

Radial variation of wood cell features under different stocking densities management of two new clones of rubberwood (*Hevea brasiliensis*)

ABSTRACT

Wood characteristics vary from pith to bark and this can influence the final use. These variations can be related to the effects of plantation management. The radial variation in fiber cells, vessel elements, and ray cells was investigated for a commercial and fast-grown species, the rubberwood (*Hevea brasiliensis*), at varying stocking densities. Nine-year-old trees of two new clones (RRIM 2020 and RRIM 2025) were categorized into four stocking densities of 500, 1000, 1500, and 2000 trees ha⁻¹. The sample blocks were anatomically analyzed to determine the changes in wood cells from pith to bark. The results generally showed a centrifugal increase in fiber features, vessel diameter, ray height, and ray area. Vessel density and ray density showed a decreasing trend. Vessel areas revealed a radial irregular variation. The ray area showed a striking relationship with ray density and ray height. Ray cell pattern indicated enough variation for visual approval to ensure within and between stocking density changes. Most radial variation was explained by the effect of cambial age. Owing to different stem width and growth rates, the mean cell features were not at the same radial distances from the pith.

Keyword: Anatomical properties; Clonal effect; Radial variation; Rubberwood; Stocking density