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## EFFECTS OF CONTRASTING IRRADIANCES ON CARBON BALANCE, BIOMASS PARTITION, AND LEAF NUTRIENT CONTENTS IN BRAZILIAN CERRADO WOODY SPECIES

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It was evaluated growth and photosynthetic performance of two leguminosae woody species under contrasting irradiances environments, *Anadenanthera falcata* (Benth.) Speng. and *Stryphnodendron adstringens* (Mart.) Coville. Under total irradiance in open area both species presented greater biomass accumulation, height, stem diameter, total leaf area and higher photosynthetic capacity on area bases (Am<sub>axa</sub>). Shaded individuals under canopy modified the biomass partition, presenting greater mean values of leaf area rate (LAR), and smaller values of the specific leaf mass (SLM), respiration in dark (R<sub>d</sub>), and apparent photorespiration (Pr), apparent carboxylation efficiency (electron transport rate (J). High transitory concentrations of CO<sub>2</sub> increased the photosynthetic capacity under total irradiance (83%) and under canopy (71%). Leaf nutrient content on mass base showed that both species at open site had lower concentration than in shade. In contrast, instantaneous photosynthetic leaf nutrient use efficiency (NUE) under CO<sub>2</sub> normal conditions and under CO<sub>2</sub> saturation (NUE<sub>pot</sub>) was usually higher in open site. *A. falcata* presented greater performance under both irradiance conditions. Under shade it presented survival rate of 100% and larger biomass gain than *S. adstringens* being more capable to acclimate at low irradiance levels. These physiological and morphological alterations in both species growing under contrasting irradiances environments provided important understanding of ecological conditions of natural regeneration in cerrado domain and supply valuable information that are requested for initial establishment in projects of Brazilian cerrado recovery. (FAPESP)

Palavras-Chave: Cerrado, Leguminosae, Photosynthesis, Respiration, Survival rate