

SUMMARY

Nurul Hariadi. 0810480066. Growth and Production Study of White Oyster Mushrooms (*Pleurotus ostreatus*) on Rice Straw and Sawdust Growth Media. Under the guidance of Ir. Lilik Setyobudi. MS., Ph.D as Main Supervisor and Ir. Ellis Nihayati, MS as Co-Supervisor.

White Oyster Mushroom (*Pleurotus ostreatus*) were first cultivated in 1900 (Gunawan, 2000). To produce this species of mushroom for consumption, one of the factors that needs to be noted is the availability of substrate (Brock dan Michael, 1991). In general, the substrate used in the cultivation of white oyster mushroom is wood sawdust. So that a problem will arise if the wood sawdust is difficult to obtain. Therefore, in order to anticipate this problem, an alternative substrate must be found that is widely available in the location targeted for oyster mushroom cultivation. The alternative Substrat require to study about the effect of growth and production white oyster mushroom. The purpose of this experiment are 1) to study the differences in the growth and production of white oyster mushroom between baglog rice straw and sawdust, and 2) obtain a comparison of the composite mixture among sawdust and rice straw that is appropriate so it can be used as growing medium for white oyster mushrooms. The proposed hypothesis is that the use of different compositions of sawdust and rice straw can give different effects on the growth and production of white oyster mushrooms (*Pleurotus ostreatus*).

The experiment was divided into two phases: 1) The manufacturing, and 2) Cultivation in kumbung. The research method was used completely randomized design (CRD) with treatment combination of rice straw mixed with wood sawdust. This research consists nine treatment combinations of planting media with three replications. The composition of growing media consists of sawdust, rice straw, rice bran, and green waste fertilizer with a total weight of 1000 grams per baglog. The compositions of bran and green waste fertilizer are 50 g and 150 g, whereas sawdust (SGK) and rice straw (J) at various percentage comparisons are M1: SGK 0 g, J 80 g; M2: SGK 10 g, J 70 g; M3: SGK 200 g, J 600 g; M4: SGK 300 g, J 500 g; M5: SGK 400 g, J 400 g; M6: SGK 500 g, J 300 g; M7: SGK 600 g, J 200 g; M8: SGK 700 g, J 100 g, and B9 (control) : SGK 800 g, J 0 g. Each replication consists of 5 baglog totaling 135 baglog. This experiment, using F2 white oyster mushroom seeds. Observed variables were: spreading miselium on the substrat, the time when the first pin head emerges, average of the fruit cap diameter, harvest frequency, average of fresh fruit weight, the interval period of harvest. The data have been obtained, so than testing by analysis of variance F at the level of 5% ($P = 0.05$). If there are effects or interactions between treatments, then a follow-up comparison test between treatments is conducted. The comparison test used the Least Significant Difference (LSD) test with a real level of $p = 0.05$.

Treatment M8 with composition 700 g sawdust, 100 g rice straw, 50 g rice bran, and 150 g green waste fertilizer produce the best effect on growth and production white oyster mushrooms. The result of treatment M8 are the long spread of mycelium on the substrate 35.19 DAI, the time when the first pin head emerges 65.63 DAI, average of the fruit cap diameter 6.57 cm, harvest frequency

9.33 times, average of fresh fruit weight 58.71 g, the interval period of harvest 3.34 days. The farm analysis calculation of treatment M8 with total cultivated baglog as much 1000 baglog and the successful of cultivation is 90%. The Treatment M8 Generated a total profit Rp 820,600.00 with BEP Production volume 390.63 Kg; BEP Production price of Rp 6336.00; Benefit Cost Ratio (B/C) is 1.26; ROI is 0.26 %; and surplus Rp 3,942,300.00 for three periods of planting in 1 year at interest rate KUT of 14% per year.

