

PENGGUNAAN TANIN KULIT
Acacia mangiwn Willd. PADA RESIN SISTEM¹
(Utiization of Tannin from the Bark of Acacia trumgiwn Willd. In Resign System)

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ABSTRACT

The purpose of this study was to evaluate the character of tannin *Acacia mangium* barks and to compare dimensional stability and strength of MDF prepared using tannin from *A. mangium* in combination with commercial UF, PF resin systems. The bark was water extracted, in a water to bark ratio of 5:1 at temperature range of 60-70°C for 4 hour. Tannin-adhesive formulations prepared were: 1) UF-resin, 2) tannin extract + UF = 50% + 50%, 3) tannin extract + UF = 60% + 40%, 4) PF-resin, 5) tannin extract + PF = 50% + 50%, 6) tannin extract + PF = 60% + 40%. The extractive content of bark was 22.29%. The reactivity of extractives towards formaldehyde, as measured by Stiasny-method, was about 90.94%. The results indicated that the pH decreased with increasing of tannin concentration and the viscosity range of various formulation tannin-adhesives was between 2.5 to 30 poise. To a certain extent, the content of tannin in UF-resin systems has positive influences on thickness swelling, and modulus of rupture (MOR), while the internal bond seemed to decrease as a high amount of tannin was used in UF-resin systems. Negative influence was observed in the thickness swelling and internal bond strength due to the use of tannin in PF-resin system. However, modulus of rupture (MOR) seemed to be positively affected. Further works are needed for the improvement of tannin-UF and tannin-PF resin blends properties.

Keywords: tannin, *Acacia mangium* Willd. UF and PF, resin system, MDF

¹ Sebagian dari paper ini disampaikan pada "The 4th International Wood Science Symposium" di Serpong, 2-5 September 2002

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