

SUMMARY

Neilla Nurilla. 0810480061. The Study of Growth and Production of Wood Ear Mushroom (*Auricularia auricula*) on Sawdust and Coco Peat Substrate. Under Guidance Ir. Lilik Setyobudi, MS., Ph.D as Main Supervisor dan Dr. Ir. Ellis Nihayati, MS. As Second Supervisor.

Wood ear mushroom (*Auricularia auricula*) in taxonomy classified as Heterobasidiomycetes class that has high nutrition content and economic value. According to Prihati (2011), the nutrition content of wood ear mushroom are protein, carbohydrate, riboflavin, niacin, Ca, K, P, Na, and Fe also known as detoxification, heart coronary, and decreasing the risk of blood artery blocking on brain. The productivity of wood ear mushroom is still low, and there are still few farmers cultivated than oyster mushroom. According Djuariah (2008), the productivity of wood ear mushroom is 200-300 g fresh weight, but actually the potential productivity is 400-500 g fresh weight per 1 kg of growth media. One causes of the low productivity there is no modification of substrate as growing media (substrate formula is always same at every production. The common formula that farmers used is sawdust, rice bran, corn meal, and gyps, but sawdust is not always available in the areas of mushroom cultivation, so need the alternative substrat for growth media of wood ear mushroom. The alternative substrat that can used as growing media for ear mushroom is coco peat. The main component of coco peat is water, pectin, lignin, cellulose, and hemicelluloses, and contains of nutrients N, P, K, Ca, Mg, Na, for the growth nutrients. This research treatments combine sawdust with coco peat at various percentages. The purpose of this research was to get the precise percentage ratio of sawdust and coco peat as alternative substrate for the growth and production of wood ear mushroom (*Auricularia auricula*). The hypothesis is suspected the growth media with different percentage composition of sawdust and coco peat gives different results for the growth and production of wood ear mushroom.

Research conducted in Sengkaling village, subdistrict Dau, Malang with altitude 550 m asl, the minimum temperature 18°C and the maximum temperature 33°C and rainfall on average 2.71 mm. The experiment was conducted at July-November 2012. The tools that used there is shovel, tool press, steamer, thermometer, sprayer, silver black mulch, spatula, ring baglog, and Bunsen. The material that used is wood ear mushroom F3 seed, sawdust, coco peat, rice bran, corn meal, gyps, plastic bag size 1 kg, spirits, and alcohol 70%. Research method using Completely Randomized Design (CRD) consisting of 9 treatment growth media combinations with 3 replications. The composition of growth media are sawdust, coco peat, rice bran, and corn meal with total weight per baglog is 1000 g. The each percentage of rice bran and corn meal is 10%, for Sawdust (S) and Coco peat (Cp) at various ratio percentage which is B1: S 0%, Cp 80%; B2: S 10%, Cp 70%; B3: S 20%, Cp 60%; B4: S 30%, Cp 50%; B5 : S 40%, Cp 40%; B6: S 50%, Cp 30%; B7: S 60%, Cp 20%; B8: S 70%, Cp 10%, and B9 (control): S 80%, Cp 0%. The observation variable include the percentage of full mycelium (%), first pin head appears (HSI), harvest interval (days), number of fruit bodies (fruit), fruit body diameter (cm), fresh weight (g), dried weight (g), harvest frequency (times), and percentage of water (%). Data were analyzed using

analysis of variance F test treatment effect at the level of 5% ($P = 0.05$), followed by the Least Significant Difference (LSD) at 5% level.

The results of research showed that the growth media composition with 60% sawdust and 20% coco peat has a the percentage of full mycellium is 73%, harvest interval is 33.02 days, diameter of fruit body 12.22 cm, fresh weight average per baglog is 65.32 grams and the total fresh weight per-baglog 567, 70 grams, dry weight average per-baglog 9.8 grams, and harvest frequency is 8.67 times. That results on growth parameter at percentage of full mycelium 36,36% bigger than control treatment. The economy analysis give the NPV 9.718.480, BEP production volume 367,5 kg fresh weight wood ear mushroom and 73,5 kg dried weight wood ear mushroom, BEP production price Rp.5.993/kg fresh weight wood ear mushroom dan Rp.30.058/kg dried weight wood ear mushroom, R/C ratio 2,12, B/C ratio 1,12, and ROI 112%.

