

THE POSSIBILITY OF OXIDATION TREATMENT APPLICATION IN MANUFACTURING BINDERLESS PARTICLEBOARD USING SEVERAL WOOD SPECIES FROM COMMUNITY FOREST

S Suhasman, A D Yunianti, S Saad

Laboratory of Forest Product Utilization and Processing,
Faculty of Forestry, Hasanuddin University, Makassar, Indonesia

Corresponding author, email : suhasman@yahoo.com

Abstract

Binderless Particleboard manufacturing technology using oxidation treatment has been successfully applied on sengon wood and candlenut wood species as raw material. The key factor of the technology is activating of wood chemical component. Therefore, wood species will determine the bond quality of resulting particleboard, because of it is closely related to variations in their chemical components. This study aimed to evaluate the possible application of oxidation technique to produce binderless particleboard made of several wood species from community forests. The wood species that used were pulai (*Alstonia scholaris*), jabon (*Anthocephalus cadamba*), acacia (*Acacia mangium*), and lento-lento (*Athropyllum diversifolium*). There are two particle type that used in this study namely coarse particles (shaving shape) with an average size of 10 x 5 x 0.1 mm and fine particles that pass 10 mesh sieve. Binderless particleboard was produced using oxidized particles. The results showed that produced particleboard made from several wood species have a various characteristics both of particleboard made from coarse particles or fine particles. Good quality was found in jabon and lento-lento wood. It's Bonding strength, modulus of elasticity, and dimensional stability fulfill JIS A 5908 2003. It's indicated that wood species has significant effect on binderless particleboard quality.

Keywords; binderless particleboard, oxidation, community forest, acacia mangium