

Thesis Title Development of Culture Media and Yield Comparison of
Pleurotus Mushroom Hybrids

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Abstract

Physiology of Pleurotus mushroom hybrid, KDCM-4 strain was studied. The mixtures of Para rubber tree , Kapok tree and Raintree sawdust were tested as a growing media . The mixtures of Kapok tree and Para rubber tree sawdust at the ratio 1:1 have significantly highest yield than ratio 1:3 , 3:1 , 0:1 , 1:0 and mixture of Raintree and Para rubber tree sawdust at the ratio 1:1 . The addition of lime at 1 % to the media increased the yield but decreased the yield at 2% and 3% . The addition of $MgSO_4$ to the media promotes the yield , highest yield was obtained from 4.5 % of $MgSO_4$, compared to 1.5 and 3.0 % . Interaction of $MgSO_4$ and lime were found. This indicates that the optimum lime and $MgSO_4$ in the media are 1 % and 1.5 % . Five different rice bran 8,14,20,26 and 32 % were tested . The highest yield was obtained from 20 % treatment . Moisture content in the culture media at 70 , 72 and 74 % were compared . It was found that the moisture content at 74 % gave the highest yield . Two culture media were tested. The results show a higher yield with composts Kapok tree and Para

rubber tree sawdust at the ratio 1:1 , rice bran 20 % , lime 1 % , $MgSO_4$ 1.5% and moisture content 74 % in the media gave yield more than another media which composted Kapok tree and Para rubber tree sawdust at the ratio 1:1 , rice bran 10 % , lime 1 % , $MgSO_4$ 0.5% and moisture content 70 % in the media.

Yield potential of 5 *Pleurotus* mushroom hybrids were compared with their parents , *Pleurotus ostreatus* from Japan (KD1) and *Pleurotus ostreatus* (CM1) . The results indicated that CM produced the highest yield followed by KDCM-4 and KDCM-3 produced the lowest yield. Electrophoretic Isozyme assays of esterase , peroxidase and acid phosphatase were conducted on 7 strains on 8.5 % polyacrylamide gel . The results indicated that the enzyme pattern of hybrids have the relation with their parents. An investigation of enzyme bands of the *Pleurotus* mushroom hybrids revealed distribution of *Pleurotus ostreatus* from Japan (KD1).