PENGARUH MODIFIKASI PANAS TERHADAP KUALITAS *FINISHING* PAPAN LAMINASI BAMBU BETUNG (*Dendrocalamus asper*)

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INTISARI

Kayu berperan penting dalam kehidupan manusia dengan dimanfaatkan sebagai bahan baku industri mebel dan bahan bangunan. Akan tetapi, ketersediaan jenis-jenis kayu komersial menurun sehingga perlu alternatif bahan baku pengganti kayu, salah satunya yakni bambu betung dan dibuat dalam bentuk bambu laminasi. Bambu memiliki kelemahan yakni mudah terserang organisme biologis perusak seperti jamur sehingga perlu peningkatan kualitas dengan cara modifikasi panas dan pemberian lapisan *finishing*. Suhu dan lama waktu modifikasi panas dapat mengubah komposisi kimia dan struktur bambu yang dapat berpengaruh pada sifat fisik dan kualitas *finishing.* Tujuan penelitian ini yakni mengetahui pengaruh suhu dan lama waktu modifikasi panas terhadap sifat fisika dan kualitas *finishing* papan laminasi bambu betung.

Rancangan penelitian yang digunakan berupa rancangan acak lengkap yang disusun secara faktorial dengan dua faktor yaitu suhu pengovenan (90˚C, 120˚C, dan 150˚C) dan lama waktu pengovenan (1 jam dan 3 jam). Pengujian yang dilakukan untuk sifat fisika meliputi (wetabilitas, higroskopisitas, dan warna) dan untuk kualitas *finishing* meliputi (*cross cut test, coin test, delamination test* dan *hardness test*). Analisis hasil penelitian meliputi analisis keragaman diteruskan dengan uji HSD (*Honestly Significant Difference*) untuk faktor-faktor yang berbeda nyata.

Hasil penelitian menunjukkan perbedaan suhu modifikasi panas memberikan pengaruh yang nyata terhadap nilai higroskopisitas, wetabilitas, dan warna. Perbedaan lama waktu modifikasi panas memberikan pengaruh yang nyata terhadap nilai higroskopisitas dan warna. Interaksi antara suhu dan waktu modifikasi panas memberikan pengaruh yang nyata terhadap nilai higroskopisitas. Kualitas *finishing* terbaik diperoleh dari perlakuan panas dengan suhu 90˚C selama 1 jam dengan hasil *cross cut test* sebesar 5,33% (cukup), *coin test* dengan skor 4 (baik), *hardness test* sangat baik, dan hasil *delamination test* sebesar 0% dengan pertimbangan efisiensi waktu dan biaya.

Kata Kunci: modifikasi panas, kualitas *finishing*, papan laminasi, bambu

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THE EFFECT OF THERMAL MODIFICATION ON THE *FINISHING* QUALITY OF BETUNG BAMBOO LAMINATED BOARDS (*Dendrocalamus asper*)

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ABSTRACT

Wood plays an important role in human life by being used as raw material for furniture and building materials industry. However, the availability of commercial wood species is decreasing, so alternative raw materials are needed to replace wood, one of which is betung bamboo and is made in the form of laminated bamboo. Bamboo has the weakness that it is easily attacked by destructive biological organism such as fungi, so it needs to improve its quality by means of heat modification and the application of a *finishing* layer. The temperature and duration of heat modification can change the chemical composition and structure of bamboo which can affect the physical properties and *finishing* quality. The purpose of this study was to determine the effect of temperature and duration of heat modification on the physical properties and *finishing* quality of betung bamboo laminated boards.

The research design used was a completely randomized design arranged factorially with two factors, namely oven temperature (90˚C, 120˚C, and 150˚C) and oven time (1 hour and 3 hours). Tests carried out for physical properties include (wettability, hygroscopicity, and colour) and for *finishing* quality include (*cross cut test*, *Coin test*, *delamination test* and *hardness test*). Analysis of research results includes analysis of diversity followed by the HSD (Honestly Significant Difference) test for significantly different factors.

The results showed that the difference in heat modification temperature had a significant effect on the hygroscopicity, wettability, and colour values. The difference in the length of heat modification time had a significant effect on the hygroscopicity and colour values. The interaction between temperature and heat modification time had a significant effect on the hygroscopicity value. The best *finishing* quality is obtained from heat treatment at a temperature of 90˚C for 1 hour with a *cross cut test* result of 5.33% (sufficient), *coin test* with a score of 4 (good), *hardness test* very good, and *delamination test* result of 0% considering time and cost efficiency.

Keywords: *thermal modification, finishing quality, laminated board, bamboo*

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