Tree Influence on Grassland in the Paraguayan Chaco

Stosiek[1,3], D., A. Glatzle[1,3], R. Schultze-Kraft[2], P. Klassen[3]
[1]Estación Experimental Chaco Central (MAG), Paraguay
[2]University of Hohenheim (380), Germany (rsk@uni-hohenheim.de)
[3]INTTAS, Loma Plata 1045-Chaco, Paraguay (info@inttas.org)

A common problem of grasslands in the semi-arid Central Chaco of Paraguay is the competition exerted by invading woody species. There is, however, an increasing awareness of the positive influences of individual trees, particularly Algarrobo (*Prosopis alba* and *P. nigra*) on the associated grassland, beyond the recreational and esthetical values of a park like woodland and the offer of shade and protection for livestock.

Parameter	Soil type	Luvisol	Regosol	Site
	Texture	Loam	Sand	
Number of trees investigated		17	48	
Soil organic matter (%)		3.9 a	2.6 a	UC
		2.4 b	2.3 b	OA
Standing biomass, dry matter (kg/ha)		3988 ns	3751 a	UC
		4295 ns	3265 b	OA
Grass water content (% of fresh matter)		65 ns	71 a	UC
		66 ns	68 b	OA
Grass crude protein content (% of dry matter)		7.9 a	8.4 a	UC
		7.2 b	5.8 b	OA
Grass Metabolizable Energy (MJ per kg of dry matter)		7.2 ns	7.4 ns	UC
		7.1 ns	7.3 ns	OA

UC = under canopy; OA = open area; ns = non significant
a and b following figures: Significant difference between "UC" and "OA"

***Conclusion:* Trees generally exert a positive influence on grass growth and grass quality characters, particularly on low fertility, sandy soils.**