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ANATOMICAL VARIATION IN PLANTED KELEMPAYAN (NEOLAMARCKIA CADAMBA, RUBIACEAE)

by

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SUMMARY

Six plantation grown Kelempayan trees [*Neolamarckia cadamba* (Roxb.) Bosser, syn. *Anthocephalus chinensis* (Lamk.) A. Rich. ex Walp., Rubiaceae] were sampled along their radii and at five different height levels to evaluate variations of wood anatomical properties. Analysis of variance indicates that between tree differences in all anatomical properties measured were significant. Vessel proportion increases while ray proportion decreases with height, while both fibre diameter and fibre lumen diameter decrease with height. No significant trend was found for fibre length vertically. Cell wall substance and vessel and ray proportion increase from pith to bark, while fibre proportion decreases. Fibre length and fibre wall thickness increase from pith to bark, while fibre diameter and fibre lumen diameter first increase and then decrease. Within-tree variations are more consistent radially than vertically.

Key words: Kelempayan, *Neolamarckia cadamba*, *Anthocephalus chinensis*, tropical hardwoods, tissue proportions, fibre dimensions, radial variation, vertical variation.

INTRODUCTION

The demand for tropical timbers is always on the increase. This is an advantage to the Malaysian economy due to its vast area of tropical rain forest. However, the prime natural forest species are becoming scarce. Thus the wood industry is expected to rely on lesser known and plantation grown species for a considerable portion of the supply of raw materials.

Kelempayan [*Neolamarckia cadamba* (Roxb.) Bosser, syn. *Anthocephalus chinensis* (Lamk.) A. Rich. ex Walp., Rubiaceae] is a fast-growing tree species with a tall and straight bole. It self-prunes and grows very well in exploited and denuded areas. Kelempayan is distributed in the Indo-Malesian region extending from India to Papua New Guinea (Willis 1973; Ridsdale 1978; Wong 1989). Gamble (1922) and Burkill (1966) reported that it is found in areas of up to 650 m altitude, although Wong (1989) stated the upper limit as 1000 m. Kelempayan dominates the initial regrowth stage of tropi-

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