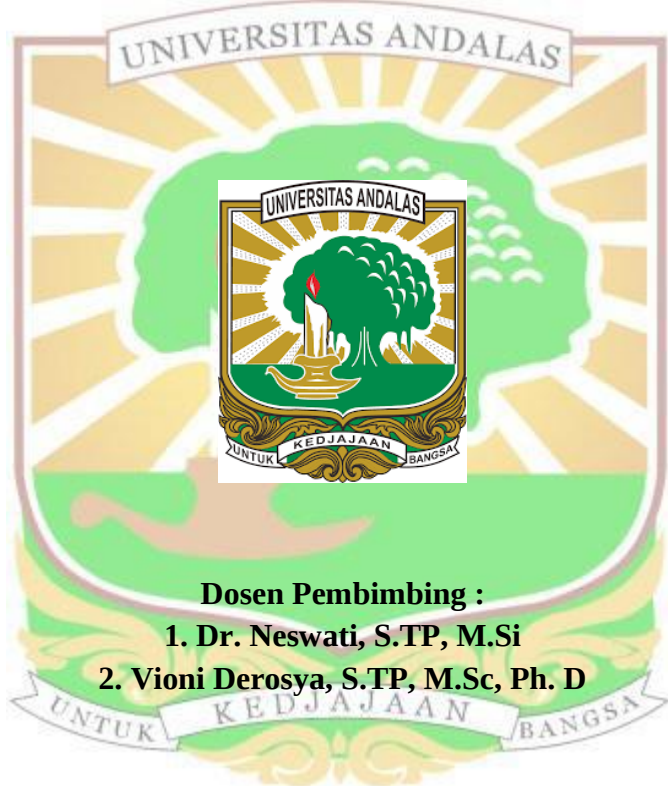


PENGUNAAN SERAT SABUT KELAPA (*Cocos nucifera*, L.) TERHADAP KARAKTERISTIK PAPAN GIPSUM

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ABSTRAK

Papan gipsium merupakan bahan bangunan yang sering digunakan pada desain langit-langit untuk menciptakan interior yang variatif dan modern. Penggunaan serat alami sebagai pengganti serat sintetis dapat memberikan nilai tambah pada papan gipsium dengan meningkatkan kekuatan mekanik dan ramah lingkungan. Penelitian ini dilakukan untuk mendapatkan perlakuan terbaik dari penambahan serat sabut kelapa dan menentukan harga jualnya. Penelitian ini menggunakan metode Rancangan Acak Lengkap (RAL) dengan 5 perlakuan dan 3 ulangan yaitu A (serat sabut kelapa 3%), B (serat sabut kelapa 6%), C (serat sabut kelapa 9%), D (serat sabut kelapa 12%), dan E (serat sabut kelapa 15%). Data yang diperoleh dianalisis menggunakan statistik ANOVA (Analysis of Variance) dan apabila berbeda nyata pada taraf $\alpha = 5\%$ ($F_{hitung} > F_{tabel 0,05}$) dilanjutkan dengan uji lanjut DNMRT (Duncan's New Multiple Range Test). Hasil penelitian menunjukkan bahwa penambahan serat sabut kelapa berpengaruh nyata terhadap kadar air, kerapatan, penyerapan air, pengembangan tebal, modulus patah (MoR), dan modulus elastisitas (MoE). Nilai papan gipsium yang optimal diperoleh pada perlakuan D (serat sabut kelapa 12%) dengan kadar air 11,5%, kerapatan 0,85 g/cm³, penyerapan air 45,19%, pengembangan tebal 1,36%, nilai MoR 52,99 kgf/cm², dan nilai MoE 5667,18 kgf/cm². Hasil perhitungan harga jual papan gipsium serat sabut kelapa dengan ukuran 1,2 x 2,4 m sebesar Rp158.082,13

Kata kunci: papan gipsium, serat sabut kelapa, harga jual

The Use of Coconut Husk Fiber (*Cocos nucifera*, L.) on The Characteristics of Gypsum Boards

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ABSTRACT

Gypsum board is a building material commonly used in ceiling designs to create varied and modern interiors. The use of natural fibers as a substitute for synthetic fibers can add value to gypsum boards by enhancing mechanical strength and being environmentally friendly. This research was conducted to determine the best treatment of coconut husk fiber addition and to determine its selling price. This study used a Completely Randomized Design (CRD) with 5 treatments and 3 replications, namely A (3% coconut husk fiber), B (6% coconut husk fiber), C (9% coconut husk fiber), D (12% coconut husk fiber), and E (15% coconut husk fiber). The data obtained were analyzed using ANOVA (Analysis of Variance), and if there were significant differences at $\alpha = 5\%$ ($F_{\text{calculated}} > F_{\text{table } 0.05}$), it was followed by Duncan's New Multiple Range Test (DNMRT). The results showed that the addition of coconut husk fiber had a significant effect on moisture content, density, water absorption, thickness expansion, modulus of rupture (MoR), and modulus of elasticity (MoE). The optimal gypsum board value was obtained in treatment D (12% coconut husk fiber) with a moisture content of 11.5%, density of 0.85 g/cm³, water absorption of 45.19%, thickness expansion of 1.36%, MoR value of 52.99 kgf/cm², and MoE value of 5667.18 kgf/cm². The selling price of the coconut husk fiber gypsum board with dimensions of 1,2 x 2,4 m was calculated at Rp158.082,13

Keywords: gypsum board, coconut husk fiber, selling price