

Effect of Cultivation Methods on Sporophore Production of *Pleurotus Sajor-caju* (Fr.) Singer*

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Effect of different methods of cultivation on the sporophore production of *Pleurotus sajour-caju* was studied. Polythene wrapper bed followed by cylindrical bed recorded maximum yield of sporophores.

Pleurotus spp. are delicious mushrooms grown in several parts of the world. *pleurotus sajour-caju* (Fr.) singer, oyster mushroom is also an edible species. The method of cultivation of mushroom is known to influence the production of sporophores (Smith, 1980). The present study reports the influence of different methods of cultivation on the yield of *P. Sajor-caju*

MATERIALS AND METHODS

The following methods viz., tray method, tier method, cylindrical method and polythene wrapper bed method of cultivation were tested.

Tray Method

Thatched shed (11 X 4 X 2 m) was constructed with eight racks, each having three tiers measuring 3 X 0.45 m. watering the floor of the shed with rosecan was done whenever necessary to increase the humidity.

One Kg of dried rice straw was chopped in to 8 cm pieces and soaked in water for 8-12 hours. Malathion at 0.1 per cent concentration was sprayed

over the substrate to prevent damage by insects. A layer of 2 cm thickness was placed in a zinc tray measuring 45 X 30 X 10 cm. Sorghum grain spawn weighing 100 g was divided into three parts and one part was sprinkled uniformly over the substrate. A second layer of substrate 5 cm thick was spread over the first layer and the second part of spawn sprinkled. Finally 2 cm thick layer of the substrate was spread, the remaining part of spawn sprinkled and tightly pressed with the hands. The trays were kept on the racks and covered with transparent polythene sheet of 300 gauge for 16 days. Then the compact mass looking like a rectangular block was carefully removed from the tray. After 24 hours of air drying, water was sprinkled regularly to keep the material moist. Each replication had 10 tray beds.

Tier Method

In this method, 10 kg of the substrate and 1 kg of grain spawn were used in a rack measuring 3 X 0.45. m

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instead of zinc trays for each replication. A layer of 2 cm thickness was placed in a rack. sorghum grain spawn weighing 1 kg was divided into three parts and one part was sprinkled uniformly over the substrate. A second layer of substrate 5 cm thick was spread over the first layer and the second part of spawn sprinkled. Finally 2 cm thick layer of substrate was spread, the remaining part of spawn sprinkled and covered with transparent polythene sheet after pressing with the hands. The polythene sheet was removed on 16th day, air dried for 24 hours and water was sprinkled regularly to keep the material moist.

Polythene wrapper bed method

A polythene sheet of 300 gauge measuring 1.25 X 1 m was spread over the tray. The bed was laid on this sheet as detailed under tray method. Then the polythene sheet was folded on all the sides of the bed tightly pressed and securely stapled. This polythene wrapped bed was taken out from the tray and incubated. The polythene sheet was removed on 16th day, air dried for 24 hours and water was sprinkled regularly to keep the material moist. Each replication had 10 beds.

Cylindrical bed method

A cylindrical bag with 25 cm diameter and 35 cm height was used instead of the tray. A layer of spawn was sprinkled at the bottom and the substrate with 35 cm thickness was placed over it. Spawn was sprinkled on the outer margins and also top of the substrate. Then the upper end was tied and kept. After the spawn had run for 16 days the compact cylindrical mass was carefully taken out from the

polythene bag and placed on a rack. Water was sprinkled regularly as in the polythene wrapper bed method. Each replication had 10 beds.

The productivity of the methods of cultivation was tested under standard growing conditions.

RESULTS AND DISCUSSION

The appearance of sporophore was found earlier in the tier and tray methods than the cylindrical bed and polythene wrapper bed methods. The differences among the methods of cultivation on the number of crops produced were non-significant. Polythene wrapper bed method recorded maximum yield of sporophores which was 85 per cent. higher than the tier method (Table 1).

Polythene wrapper bed method recorded the highest yield of sporophores followed by cylindrical bed method. Baskaran *et al.* (1978) found that the sporophore yield was twice in cylindrical bed method than that of conventional 'bamboo basket' method. The reason for increase of polythene wrapper bed and cylindrical bed methods may be due to more surface area of exposed sides and compactness of the bed which helps in retaining moisture.

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TABLE 1. Effect of cultivation methods on sporophore production

Cultivation methods	Days taken for the crop to appear	No. of crops	No. of sporophores/ 10 kg. of substrate	Weight of sporophores 10 kg of substrate(g)
Polythene wrapper bed method	23.8	3.4	690	3740
Cylindrical bed method	22.8	3.2	662	3322
Tray method	20.4	3.2	406	2120
Tier method	20.2	2.8	378	2020
C.D. (P=0.05)	1.2	NS	45.4	77.6

Mean of five replications