

B-68: An improved method of growing *Pleurotus ostreatus* (Oyster Mushroom)

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The Department of Agriculture has given a greater emphasis in popularizing the cultivation of Mushrooms, especially the growing of Oyster Mushrooms on saw dust. However those who could not find saw dust grew on paddy straw. It had been reported by many growers that the straw method was not as effective as the saw dust method. Straw when used as a substrate for mushroom loses its nutritional value faster than saw dust.

The following experiment was done to prolong the effectivity of straw and to increase the nutritional value of the substrate.

The objective of this study was to examine the yield of Oyster mushroom when grown on nutritionally improved straw medium.

The following treatment was replicated 10 times and arranged randomly. The values indicated in each treatment is for one bag.

The experiment was conducted during the 1994 Yala season at HORDI, Gannoruwa.

The chopped straw was soaked in water for 1 h and spread on a mat to drain off the excess water. This was kept for ½ h. Different mixtures were prepared separately by mixing the raw materials to the above prepared straw. Then the mixture was filled in polypropylene bags. [13 x 30 cm size and the gauge should be more than 150]. Bags were filled tight and mouths were closed using plug made of cotton waste, and a piece of PVC ring of 2 x 2 cm.

T1- Paddy straw chopped into 5 cm pieces. (control)

T2- Chopped paddy straw 300 g.
Rice bran 25 g
Soya flour 3 g
Magnesium sulphate 5 g
Calcium carbonate (Dolomite) 10 g

T3 Chopped paddy straw 300 g
Cow dung (dried) 30 g
Saw dust (soft wood) 20 g

T4 Chopped paddy straw 300 g
Cow dung (dried) 30 g
Kurakkan seeds (dried) 50 g

T5 Chooped paddy straw 300 g
Chicken manure (dried) 50 g

T6 Saw dust 1000 g
Rice bran 100 g
Soya flour 20 g
Magnesium Sulphate 2 g
Lime 10 g

Once the filling was over, disinfection was done using steam. for 3 h. The following day mushroom seed inoculation was done and bags were kept in the dark for incubation. Within 10 days the mycelium appeared to be fully grown. Then the mouths of the bags were opened and kept in a cropping room for flowering. In this method the straw compost could be arranged in racks. Fruit body formation starts within a week after shifting to the cropping house. Harvesting was done up to 2 months from the date of opening the bags.

The treatments which were tested gave significantly higher yield than the untreated control T₁. However the treatment T₆ (saw dust) gave a higher yield, the yield difference between T₄ (straw + nutrient) T₆ is not significantly different. It is apparent that straw substrate can be improved to grow *Pleurotus ostreatus* as well. Straw substrate can be improved by adding nutrients and also by changing the packing pattern of straw accordingly to treatment T₅.

According to the results it is evident that straw substrate can be nutritionally improved by adding rice bran, soya flour, lime and magnesium sulphate. The method of bagging is specially devised to reduce contamination with weed molds.

Therefore in the areas where saw dust is not found, straw can be used as a substrate for mushroom cultivation, with the incorporation of nutrients.