PENGARUH SUHU PERENDAMAN DAN JUMLAH PEREKAT SEMEN TERHADAP SIFAT PAPAN SEMEN PARTIKEL SERUTAN BAMBU PETUNG (*Dendrocalamus* sp.)

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INTISARI

Indonesia mempunyai potensi bahan baku non kayu berupa bambu yang cukup besar. Salah satunya adalah bambu petung yang belum dimanfaatkan secara maksimal. Penelitian ini bertujuan untuk mengetahui pengaruh suhu perendaman, jumlah perekat semen serta interaksinya terhadap sifat papan semen partikel serutan bambu petung *(Dendrocalamus* sp.*)* sehingga diperoleh papan semen dengan kualitas yang terbaik.

Penelitian ini menggunakan rancangan acak lengkap yang disusun secara faktorial dengan dua faktor yaitu suhu perendaman (tanpa direndam, 30°C, 60°C dan 90°C) serta jumlah perekat semen (2,5 dan 3,5 kali berat partikel) dengan masing-masing perlakuan 3 ulangan. Penelitian dilakukan dengan merendam serutan bambu petung *(Dendrocalamus* sp.*)* dalam air yang dipanasi sesuai suhu perlakuan selama 2 jam. Partikel serutan bambu petung dijemur sampai kering angin kemudian dicampur perekat semen dan air dengan tambahan katalisator $CaCl_2$ sebanyak 3% dari berat semen. Nilai rata-rata dianalisis dengan analisis varians dan apabila berbeda nyata, diuji lanjut dengan HSD Tukey.

Hasil penelitian nilai rata-rata absorbsi air tertinggi adalah 70,579% pada perlakuan tanpa direndam, 33,168% pada suhu perendaman 30^0 C, 28,105 % pada suhu perendaman 60^0C dan terendah sebesar 23,705% pada suhu perendaman 90^0C. Suhu pendaman 90^0 C memberikan nilai rata-rata kadar air 11,276%, kerapatan papan rata-rata 0,827 g/cm^2, nilai absorbsi air rata-rata 23,705%, rata-rata pengembangan tebal 1,633%, modulus elastisitas (MoE) rata-rata 9395,29 kg/cm^2, nilai modulus patah (MoR) rata-rata 43,653 kg/cm^2 dan rata-rata pengurangan tebal akibat beban 3kg/cm^2 sebesar 2,583 %. Jumlah perekat semen 3,5 kali berat partikel memberikan kadar air rata-rata 15,151%, kerapatan 0,77 kg/cm^2, absorbsi air 35,155%, pengembangan tebal 4,262%, modulus elastisitas (MoE) 7549,352 kg/cm^2, modulus patah (MoR) 35,182 kg/cm^2 dan pengurangan tebal 4,625 %. Berdasarkan standar kualitas papan semen partikel yang dihasilkan, nilai kerapatan dan pengurangan tebal sesuai dengan standar DIN 1101, nilai pengembangan tebal sesuai standar BISON, kerapatan dan pengurangan tebal papan sesuai standar Simatupang serta kadar air dan kerapatan sesuai standar papan semen partikel FAO.

Kata kunci : Papan semen partikel, serutan bambu petung, *Dendrocalamus* sp., suhu perendaman, perekat semen, $CaCl_2$

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THE INFLUENCE OF WATER TEMPERATURE AND AMOUNT OF GLUE CEMENT TO NATURE OF PARTICLE *PETUNG* BAMBOO (*Dendrocalamus* sp.) PLANNING DOWN CEMENT BOARD

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ABSTRACT

Indonesia has potency of non wood raw material in the form of bamboo that large enough and *petung* bamboo has not yet been exploited maximally. This study aim is to know the influence of water temperature , amount of glue cement, and also its interaction to nature of particle of *petung* bamboo (*Dendrocalamus* sp.) planning down cement board so that obtain the best quality of a cement board.

This research used complete random design arranged in two factorials. Two factors were applied in water temperature (without water, 30^0 C, 60^0 C, and 90^0 C) and amount of glue cement (2,5 and 3,5 times particle weight) with each getting 3 aplications treatment. This research conducted with soaked of *petung* bamboo (*Dendrocalamus* sp.) planning down in hot water according to treatment temperature during 2 hours. Particle of *petung* bamboo planning down was put under the sun until dry up then mingled by a glue cement and additionally catalyst CaCl2 water as much 3% from weight the cement. Average value was analyzed with the variant analysis and tested by HSD Tukey.

The result of this research shows the average value of water absorb is 70,579% at treatment without water, 33,168% at water temperature 30^0 C is 28,105% at water temperature 60^0 C and the lowest equal to 23,705% at water temperature 90^0 C. Water temperature 90^0 C, assigning water rate Mean value 11,276%, Mean value closeness of board is 0,827 g / cm2, Mean value the water absorbs 23,705%, thick development Mean is 1,633% elasticity modulus (MoE) Mean is 9395,29 kg/cm2, the broken modulus (MoR) Mean is 43,653 kg /cm2 and thick reduction Mean effects burden 3 kg /cm2 equal to 2,583%. The amount of glue cement 3,5 times particle weight gives the water rate Mean 15,151 %, closeness 0,77 kg /cm2, water absorbs 35,155%, thick development 4,262%, elasticity modulus (MoE) 7459,352 kg / cm2, broken modulus (MoR) 35,182 kg /cm2 and thick reduction 4,625%. Pursuant to a standard of cement board quality, thick reduction and closeness are according to DIN 1101 standard, thick development value based on BISON standard, thick reduction and board closeness are according to *Simatupang* standard and water rate and closeness according to FAO standard of particle cement board.

Key Words: Particle cement board, *petung* bamboo planning down, *Dendrocalamus* sp., water temperature, glue cement, CaCl2

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