



Occurrence of Fleshy Mushroom from Malshiras Tehsil of District Solapur, Maharashtra, India

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Abstract:

*The present study was unexplored regarding the study of mushrooms hence, it was undertaken for the study of fleshy mushrooms. The mushrooms are cosmopolitan in distribution always found in various habitats like plant debris, humus soil, soil, decaying logs, water, air, litter dung etc. It is found in various climatic, and geographic conditions, on various substrates, flora, and fauna all these are the important factors where mushrooms grow all over the world. This study area studied two different genera and species of mushroom i.e. *Panaeolus companulatus* and *Coprinus niveus* belong to the family *Bolbitiaceae* and *Psathyrellaceae* and division *Basidiomycotina* respectively. It is a spore-bearing organism mostly called a fruiting body, found every season but more in the rainy season.*

Keywords: *Pileus, Gills, Spores, Partial and Universal Ring. Basidiomycotina*

Introduction:

Mushrooms are cosmopolitan heterotrophic organism which is highly nutritious and it is well developed in every environmental condition (Kumar and Sharma, 2011a). Till date million number of macro fungi are identified throughout the world and it grow in every ecosystem. Fungi having sporocarp it is also called as macrofungi specially it is divided into many types such as bracket fungi, puffballs, truffles fungi, birds nest fungi, gilled fungi, jelly fungi, coral fungi and stink fungi respectively (Enow, 2013). The main purpose of this study is to be the listing of wild mushrooms from this region

and examine the cultural, ethno botanical, medicinal and edibility values, due to the listing recreate to cultivate wild edible or poisonous mushroom to improving the economy of villagers and both fungi i.e. wild as well as mycorrhizal are association with each other and they help in various ways regularly (Semwal et al., 2014). Akluj is one of the semi-urban areas established on the river Nira of district Solapur, Maharashtra. Sugar cane cultivation is the main cash crop in the region and accordingly, in around three sugarcane factories are located. This region comes under the Deccan plateau and the area is generally flat, the climatic condition of

Akluj is favorable for farming characterized by three main seasons i.e. summer, winter, and rainy, generally climatic condition dry except season of monsoon, soil type after geo-technically testing classified mainly *clay, silt, sand and gravel*, on this soil type mushroom grow well,

Material and Method:

Study Area:

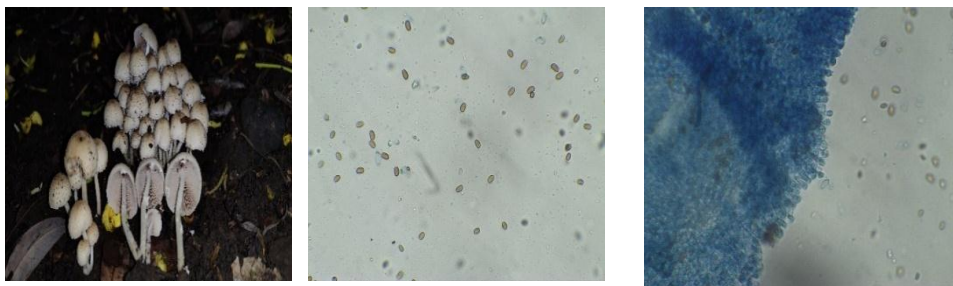
The tehsil Malshiras Akluj is located nearly 120 km (75 mi) away from the district Solapur, Maharashtra, India. The Akluj is a 551 m (1,808 ft) elevation, located on the right bank of the river Nira. The latitude 17.9000 and longitude 75.0333. The altitude in feet 1581 Lat (DMS) north 17° 53' 60 N Long (DMS) east 75° 1' 60E altitude (meters) 481. Temperature of this region is 36 °C (97 °F), in May it is hot near about 42 °C (108 °F), the month of September weather remains an average of 26 °C (79 °F) temperature and annual rainfall in this area is 450 mm. The two species reported for the first time from this study area hence it is undertaken for the study of fleshy mushroom.

Identification of Mushrooms:

Microscopic slide of gills was prepared by using glycerin and cotton blue for characterization and observed under a compound microscope using 10x, 45x objectives, and 10x and 15x eyepiece. Microscopic photography uses stereoscope trinocular Microscope SZ-PT Olympus, Japan model SZ40 and low power of research trinocular microscope KIC olympus model. An Identification of the collected mushroom was carried out by review of (Abraham et al., 1980), (Atri and Kour, 2003), (Atri and Saini, 1986, 1990a, 1990b, 1990c), (Bhatt et al., 1995, 2007), (Buyck and Atri, 2011), (Alexopoulos, C.J. & C.W. Mims. 1979), (Simon and Schuster's, 1980, 1981 and 1989), (Peter Jordan, 1995, 1996, 2000), the book like *Mushroom and their Habitat*, American Publishers, (Augusto Rinaldi, Vassili Tyndalo, 1972) and (Lincoff, Gary H, 1981).

