

Anatomical properties and microstructures features of four cultivated bamboo gigantochloa species

Abstract

Anatomical properties and microstructure features of four (4) cultivated species of popular tropical bamboo genus *Gigantochloa* were studied. *Gigantochloa* brang, *G. levis*, *G. scotechinii* and *G. wrayi* of age-group 3 were selected, harvested and processed for the anatomical and microstructure studies. The studies focussed mainly on the vascular bundles and fiber cells located at the internodes and nodes 8 at the outer, middle and inner layers of the bamboo. The sizes of the vascular bundles length, vascular bundles width, fiber length, fiber diameter, fiber lumens diameter, fiber walls thickness and fiber Runkle's ratio were measured between each of the species in relation to the samples positions at the internodes, nodes, and positions in the cross-section of the bamboo culms. The results in the fibers morphology studies showed that the fibers for each species has different lengths, diameters, cell walls thickness and lumen sizes. The size of vascular bundle is smaller at outer position and become bigger at the inner position. All the four (4) bamboo species exhibited similar in characteristics but having different sizes in anatomy and microstructure features.