

Effects of oil heat treatment on physical properties of semantan bamboo (*Gigantochloa scortechinii* gamble)

Abstract

Effect of oil heat treatment on physical properties of 3 years old *Gigantochloa scortechinii* Gamble bamboo was investigated. The bamboo splits within epidermis were heat-treated using crude palm oil at temperature 140°C, 180°C and 220°C for duration 30 and 60 min. The objectives were to determine the effect of oil heat treatment on physical properties of the heat-treated bamboo and to assess any significant changes on physical properties of the heat-treated bamboo. Untreated bamboo was used as comparison for each treatment conditions. The results indicated equilibrium moisture content (EMC), density and volumetric shrinkage of heat-treated bamboo decreased as the treatment temperature and time increases. The EMC and density reduction were 4-27% and 11-18% approximately. This study indicated that bamboo became less hygroscopic when subjected to higher temperature and longer heat treatment time. Volumetric shrinkage of bamboo was also reduced by the treatment conditions (17-53%). The shrinkage properties of bamboo were inversely proportional to the treatment conditions, indicating that oil heat treatment successfully imparts the dimensional stability of the bamboo.