

## **PENGARUH MEDIA SLUDGE BIOGAS TERFORTIFIKASI SUSU BUBUK AFKIR TERHADAP PERTUMBUHAN, NILAI NUTRISI, DAN PROFIL ASAM LEMAK JAMUR TIRAM PUTIH**

### **INTISARI**

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Penelitian ini bertujuan untuk mengetahui pengaruh media *sludge* biogas sapi perah yang telah difortifikasi susu bubuk afkir terhadap pertumbuhan, nutrisi media, nilai nutrisi dan profil asam lemak jamur tiram putih (*Pleurotus florida*). Media tanam jamur tiram putih diberikan kode P<sub>0</sub>, P<sub>1</sub>, P<sub>2</sub>, dan P<sub>3</sub>, yang mempunyai komposisi *sludge* biogas sapi perah dan susu bubuk afkir yang berbeda, yaitu P<sub>0</sub> (0%:0%), P<sub>1</sub> (10%:10%), P<sub>2</sub> (5%:15%) P<sub>3</sub>: (15%:5%). Komposisi media penelitian yang digunakan adalah serbuk gergaji, *sludge* biogas sapi perah, susu bubuk afkir, dedak dan kerabang telur, media ditanam dalam media baglog jamur tiram berbahan plastik polipropilen, penanaman jamur tiram putih dilakukan selama 46 sampai dengan 48 hari pada kumbung jamur tiram putih. Media tersebut dilihat pengaruhnya terhadap kandungan nutrisi media, pertumbuhan miselium, pertumbuhan, kadar air, abu, lemak, protein, karbohidrat dan profil asam lemak jamur tiram. Hasil data penelitian berupa kandungan nutrisi media, pertumbuhan jamur, nilai nutrisi dan profil asam lemak jamur dianalisis menggunakan analisis variasi pola searah, sedangkan untuk pertumbuhan miselium dianalisis menggunakan analisis variasi pola faktorial, apabila data penelitian menunjukkan beda nyata dilanjutkan dengan uji *Duncan Multiple Range Test* (DMRT). Hasil penelitian menunjukkan bahwa media tanam P<sub>3</sub> yang digunakan mampu meningkatkan nutrisi, dengan hasil terbaik pada variabel C-organik, serat kasar, C/N Rasio dan kalium. Pertumbuhan miselium dan pertumbuhan jamur tiram hasil terbaik terlihat pada media P<sub>2</sub> yang mampu menghasilkan hasil yang terbaik pada panjang miselium, persentase pertumbuhan miselium, waktu pertama tumbuh, dan waktu pemenuhan miselium, sedangkan pada pertumbuhan jamur adalah pada berat segar, diameter tudung, lama panen dan panjang tangkai. Kandungan gizi jamur tiram terbaik terdapat pada perlakuan media P<sub>1</sub> yang memberikan hasil terbaik kadar abu, dan kadar protein. Media tanam P<sub>0</sub> menunjukkan hasil tertinggi pada profil asam lemak yaitu pada kandungan *Unsaturated Fatty Acid*, sedangkan untuk kandungan *Saturated Fatty Acid* yang tertinggi pada Media P<sub>1</sub>. Profil asam lemak jamur tiram terdapat 26 jenis asam lemak. Kandungan asam lemak yang paling dominan yaitu *Linolenic Acid*, *Linoleic acid*, *Palmitic acid*. Kesimpulan dari penelitian ini adalah media P<sub>3</sub> menghasilkan hasil terbaik pada kualitas media tanam, media P<sub>2</sub> merupakan media terbaik dikarenakan mampu menghasilkan hasil terbaik pada pertumbuhan miselium dan pertumbuhan jamur tiram putih, media P<sub>1</sub> menghasilkan hasil terbaik pada kandungan gizi jamur tiram.

Kata Kunci: Jamur Tiram Putih, *Sludge* Biogas Sapi Perah, Susu Bubuk Afkir, Kualitas Media Tanam, Profil Asam Lemak.

## **THE INFLUENCE OF FORTIFIED BIOGAS SLUDGE MEDIA WITH EXPIRED MILK POWDER ON GROWTH, NUTRITION VALUE, AND FATTY ACID PROFILE OF WHITE OYSTER MUSHROOM**

### **ABSTRACT**

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This study aims to determine the effect of dairy cattle biogas sludge media fortified with expired milk powder on growth, media nutrition, nutritional value, and fatty acid profile of white oyster mushroom (*Pleurotus florida*). The white oyster mushroom growing media is coded P0, P1, P2, and P3, which have different compositions of dairy cattle biogas sludge and refined milk powder, namely P0 (0%: 0%), P1 (10%: 10%), P2 (5%: 15%) P3: (15%: 5%). The composition of the research media used was sawdust, dairy cattle biogas sludge, expired milk powder, bran, and eggshells, the media was grown in baglog media of polypropylene plastic oyster mushrooms, planting of white oyster mushrooms was carried out for 46 to 48 days on white oyster mushroom kumbung. . The media saw its effect on the nutritional content of the media, mycelium growth, growth, moisture content, ash, fat, protein, carbohydrates and the fatty acid profile of oyster mushrooms. The results of the research data in the form of media nutrient content, mushroom growth, nutritional value, and fatty acid profile of fungi were analyzed using unidirectional variation analysis, while mycelium growth was analyzed using factorial pattern variation analysis if the research data showed significant differences followed by the Duncan Multiple Range Test (DMRT). The results showed that the P3 growing medium used was able to increase nutrients, with the best results on C-organic variables, crude fiber, C/N ratio, and potassium. The best results of mycelium growth and oyster mushroom growth were seen on P2 media which was able to produce the best results on mycelium length, percentage of mycelium growth, first time to grow, and mycelium fulfillment time, while fungal growth was on fresh weight, hood diameter, and harvest time and the length of the stalk. The best oyster mushroom nutritional content is found in the P1 media treatment which gives the best results of ash content and protein content. The P0 planting medium showed the highest yield on the fatty acid profile, namely the content of Unsaturated Fatty Acid, while the highest content of Saturated Fatty Acid was in the P1 Media. The oyster mushroom fatty acid profile contains 26 types of fatty acids. The most dominant fatty acid content is Linolenic Acid, Linoleic acid, Palmitic acid. This research concludes that P3 media produces the best results on the quality of planting media, P2 media is the best media because it can produce the best results on mycelium growth and white oyster mushroom growth, P1 media produces the best results on the nutritional content of oyster mushrooms.

**Keywords:** White Oyster Mushroom, Dairy Cattle Biogas Sludge, Expired Milk Powder, Quality of Planting Media, Fatty Acid Profile.