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Basic properties and nanostructure of wood from four fast growing species from a community forest

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Abstract

Four fast-growing wood species, jabon (*Anthocephalus cadamba*), lento-lento (*Arthrophyllum diversifolium*), acacia (*Acacia mangium*) and pulai (*Alstonia* spp.), can be easily found in many areas of the South Sulawesi Community Forest. This research evaluates basic properties (physical, mechanical and chemical) and nanostructure of the woods of each species. Physical and mechanical properties were analyzed according to SNI 03-6847-2002 and ASTM D 143-2005, while the chemical components were analyzed according to TAPPI Standard. The nanostructure was determined by X-ray diffraction. The density, lignin, cellulose and nanostructure (the degree of crystallinity) analysis indicated that lento-lento and pulai would potentially produce a composite product superior especially binderless to that made from acacia and jabon wood. Acacia and jabon have a high density and a high lignin content with a low cellulose content.

Keywords

Basic properties Nanostructure Jabon wood Pulai wood Lento-lento wood Acacia wood

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