

PENGARUH PENGGUNAAN SLUDGE BIOGAS KOTORAN AYAM DAN PENAMBAHAN ECENG GONDOK SEBAGAI BAHAN SUBSTITUSI DEDAK TERHADAP PERTUMBUHAN DAN PRODUKTIVITAS JAMUR TIRAM PUTIH (*Pleurotus florida*)

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INTISARI

Penelitian ini bertujuan untuk mengetahui pengaruh substitusi dedak menggunakan *sludge* biogas kotoran ayam dan penambahan eceng gondok terhadap produktivitas jamur tiram putih (*Pleurotus florida*). Eceng gondok dan *sludge* biogas dikeringkan di bawah sinar matahari sampai kering yang kemudian dihaluskan. Kontrol (P_0) yang digunakan adalah campuran 83% serbuk gergaji, 15% dedak dan 2% kapur. Komposisi tiap perlakuan terdiri atas 83% serbuk gergaji, 14% *sludge*, 1% eceng gondok, dan 2% kapur (P_1), 83% serbuk gergaji, 13% *sludge*, 2% eceng gondok, dan 2% kapur (P_2), 83% serbuk gergaji, 12% *sludge*, 3% eceng gondok, dan 2% kapur (P_3). Setiap perlakuan dilakukan 3 pengulangan. Masing-masing perlakuan diuji kimia yang meliputi kadar air, serat kasar, bahan organik, C-organik, N-total, P-total, K-total, dan Rasio C/N. Variabel produktivitas jamur tiram putih meliputi umur mulai panen, berat segar, diameter tudung, jumlah tudung, panjang tangkai, dan jumlah panen. Data dianalisis statistik menggunakan Rancangan Acak Lengkap (RAL) pola searah dan dilanjutkan dengan uji *Duncan's new Multiple Range Test* (DMRT) untuk data yang berbeda nyata. Hasil penelitian menunjukkan bahwa penggunaan *sludge* biogas kotoran ayam dan eceng gondok sebagai media tanam jamur mampu meningkatkan nutrisi media tanam jamur seperti kadar air 64,63% pada perlakuan P_3 ; bahan organik 33,82% pada perlakuan P_3 ; posphor total 0,672% pada perlakuan P_1 ; dan nitrogen total 1,064% pada perlakuan P_3 . Penggunaan *sludge* dan eceng gondok 12%:3% mampu memperbanyak jumlah tudung setelah panen sebanyak 17,33 buah. Dapat disimpulkan bahwa eceng gondok dan *sludge* biogas kotoran ayam berpotensi sebagai bahan pengganti dedak karena mampu meningkatkan nutrisi media tanam dan produksi jamur tiram putih.

(Kata kunci : eceng gondok, *sludge* biogas kotoran ayam, jamur tiram putih)

**THE EFFECT ADDITION OF WATER HYACINTH ON THE CHICKEN
MANURE BIOGAS *SLUDGE* MUSHROOM MEDIA AS A SUBSTITUTE
FOR BRAN WHITE OYSTER MUSHROOM (*Pleurotus florida*)
PRODUCTION**

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ABSTRACT

This study aims to determine the effect of bran substitution using chicken manure biogas sludge and the addition of water hyacinth to the productivity of white oyster mushrooms (*Pleurotus florida*). Water hyacinth and biogas sludge are dried in the sun to dry and then smoothed. The control (P0) used was a mixture of 83% sawdust, 15% bran and 2% lime. The composition of each treatment consisted of 83% sawdust, 14% sludge, 1% water hyacinth, and 2% lime (P1), 83% sawdust, 13% sludge, 2% water hyacinth, and 2% lime (P2), 83 % sawdust, 12% sludge, 3% water hyacinth, and 2% lime (P3). Each treatment was carried out 3 repetitions. Each treatment was tested for chemistry including water content, crude fiber, organic matter, organic C, total N, P-total, K-total, and C / N ratio. Variables of white oyster mushroom productivity include age of harvest, fresh weight, diameter of hood, number of hoods, length of stem, and number of harvests. Data were statistically analyzed using a directional Completely Randomized Design (RAL) pattern and continued with Duncan's new Multiple Range Test (DMRT) test for data that was significantly different. The results showed that the use of chicken manure and water hyacinth biogas sludge as a mushroom planting medium was able to increase the nutrient of fungal growing media such as 64.63% moisture content in P3 treatment; organic matter 33.82% in treatment P3; phosphor total 0.672% in treatment P1; and total nitrogen 1.064% in treatment P3. The use of 12%: 3% sludge and water hyacinth can increase the number of hoods after harvest of 17.33 pieces. It can be concluded that water hyacinth and chicken manure biogas sludge have the potential as a substitute for bran because they can increase the nutrient of the growing media and the production of white oyster mushrooms.

(Key words: water hyacinth, biogas sludge chicken manure, white oyster mushroom)