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Growth and Productivity of Maize Cultivated in No-Tillage in Succession of Different Cover Crops

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Abstract

The use of cover plants, especially leguminous, can improve the fertility of the soil by the nutrients cycling and adds N by symbiotic fixation. In the organic system of production is not allowed the use of fertiliser whit high solubility. Thus the use of agricultural systems with leguminous species is an efficient strategy in promoting the accumulation of total N in the superficial layer of the soil, for the maize nutrition This work was carried out with the objective of evaluating, through the growth analysis, the effects of cover plants on the development of maize (*Zea mays* L.) cultivars AG 1051, under no-tillage, in organic system of production. This study was conducted in typic dystrophic Red Latosol (Oxisol) located at Experimental Station of Embrapa Rice and Beans, in Santo Antônio de Goiás, Goiás State, Brazil. The experiment was carried out in a randomised block design, using five treatments with four replications. The treatments was represented by cover plants: velvet bean (*Mucuna aterrima*), Dwarf pigeon pea (*Cajanus cajan*), Sun hemp (*Crotalaria juncea*), Sorghum (*Sorghum technicum*), and fallow with spontaneous vegetation. For evaluating leaf area and dry matter production, ten samples were collected at seven days intervals, randomly taking three plants, replicated two times. The growth analysis showed that for the variables leaf area and dry matter production was observed significant differences for the maize plants cultivated in succession to the leguminous, especially velvet bean and sun hemp, in relation to those cultivated in succession to the spontaneous vegetation and sorghum. The medium productivity of ears of maize without husk went larger for the system of succession sun hemp-maize (11.534 kg ha^{-1}).

Keywords: Growth analysis, leaf area index, leguminous, *Zea mays*

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