



Grain Yield of Mayze as a consequence of a crop rotation with a second crop, forage, green manure and lie fallow

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Introduction

Among the numerous benefits of Crop-Livestock-Forest Integration are: the restoration of soil fertility, the establishment of pastures with low costs, the improvement in physical, chemical and biological properties of the soil, the control of pests, pathogens and weeds, the recycling of nutrients from the soil, the increase in grain yield. The Crop-Livestock-Forest systems can increase job opportunities, the efficiency in the use of machinery, equipment and manpower, and also productivity and profitability. Quantify these benefits should be role of the research to support public policy actions.

Material and Methods

The experiment was conducted on the 2010/11 growing season. The soil is a Rhodic Hapludox located in Botucatu-SP. The experimental design was a randomized block with four replications. The plots consisted of four crop systems (I. "Mayze crop - forage" II. "Mayze crop – Second crop", III. "Mayze crop - Fallow", IV. "Mayze crop - Green Manure nt "). The hybrid 2B433 of Mayze was sown on november 18 of 2010. It were determined the yield components of the plants in two lines of 5 meters and the grains yield using all the plants in the plots of 52 m² each. Data were subjected to the analysis of variance, and means were compared by the t test (LSD), at 5% probability.

Results and Conclusions

Only the plant population and ear index were not affected by treatments. For all other treatments, the fallow system was less efficient in agronomic terms. The efficiency of crop rotation systems, especially those involving the green manure and the forage (Crop-Livestock Integration) is linked to the multiple benefits that these practices provide to production systems. Encourage more efficient systems is the most sustainable way to promote agronomic and social gains to Brazilian agriculture, which will be more charged every day by their efficiency and sustainability.

Table 1. Yield components and grain yield of mayze as a function of the crop rotation in a no tillage system. Botucatu, São Paulo State, Brazil, 2010-2011.

Tratamentos	Yield components					
	Dry matter	Population	Ear index	Grains per ear	Mass of a hundred grains	Grain Yield
Systems	kg ha ⁻¹	plants ha ⁻¹	-----n ^o -----		g	kg ha ⁻¹
Fallow	9803d	60000a	1.1a	500c	28.58b	8339c
Second Crop	12574c	61000a	1.1a	538b	32.99a	11665b
Green Manure	14901a	60000a	1.1a	587a	32.50a	12527a
Forage Crop	14014b	60750a	1.1a	583a	33.07a	12800a
DMS (0,05)	880	3050	0,18	37,02	1,52	741
CV(%s)	7.4	11.0	3.5	7.3	5.2	16.9

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