

Pengaruh penambahan *Aspergillus flavus* (link 1809) pada proses pengomposan limbah kapas terhadap produktivitas jamur merang (*Volvariella volvacea* (BULL.) Singer 1951) = Effect of addition *Aspergillus flavus* (link 1809) on cotton wastes composting process productivity paddy straw mushroom (*Volvariella volvacea* (BULL.) Singer 1951) / Maulia Irawati

Maulia Irawati, author

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Abstrak

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*Volvariella volvacea* (jamur merang) merupakan cendawan pangan yang dibudidayakan di negara tropis karena memiliki nilai gizi tinggi dan teknik budidaya yang mudah. Penelitian bertujuan untuk meneliti pengaruh penambahan *Aspergillus flavus* terhadap kualitas kompos pada substrat limbah kapas (*Gossypium* sp.) dan produktivitas tubuh buah *V. volvacea*. Hasil penelitian menunjukkan bahwa selama pengomposan, terjadi peningkatan suhu sebesar 27--58°C dan pH 7--8 selama tujuh hari pengamatan. Peningkatan kadar glukosa dan xilosa pada kontrol dan perlakuan terjadi selama lima hari pengomposan, yaitu 0,073--0,143 mg/mL dan 0,045--0,157 mg/mL serta menurun nilainya pada hari ketujuh 0,122--0,123 mg/mL. Kadar selulosa, hemiselulosa dan lignin substrat kapas pada awal pengomposan, 15%, 8% dan 6--7% mengalami penurunan selama penelitian. Produktivitas *V. volvacea* pada perlakuan dan kontrol selama pemanenan tujuh belas hari menunjukkan nilai 1766 dan 1715 tubuh buah dan berat basah 8700 g dan 8395 g. Hasil uji ANOVA menunjukkan produktivitas jamur merang pada perlakuan dan kontrol tidak memiliki perbedaan signifikan ( $P > 0,05$ ).

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**ABSTRACT**

*Volvariella volvacea* (straw mushroom) is an edible mushroom cultivated in tropical countries due to its high nutritious and simple cultivation techniques. The research aims to investigate the effect of *A. flavus* addition toward the quality of cotton waste compost (*Gossypium* sp.) and productivity of *V. volvacea*. The result showed that during composting, there was an increase in compost temperature about 27--58°C and pH compost 7--8 for seven days observation. The rise of glucose and xylose concentration both in the control and treatment group occurred in five days of composting 0,073--0,143 mg/mL and 0,045--0,157 mg/mL respectively, then decreased on the seventh days about 0,122--0,123 mg/mL. The concentration of cellulose, hemicelluloses and lignin within the substrate of cotton waste in early composting, 15%, 8% dan 6--7% respectively, has been reduced during observation. The productivity of *V. volvacea* among treatment and control groups during seventeen days cropping yielded 1766 and 1715 fruit body of mushroom and 8700 g, 8395 g fresh weight of mushroom. The outcomes of ANOVA test affirmed that productivity of straw mushroom among treatment and control did not have significant differences ( $P > 0.05$ ).