

Mechanical properties of 10-year-old sentang (*Azadirachta excelsa*) grown from vegetative propagation

ABSTRACT

Mechanical properties of 10-year-old sentang (*Azadirachta excelsa*) grown from vegetative propagation. This paper reports the mechanical properties of sentang (*Azadirachta excelsa*) wood cut from trees that were planted by vegetative propagation, their variations along tree height and also between sapwood and heartwood. The correlation between selected anatomical properties as well as density and mechanical properties were also presented. There was no significant difference in modulus of rupture between wood from seedling and rooted-cutting trees. However, wood from rooted-cutting trees showed higher modulus of elasticity compared with wood from seedling trees. On the other hand, compression and shear parallel to the grain were significantly higher in wood planted from seedling compared with wood from rooted-cutting trees. There was an increase in mechanical properties at the bottom portion towards the top irrespective of the planting technique. Mechanical properties were higher in heartwood than in sapwood. Mechanical properties were correlated with anatomical properties rather than density. Rooted cutting could be a promising method for planting sentang, apart from seedling.

Keyword: Static bending; Compression; Shear; Rooted cuttings; Seedlings; Fast growth