

PENGARUH SUHU DAN LAMA PEMASAKAN TERHADAP SIFAT PAPAN SERAT BATANG SEMU PISANG KEPOK (*Musa spp.*)

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INTISARI

Industri kehutanan di Indonesia dewasa ini mengalami penurunan yang drastis dari segi kuantitasnya yang disebabkan ketidakseimbangan pasokan bahan baku yang dibutuhkan dengan ketersediaannya di alam. Salah satu upaya penghematan bahan baku kayu yaitu dengan pemanfaatan bahan lignoselulosa seperti limbah perkebunan dan pertanian untuk memproduksi berbagai macam produk tiruan yang dapat menggantikan fungsi kayu masif, dimana salah satunya adalah produksi papan serat batang semu pisang kepok (*Musa spp.*). Penelitian ini bertujuan untuk mengetahui interaksi antara suhu dan lama pemasakan untuk mendapatkan sifat papan serat batang semu pisang kepok yang optimal.

Bahan penelitian ini adalah batang semu pisang kepok yang diperoleh dari Dusun Pager Gunung, Kecamatan Piyungan, Kabupaten Bantul. Batang semu dimasak pada suhu pemasakan 50°C, 70°C dan 90°C dengan variasi lama pemasakan 1 dan 2 jam. Penelitian ini menggunakan percobaan faktorial dengan Rancangan Acak Lengkap (*Completely Randomized Design*). Analisis statistik yang digunakan adalah analisis sidik ragam (*Analysis of Varians*) dengan faktor suhu dan lama pemasakan. Uji lanjut menggunakan uji HSD (*Honestly Significant Difference*). Adapun pengujian sifat fisik dan mekanik papan serat menggunakan standar ASTM D 1037-99 (*Standar Test Method for Evaluating Properties of Wood-Based Fiber and Particle Panel Materials*) yang meliputi kadar air dan kerapatan, penyerapan air dan pengembangan tebal, keteguhan lengkung statik, keteguhan tekan sejajar permukaan dan keteguhan tarik tegak lurus permukaan.

Hasil penelitian menunjukkan bahwa interaksi antara suhu dan lama pemasakan hanya memberikan pengaruh nyata terhadap keteguhan tekan sejajar permukaan papan serat yang dihasilkan, dimana nilai tertinggi diperoleh pada kombinasi perlakuan suhu pemasakan 90°C selama 1 jam. Faktor suhu pemasakan berpengaruh nyata pada rendemen, kadar air, kerapatan, pengembangan tebal, *internal bonding* dan modulus elastisitas. Makin tinggi suhu pemasakan, makin tinggi rendemen, kerapatan dan modulus elastisitas; di lain pihak nilai kadar air dan pengembangan tebal semakin rendah. Faktor lama pemasakan berpengaruh nyata pada rendemen, kadar air, kerapatan dan penyerapan air. Makin lama pemasakan, makin tinggi nilai rendemen, kerapatan dan penyerapan air, namun nilai kadar air semakin turun. Sifat fisika papan serat telah memenuhi standar FAO (1966) dan NPA 4-73 namun hanya sebagian sifat mekanika papan serat yang memenuhi standar.

Kata kunci : suhu dan lama pemasakan, papan serat, batang semu pisang kepok

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**THE EFFECT TEMPERATURE AND TIME OF COOKING TO THE
PROPERTIES OF FIBERBOARD PSEUDO-STEM KEPOK BANANA
(*Musa spp.*)**

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ABSTRACT

In this time forest of industry in Indonesia drastic degradation happened from its amount facet caused by imbalance raw material available of wood required by preparation in nature. One of effort of thrift raw material wood that is exploiting of substance lignoselulose like waste of horticulture and agriculture to produce assorted of artificial product which can replace the function of massif wood, where one of theme is production of fiberboard of pseudo-stem kapok banana. The aim of experiment was to know interaction between temperature and time of cooking to get the properties of fiberboard pseudo-stem kepok banana that optimal.

The experiment material was Pseudo-stem kepok banana which of taken from Piyungan sub district, Bantul district. Pseudo-stem kapok banana was cooked in heating temperature 50°C, 70°C and 90°C which variation time of cooking 1 and 2 hour. This experiment was designed in a completely randomizes design, with 2 factors, such as temperature and time of cooking, and used analysis of varian as statistical analysis. Post hoc tests used honestly significant difference. The tests of the physical and mechanical properties fiberboard used ASTM 1037-99 which include moisture content and density, water absorption and thickness swelling, static bending, compressive strength parallel of surface and tensile strength perpendicular of surface.

The result experiment showed that interaction between temperature and time of cooking only significant affected the compressive strength parallel of surface fiberboard which resultant, highest value compressive strength parallel of surface at treatment combination are temperature cooking 90°C and time of cooking at 1 hour. Temperature of cooking factor significant affected the pulp yield, moisture content, density, thickness swelling, internal bonding and modulus of elasticity. More high temperature of cooking causing the pulp yield, density, internal bonding and modulus of elasticity can be higher, but moisture content and thickness swelling more lower. Time of cooking factor significant affected the pulp yield, moisture content, density and water absorption. Longer time of cooking causing the pulp yield, water absorption and density can be higher but moisture content more lower Physical properties of fiberboard has fulfilling FAO standard and NPA 4-73, but just some of mechanical properties fiberboard which fulfilling standard.

Keyword : temperature and time of cooking, fiberboard, pseudo-stem kapok banana

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