Evaluation on some finishing properties of oil palm plywood : (Bewertung der Oberflächeneigenschaften von Unterschiedlich Behandeltem Ölpalmen-sperrholz)

Abstract

Oil palm is the largest and most important plantation crop in Malaysia. The oil palm generally lasts for 25-30 years before the next replantation is done. Substantial amount of biomass in the form of palm trunk results from plantation cycle. This resource is simply left on the ground to decay and is not used as raw material to manufacture any kind of value-added products. The objective of this study was to investigate the possibility of manufacturing plywood from oil palm trunks and to evaluate some of the finishing properties of such experimental panels in comparison to those from Shorea sp as control samples. Three-ply plywood samples were produced from 5 mm thick veneers of oil palm using urea formaldehyde adhesive. Three types of chemicals, namely nitrocellulose, pre-catalyzed lacquer and polyurethane were used to finish experimental panels. The surface finished with nitrocellulose had the lowest contact angle on raw surface of oil palm plywood and wood. The average cross cut tape index of oil palm plywood was comparable to Shorea sp. All finishing materials of oil palm plywood produced impact rating of 4 except for surface finished with nitrocellulose while finishing on wood indicated an impact rating of 3. Oil palm plywood had higher weight loss compared to Shorea sp. Based on results from contact angle, cross cut tape index, impact rate test, weathering, and soil burial test methods it appears that the samples showed acceptable finishing properties comparable to those of solid wood.