

**DIVERSITY OF FLESHY MUSHROOM IN SANGOLA TALUKA, DISTRICT-SOLAPUR,
MAHARASHTRA (INDIA)****Dr. Tembhurne R. R.* and S. P. Nanir**

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ABSTRACT

During the floristic study of the mushroom of this region author come across a number of mushroom species. In this study five species of mushroom are being discussed. 1. *Pholiota alnicola* (Fr.) Singer 1951. 2. *Amanita vaginata* (Bull.) Lam. (1783). 3. *Lepiota cristata* (Bolton) P.Kumm. (1871) 4. *Battarea phalloides* (Dicks.) Pers. (1801). and 5. *Asterophora lycoperdoides* (Bull.) Ditmar. are being discussed with different five genus and species. All the different genus and species are being reported for the first time from this region .

KEYWORDS: Mushroom.**INTRODUCTION**

Sangola taluka comes under the Western part of the zone belongs to Solapur district, Maharashtra. Classifying as drought prone areas, shallow and poor type of soil, not retentive of moisture marks this part, along with the scanty and uncertain rainfall, due to scanty and non uniform rains scarcity condition prevail in the talukas. Generally monsoon period is from the second fortnight to June to the end of September bringing rains from South-West monsoon.

Even in the scarcity of water, we selected this region for the study of fleshy mushroom. Sangola taluka has number of rural areas which are very rich in flora and has geographical distribution. We visited different locality's through out year, collected number of samples of mushrooms. All these collection was from some rural and urban of said area.

Soil is the most important natural source for development of various type of micro-organisms including edible and non edible fleshy mushroom. All the saprophytic fleshy mushroom are developed on moist decaying logs, soil and dung. An analyzing of the diversity of sporulating fungi monitored over one wet seasons i.e. rainy season in Sangola taluka Solapur District. Also the soil is one of the most important and interesting factor and is the most characteristics feature of terrestrial environment in which study of soil increase knowledge and helpful in practice of Agriculture, Horticulture and Forestry. The soil is the earthy material in which plants grow. Present study diversity of fleshy mushroom from Sangola taluka Solapur District is a place with hot and partial moist climatic condition undertaken.

Fleshy mushroom are parasitic, saprophytic, poisonous, non-poisonous, edible and non-edible. Main aspects of this study to find out the poisonous and edible mushrooms from this region. Present study is the floristic study and to collect maximum number of sample from this region and identified and classified. Fleshy mushroom and other plants are directly used as medicines by a majority of cultures around the world. Many food crops and fleshy mushroom have medicinal effects. Fleshy mushrooms and several other plants are resources of new drugs.

Studying fleshy mushrooms helps to understand plant toxicity and protect human and animal from natural poisons. Cultivation and preservation of mushroom protect biological diversity. Whole the things there is a poison and there is nothing without a poison. It depends on only upon the those weather a poison is a poison or not. Many of the modern medicines are produced indirectly from mushrooms and medicinal plants. Mushrooms and medicinal plants have played an essential role in the development of human culture. Plants have always been the main forms of medicine in India and now they are becoming popular throughout the world.

In the present work an attempt is made to present some interesting fleshy mushrooms observations recorded in Sangola division, Solapur district, Maharashtra, India. While carrying out the field work, help was taken from the traditional healers in the plants of mushrooms and information, as they are familiar with the plants around them. The findings of this study can provide useful leads for pharmacological and food conformation of these

reported uses which might in time become useful for mankind.

Many workers reported fungi from decaying log, humus, dung, rhizosphere (Alexopoulos and Mims 1979, Alexopoulos 1962, Lincoff G. and Mitchel D.H. 1977, Lincoff Garry H. 1981, Ainsworth G.G., Sparrow F.K. and Sussman 1973, Miller O.K. 1975, 1977, Smith A.H. 1947, 1968, 1971, 1973, 1979, Snail 1970, 1971 Peter Jordan 1995, 1996 and 2000, Augusto Rinaldi Vassali Tyndalo 1985, Jacob E. Lange and Morten Lange 1961).

Sangola taluka is the region under investigation is very rich in biodiversity-constitute the districts Solapur. The study of fleshy mushrooms was practically neglected from this region. Hence, it was felt to undertake the study.

MATERIAL AND METHOD

All the sample were collected from different areas of Sangola Taluka. The different region were taken into consideration. From each region sample were collected from different localities. There are more number of sample were collected of fleshy mushroom.

All the fleshy mushroom sample were grow on natural media. The source of natural media on which fleshy mushroom grown on humus, deadwood debris, decaying logs, wood decomposing fungi, dung, dying tree roots, roots of living plants, exterior and interior humus contain soil, lawn and garden, health forest and landscape, dead plant material, living plant material, bark of trees, living and non-living host of plants biomass, topsoil.

