

PC4.04 Poster

Wood formation, girth trunk increment and phenology of two tree species from Atlantic rain forest in southern Brazil growing in two different soil conditions

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The tree growth and regulation of reproductive and vegetative activities of the plants over time depends on factors such as climate, day length, water availability and nutritional characteristics of the soil. Phenological observations and girth trunk increment data were performed every 15 days over one year for 61 adult trees of *Senna multijuga* (Caesalpinioideae) and 61 *Citharexylum myrianthum* trees (Verbenaceae) growing in the Atlantic rainforest (25°19'15" S; 45°42'24" W) with a well-balanced rainfall distribution all year round, high and nearly constant humidity, no dry season and low annual thermal oscillation. The increment of trunk and timing of growth for all trees were recorded at DBH by using steel permanent dendrometer bands, aiming to investigate the phenological and growth patterns of these species growing in two different soil conditions (Gleisol and Cambisol). Phenophases were strongly correlated with climate variables and day length, but they were weaker in relation to water table depth. Diameter growth and wood formation was significantly correlated with flushing and fruiting. Mean cumulative growth for *C. myrianthum* trees was lower in the Gleisol area than in Cambisol, while there was no difference in growth between soils for *Senna multijuga* trees. There were strong correlations between diameter growth and all the climatic variables, but they were stronger with day length, rainfall and mean temperature. Simultaneously exploring relationships among phenology, cambial activity and growth conditions, it was possible better understand the particular growth behavior, including the rhythm of cambial activity and the wood formation of these species.