

Wild Edible Fungi Sold In Local Markets of Ukhrul District of Manipur, India

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Abstract- Ukhrul district which is one of the nine districts of Manipur, is a hilly region predominantly inhabited by the *Tangkhul* tribe. Wild edible fungi constitute an essential component in the diet and food security of the *Tangkhul* tribe living around the forest fringe or in its vicinity. Since time immemorial, *Tangkhul* tribe collects and consumed a wide variety of wild edible fungi for sustenance their livelihood. Moreover, many wild edible fungi are rich in nutrient content and formed as good sources of proteins, carbohydrates, fats, vitamins, minerals etc.,. This article reports 14 wild edible fungi species documented during field survey in the local markets of Ukhrul district of Manipur, along with their vernacular names and mode of uses.

Index Terms- Edible fungi , Local markets, Ukhrul, Manipur.

I. INTRODUCTION

The *Tangkhul Naga* tribe is one of the largest tribe among the Naga tribes of Manipur. The *Tangkhul* people of this region are simple, brave, reliable, generous, sincere and friendly. The majority of the people are agriculturist and Rice (*Zhat*) is their staple food. The *Tangkhul* tribe largely depends on wild edible plants, which constitute the major nutrient source in their daily diet. Agriculture is the mainstay of these people and *Tangkhul* people had been practicing terrace and Jhuming cultivation since their ancient times. Wild edible fungi also plays a major role in food stuff of the *Tangkhul*, many of the species like *Auricularia delicata*, *Lentinula edodes*, *Lentinus squarrossulus*, *Schizophyllum commune*, *Termitomyces clypeatus*, etc. are collected by the local people during the rainy season for their own consumption as well as selling in the local markets and thereby generating a supplementary income to their household economy.

II. STUDY AREA AND METHOD

Ukhrul, the main homeland of *Tangkhul Naga* tribe lies between 23°13'N and 25°68' N latitudes and 94°20' E and 94°25' E longitudes, having an area of 4,544 km² of which forest occupied about 2,600 km². It is a hilly region, surrounded by Myanmar in the east, Nagaland state in the north, Chandel and Senapati districts of Manipur respectively in the south and west with the population of 1, 83,115. (as per 2011 Census). The Climate of the district is temperate nature with a minimum and maximum degree of 3⁰ C to 33⁰ C. The soil ranges from laterite

to sandy loams with general red colour and have moderate fertility.

The *Tangkhul* tribe largely depends on wild edible plants, which constitute the major nutrient source in their daily diet. Consumption of wild edible fungi works as dietary supplements during times of food shortage is still an integral part of the *Tangkhul* community. Women and children generally collect a good number of edible fungi from the surrounding forest for daily consumption as well as to sell the excess harvest in local markets as good source of income. Most of the markets in every district of Manipur are run and controlled by women, even in Ukhrul district *Ava*(Mother), *Avakatui* (Aunty) and *Achon* (Sister) of the *Tangkhul* community run different markets to support their families. The study indicated the presence of a large number of wild edible fungi in the district; however, the present paper enumerates only those species, which are sold in the local markets of Ukhrul District of Manipur.

In fact, a good number of valuable accounts have been published during the last two decades. In fact, a good number of valuable accounts have been published in recent years within the country including Baruah *et al* (1971), Singh & Singh (1993), Rai *et al* (1993), Verma *et al* (1995), Barua *et al* (1998), Sarma *et al* (2010), Tanti *et al* (2011), Polashree & Joshi (2013).

III. MATERIALS AND METHODS

The preliminary survey was made in different rural areas of the Ukhrul District, Manipur during 2014-2015 for gathering information on wild edible fungi traditionally used by them. The authenticity of the uses was repeatedly verified by asking to the different informer. In case of contradictory information, efforts were made to get the correct information. Regular surveys were conducted at the selected local markets (Litan, Lambui, Ukhrul) at least twice in a month. A minimum of 10 – 12 women vendors in each market were interviewed regarding the local name of the edible fungi , their use, source and market price. The identification of each sample was done with the help of standard manuals studying carefully different microscopic and macroscopic characters. Further, the collected samples were preserved in 4% formaldehyde and deposited in the Museum of the Department of Botany, Nagaland University Headquarters: Lumami and in the Life Sciences Department of Manipur University, Manipur..