All the fleshy mushroom collected from wild as well as domestic area of Sangola Taluka during month of August 2016 from the different localities and material deposited in the formalin and photographs it, listed it according to

index of preservation and studied. Identification of all mushroom is carried out with the help of movable suiting, stopper photographs, preserve material and following mushroom to taking a refrecnes of Simon and Schusters Guide to mushroom by Giovanni Pacioni, U.S. editor: Gary Lincoff., The mushroom guide and identifier by Peter Jordan, Augusto Rinaldi, Vassili Tyndalo-The complete book of mushrooms, Mushroom of the great lakes region by Verne ovid Graham, Collins Guide to mushrooms and Toadstools by morten lange and F. Bayard Hora. This is the important method are use for the identification of fleshy mushroom.

RESULT AND DISCUSSIONS

1. *Pholiota alnicola* (Fr.) Singer 1951.

- **Collection Examined:** RRT/146, June-2017, Sangola, Dist.-Solapur. On moist soil.
- **Distirbution: India:** M. S. (Tem, 2017), Britain and Ireland, Northern and Central mainland Europe as well as in Asia and parts of North America.
- **Cap** 1.7 to 5 cm in length, 1.5 to 9.5 cm in width, white, rough at upper, black spot arise, slightly brown appearance at apex, smooth, fleshy, dome shape, knot and hat like, fragile at periphery, convex, depressed crntrally, arise number gills at lower side, total height 4 to 10 cm. **Gills** are many, whitish pink, crowded, dense, free at periphery, some gills long and short arises in between the two gill, smooth, feshy, bears spores. **Stipe** long, cylindrical, smooth, fleshy, packed, fibrous, white to cream color, broad at the base, protuberance, bent, narrow at the apex, length of stipe 4 to 7.5 cm, width of stipe 0.5 to 1 cm. **Spores** brown, smooth, ellipsoidal or oval, globose, 6.9 to 12.9 um in diameter, conspicuous, distinct, not transparant. **Odor** bitter. **Habitat** on moist soil. **Season** rainy, June. **Edibility** poisonous, inedible.



1. *Pholiota alnicola* (Fr.) Singer 1951. Spores: Globose and Oval.

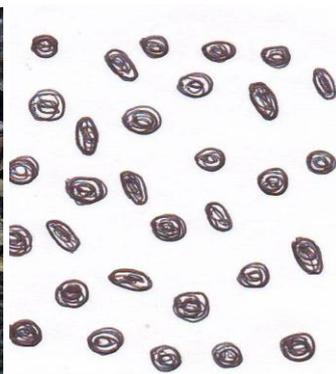
2. *Amanita vaginata* (Bull.) Lam. (1783).

- **Collectiion Examined:** RRT/147, June-2017, Sangola, Solapur. On moist soil.
- **Distribution: India:** M. S. (Tem, 2017), Scotland, Azores, North America and Australia.
- **Cap** 1.6 to 5 cm in length, 1.4 to 9.5 cm in width, broad, umbrella like, rounded, globose, smooth,

fleshy, depressed centrally, upper part rough, black spot arise, central part knot like, on the cap lines arise, white to pink color, periphery fragile, total height 4 to 7 cm. **Gills** many, arise lower surface of pileus, attached with each other, smooth, fleshy, long and short, bears spores, close, fringed, white to pinkish in color, branched. **Stipe** long, cylindrical,

smooth, fleshy, flexible, packed, fibrous, bent, broad at the base, narrow at the apex, bright white to creamy, thick, stuffed, pruinose, squamulose, length of stipe 4 to 9 cm in length, width of stipe 0.5 to 0.9

cm. **Spores** brown, globose, oval, smooth, thin wall, distinct, non transparent, 6.94 to 11 μ m in diameter. **Odor** none. **Habitat** on moist soil. **Season** rainy, June. **Edibility** non edible, poisonous, toxic.



2. *Amanita vaginata* (Bull.) Lam. (1783). Spores: Globose and Oval.

