

poisonous members of mushroom was found on fallen logs of wood.

1) *Amanita*

It is called as fly agaric fungus. It is found in groups with distinct fruiting body. The cap of fruiting body is

covered with white to yellow pyramid-shaped warts. The basidiocarp shows yellowish layer of skin under the veil. The red colour appears through the broken veil. The warts may become less prominent. The cap may be globose to hemispherical and plate-like. The free gills are white coloured. The stipe is white with slightly brittle, fibrous texture. At the base there found a bulb that bears veil remnants in the form of distinct rings.

2) *Cortinarius*

The fruiting body consisted of bright purple caps. The cap is broad with incurved margins. The colour of cap may be violet to violet-brown with glutinous and smooth texture. The flesh of the cap is thick. The gills are brown and violet. The stipe of fruiting is long, cylindrical and swollen at the base. The fruiting body produces brown spores.

3) *Gyromitra*

The fruiting body is irregular and brain shaped with dark brown colour. The cap may become more wrinkled as it grows. The cap colour shows many shades of reddish to purple or dark to golden-brown coloured. The spores are whitish with transparent elliptical spores.

4) *Psilocybe*

It is commonly called as liberty cap. The fruiting body has distinct conical to bell-shaped cap of fruiting body with a small nipple-like protrusion on the top. The fruiting body may be yellow to brown and covered with radial grooves. The stipe is slender and long. The spores are dark purplish-brown with ellipsoid shape. The margin of cap is initially rolled inward but unrolls to become straight or even curled upwards at maturity. In moist condition the cap is pale brown to dark brown or with a greenish-blue tinge. The dry cap shows pale to light yellow-brown colour. The underside of the cap possess narrow gills. The spores produced are deep reddish purple to brown in colour. The stalk of fruiting body is slender and yellowish to brown.

CONCLUSION

In nature two types of mushroom are found in wild state. They grow on dead and decaying organic matter. They can grow and found on dead tree trunk or stumps and fallen logs. The edible mushrooms are rich in minerals, vitamins, proteins and fibres. The edible mushrooms can be used to make the body healthy, sound and medically fit. The edible mushrooms can be cultivated on dried plant parts. The cultivation of edible mushrooms can be a source of earning for large number of peoples. The innovative methods of cultivation of mushroom are helpful to increase the yield and per capita income. The substrate of mushrooms can be utilized as fodder, fuel and fertilizer. The problem of malnutrition can be overcome by using edible mushrooms in daily diet. There are many species of poisonous mushroom that can grow wild in nature where they found dead organic matter. The poisonous mushroom causes irritation or

allergies to skin and becomes lethal to human health if they are eaten.

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