

- [About](#)
- [Meetings](#)
- [Sections](#)
- [Index Terms](#)
- [Advanced Search](#)

Quick Search

Enviar dados

CARBON BALANCE IN BRAZILIAN SAVANNA (CERRADO) WOODY SEEDLINGS UNDER CONTRASTING IRRADIANCES

Details

Meeting	2010 Meeting of the Americas
Section	Global Environmental Change
Session	Global Environmental Change General Contributions II Posters
Identifier	GC13C-01
Authors	Ronquim, C*, Embrapa, Campinas, Brazil
Index Terms	Climate variability [1616] Instruments and techniques [1694]

Abstract

Carlos Cesar Ronquim (Presenting) Embrapa Monitoramento por Satélite; Av. Soldado Passarinho, 303; CEP 13070-115; Campinas - SP - Brasil ronquim@cnpm.embrapa.br The vast Cerrado area could be an important continental sink to CO₂. On the other hand, the responses facing specific constraints (e.g. shade, water stress, mineral deficiency) must be quantified in order to estimate the real capacity of each Cerrado species to act as a carbon sinker. Studying several levels of organization at same time it was possible to point out how phenotypic plasticity operates in five young Cerrado woody species, *Copaifera langsdorffii* Desf, *Cybistax antisiphilitica* (Mart) Mart., *Tabebuia chrysotricha* (Mart. ex DC) Mart., *Anadenanthera falcata* (Benth.) Speg., and *Stryphnodendron adstringens* (Mart.) Coville, submitted to different irradiance and under transitory increasing of atmosphere CO₂ availability. Under full irradiance, photosynthetic capacity, leaf area, and carboxylation efficiency increased at least two times in comparison to same species growing in shade (under Cerradão irradiance attenuation). As a consequence, biomass production was always greater ($p < 0.05$) under full irradiance (FI) till 570 days after sowing (DAS). Photosynthetic capacity under 1600 ppm of CO₂ was at least two times higher in comparison to regular CO₂ availability irrespective the irradiance treatment. In addition to leaf physiological alterations, height, stem diameter and specific leaf mass values were also significantly lower in all species in shade. These physiological and morphological alterations could enable some Cerrado woody species to survive under Cerradão irradiance attenuation working as a carbon sinker even in the densest Cerrado physiognomy.

Cite as: Author(s) (2010), Title, *Eos Trans. AGU*, 91(26), Meet. Am. Suppl., Abstract GC13C-01

