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Cultivation technique of *Lentinus squarrosulus* Mont., an edible tropical mushroom

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In the present investigation, the cultivation technique of *Lentinus squarrosulus* Mont., one edible tropical mushroom has been standardized and the technique is described here.

Key words : *Lentinus squarrosulus,* cultivation technique, rice straw compost

INTRODUCTION

Mushrooms are gradually becoming very popular as one of the dietary items of the urban and rural people of West Bengal, India. In West Bengal, several edible tropical mushrooms grow naturally during rainy season and are consumed heavily by the urban and rural people. These mushrooms are highly choiced one of the local people but they are unable to consume them throughout the year except the rainy season as the cultivation technique of most of these mushrooms are not yet available. Of these the cultivation techniques of *Tricholoma crassum, Agaricus bisporus, Pleurotus sajorcaju* and *Volvariella diplasia* under the rural climatic conditions of West Bengal have already been standardized and reported from this laboratory (Sur and Samajpati, 1981; Samajpati, 1978 a, b; Roy and Samajpati, 1992.) In the present investigation the cultivation of *Lentinus squarrosulus* Mont., under rural conditions has been attempted and the observations are reported here.

MATERIALS AND METHODS

Fresh basidiocarp of *L. squarrosulus* was collected from logyard of Garia, 24 Pgs (S), West Bengal and brought into the laboratory for further study. The basidiocarp was cleaned with sterile distilled water and the surface of the basidiocarp was sterilized with alcohol. Then from the juncture of the stipe and the pileus, a small rectangular block of fungal tissue (ca. 5 mm^2) was transferred aseptically to a culture tube containing sterilized PDA medium. The inoculated tube was incubated at 30° ± 1°C for 5 days. The mycelium came out profusly on PDA medium from the fungal tissue of the basidiocarp. The tip portions of the mycelium were transferred aseptically to sterilized PDA slants and by this way the pure mycelial tissue culture of *L. squarrosulus* was obtained and maintained for further use. This culture was used in the investigation.

The spawn used in the present investigation was a small rectangular agar block (ca. 5 mm^2) of active mycelial culture of the fungus on PDA medium.

The compost was prepared following the method of Vilela and Silverio (1982) but modified slightly for our purpose. The compost consisted of rice straw (2.5 to 5 cm pieces), 1000 g; rice bran, 260 g; white sugar, 13 g and calcium carbonate 13 g. The rice straw was soaked in water for 6 h and then excess water was drained off. Then the other ingredients were mixed thoroughly with the wetted rice straw and made a heap. The heap was covered with a clean polythene sheet and composting was continued for 6 days, breaking the heap every 2nd day and again reheaping the compost. The moisture level was maintained at 70 - 80% and the pH 7.5.

The compost was filled in clean and dry bottles (500 ml) or polypropylene bag to two - third capacity, plugged and sterilized at 20 lb / sq inch pressure for 40 minutes. After cooling the compost was inoculated with agar block containing active mycelium.

The inoculated containers were incubated in an incubator at 30°C ± 1°C in darkness. Then these were placed for fruiting in mushroom house after removing the glass covering by breaking and removing the polythene by cutting.

RESULTS AND DISCUSSION

The inoculated compost in the containers were found to be completely infested and covered within 7 - 8 days. After this when the glass was broken or the polypropelene bag was cut, the entire composts came out as a solid cylinder mass filled up with white mycelium. These were placed on a raised platform in mushroom house and watering was done to keep the humidity between 80 - 95%. The pin heads started appearing on all sides of the cylinder on 7th or 8th day and fruitbody was ready for harvest on 9th day in first flush. (Fig. 1) The second flush appeared 7 - 8 days after the first flush. But the yield was very low in comparison to first flush. The data are given in Table 1.

From the data of the above mentioned table it is very clear that *L. squarrosulus* could be cultivated very easily under rural conditions of West Bengal. The B.E. of this strain was 76.5% which is also very high. The most popular species of *Lentinus* in the world specifically in the South-east Asia and Japan is *L. edodes*. The cultivation technique of *L. edodes* is very complicated and time consuming one.

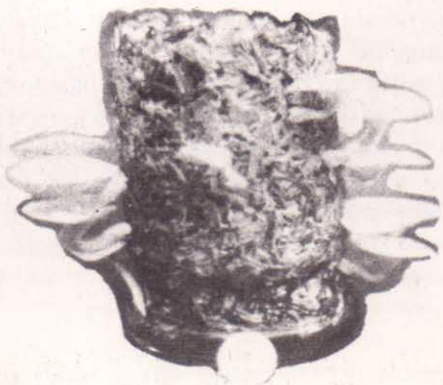

Fig. 1. : Basidiocarps of *L. squarrosulus* in rice straw compost.

Table 1 : Data (mean) showing the cropping pattern of *L. squarrosulus*

Days after spawning	Pin heads appeared (per bed)	Fresh weight of mushroom in g/kg dry weight of straw			
		1st flush	2nd flush	Total	BE(%)
14 - 15	25 - 30	-	-	-	-
17 - 18	25 - 30	650	-	650	65.0
24 - 25	2 - 5	-	115	115	11.5
Total 25		650	115	765	76.5

It could be concluded on the basis of the data of the present investigation that the cultivation of *L. squarrosulus* could be taken up commercially by the low income people under the rural conditions of West Bengal as a second avenue of income.

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