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Identification of edible mushrooms consumed as delicacies by tribes in North-Eastern part of India using genomic tools

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Mushrooms are spongy, fleshy fungi which are edible and non-edible. The edible varieties are popular as delicacies equally among the tribals as well as elite. Among the 3 million fungi, few thousands are mushrooms. In India only 5-6 edible species are grown and cultivated commercially viz. Oyster Mushroom (*Pleurotus* spp.), White Button Mushroom (*Agaricus bisporus*), Paddy straw mushroom (*Volvariella volvacea*), Milky Mushroom (*Calocybe indica*), Shittake Mushroom, (*Lentinula edodes*) and few others are largely hunted and consumed by tribals viz. *Termitomyces* spp., *Entoloma* spp., especially in the north eastern parts of India, especially in the foothills of Darjeeling and Kalimpong districts of West Bengal and are called as "Chews" by locals. The identification of mushrooms has been done preciously using morphological and biochemical markers but there has always been a confusion/ambiguity in the taxonomy of the mushrooms across the world as it is greatly affected by the external environmental conditions and thus causing changes in the fructification and spore size. Thus the use molecular markers like Random Amplified Polymorphic DNA (RAPD), Restriction Fragment Length Polymorphism-Internal Transcribed spacer (RFLP-ITS), Amplified Fragment Length Polymorphism (AFLP), Single Nucleotide Polymorphism (SNP), SSR's, Mitochondrial SSU rDNA in identification of mushroom species and determining the phonetic distances between the species after using the phylogenetic programs CLUSTAL W and molecular evolutionary analysis using MEGA 4.0. The development of SCAR markers would be really of great help to local people to identify and consume these edible mushroom varieties and might save them from atrocities of poison.

Biography

Rishu Sharma has completed her PhD in 2012 from Himachal University and presently she is working as an Assistant Professor in the University of West Bengal since past two years. She has worked on the molecular studies of mushrooms and strain improvement during her Doctoral studies. She has published research papers related in reputed journals and is also serving as an Editorial Board Member of repute.

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