PENGGUNAAN TANIN KULIT
Acacia mangiwn Willd. PADA RESIN SISTEM
(Utiiization 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 hours. 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

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