PENGARUH PERBEDAAN UKURAN PARTIKEL TEPUNG JAMUR TIRAM DAN LAMA SONIKASI LARUTAN TERHADAP KARAKTERISTIK *EDIBLE FILM* BERBASIS KOLANG KALING (*Arenga pinnata*)

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ABSTRAK

Penelitian ini bertujuan untuk mengetahui interaksi antara ukuran partikel tepung jamur tiram dan lama sonikasi terhadap karakteristik *edible film* berbasis kolang-kaling. Penelitian ini menggunakan Rancangan Acak Lengkap Faktorial (RALF) dengan 2 faktor yaitu faktor A ukuran partikel tepung jamur tiram yaitu A1 (80 mesh) dan A2 (100 mesh) serta faktor B lama sonikasi B1 (20 menit), B2 (40 menit), dan B3 (60 menit), dengan 3 kali ulangan. Jika hasil menunjukkan perbedaan nyata, maka dilakukan uji lanjut dengan BNT (Beda Nyata Terkecil) pada taraf 5%. Berdasarkan hasil penelitian dapat disimpulkan bahwa terdapat interaksi ukuran partikel tepung jamur tiram dan lama sonikasi pada analisis kadar air dan kuat tarik. Namun, tidak terdapat interaksi pada analisis ketebalan, transmisi uap air, biodegradasi dan kelarutan dalam air. Perlakuan terbaik pada penelitian ini adalah A2B2 dengan kombinasi ukuran partikel tepung jamur tiram 100 mesh dan waktu sonikasi 35 menit, dengan rata-rata kadar air (11,10%), kuat tarik (1,26 Mpa), ketebalan (0,234 mm), transmisi uap air (5,47 g/m^2/jam), biodegradasi (69%), dan kelarutan dalam air (53%).

***Kata kunci* ;** *edible film*; sonikasi; ukuran partikel.

THE EFFECT OF DIFFERENCES IN OYSTER MUSHROOM FLOUR PARTICLE SIZE AND SOLUTION SONICATION DURATION ON THE CHARACTERISTICS OF KOLANG KALING (Arenga pinnata) BASED *EDIBLE FILM*

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ABSTRACT

This study aims to determine the interaction between the particle size of oyster mushroom flour and the duration of sonication on the characteristics of *edible film*s based on palm fruit. This study used a Complete Randomized Factorial Design (CRFD) with two factors, namely factor A, the particle size of oyster mushroom flour, which is A1 (80 mesh) and A2 (100 mesh), and factor B, the duration of sonication, which is B1 (20 minutes), B2 (40 minutes), and B3 (60 minutes), with three replicates. If the results showed significant differences, further testing was conducted using the Least Significant Difference (LSD) test at a 5% level. Based on the results of the study, it can be concluded that there was an interaction between the particle size of oyster mushroom flour and the duration of sonication in the analysis of moisture content and tensile strength. However, there was no interaction in the analysis of thickness, water vapor transmission, biodegradation, and water solubility. The best treatment in this study was A2B2 with a combination of 100 mesh oyster mushroom flour particle size and 35 minutes of sonication time, with an average moisture content of (11.10%), tensile strength of (1.26 Mpa), thickness of (0.234 mm), water vapor transmission of (5.47 g/m^2/hour), biodegradation of (69%), and water solubility of (53%).

Keywords: *edible film*; sonication; particle size