Wild edible fungi and their uses

As much as 14 species of wild edible are recorded during the present survey. These are enumerated below alphabetically in

Table 1 with their scientific names along with family and references to voucher specimens followed by the vernacular names, market price and mode of used by *Tangkhul* Nagas. (Table 1)

Table 1: Wild edible fungi used by the *Tangkhul* tribe in Ukhrul district, Manipur.

Botanical name	Family	Vernacular Name	Market price	Mode of use
<i>Agaricus campestris</i> L.	Agaricaceae	<i>Sipovar</i>	Rs 15-20 per bundle	Eaten fried or cooked with meat
<i>Auricularia polytricha</i> (Mont.) Sacc.	Auriculariaceae	<i>Shiokkhanavar</i>	Rs 50-70/-per kg	Eaten fried or cooked with dal
<i>Auricularia delicata</i> (Fr.) Henn.	Auriculariaceae	<i>Shiokkhanavar</i>	Rs 50-70/-per kg	Cooked with dal
<i>Lactarius princeps</i> Berk	Russulaceae	<i>Chengum khomthokpi</i>	Rs 20-25/- per bunch.	Cooked as vegetable with dry fish
<i>Laetiporus sulphureus</i> (Fr.) Murr.[]	Polyporaceae	<i>Uyen</i>	Rs 30-45/-per kg	Eaten in the form of <i>iromba</i> (mashed with fermented fish)
<i>Lentinula edodes</i> (Berk.) Pegler	Polyporaceae	<i>Thangjiyen</i>	Rs 40- 50/- per kg	Cooked as vegetable in mixing with others
<i>Lentinula lateritia</i> (Berk.) Pegler	Polyporaceae	<i>Thangjiyen</i>	Rs 40- 50/- per kg	Eaten in the form of <i>iromba</i> (mashed with fermented fish)
<i>Lentinus conatus</i> Berk.	Polyporaceae	<i>Uyen</i>	Rs 60-70/- per kg	Cooked with pork meat
<i>Lentinus squarrossulus</i> Mont.	Polyporaceae	<i>Uyen</i>	Rs 60-70/- per kg	Cooked with meat
<i>Pleurotus flabellatus</i> (Berk. and Br.) Sacc.	Polyporaceae	<i>Uyen</i>	Rs 40-50/-per kg.	Cooked as simple boiled vegetables with dry fish.
<i>Ramaria sanguine</i> (Pers.) Quel.	Clavariaceae	<i>Uchek khong</i>	Rs 40-50/-per kg	Eaten fried or cooked with fish
<i>Schizophyllum commune</i> Fr.	Schizophyllaceae	<i>Lengphong</i>	Rs 150-200/- per kg.	Cooked with fish or pork
<i>Termitomyces clypeatus</i> Heim.	Tricholomatacea e	<i>Varlang</i>	Rs 35-45/- per kg	Cooked with fish
<i>Termitomyces eurrhizus</i> (Berk.) Heim.	Tricholomatacea e	<i>Shipungvar</i>	Rs 10-20/- per bunch	Eaten fried or cooked with meat.

IV. RESULTS AND CONCLUSION

During the current survey 14 species of wild edible fungi belonging to 8 genera under 7 families were recorded from Ukhrul district used by the *Tangkhul* community. Many of the edible species which are consumed throughout the year in both fresh and dried form by the *Tangkhul* people are collected and sold in local market by wrapping them in *Musa* spp or *Phrynium capitatum* leaves which are in high demand by the *Tangkhul* people of Ukhrul district and fetches good market price even today. The price of different species fluctuates from season to season depending on their availability. Majority of the species are eaten simple boiled with fermented fish (*Ngari*) or dry fish, cooked with meat or dal, used as part of ingredients in the preparation of *Iromba* (mashed with fermented fish) and only few are taken fried. Some species like *Auricularia polytricha*, *Lactarius princeps*, *Lentinula lateritia*, *Lentinus conatus*, *Pleurotus flabellatus*, *Termitomyces clypeatus* that are commonly consumed by the local people are non-toxic according to the

gathered information and has a strong market demand, and this is reflected in a higher price as it possesses nutritional value and medicinal properties. Edible fungi species have not been systematically documented and studied in Ukhrul district, Manipur. So, there is a need to document the existing species of edible fungi species and to disseminate the knowledge among the *Tangkhul* tribe to generate interest in conservation and cultivation of edible fungi species.

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