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Rubber Wood Saw Dust - An Ideal Substrate for Summer Mushroom Cultivation

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*The possibility of growing summer mushroom (*Calocybe indica*) in rubber wood saw dust was attempted. The mushrooms grew well and produced a fresh weight of 533 g per kilogramme of saw dust. The mushrooms are symmetrical, umbrella shaped, fleshy and milky white with thick bulbous base.*

***Keywords**: Rubber wood saw dust, summer mushroom, cultivation*

Calocybe indica, a wild mushroom growing in West Bengal was first isolated and identified by Purkayastha and Chandra (1974). Purkayastha and Nayak (1979) and Doshi *et al.* (1987) cultivated this mushroom under artificial condition using paddy straw. Use of various agro industry wastes as substrate for the cultivation of *C. indica* was attempted by Purkayastha and Nayak (1981), Purkayastha (1985), Doshi *et al.* (1987) and Trivedi *et al.* (1991). Doshi *et al.* (1991) observed comparatively better yield when logs of *Euphorbia* was used as substrate. In Kerala and adjacent districts of Tamil Nadu and Karnataka, rubber wood saw dust is available throughout the year in plenty and is successfully used for the cultivation of oyster mushroom (Kothandaraman *et al.*, 1991) only. Since the summer mushroom is becoming popular, the rubber wood saw dust was tested for its cultivation and reported here.

MATERIALS AND METHODS

Spawn of *C. indica* was prepared using sorghum grains

Fresh rubber wood saw dust was soaked in water for 48 h to get rid of water soluble nutrients, washed well and pasteurised by immersing in boiling water for 30 minutes. After pasteurisation, the saw dust was squeezed and dried under shade to about 70 per cent moisture level. Calcium carbonate at 2 per cent level by wet weight of saw dust was added, mixed well and spawned at the rate of 4 per cent with grain spawn by thorough spawning. The substrate inoculum mixture was transferred to a plastic tray of 40 x 30 x 8 cm size, pressed well with hand and covered with 100 gauge transparent polythene sheets having two holes of 1 cm^2 in the middle. Spawn running was carried out in a dark room at 75-80 per cent relative humidity and 22-24^{0}C temperature. Periodical observation on the growth of the fungus was made. When the surface was covered with mycelia of the fungus, 2 cm thick casing was done. The casing material was prepared with dry loamy soil and sand (1:1) along with calcium carbonate (at 12% of sand and soil mixture) after sterilising by autoclaving. Watering was done by sprinkling as and when required.

After casing and incubation at 20-22^{0}C and relative humidity 80-85 per cent with adequate aeration and light exposure, observations were taken for mycelial growth,

sporocarp initiation, morphology of sporocarp and weight of mushroom.

RESULTS AND DISCUSSION

The results of the experiment is given in *Table 1*. During spawn running period, the fungus grew with creamy white mycelia and covered the surface of the beds in 20 days. After casing the mycelia got atpressed to the surface of saw dust and again started growing on the casing layer after 10 days. On the 15th day of casing, small brown coloured buttons started forming in clusters from the saw dust and broke open the casing layer. In the initial stage, the barrel shaped stalk with small rudiment of pileus developed. On seventh day, the milky white mushroom was fully grown (*Figure 1*). The length of the mushroom stipe varied from 8-12 cm. The stalk was stout and white in colour. The diameter of the pileus ranged from 5-8 cm. The pileus stalk ratio was 2:1 by weight. The weight of individual mushrooms varied from 32-92 g. Average yield obtained was 533 g per kilogramme of saw dust in the first harvest. Even delayed harvest did not cause any change in the structure as well as colour of the mushroom. The moisture content of the mushroom was 87 per cent. The mushroom was milky white, umbrella shaped and has much consumer attraction.

One of the problems with oyster mushrooms is that it disfigures during storage and has a papery appearance. But summer mushroom is thick, fleshy and milky white making it more attractive.

The present study shows the possibility of growing summer mushroom using rubber wood saw dust following the techniques of oyster mushroom cultivation with little modification.

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TABLE 1
CHARACTERS OF *CALOCYBE INDICA* GROWN ON RUBBER WOOD SAW DUST*

Character	*Measure*
Spawn running time	20 days
Cropping time	15 days
Duration for sporocarp development	7 days
Maximum height of mushrooms	12 cm
Minimum height of mushrooms	8 cm
Maximum diameter of mushrooms	8 cm
Minimum diameter	5 cm
Maximum weight of a single mushroom	92 g
Minimum weight	36 g
Pileus-stalk ratio (weight basis)	2:1
Colour of the mushroom	Milky white
Yield/kg of substrate (range)	488 g - 578 g
Total yield/kg of substrate	533 g
Moisture	87%

* Data refers to the trial

Figure 1 C. indica *grown on rubber wood saw dust*

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