

Periodicity and growth rate of five promising tropical tree species from semideciduous forests in southeast region of Sao Paulo State, Brazil. Botosso, P.C. (*Embrapa Florestas, Brazil; botosso@cnpf.embrapa.br*), Tomazello Filho, M., Lisi, C.S., Maria, V.R.B. (*ESALQ/Universidade de São Paulo, Brazil; mtomazel@esalq.usp.br; cslisi@carpa.ciagri.usp.br; vivibap@ig.com.br*).

Growth rate and periodicity in girth increment were studied in five woody species that are potentially promising for restoration and silviculture, based on wood anatomy, phenology and diameter growth measurements. Permanent steel dendrometer bands were fixed in the trunks of 27 selected trees from a plantation of known age (*Tabebuia serratifolia* – Bignoniaceae; *Cedrela fissilis* – Meliaceae; *Dipteryx alata* – Papilionoideae; *Copaifera langsdorffii* – Caesalpinoideae; *Cariniana estrellensis* – Lecythidaceae) and girth increments were evaluated during 33 months. Cambium activity was reduced or ceased in the dry winter season probably due to water stress. Expressive growth rates were detected after the first rainfall, demonstrating that the largest period of wood formation corresponds to the rainy season and a longer phase of permanence of the leaves. Higher average trunk girth increments were observed in species with lower wood specific gravity (SG) and slower growth in higher wood SG species. Girth increment may be influenced by several climatic parameters, but the most important variable is the soil water deficiency, inducing leaf fall and seasonal growth behaviour. Growth rings as a source of cyclic structural change of growth periodicity were observed. This methodology is a potential tool to determine age and growth rate of tropical trees.