

Carbon stock in areas of pasture and native vegetation

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Introduction

One of the factors that may indicate the quality of soil is the organic matter (SOM), directly linked to structural, biological and chemical soil characteristics, in addition it is stock for carbon (C) and nitrogen (N). For grazing areas, stocks of C and N vary when compared to natural vegetation inventories. Factors such as the type of management adopted, climatic condition and renewal of plants can contribute to stocks become smaller over land use. Thus, the objective of this study was to evaluate the initial and final C stocks in pasture under two types of grazing and native vegetation.

Material and Methods

The experiment was conducted at FZEA / USP in Pirassununga / SP. The experimental area was cultivated with *Brachiaria brizantha* cv. Marandu and evaluations¹ were made in continuous and rotational grazing method with stocking rate as a variable. The period of use of the area was from 01/13/2014 to 10/20/2014 and after the experiment finishing date, samples were collected in continuous and rotated grazing systems and in native vegetation (forest). The samples were collected at depths of 0-5, 5-10, 10-20, 20-40, 40-60, 60-80, 80-100 cm, with four replications each. The quantification of the total content of C and N, were held in the elemental analyzer LECO CN, at Embrapa Meio Ambiente, Jaguariuna-SP. The samples were dried in an air forced circulation oven at 40 °C for 72 hours (or until constant weight) sieved

in 100 mesh (0.149 mm). From the concentrations of carbon (C) in soil and densities (obtained from soil samples of volumetric rings at 60 cm depth) C stocks were calculated in each layer and treatments were compared. The results were submitted to analysis of variance and the means compared by Tukey test at the 5% level of probability using SAS software.

Results and Conclusions

The results for the carbon stocks are shown in Table 1.

Table 1. Carbon stock in pasture of *Brachiaria brizantha* cv. Marandu and native vegetation (forest).

Treatments	Depths (cm)						
	0 to 5	5 to 10	10 to 20	20 to 40	40 to 60	60 to 80	80 to 100
Continuo	13.85	10.97	28.322	34.175	27.425	26.187	20.917
Rotational	15.087	11.912	20.205	52.37	29.415	28.465	25.315
Native Veget.	32.11	21.37	36.92	61.11	50.34	41.92	37.02
p < 0.05	0.3707	0.3293	0.3339	0.001	0.3458	0.348	0.0056

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