

EFFECT OF DIFFERENT SUBSTRATE COMBINATIONS ON THE GROWTH AND YIELD OF OYSTER MUSHROOM

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Mushroom cultivation in Sri Lanka is a popular agribusiness and oyster mushroom (*Pleurotus ostreatus* (Jacq) P. Kumm) is the most preferred species for cultivation. Sawdust is the most popular substrate used in oyster mushroom cultivation. However, mushroom growers face difficulties in finding required quantity of suitable sawdust due to its low availability. Therefore, it is required to find out an alternative substrate combination for oyster mushroom cultivation. Thus, a research was conducted in the Mushroom Cultivation Unit of Faculty of Agriculture, Rajarata University of Sri Lanka, Anuradhapura to evaluate different combinations of substrate for oyster mushroom growth. The experiment was laid out in a Completely Randomized Design with six treatments and four replicates. Treatments used were T1 (50% sawdust + 50% paddy husk), T2 (50% paddy straw + 50% paddy husk), T3 (50% spent sawdust + 50% paddy husk), T4 (50% paddy straw + 50% sawdust), T5 (100% sawdust) - control and T6 (100% paddy straw). The time duration for mycelium running, pinhead formation and fruiting body formation were recorded. Biological yield, economic yield, dry weight and biological efficiency were also measured. There was no significant difference ($p>0.05$) among treatments for the days taken for completion of mycelium running. However, the time period taken for pinhead formation and fruiting body formation was different among treatments. The fastest pinhead (7 days) and fruiting body formation (13 days) were observed in T2. The substrate combinations were significantly different ($p<0.05$) in terms of biological yield and economic yield. T4 had the highest biological yield (4882.5g) and economic yield (4689.0 g) after 45 days of cropping period. In contrast, T3 had the least biological yield (2719.5 g) and economic yield (2552.8 g). The biological efficiency was significantly ($p<0.05$) different among treatments. The highest biological efficiency was identified in T4 (64.32%) while the least was observed in T3 (26.40%). Dry weights were significantly higher in T4 (529.87g) and T5 (518.01g) when compared to others. Based on the performances, it could be concluded that 50% of sawdust could be supplemented with paddy straw and it yields mushrooms as much as sawdust does alone.

Keywords: Oyster mushroom, Substrate combination, Yield