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Cultivation and Utilization of Japanese Fast Growing Trees with High Capability for Carbon Stock I. Potential of *Melia azedarach*

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Abstract: Wood properties and their variation in the stem of 17-year-old *Melia azedarach* trees, which grew fast and had straight stem forms due to pruning, were investigated to clarify the potential of this species as a fast-growing tree in Japan. The test trees were grown as seedlings from the same mother tree. The diameter at breast height ranged from 21.4 to 32.7 cm. Growth ring width near the pith up to 3 m height above ground was large and became stable beyond the 4th ring regardless of stem height.

The specific gravity when air-dry increased slightly from the pith outward and with increasing stem height. The pattern of distribution of specific gravity showed that there were low and high specific gravity zones in the stem. The compression strength in the stem varied in a trend similar to that of specific gravity. There was a significant correlation between specific gravity and compression strength at the 1% level. Stems up to 4 m height above ground have been used because of the umbrella-type crown form, but correction of stem form by pruning has made it possible to use stems up to 8 m in height.

Keywords: *Melia azedarach*, fast growing tree, wood properties, specific gravity, pruning



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