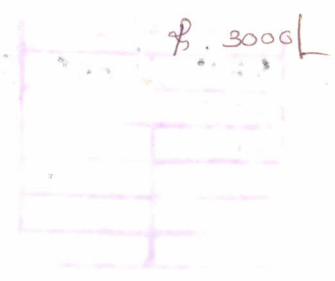


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**PRESERVATIVE TREATMENT OF JAK
(*Artocarpus heterophyllus*)
SAPWOOD USING CCA AND BORON PRESERVATIVES**

by

G. Mangala Kirthi Perera (B.Sc.)



This work is independent,
The work
submitted in partial fulfillment of requirement for the
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Department of Forestry and Environmental Science,
Faculty of Graduate Studies,
University of Sri Jayewardenepura,
Nugegoda,
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ABSTRACT

In Sri Lanka Jak timber is listed as a special class timber. Jak timber has high demand for the construction and furniture. Jak heartwood is highly durable. However, sapwood is susceptible to borer attack. Jak sapwood can be used if proper treatments and finishings are given. This study was conducted to determine the most suitable and practical treatment method for Jak sapwood to improve its durability. 10 trees of Jak (*Artocarpus heterophyllus*) were selected for this study. Sapwood samples and heartwood control samples were extracted from each tree.

Jak sapwood was treated by three methods: Boron (Cold) diffusion and Boron (Hot & Cold) open tank method using 25% boron solution and Pressure Impregnation Full-cell process using 2.8% CCA solution. The treatability of different age trees were evaluated by measuring the preservative retention and depth of penetration. Effectiveness of the treatment was evaluated by percentage weight loss in field exposure test.

According to the results, retention in CCA pressure treated samples was higher compared with boron diffusion methods. Boron (Hot & Cold) open tank method gave higher retention compared with boron (Cold) method. There was no relation observed between preservative retention and percentage weight loss in field exposure test. Spot test showed full depth of penetration (100%) in both boron treatments and 46% of penetration in CCA pressure process.

After the field exposure test, the highest weight loss was recorded for boron (Hot & Cold) treated samples and second weight loss was recorded in boron (Cold) treated samples.

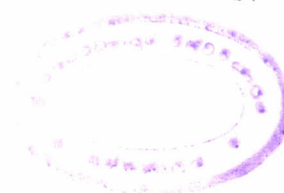
There was no significant difference of the penetration and weight loss between two boron treatment methods. Weight loss of the CCA pressure treated samples was very small. Although the full depth of penetration was not achieved the CCA pressure impregnation schedule and solution were more effective for the preservation of Jak sapwood.

Based on results, it is clear that Jak sapwood can be fully treated with boron diffusion methods and effectively treated with CCA pressure impregnation method. Diffusion methods using boron solution is recommended for the interior joinery and CCA pressure impregnation is recommended to use Jak sapwood in exterior construction activity.

However, sapwood of Jak showed other undesirable characters in terms of utilization: compared with heartwood, density of sapwood was low, and shrinkage was higher.

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