

Study on the longitudinal permeability of oil palm wood

ABSTRACT

In this research, variations in longitudinal permeability of oil palm (*Elaeis guineensis* Jacq) wood were investigated. Panels were prepared from bark to pith with the study carried out on 3 parts of the transverse surface: outer, middle, and inner. Microscopic observations were done to determine the anatomical properties to establish its theoretical permeability using Poiseuille's equation. Results showed that the middle part of the transverse surface of oil palm wood had the highest theoretical, water, and gas permeability values in the longitudinal direction followed by the inner and outer parts. A decrease in the length of samples resulted in an increase in the permeability of the samples. For all parts, theoretical permeability values were the highest followed by water and gas permeability. Lower gas permeability values in comparison to water permeability indicates that oil palm wood is prone to drying defects and is more difficult to treat with chemicals after drying.

Keyword: Oil palm wood; Longitudinal permeability