RINGKASAN

Tingginya permintaan jamur tiram sejalan dengan meningkatnya produksi jamur. Dalam budidaya jamur diperlukan media tanam untuk meletakkan bibit jamur yang disebut baglog. Jamur tiram termasuk ke dalam jamur kayu sehingga bahan utama baglog berupa serbuk gergaji. Semakin tinggi permintaan jamur tiram maka semakin banyak limbah baglog yang dihasilkan. Limbah baglog yang sudah tidak produktif jika tidak dimanfaatkan akan menjadi sampah yang menumpuk, menimbulkan bau tidak sedap, dan menjadi sumber penyakit. Limbah baglog ini berasal dari tiga jenis jamur tiram yaitu *Pleurotus cystidiosus, Hypsizygus ulmarius*, dan *Pleurotus ostreatus.* Serbuk gergaji kayu termasuk ke dalam biomassa lignoselulosa. Biopelet merupakan hasil produk dari biomassa yang tersusun atas lignoselulosa dan menjadi energi alternatif untuk mengurangi ketergantungan bahan bakar fosil. Penelitian ini bertujuan mengetahui pengaruh jenis baglog dan penambahan perekat molase terhadap kualitas biopelet yang dihasilkan serta mengetahui pengaruh interaksi jenis baglog dan penambahan perekat molase terhadap kualitas biopelet yang dihasilkan.

Penelitian ini dilakukan menggunakan metode eksperimental dengan Rancangan Acak Lengkap Faktorial, dua faktor. Faktor 1 yaitu pembuatan biopelet yang dipengaruhi tipe baglog jamur yang ditumbuhi tiga jenis jamur berbeda yaitu *P. cystidiosus, H. ulmarius*, dan *P. ostreatus*. Faktor 2 yaitu penambahan perekat molase dengan konsentrasi 15% dan tanpa penambahan perekat molase. Pengujian diawali dengan pengeringan bahan baku, pencampuran perekat molase, dan pembuatan biopelet menggunakan mesin cetak pelet. Pengujian dilakukan dengan melihat kandungan lignoselulosa pada bahan baku baglog dan kualitas biopelet dengan pengujian kadar air, densitas, kadar abu, kadar zat terbang, laju pembakaran, dan nilai kalor. Data hasil uji biopelet dianalisis menggunakan *Analysis of Variance* (ANOVA) dengan tingkat kesalahan sebesar 5% kemudian dilanjutkan dengan analisis Tukey.

Hasil penelitian menunjukkan bahwa biopelet yang terbaik terdapat pada jenis baglog *Pleurotus cystidiosus* dan penambahan perekat molase berpengaruh terhadap kualitas biopelet. Biopelet dengan jenis baglog tanpa perekat lebih baik dibandingkan dengan yang menggunakan perekat. Berdasarkan hasil pengujian didapati densitas 1,69 –1,67 g/detik; kadar air 6,29 – 7,44%; kadar abu 11,75-17,17%; zat terbang 69,46-70,39%; nilai kalor 3345-3688 kal/g; kuat tekan 10,07-16,34 N/mm^2; laju pembakaran 0,0371-0,0314 g/detik. Dari pengujian tersebut didapati densitas, kadar air, kadar zat terbang telah memenuhi SNI 8675:2018, namun kadar abu dan nilai kalor belum memenuhi SNI 8675:2018.

Kata kunci: *Baglog, Biopelet, H. ulmarius, Lignoselulosa, Molase, P.cystidiosus, P. ostreatus.*

SUMMARY

The high demand for oyster mushrooms is in line with the increase in mushroom production. In mushroom cultivation, a planting medium is needed to place mushroom seeds called baglog. Oyster mushrooms are classified as wood mushrooms, so the main ingredient for making baglog is sawdust. The higher the demand for oyster mushrooms, the more baglog waste is produced. Baglog waste that is no longer productive if it is not utilized will become garbage that accumulates, creates an unpleasant odor, and becomes a source of disease. This baglog waste comes from three types of oyster mushrooms, namely *Pleurotus cystidiosus*, *Hypsizygus ulmarius*, and *Pleurotus ostreatus*. Wood sawdust is included in lignocellulosic biomass. Biopellet is a biomass product composed of lignocellulosic and is an alternative energy to reduce dependence on fossil fuels. This study aims to determine the effect of the type of baglog and the addition of molasses adhesive on the quality of the biopellets produced and to determine the effect of the interaction between the types of baglog and the addition of molasses adhesive on the quality of the resulting biopellets. biopellets.

This research was conducted using the experimental method with a completely randomized two-factor factorial design. Factor 1 was the production of biopellets which was influenced by the type of mushroom baglog grown by three different types of mushrooms, namely *P. cystidiosus, H. ulmarius*, and *P. ostreatus.* Factor 2 was the addition of molasses adhesive with a concentration of 15% and without the addition of molasses adhesive. The test begins with drying the raw materials, mixing the molasses adhesive, and making biopellets using a pellet press. Tests were carried out by looking at the lignocellulosic content of the baglog raw material and the quality of the biopellets by testing the water content, density, ash content, volatile matter content, burning rate, and calorific value. Data from the biopellet test results were analyzed using Analysis of Variance (ANOVA) with an error rate of 5% and then followed by Tukey analysis.

The results showed that the best biopellets were found in baglog *Pleurotus cystidiosus* and the addition of molasses adhesive had an effect on the quality of the biopellets. Baglog type biopellets without adhesive are better than using adhesive. Based on the test results, the density is 1.69 –1.67 g/second; water content 6.29 – 7.44%; ash content 11.75-17.17%; volatile matter 69.46-70.39%; calorific value 3345-3688 cal/g; compressive strength 10.07-16.34 N/mm^2; burning rate 0.0371-0.0314 g/second. From this test it was found that the density, air content, volatile matter content complied with SNI 8675:2018, but the ash content and calorific value did not comply with SNI 8675:2018.

Keywords: *Baglog, Biopellet, H. ulmarius, Molasses, Lignocellulose, P. cystidiosus, P. ostreatus*