

PATTERNS OF STOMATAL CONDUCTANCE IN DYNAMIC ENVIRONMENTS OF SECONDARY VEGETATION UNDER FALLOW, IN NORTHEASTERN PARÁ, BRAZIL

PADRÕES DE CONDUTÂNCIA ESTOMÁTICA SOB CONDIÇÕES DINÂMICAS DA VEGETAÇÃO DE POUSIO NO NORDESTE PARAENSE, BRASIL

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Since virtually all gaseous water and CO₂ exchange of leaves during photosynthesis occurs through the stomata, they exert an important control over the flux of these gases and the understanding of their responses to environmental conditions is crucial for the assessment of transpiration and assimilation rates in environments. Secondary vegetation grown during different fallow periods presently represents a substantial proportion of agricultural landscape in Amazonia. Contrasting from Amazonian rainfall vegetation, which has been studied, secondary vegetation components are little understood ecophysiologically, which makes it difficult to investigate about the environmental impact of this land-use, as well as to decide about its sustainable management. Vertical profiles of stomatal conductance (g_t) measurements using a diffusion dynamic porometer (AP-4, Delta-T Devices, Inc.), were made during field campaigns, covering periods with different water supply, on leaves of species of three secondary vegetations (*i.e.* 2 to 3 year-old, 4 to 5 year-old, and 10 to 11 year-old “fallow”), including: *Phenakospermum guianense* Endl., *Davilla rugosa* Poir., *Lacistema pubescens* Mart., *Vismia guianensis* (Aubl.), *Banara guianensis* Aubl., *Myrcia bracteata* (Rich.)DC, and *Cecropia palmata* Willd.. The lowest g_t midday average values were found in *P. guianense* and *D. rugosa*, and the highest in *C. palmata*, followed by *B. guianensis* and *V. guianensis*. In some of the measuring dates water potentials were also determined on plants adjacent to those used for porometry, allowing to assess the stomatal responsiveness to plant water status changes. Some of the species with amphistomatous leaves control effectively the stomatal opening on the adaxial leaf surface, under water stress conditions.

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