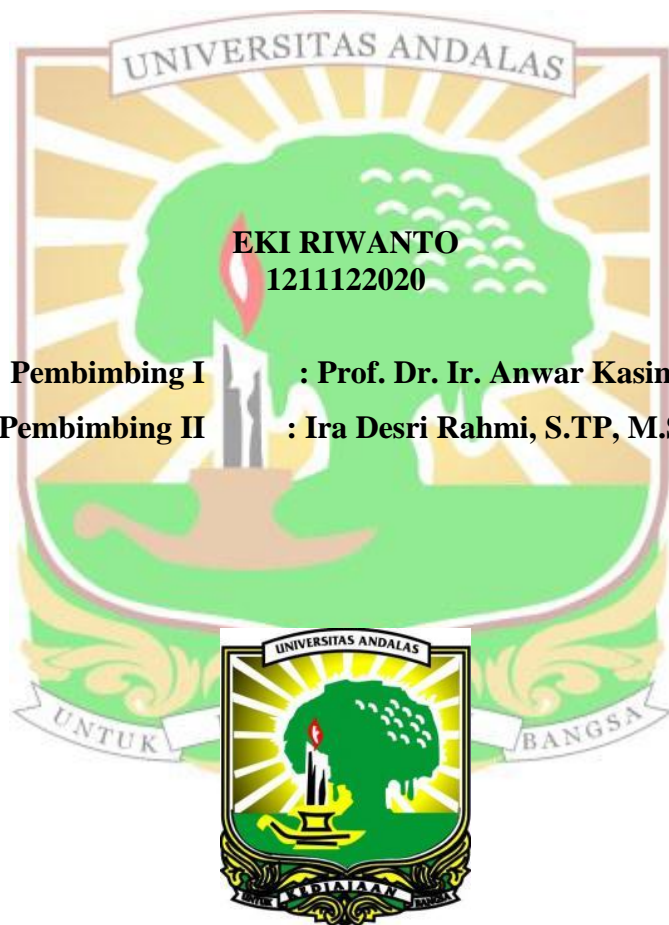


**PENGARUH PERBEDAAN PERBANDINGAN TANDAN
KOSONG KELAPA SAWIT DAN LIMBAH PADAT
PENGOLAHAN TEH TERHADAP SIFAT FISIS DAN
MEKANIS PAPAN PARTIKEL TANPA PEREKAT**



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Pengaruh Perbedaan Perbandingan Tandan Kosong Kelapa Sawit dan Limbah Padat Pengolahan Teh terhadap Sifat Fisis dan Mekanis Papan Partikel Tanpa Perekat

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ABSTRAK

Penelitian ini bertujuan untuk meneliti pengaruh perbedaan perbandingan tandan kosong kelapa sawit dan limbah padat pengolahan teh terhadap sifat fisis dan mekanis papan partikel tanpa perekat, memperoleh papan partikel dengan sifat fisis dan mekanis yang sesuai dengan SNI 03-2105-2006 dan mendapatkan tingkat perbandingan limbah padat pengolahan teh dan tandan kosong kelapa sawit yang terbaik dalam menghasilkan papan partikel berdasarkan sifat fisis dan mekanis. Metode penelitian yang digunakan pada penelitian ini adalah Rancangan Acak Lengkap (RAL) dengan 5 perlakuan dan 3 ulangan. Data dianalisis secara statistik dengan menggunakan ANOVA dan dilanjutkan dengan uji *Duncan's New Multiple Range Test* (DNMRT) pada taraf 5%. Perlakuan pada penelitian ini perbandingan tandan kosong kelapa sawit dan limbah padat pengolahan teh, yaitu A (90% : 10%), B (80% : 20%), C (70% : 30%), D (60% : 40%), dan E (50% : 50%). Pengujian pada penelitian ini adalah sifat fisis dan sifat mekanis dari papan partikel tanpa perekat. Uji fisis meliputi : kadar air, kerapatan, daya serap air, dan pengembangan tebal. Uji mekanis meliputi : keteguhan patah, keteguhan rekat internal, dan keteguhan tekan sejajar permukaan. Berdasarkan hasil pengujian papan partikel tanpa perekat yang dihasilkan, perlakuan terbaik terdapat pada perlakuan E (tandan kosong kelapa sawit 50% : limbah padat pengolahan teh 50%). Sifat fisis papan, yaitu : kadar air 11,08%, kerapatan 0,87 g/cm³, daya serap air 152,96%, pengembangan tebal 112,23%. Sifat mekanis papan, yaitu : keteguhan patah 106,17 g/cm², keteguhan rekat internal 3,24 g/cm², keteguhan tekan sejajar permukaan 51,38 g/cm².

Kata kunci – papan partikel tanpa perekat, tandan kosong kelapa sawit, limbah padat pengolahan teh

The Effect of Difference Comparison of Empty Bunches of Palm Oil and Solid Waste of Tea Processing on Physical and Mechanical Properties of Binderless Particle Board

ABSTRACT

The reseach was aimed to examine the effect of difference comparison of empty bunches of palm oil and solid waste of tea processing on physical and mechanical properties of binderless particle board, obtain particle board of physical and mechanical properties according to SNI 03-2105-2006 and obtain the best comparison of oil palm empty bunches and solid waste tea processing to produce particle board based on physical and mechanical properties. The research method used in this research is Complete Random Design with 5 treatments and 3 repetitions. The data has been analyzed in statistic way using ANOVA and continued with testing Duncan's New Multiple Range Test in level 5 %. Treatment in this research comparison of empty bunches of palm oil and solid waste of tea processing is A (90% : 10%), B (80% : 20%), C (70% : 30%), D (60% : 40%), E (50% : 50%). Tests on this research are physical and mechanical properties of binderless particle board. Physical test include: water quantity, density, water absorption, and thickness swelling. Mechanical test include: modulus of rupture, internal bonding and row surface dependability. Based on the testing result of binderless particle board which is produced, the best treatment has been found in treatment E (empty bunches of palm oil 50% : solid waste of tea processing 50%). The physical characteristic of the board is water quantity 11.08%, density 0.87 g/cm³, water absorption 152.96%, and thickness swelling 112.23 %. Mechanical characteristic of the board is modulus of rupture 106.17 kg/cm², internal bonding 3.24 kg/cm² and row surface dependability 51.38 kg/cm².

Keywords - binderless particle board, empty bunches of palm oil, solid waste of tea processing

