

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

Oleh :

Wulandari Mulyani¹ dan T.A. Prayitno²

INTISARI

Salah satu tanaman non kayu yang banyak dijumpai di Indonesia adalah pisang kepok. Batang semu pisang kepok merupakan sumber serat yang menjanjikan, dan belum banyak dimanfaatkan. Batang semu tersebut dapat dimanfaatkan menjadi bahan baku papan serat sebagai alternatif pengganti ketersediaan bahan baku kayu yang terus mengalami kemerosotan setiap tahunnya. Penelitian ini bertujuan untuk mengetahui interaksi antara suhu dan lama pengempaan yang digunakan untuk mendapatkan sifat papan serat batang semu pisang kepok yang optimal.

Bahan baku penelitian ini adalah batang semu pisang kepok yang diperoleh dari Kecamatan Sidoharjo, Kabupaten Wonogiri. Suhu pengempaan yang digunakan adalah 175 °C dan 195 °C dengan lama pengempaan 5, 10, dan 15 menit. Penelitian ini menggunakan percobaan faktorial dengan Rancangan Acak Lengkap (*Completely Randomized Design*). Analisis yang dipakai merupakan analisis keragaman (*Analysis of Varians*) dengan factor suhu kempa dan lama kempa. Uji lanjut menggunakan uji HSD (*Honestly Significant Difference*). Pengujian sifat fisika dan mekanika papan serat menggunakan standar ASTM D 1037-99 (*Standar Test Method for Evaluating Properties of Wood-Based Fiber and Particle Panel Materials*). Kadar air, kerapatan, pengembangan tebal, penyerapan air, keteguhan lengkung statik, keteguhan sejajar permukaan, dan keteguhan tarik tegak lurus permukaan (*internal bonding*).

Hasil penelitian menunjukkan bahwa interaksi antara suhu dan lama pengempaan memberikan pengaruh nyata pada keteguhan tekan sejajar permukaan dan *internal bonding*. Keteguhan tekan sejajar permukaan tertinggi diperoleh pada kombinasi suhu kempa 175 °C dengan lama kempa 10 menit. *Internal bonding* tertinggi diperoleh pada kombinasi suhu kempa 175 °C dengan lama kempa 15 menit. Faktor suhu kempa berpengaruh pada kadar air dan modulus patah. Makin tinggi suhu kempa makin turun nilai kadar air, demikian pula makin tinggi suhu kempa modulus patah juga semakin turun. Faktor lama pengempaan berpengaruh nyata terhadap nilai kadar air. Makin lama kempa makin turun nilai kadar air. Sifat mekanik papan serat telah memenuhi standar FAO (1966) dan NPA 4-73 namun hanya sebagian sifat fisik papan serat yang memenuhi standar.

Kata kunci : suhu kempa, lama kempa, papan serat, batang semu pisang

¹Mahasiswa Jurusan Teknologi Hasil Hutan Fakultas Kehutanan UGM

²Staf Pengajar Jurusan Teknologi Hasil Hutan Fakultas Kehutanan UGM

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

By
Wulandari Mulyani⁻¹ dan T.A. Prayitno⁻²

ABSTRACT

One of non-wood plant of Indonesia is kepok banana. The Pseudo-stem of this plant was found to be a promising source of cellulose, and has not being exploited yet. Pseudo-stem banana can be processed to produce fiberboard, as an alternative substitution of wood material which is decrease every year. The objective of this research is to know the interaction of pressing temperature and pressing time on the physical and mechanical properties of fiberboard.

This research material was Pseudo-stem kepok banana which of taken from Sidoharjo district, Wonogiri district. Pseudo-stem kepok banana was press in pressing temperature 175 °C and 195 °C with pressing time 5, 10, and 15 minutes. This research was designed in a completely randomized design, with two factors, such as pressing temperature and pressing time, and used analysis of variants as statistical analysis. Post hoc test used honestly significant difference. The test of physical and mechanical properties fiberboard used ASTM 1037-99 (Standard Test Method for Evaluating Properties of Wood-Based Fiber and Particle Panel Materials) which including moisture content, density, water adsorption, thickness swelling, static bending, compressive strength parallel of surface, and tensile strength perpendicular of surface (internal bonding).

The result of research showed that interaction between pressing temperature and pressing time significantly affected the compressive strength parallel of surface, and internal bonding. Highest compressive strength parallel of surface at treatment combination are pressing temperature 175 °C and pressing time 10 minutes. Highest internal bonding treatment combination are pressing temperature 175 °C and pressing time 15 minutes. Pressing temperature significantly affected the moisture content and modulus of rupture. More high temperature causing the moisture content and modulus of rupture more lower. Pressing time factor only significantly affected the moisture content. More high time causing the moisture content more lower. Mechanical properties of fiberboard has fulfilling FAO standard and NPA 4-73 standard, but just some of physical properties fiberboard which fulfilling standard.

Key words : pressing temperature, pressing time, fiberboard, pseudo-stem banana

¹Student of Forest Product Technology Department of Forestry Faculty of GMU

²Lecture of Forest Product Technology Department of Forestry Faculty of GMU