Pengaruh Perbedaan Konsentrasi Perekat Gambir (Uncaria gambir, Roxb) Terhadap Sifat Fisis dan Mekanis Papan Partikel Berbahan Tongkol Jagung dan Ampas Pengolahan Gambir

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ABSTRAK

Penelitian ini bertujuan untuk mengetahui pengaruh perbedaan konsentrasi perekat gambir (Uncaria gambir, Roxb) terhadap sifat fisis dan mekanis papan partikel berbahan tongkol jagung dan ampas pengolahan gambir. Penelitian ini menggunakan Rancangan Acak Lengkap (RAL) terdiri dari 5 perlakuan dan 3 kali ulangan. Data dianalisa secara statistik dengan menggunakan ANOVA dan dilanjutkan dengan uji Duncan's New Multiple Range Test (DNMRT) pada taraf 5%. Perlakuan pada penelitian ini adalah perbedaan konsentrasi perekat gambir sebesar 12%; 14%; 16%; 18%; dan 20%. Pengamatan pada papan partikel berbahan campuran tongkol jagung dan ampas pengolahan gambir yang dihasilkan adalah pengamatan sifat fisis yaitu uji kadar air, kerapatan, daya serap air, pengembangan tebal, sedangkan pengamatan sifat mekanis yang diamati antara lain Modulus of Rupture (MOR), Internal Bonding (IB), keteguhan tekan sejajar permukaan. Hasil penelitian menunjukkan bahwa perbedaan konsentrasi perekat gambir berpengaruh nyata terhadap kerapatan, daya serap air, keteguhan patah, keteguhan rekat internal, keteguhan tekan sejajar permukaan dan berpengaruh tidak nyata terhadap kadar air dan pengembangan tebal. Papan partikel terbaik berdasarkan uji mekanis adalah pada perlakuan E (konsentrasi perekat gambir 20%) dengan nilai rata – rata, Modulus of Rupture (MOR) yaitu 27,65 kg/cm2, Internal Bonding (IB) yaitu 9,26 kg/cm2, dan tekan sejajar permukaan (53,47 kg/cm2). Sedangkan hasil pengamatan sifat fisis papan partikel perlakuan E dengan konsentrasi gambir 20% dengan nilai rata-rata, kadar air 9,03%, kerapatan 0,82%, daya serap air 181,16%, pengembangan tebal 111,54%.

Kata Kunci - ***ampas gambir, gambir (Uncaria gambir,* Roxb*), papan partikel, tongkol jagung***

The Effect of The Difference of Gambier Adhesive Concentration (*Uncaria Gambier*, Roxb) Toward Physical and Mechanical Properties of Particle Board Made of Corn Cobs and Gambier baggases

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ABSTRACT

This research was aimed to learn the effect of concentration difference of gambier adhesive (*uncaria gambier*, roxb) toward the physical and mechanical properties of particle board made of corn cobs and gambier baggase. This research used Completely Randomized Designed (CRD) that consists of 5 treatments and 3 repetitions. Data were analyzed statistically using ANOVA continued by Duncan's New Multiple Range Test (DNMRT) at 5%. The treatment in this research is the concentration difference of 12% gambier adhesive; 14%; 16%; 18%; and 20%. The observation on the particle board made of a mixture of corn cobs and gambier baggase that are physical properties include a water content test, density, water absorption, thickness swelling, while the observation on mechanical properties include Modulus of Rupture (MOR), Internal Bonding (IB), strenghth of surface parallel press. The results showed that the difference in the concentration of gambier adhesive significantly affect the density, water absorption, fracture strength, internal bonding strength, strenghth of surface parallel press and indirect effect on water content and thickness swelling. The best particle board based on properties tests in treatment E (gambier adhesive concentration 20%) with average, Modulus of Rupture (MOR) is 27.65 kg / cm^2, Internal Bonding (IB) is 9.26 kg / cm^2, and parallel press to the surface (53.47 kg / cm^2). Whereas observations of physical properties of particle board treatment E (gambier concentration 20%) with average, the water content of 9.03%, 0.82% density, water absorption 181.16%, thickness swelling 111.54%.

Keywords: **gambier baggase, gambier (*Uncaria gambir*, Roxb), corn cobs, particle board**