TREATABILITY OF PLANTATION TIMBER SPECIES WITH CCA (COPPER-CHROME-ARSENATE) PRESERVATIVES AND THEIR EFFECTIVENESS AGAINST INSECT AND FUNGAL ATTACK

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This study was conducted to assess the treatability of four plantation timber species (*Pinus caribaea, Hevea brasiliensis, Eucalyptus grandis* and *Eucalyptus microcorys)* with Copper-Chrome-Arsenate (CCA) by using pressure impregnation full-cell process. The treatability of core wood and outer wood of the species were also investigated. Treatability was evaluated by measuring the preservative retention (Net Dry Salt Retention or NDSR) and depth of penetration.

According to the results, *Pinus caribaea* showed the highest treatability while treatability of *Hevea brasiliensis, Eucalyptus grandis* and *Eucalyptus microcorys* were respectively lower. A significant negative correlation was observed between density of the timber and the treatability. Based on depth of penetration of preservatives, *Pinus caribaea* and *Hevea brasiliensis* were classified as permeable to preservative treatment. *E. grandis* was resistant while *E. microcorys* was extremely resistant to preservative treatment.

Treatability of outer wood of all the species were higher than that of core wood indicating the higher permeability of outer sapwood area compared with the inner core wood.

Treating schedule with initial vacuum of -0.8 bar, pressure of 6.5 bar maintained for 180 minutes and final vacuum of -0.8 bar was effective treatment of *Hevea brasiliensis*. Even with this pressure, it was unable to achieve depth of penetration levels as specified in the Sri Lankan Standards for *E. grandis* and *E. microcorys*.

When wood samples were exposed to exterior ground contact in the grave yard test for five months, none of the treated samples were infected, but untreated control samples were attacked by fungi and termites. This indicates the effectiveness of the CCA treatment in controlling fungal and insect attack.