

## **Changes in strength and chemical contents of oil heat treated 15-year-old cultivated Acacia hybrid**

### **Abstract**

Studies were conducted on the changes in strength and chemical contents of cultivated 15 year-old Acacia hybrid treated through oil heat treatment process. The timbers harvested and cut at the portions bottom, middle and top, were oil heat treated using palm oil for durations of 30, 60 and 90 min. at temperatures of 180, 200 and 220°C. The untreated A. hybrid was used as control. The results of the studies showed that the oil heat treatment process causes some changes in the strength and chemical composition of the timbers. Strength reduction during the bending tests in both the MOR and MOE were noted throughout the treatment process. The chemical constituents of the treated timber also underwent changes in their contents. The holocellulose and cellulose degraded with the increasing of treatment temperature and duration in the oil heat treatment, while lignin showed the increment in content through this treatment. The changes in values of both the strength and chemical contents were influenced by temperature and duration of the treatment.