Results:

In the present study *Panaeolus companulatus* and *Coprinus niveus* of Fleshy Mushroom was first time newly recorded genus and species from the study area.

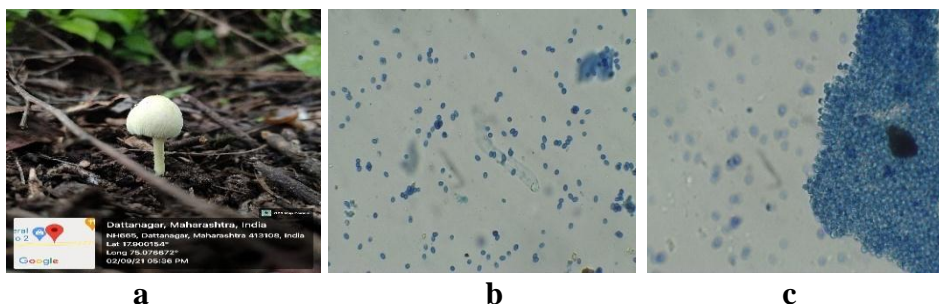
1. *Panaeolus companulatus* (Bull. ex Fries) Quélet

a

b

c

Panaeolus companulatus (Bull. ex Fries) Quélet Fig-1: a-Habit b-Spores c-Basidia and Basidiospores

2. *Coprinus niveus* (Pers.) Redhead, Vilgalys & Moncalvo (2001)

a

b

c

Coprinus niveus (Pers.) Redhead, Vilgalys & Moncalvo (2001) Fig-2 a-Habit b-Spores c-Basidia and Basidiospores

Description:1. *Panaeolus companulatus*(Bull. ex Fries) Quélet **Family:**

Bolbitiaceae

Fruiting body white, when exposed in the air it turn into whitish brown to ash in color, Cap knot like, bell shaped, more or less cylindrical, Flesh white, Odor mild, flavour pleasant; Gills crowded, adnate, ash in color, Partial veil absent; Universal veil absent; Spores yellowish dark brown in color, Edibility poisonous.

2. *Coprinus**niveus*

(Pers.) Redhead, Vilgalys & Moncalvo (2001) **Family:** Psathyrellaceae

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Fruiting body solitary, scattered, Cap cylindrical, bell shaped, more or less dome shaped, 0.1 – 1.1 cm in length, 2.7- 4.1 cm wide, Flesh dark white, odor mild, Gills crowded, adnate, Stalk rhizoidal, equal, Partial veil present, ring zoned like; Universal veil absent; Spores smooth, globose, cylindrical, Edibility poisonous.

Discussion:

The natural media based on plant components are used in the form decoction such as, sorghum or taro decoction, rice bran or coconut water decoction (Garcia et al. 2020, Landingin et al. 2020). An

extracts of citrus peel extracts of lemon, orange, grapefruit (Yang et al., 2012), with rice bran or rice straw extracts (Rizal et al., 2016, Nguyen et al. 2019), chickpea or pigeon pea extract, barley or oat extract (Singh & Singh 2018).

As the present mushrooms were recorded near Malinagar sugar factory (Akluj) having the waste mainly constitutes sugarcane straw particles and bagasse having high amount of cellulose and small amount of sucrose. Which is suitable for the growth of fungi and mushrooms. It might be the case in the region, these species of mushrooms grow in large scale.

Conclusion:

Fleshy mushroom plays a very great role to maintain the various type of ecosystem, it is highly nutritious, presence of more medicinal properties, it is biodegradable and recycle the organic and inorganic content in the soil. New researcher having challenge to identify unknown fleshy mushroom in the commercial point of view. Mushrooms are used in the preparation of pharmaceutical medicine, food industry and cultivation, this is moreover gaining character to help in increase the economy in social platform in the present area. In this study area authors come across two newly record species such as *Panaeolus companulatus*

(Bull. ex Fries) Quélet and *Coprinus niveus* (Pers.) Redhead, Vilgalys and Moncalvo (2001).

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