

INTISARI

PEMANFAATAN LIMBAH KAPAS DIVISI PEMINTALAN PT. SRI REJEKI ISMAN TBK SEBAGAI BAHAN DASAR MEDIA TANAM JAMUR TIRAM PUTIH (*Pleurotus ostreatus*)

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Terdapat lima jenis limbah kapas yang dihasilkan oleh Divisi Pemintalan PT. Sri Rejeki Isman Tbk yaitu *dropping*, *flat strip recycle*, *flat strip c*, *air waste* dan *fan open end*; yang memiliki kandungan *trash* semakin kecil. Penelitian ini bertujuan untuk mengetahui bagaimana pemanfaatan limbah kapas yang memiliki kandungan *trash* berbeda sebagai bahan dasar media tanam jamur tiram putih. Pengujian pemanfaatan limbah kapas dilakukan menggunakan 5 formula yakni kontrol dengan formula serbuk kayu sengon 100% + bekatul 200 gram + kapur 10 gram (S_0), *dropping* 50% + serbuk kayu sengon 50% + bekatul 200 gram + kapur 10 gram (S_{1a}), *dropping* 75% + serbuk kayu sengon 25% + bekatul 200 gram + kapur 10 gram (S_{1b}), *fan open end* 50% + serbuk kayu sengon 50% + bekatul 200 gram + kapur 10 gram (S_{2a}) dan *fan open end* 75% + serbuk kayu sengon 25% + bekatul 200 gram + kapur 10 gram (S_{2b}). Rancangan penelitian ini menggunakan rancangan acak lengkap 5x3 (RAL 5x3) yang dianalisis menggunakan uji *One Way Anova* dan uji Beda Nyata Terkecil (BNT/LSD). Penentuan perlakuan terbaik menggunakan *Zero-One Integer Programming*. Parameter yang diamati terhadap media tanam berupa perubahan kandungan selulosa dan lignin, sedangkan terhadap pertumbuhan jamur berupa waktu pemenuhan miselium; jumlah badan buah; lebar tudung; berat basah dan panjang tangkai. Hasil penelitian ini menunjukkan bahwa limbah kapas dapat dimanfaatkan sebagai bahan dasar media tanam jamur tiram putih, dimana formula terbaik yaitu formula S_{2b} . Selama pertumbuhan jamur, pada media tanam dengan formula S_{2b} terjadi degradasi selulosa dari 66,7% menjadi 60,8% serta degradasi lignin dari 10,5% menjadi 6,6%. Selain terhadap media, formula S_{2b} menghasilkan jamur dengan karakteristik pertumbuhan meliputi waktu pemenuhan miselium $28,33 \pm 1,53$ hari, jumlah badan buah $17,67 \pm 8,96$ buah, lebar tudung $5,76 \pm 0,87$ cm, berat basah $143,33 \pm 26,27$ gram dan panjang tangkai $4,52 \pm 0,55$ cm.

Kata kunci: media tanam limbah kapas, jamur tiram putih, selulosa, dan lignin

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ABSTRACT

UTILIZATION OF COTTON WASTE FROM PT. SRI REJEKI ISMAN TBK SPINNING DIVISION AS BASIC MATERIAL FOR WHITE OYSTER MUSHROOM (*Pleurotus ostreatus*) PLANTING MEDIA

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There are five types of cotton waste produced by the Spinning Division of PT. Sri Rejeki Isman Tbk: dropping, flat strip recycle, flat strip c, air waste, and fan open end, which has a smaller trash content. This study aims to determine how to use cotton waste containing different trash content as the basic material for white oyster mushroom planting media. Utilization of cotton waste are examined by 5 formulas: control with 100% sengon wood powder + 200 gram bran + 10 gram lime (S₀), 50% dropping + 50% sengon wood powder + 200 gram bran + 10 gram lime (S_{1a}), 75% dropping + 25% sengon wood powder + 200 gram bran + 10 gram lime (S_{1b}), 50% fan open end + 50% sengon wood powder + 200 gram bran + 10 gram lime (S_{2a}) and 75% fan open end + 25% sengon wood powder + 200 gram bran + 10 gram lime (S_{2b}). This study uses a 5x3 completely randomized design (CRD 5x3) and is then analyzed using the One Way Anova test and the Least Significant Difference (BNT/LSD) test. The best formula was chosen for planting media based on the highest score in Zero-One Integer Programming. Parameters observed on the planting media are changes in the content of cellulose and lignin, while on the fungal growth is the form of mycelium fulfillment time; the number of fruit bodies; hood width; wet weight, and stem length. This study indicates that cotton waste can be used as a base material for white oyster mushroom planting media, where the best formula is S_{2b}. During fungal growth, in the planting media with formula S_{2b}, cellulose degradation occurs from 66,7% to 60,8%, and lignin degradation occurs from 10.5% to 6.6%. In addition to the media, formula S_{2b} produces mushrooms with growth characteristics including mycelium fulfillment time of 28,33±1,53 days, the number of fruit bodies 17,67±8,96, hood width 5,76±0,87 cm, wet weight 143,33±26,27 grams, and stalk length 4,52±0,55 cm.

Keywords: cotton waste planting media, white oyster mushroom, cellulose, and lignin

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