

Mechanical Properties and Failure Behaviour of Gigantochloa Scortechinii

ABSTRACT

The physical and mechanical properties of bamboo have been widely studied but information of these properties at the nodes is still lacking. The presence of node in a bamboo split may affect the mechanical strength of the material. To enable usage of bamboo in a longer length, understanding the mechanical properties and behaviour of the bamboo at the node is crucial. This study used 4-year-old *Gigantochloa scortechinii* bamboo. The physical and mechanical properties at the nodal and internodal sections of the bamboo split were tested in green and air dry conditions. The orientations of the bamboo splits with the periphery of the bamboo split oriented facing downwards (referred to as compression) and facing upwards (referred to as tension) were taken into consideration during the mechanical test. Results suggested avoiding orientating the bamboo splits with the peripheral skin positioned at the bottom as it reduced the mechanical properties. The failure behaviour of bamboo splits at the node and internode were evaluated and compared.

Keyword: Node, internode, bamboo splits