

EVALUATION OF PARTICLEBOARD MADE OF PALM LEAVES MIDRIBS AS COMPARED WITH FLAXBOARD

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Abstract¹

As a part of a large program of exploring the possibility of utilizing agricultural residues in Egypt, this study was undertaken to evaluate the basic properties of one layer particleboards from palm leaves midribs, and to compare these properties with those of currently produced flaxboards.

Boards were produced from each of palm leaves midribs particles and flax shivs under the same conditions. Resin content was 8.2% (based on oven dry weight) and press conditions were 150°C, 25 Kg/cm² and 11 minutes. Mechanical properties in static bending (MOR and MOE) and

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internal bond strength as well as dimensional stability properties were determined.

The results showed that particleboards of adequate strength and stability can be produced from palm leaves midribs. Palmboards were statistically equal in stiffness (MOE) and internal bond strength to flaxboards. However, palmboards was lower in MOR than flaxboards.

Thickness swelling of palmboards was higher than flaxboard. Water absorption after 2-hour soak was higher in palmboards but it was lower after 24-hour soak than flaxboards. Linear expansion, also was higher than flaxboard after 2-hour soak but statistically equal to flaxboards after 24-hour soak.

In the light of increasing demands for an inexpensive panel products in Egypt and based on the result of this study, kpalm leaves midribs is suitable for producing medium density particleboard. However, further investigation into the optimum conditions of particle geometry, adhesion and pressing condition of palm leaves midribs are needed to improve the board quality.