

Date palm biomass is a renewable natural resource that has not widely been utilized in industry. The objective of this study was to examine some chemical properties of date palm trunk and rachis (holocellulose, cellulose, lignin and extractives) and to evaluate their suitability to produce composite panels. Particleboards were produced using trunk and rachis as an alternative raw material for forest products industry in the presence of two types of polycondensation resins (phenol–formaldehyde and melamine urea–formaldehyde) which were selected as binding agents. The panels were tested for their physical (water absorption and thickness swelling) and mechanical (modulus of rupture, modulus of elasticity and internal bond strength) properties. The internal bond strength of date palm trunk and date palm rachis based boards met the requirements of the general purpose product standards (EN 312) at 0.70 g/cm³ density. The panels made with phenol–formaldehyde resin showed better performance with respect to the panels made with melamine urea–formaldehyde. In addition, the particleboard made with date palm trunk particles had better quality compared to the particleboard made from date palm rachis particles. Based on preliminary results of this work, raw materials from date palm trunks and rachis can have a promising potential in the manufacture of particleboards and as a substitute for wood in board production