

Growth dynamics of different species in a Araucaria Forest remnant

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Keywords: *Growth increment, Competition, canopy area, dendrometer bands*

The complex structure of the Araucaria Forest had its productive potential, structure and biodiversity adversely affected due to intense logging that occurred in the last century. Information concerning the dynamic of these forests are essential for the proper management of these remnants. The aim of this study was to contribute to the understanding of the growth dynamics of native species, by the analysis of growth and competition, to subsidize the forest management and its conservation. The study was performed in a remnant of Araucaria Forest in Colombo, Parana State, Brazil, from July 2010 to June 2011. Dendrometer bands were installed in trees of nine species (*Casearia inaequilatera*; *Casearia sylvestris*; *Jacaranda micrantha*; *Matayba eleagnoides*; *Nectandra lanceolata*; *Nectandra megapotamica*; *Ocotea odorifera*; *Podocarpus lamberti* and *Prunus myrtifolia*), totalizing 182 trees monitored monthly. Tree height were estimate in the field and it was measured diameter at breast height and crown projection in directions North, South, East and West, to estimate the crown projection area. It was also estimated the percentage of canopy cover. Autumn was the period of the year with the largest number of trees with growth increment registered, and also presented the highest increases in basal area. *Nectandra lanceolata* and *Ocotea odorifera* showed the highest relation between crown diameter and annual increment, reflecting the high light dependence for growth of these species. Unlike other species, *Jacaranda micrantha* showed no relation between canopy area and diameter increment, possibly reflecting the senescence stage, as it is a pioneer species in a late secondary forest remnant. The relation between the crown area and the percentage of canopy cover with the annual diameter increment suggests that the implementation of a management plan with thinning interventions should be positive to contribute to increase diameter growth, since the trees are currently under condition of high competition for light.