
Artificial production technology of *Auricularia delicata* in Manipur

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Auricularia delicata collected locally was tried for artificial production in Aerobiology, Microbiology and Plant Pathology Laboratory, Dept. of Life Sciences, Manipur University. Paddy straw soaked overnight in water being supplemented with 4% ricebran and partially decomposed sawdust [prepared by mixing and watering ingredients like sawdust (78%) : ricebran (20%) : CaCO₃ (1%) : sucrose (1%)] were used as the substrates for the production of this jelly fungus. Prior to cultivation, both the substrates were autoclaved and spawned at the rate of 2% on wet wt. basis. Partially decomposed sawdust substrate produced better yield (433 gm/2 kg wet wt.) than the commonly used substrate, paddy straw (280 gm/ 2 kg wet wt.).

Key Words : *Auricularia*, artificial cultivation, sawdust, paddy straw, ricebran as substrates

INTRODUCTION

Auricularia is an edible jelly fungus belonging to the order Auriculariales. It is commonly found growing in nature on various decaying wood. The indigenous people of Manipur are very fond of taking this fungus (locally known as Uchina) as a culinary item since olden days. It is consumed both fresh as well as in dried form after soaking in water. Three different species viz. *Auricularia delicata*, *Auricularia polytricha* and *Auricularia auricula* were recorded from the Manipur state (Verma *et al.*, 1995). However, their availability has gone down considerably during the last one decade due to shrinkage in area of their natural habitats. There is a big gap between supply and demand of this edible fungus in the state. Although artificial cultivation of *Auricularia polytricha* and *Auricularia auricula* had been conducted by other workers (Bhandal and Mehta, 1989 ; Cheng and Tu, 1978 ; Loulung-Hou, 1981 ; Quimio, 1981 ; Nita Bahl, 1984). So far no artificial cultivation for *Auricularia delicata* has been attempted. Hence, a study was undertaken to cultivate *Auricularia delicata* in the Aerobiology, Microbiology and Plant Pathology Laboratory, Department of Life Sciences, Manipur University, for generating additional income for the socially weaker section people of the Manipur society.

MATERIALS AND METHODS

Pure culture of *Auricularia delicata* collected locally was maintained on potato dextrose agar (PDA) medium. Grain spawn medium of the mushroom was prepared on coarse paddy seed following the standard method of spawn preparation. Paddy seeds, boiled previously till soft, were mixed thoroughly with 2% calcium sulphate (gypsum) and 4% calcium carbonate (chalk powder) and sterilized in a heat resistant polypropylene bag at 20 lb. p.s.i. for one and half hour. After cooling, the medium was inoculated with a agar piece of pure culture of *Auricularia delicata* aseptically and incubated at 25 ± 1°C for 25-30 days till mycelial development.

For artificial production, paddy straw supplemented with ricebran and partially decomposed (synthetic) sawdust were used as the substrates. Good quality paddy straw was chopped into 3-5 cm long and soaked in water overnight. The straw after removing the excess water was thoroughly mixed with 4% ricebran on wet weight basis. In case of partially decomposed sawdust, the substrate was prepared by mixing and watering ingredients [sawdust (78%) : ricebran (20%) : CaCO₃(1%) : sucrose (1%)] in a large pile and allowed to ferment for 20-30 days with turning on 5 days intervals. Well prepared

compost will be free from ammonia and brown to dark brown in colour. In either case, the substrate (about 2 kg wet weight) was filled into heat resistant transparent polypropylene bag and autoclaved at 20 lb p.s.i. for 1 (one) hour. After cooling the substrate was spawned with the *Auricularia delicata* spawn at the rate of 2% on wet weight basis. The bags were then incubated in a warm dark room (temp. ranging from 25-28°C) for mycelium development. The spawn running was completed within 2-3 months and the bags were slitted after pinheads started appearing. Slitting was better than complete removal of bag as it prevents drying. Regular spraying of water was given to maintain the relative humidity (R.H.) at about 80%. The mature fruiting bodies were harvested manually and the yield of each bag was recorded.

RESULTS AND DISCUSSION

The yield potential of the locally available *Auricularia delicata* on paddy straw and partially decomposed sawdust revealed that the substrate partially decomposed sawdust gave better yield 433 gms/2 kg. wet wt. (Table 1. Fig. 1B) than the commonly used substrate, paddy straw 280 gms/2 kg. wet wt. (Table 1 Fig. 1A).

From the above findings it is concluded that *Auricularia delicata* can be produced artificially at large scale in Manipur.

Table 1 : Yield of *Auricularia Delicata* in gm/2kg wet wt. of substrate (results are average of 4 replicates for 1 year, 2003).

Substrate	Average No. of sporophores	Average yield of sporophores (g)
Paddy straw	256	280
Partially decomposed (synthetic) sawdust	378	433

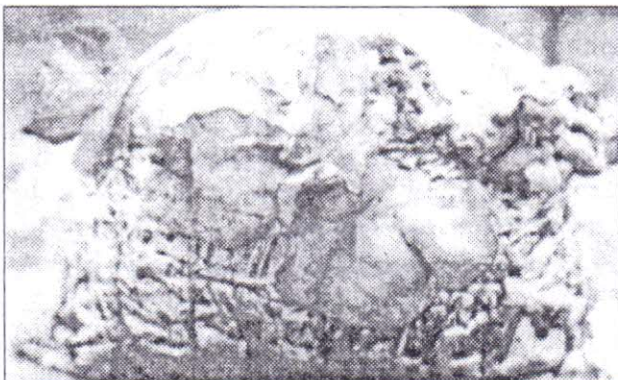


Fig. 1A : *Auricularia delicata* grown in paddy straw substrate

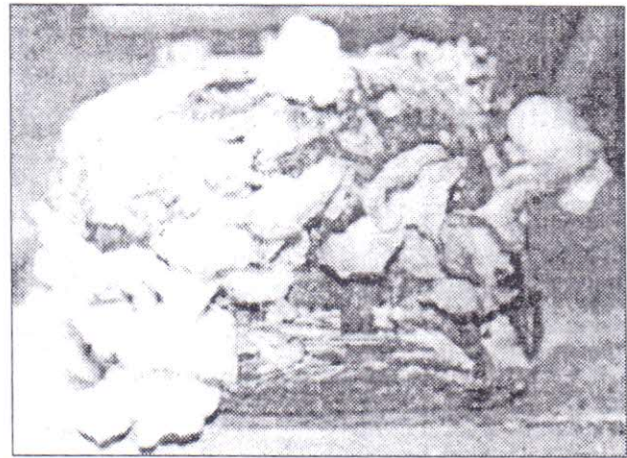


Fig. 1B : *Auricularia delicata* grown in sawdust substrate

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