

Pengaruh Penggunaan *Sludge* Biogas Kotoran Ayam Dengan Penambahan Ampas Sagu Pada Media Tanam Jamur Terhadap Produksi Jamur Tiram Putih (*Pleurotus ostreatus*)

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INTISARI

Penelitian ini bertujuan untuk mengetahui pengaruh penambahan *sludge* biogas kotoran ayam dengan ampas sagu yang berbeda kadarnya pada media tanam (*baglog*) terhadap produksi jamur tiram putih pada saat panen pertama. *Sludge* biogas merupakan sisa limbah yang telah dicerna oleh bakteri metan dalam proses biogas dan masih mengandung berbagai macam unsur hara yang dibutuhkan oleh tumbuhan seperti C, N, P, K, Mg, Ca, Cu dan Zn sehingga dapat dijadikan sebagai pupuk. *Sludge* biogas kotoran ayam dan ampas sagu dikeringkan di bawah sinar matahari hingga kering kemudian dihaluskan. Penelitian ini terdiri dari 5 perlakuan. Kontrol (P_0) menggunakan *sludge* 18% dan serbuk gergaji 100% tanpa ampas sagu. Komposisi tiap perlakuan terdiri atas 18% *sludge* biogas kotoran ayam yang ditambahkan ampas sagu dan serbuk gergaji dengan perbandingan (P_1) 25%:75%, (P_2) 50%:50%, (P_3) 75%:25% dan (P_4) 100%:0%. Setiap perlakuan terdiri dari 3 ulangan. Masing-masing perlakuan diuji kimia yaitu kadar air, bahan organik, serat kasar, C-organik, N-total, P-total, K-total, dan C/N rasio. Variabel produksi jamur tiram putih yang diamati meliputi umur panen pertama, berat panen, jumlah tudung, diameter tudung dan panjang tangkai jamur. Penelitian ini menggunakan analisis variansi dengan Rancangan Acak Lengkap (RAL) pola searah dan dilanjutkan dengan *Duncan's new Multiple Range Test* (DMRT) untuk data yang berbeda nyata. Hasil penelitian menunjukkan bahwa penggunaan *sludge* kotoran ayam 18% dengan penambahan ampas sagu sebagai media tanam jamur mampu menumbuhkan jamur tiram putih dan berbeda nyata ($P < 0,05$). Perlakuan yang paling baik sebagai media tanam adalah P_2 karena serat kasar 22,81% dan C/N 60,13 yang memenuhi standar nutrient media tanam jamur tiram putih. Perlakuan P_1 menghasilkan produksi jamur yang paling tinggi dibandingkan perlakuan lainnya karena umur panen pertama paling cepat yaitu 55,33 hari, berat panen yang paling tinggi yaitu 68 gram dan jumlah tudungnya paling banyak yaitu 8,33 buah. Dapat disimpulkan bahwa penambahan ampas sagu pada *sludge* biogas kotoran ayam dapat digunakan sebagai media tanam jamur tiram putih karena mampu meningkatkan nutrisi media tanam dan produksi jamur tiram putih.

Kata kunci: *sludge* biogas, kotoran ayam, ampas sagu, *baglog*, jamur tiram

Effect of the Use of Chicken Manure Biogas Sludge with the Addition of Sago Pulp to Mushroom Growing Media, on White Oyster Mushroom (*Pleurotus ostreatus*) Production

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ABSTRACT

This study aims to determine the effect of the addition of chicken manure biogas sludge and sago pulp with different levels on planting media (baglog) to the production of white oyster mushrooms at the first harvest. Biogas sludge is residual waste that has been digested by methane bacteria during the biogas process and still contains various nutrients needed by plants such as C, N, P, K, Mg, Ca, Cu and Zn so that it can be used as fertilizer. Chicken manure biogas sludge and sago pulp are dried in the sun and mashed. This research consisted of 5 treatments. Control (P0) uses 18% sludge and 100% sawdust without sago pulp. The composition of each treatment consisted of 18% biogas sludge of chicken manure added with sago pulp and sawdust with a ratio of (P1) 25%:75%, (P2) 50%:50%, (P3) 75%:25% and (P4) 100%:0%. Each treatment consisted of 3 replications. Each treatment was chemically tested namely water content, organic matter, crude fiber, C-organic, N-total, P-total, K-total, and C/N ratio. The observed variables of white oyster mushroom production including age of first harvest, harvest weight, number of hoods, diameter of the hood and the length of the mushroom stems. This study uses analysis of variance with a unidirectional patterns of Complete Randomized Design (CRD) and continued with Duncan's new Multiple Range Test (DMRT) for significantly different data. The results showed that the use of 18% chicken manure sludge with the addition of sago pulp as mushroom growing media was able to grow white oyster mushrooms and was significantly different ($P < 0.05$). The best treatment as a growing medium is P2 because of crude fiber 22.81% and C/N 60.13 which is fulfill the nutrient standard of white oyster mushroom growing media. P1 treatment produced the highest mushroom production compared to other treatments because the age of the first harvest was 55.33 days, the highest weight was 68 grams and the number of hoods were 8.33. It can be concluded that the addition of sago pulp to the biogas sludge of chicken manure can be used as a growing media for white oyster mushrooms because it is able to increase nutrient of growing media and production of white oyster mushrooms.

Keywords: biogas sludge, chicken manure, sago pulp, baglog, oyster mushroom.