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RESEARCH ARTICLE

SURVEILLANCE OF WILD EDIBLE MUSHROOMS AT MEGAMALAI HILLS IN SOUTHERN WESTERN GHATS

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ABSTRACT

Megamalai hills in Southern Western Ghats of India have an unestimated wealth of mushrooms biodiversity that need to be tapped. The Megamalai hill forest was surveyed for occurrence of wild edible fungi. Studies were carried out two consequent years and it is done in all seasons. A total of 60 species of mushroom were collected, recorded, photographed and preserved. Most of the samplings were done in Megamalai reserved forest and the dense biomass favours variety of edible and medicinal mushrooms. Some of the species identified are *Lymnophilus, Auricularia, Agaricus, Tricholoma, Pleurotus*. These studies give significance in molecular diversity of wild edible mushrooms and its conservation from Megamalai hills.

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INTRODUCTION

Fungi are considered the largest biotic community after insects (Sarabhoy *et al*., 1996). The species diversity of fungi and their natural beauty occupy prime place in the biological world and India has been a cradle for these species (Manoharachary 2002). Only a fraction of total fungi wealth has been subjected to scientific screening and mycologist continue to unravel the unexplored and hidden wealth one third of fungal diversity of the globe exist in India and of this only 50% are characterised until now (Manoharachary *et al*., 2005). Efforts need to be made to identify and exploit these mushroom floras for utility as their biodiversity and conservation strengthen the food security of our country (David Arora, 1990) Through India has rich Macro fungal biodiversity, most traditional knowledge about mushrooms come from the far East countries like china, Japan, Korea, Russia where mushrooms like *Ganoderma, Lentinus, Grifola* and others were collected and used since time immemorial. Most of the mushrooms grow abundantly in nature and their commercial harvest is being undertaken for benefit in these countries (Sitta and Floriani 2008). Recent reports show a tradition of wild picking for their consumption and sale in the market. However the ecological data available on some of the taxa is still not enough and systematic of wild mushrooms has received more attention than other threatened aspects like conservation. The Megamalai reserved forest is situated in Theni district, TN, India and is located in longitude 77 10-7730E and latitude 931-951N, which is popularly known as Highwavy mountains, a part of the western Ghats biodiversity hotspots (Mittermeier *et al*., 2005) with the elevation of 1500m above sea level. In total 806.86km^2, about 400.77km^2 is regarded forest area. In this paper major group of fungi identifies in Megamalai hills are discussed and also gives the information about species identification using molecular diversity for the utilisation and conservation of identified mushrooms.

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MATERIALS AND METHODS

In order to collect different species in different environment, the selected study area will be divided in to three regions (i) Megamalai down hill (ii) Megamalai middle hill and (iii) Megamalai up hill. Wild mushroom collection is carried out

randomly by using ethnic data, and mushroom foraging guide. Mushroom foraging was done in all the seasons and frequent visit were made. Primary identification of mushrooms were done based on their morphology and habitat. All the collected samples were preserved and subjected for genetic diversity studies. The use of molecular tool provides more accurate methods for identification than the few characters afforded by traditional morphological features. Species identification and diversity of species also done with 18s-rRNA sequencing. The similarity of sequences were analysed with sequence similarity search tool. Finally close proximity is analysed by phylogenetic tree construction.

RESULTS AND DISCUSSION

Wild mushrooms depend very much on the environment-location and weather. They, as wild plants or trees, relate to weather seasons. Before started hunting of wild edible mushroom, ethnic data was collected from tribals residing in lower, middle and upper part of Megamalai hills. According to tribals data, tribals were known to most of the wild varieties of mushrooms and their habitat but they were aware of few species of edible mushrooms. For example white *Truffle* and *Matsutake* mushroom were thought to be poisonous even though they were predominant in their places. *Pleurotus & Termetomyces* were only edible according to them. Samples were collected in all season at Vettukadu, Palliyangudi, Tiger reserve forest, Valluthupadugu, Santhanakadu, Vellimalai, Vellimamali III Beat, Kaddukkakulam, Moola Vaigai River, Megamalai Highway Valley. Samples were collected in Vellimalai reserve forest with proper permission from forest Department, Theni wild life sanctuary, Theni. The 18s rRNA sequencing of all 60 samples were performed and 30 samples were identified and recorded. Sequence similarity using BLAST tool and phylogenetic tree were constructed to identify the diversity of species. As a result, most of the species were Polypores and they were widely spread in the forest. Most of the species were identified in decayed woods and especially *Thespheceа popi, Bombex malebaricum, Ilanthus exelsa, Pamerintus indicum* trees.

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