3. *Lepiota cristata* (Bolton) P.Kumm. (1871)

- **Collection Examined:** RRT/148, June-2017, Sangola, Solapur. On moist soil.
- **Distribution: India:** M. S. (Tem, 2017), North of Mexico (North America), North Asia, Europe Britain, Ireland and New Zealand.
- **Cap** 0.5 to 0.6 cm in length, 2.2 to 3 cm in width, rounded, globose, smooth, fleshy, surface clean, thin or thick, wavy, periphery fragile, crack, whitish pink in color, central yellowish brown in color, tikka like, flat, convex, total height 4 to 6 cm. **Gills** free,

blackish brown, crowded, scattered, long and short, smooth, fleshy. **Stipe** long, cylindrical, smooth, fleshy, flexible, packed, fibrous, bent, broad at the base, narrow at the apex, bright white to creamy, shiny, thick, stuffed, length of stipe 4 to 6 cm, width of stipe 0.3 to 0.4 cm. **Spores** dark brown, globose, oval, smooth, distinct, not transparent, dextrinoid, 2.7 to 5.5 μ m in diameter. **Odor** unpleasant, rubbery, mild taste. **Habitat** moist soil, shady places and damp. **Season** rainy, June. **Edibility** poisonous.



3. *Lepiota cristata* (Bolton) P.Kumm. (1871) Spores: Globose.

4. *Battarea phalloides* (Dicks.) Pers. (1801).

- **Collection Examined:** RRT/149, September-2017, Sangola College, Solapur.
- On moist and dried black, sandy soil.
- **Distribution: India:** M. S. (Tem, 2017), Western and Southern United State, several European countries, Russia, North America, Yukon Territory, Western Canada, USA, Southern California, New Mexico, Arizona, Mexico, Hawaii, South America (Brazil), Africa (Morocco), Europe (Belgium), China, Australia, Hungary and United State.
- **Cap** 5.5 cm in length, 5.3 cm in width, globose, rounded, compressed, ball like, smooth at early stage, conical, hemispherical cap is covered initially

by the upper part of the universal veil, beneath which there is a spore sac attached to the stem. When the dried out upper part of the universal veil blows away, the rusty-brown upper surface of the spore-bearing layer is open to wind and rain, and in this way the spores are dispersed; the underside of the cap is buff. It develops from an egg shaped body known as a volva, buried several inches deep in the ground and very rapidly sends up a tall. After mature cap whitish black or gray in color, when fruit split it separate from spore sac, it is arise two part, one covering cap or like topra, other is spore sac, hard, rigid, leathery, some cap is rounded and some cap is slightly dome shaped, spore bared,

exoperidium, ruptured by spore sac and elongating stalk, . **Gill** absent in place arise spore sac. **Stipe** long, cylindrical, packed, dry with fibrous, bent, broad at the base, narrow at the apex, equal to taper at the base, thick, rusty brown scales or fibres and looking rather like a miniature pine trunk, the small head of the fungus is brown and as it rises carries with it, like a skull cap, membranous volva at the base shrivels in age, length of stipe 10 to 34 cm, width of stipe 1.7 to 2 cm. **Spore** sac 2.3 to 4.2 cm broad, 2.1 to 3.2 cm thick, convex, covered by a

white membranous endoperidium, the latter splitting horizontally along the margin, exposing a sticky, brown spore mass, the spores are formed inside the head, as in puff ball, spores 5.4 to 6.6 um in diameter, rounded, warted, rusty brown in color, distinct, not transperat. **Odor** not distinctive. **Habitat** saprobic, in dry sandy and moist and black soil areas such as hedge banks or beneath deciduous tree. **Season** September to march in India. **Edibility** inedible, woody.



4. *Battarea phalloides*

5. *Asterophora lycoperdoides* (Bull.) Ditmar.

- **Collection Examined:** RRT/150, July–2017, Sangola, Solapur. On moist soil.
- **Distribution: India:** M. S. (Tem. 2017). Britain and Ireland, Mainland Europe and in North America.
- **Cap** 0.5 to 1.0 cm in length, 0.3 to 0.4 cm in width, white to creamy, globose to subglobose, convex, smooth, fleshy, fruit body scattered, upper surface depressed, lower surface aperared like basket, umbrella like, total height 1.1 to 1.6 cm. **Gills** many, arise like network of spider, brars spores, smooth, fleshy, flexible, long and short, white to creamy, thin or thick, distant often incompletely formed and little

more than 'veins'. **Stipe** long, cylindrical, smooth, fleshy, flexible, packed, fibrous, bent, broad at the base, narrow at the apex, white to creamy, shiny, thick, stuffed, flexible, length of stipe 0.5 to 1.4 cm, width of stipe 0.3 to 0.4 cm. **Spore** globose, white, shiny diamond like, distinct, conspicuous, transperant, 4.1 to 9.7 um in diameter, oval spores brown, 5.5 to 8.3 um in diameter. **Odor** not significant. **Habitat** on moist soil, Saprobic, on various types of decaying brittlegill fruitbodies. **Season** rainy in India. **Edibility** inedible.



5. *Asterophora lycoperdoides* (Bull.) Ditmar Spores: Globose and Oval.

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