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Studi penggunaan limbah pertanian untuk budidaya jamur merang (volvariella volvacea (bull.) singer 1951) = Study of utilizing agroindustrial waste for cultivation of paddy straw mushroom volvariella volvacea (bull.) singer 1951)

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Abstrak

ABSTRAK
Volvariella volvacea (Bull.) Singer 1951 merupakan salah satu jamur yang tumbuh pada limbah pertanian mengandung lignoselulosa. Penelitian bertujuan mengetahui karakteristik biokimia media tanam dalam memproduksi jamur merang. Sampel dianalisis kandungan lignoselulosa, karbon dan nitrogen (rasio C/N), gula pereduksi, pH dan total populasi mikroorganisme. Hasil penelitian menunjukkan penurunan kadar lignoselulosa, suhu, rasio C/N and total mikroorganisme, namun terjadi kenaikan pH dan gula pereduksi. Penurunan kadar lignin 12,94% pada media daun pisang, 10,35% pada media jerami padi dan 9,50% pada media kapas. Kadar holoselulosa mengalami penurunan 19,96% menggunakan jerami padi; 11,85% menggunakan kapas; dan 4,73% menggunakan daun pisang. Jamur merang pada media kapas menghasilkan produksi tertinggi dalam total berat basah, diameter dan jumlah tubuh buah. Efisiensi biologi tertinggi diperoleh dari diproduksi menggunakan kapas, 17,79%; daun pisang 8,56%; dan jerami padi 7,93%. Analisis statistik menunjukkan tidak adanya perbedaan signifikan dari budidaya menggunakan kapas, jerami padi, dan daun pisang ($p<0,05$). Kadar gula pereduksi mengalami kenaikan 38,66% menggunakan kapas; 36,57% menggunakan daun pisang; dan 20,17% menggunakan jerami padi. Budidaya jamur merang mengakibatkan pH media tanam menjadi basa dengan akhir pH 8,97 pada jerami padi; pH 8,55 pada kapas; dan 7,95 pada daun pisang.
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ABSTRACT
Volvariella volvacea (Bull.) Singer 1951 is one of the most cultivated mushroom grew on lignocellulosic media. The purpose of study was analyze biochemical characteristic growth on media for production of paddy straw mushroom. The samples were analyzed on lignocellulosic, carbon and nitrogen (C/N ratio), reducing sugar content, pH and total population on microorganism. The results revealed decrease on lignocellulosic content, temperature, C/N ratio and total microorganism, however increased in pH and reduced sugar content. Lignin content decreased 12.94% using banana leaves; 10.35% using paddy straws; and 9.50% using cotton wastes. Holocellulose content decreased 19.96% on paddy straws; 11.85% on cotton wastes; and 4.73% on banana leaves. Cotton waste has

the highest production based on the fresh weight, diameter and number of fruiting bodies. The highest biological efficiency, 17.69% produced from cultivation on cotton waste; 8,56% on banana leaves; and 7.93% on paddy straws. Reducing sugar content increased 20.71% on paddy straws; 36.57% on banana leaves; and 38.66% on cotton wastes. Statistical analysis shows no signifficant different from cultivation on cotton wastes, paddy straws and banana leaves ($p<0,05$). Cultivation of paddy straw mushroom caused pH into alkali with final pH 8.97 on paddy straw; 8.55 on cotton wastes; and 7.95 on banana leaves.