



## **Grain Yield and Forage Quality of Corn with Pre-Cultivation of Stylosanthes as Green Manure**

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Green manure using pre-cultivation of legumes can increase soil fertility, reducing dependence on synthetic fertilizers. The objective of this work was to evaluate the effect of stylosants as green manure on grain production and bromatological quality of the corn plant. The experiment was conducted in the 2023/2024 agricultural year at the Centro de Transferência de Tecnologias de Raças Zebuínas com Aptidão Leiteira (CTZL - Embrapa Cerrados), located in Brasília- DF. The experimental design was completely randomized, with 4 replications (4 m<sup>2</sup> plots) and 3 sub-replications, with two treatments, with and without green manure with *Stylosanthes guianensis* cv. BRS BioN, in the pre-culture of *Zea mays* L. cv BM 270. The data were subjected to analysis of variance using the f test, and the means compared using the LSD test. All analyzes were performed at 5% probability, using Sisvar® software. At 110 days after incorporation of the stylosants plant material, at the time of corn harvest, composite soil samples were collected and analyzed for soil fertility according to Donagema et al (2011). Grain productivity estimated using the Reetz (1987) methodology by measuring the number of plants per plot, the number of ears per plant, rows of grain per ear and grains per row. In corn plants, the levels of CP, NDF, ADF, cellulose, hemicellulose and lignin were also determined. Green manure with Stylosants promoted an increase in the values of pH, Ca<sup>2+</sup>, Mg<sup>2+</sup>, organic carbon, sum of bases, and effective and potential at pH 7.0 cation exchange capacity. Green manure with stylosants significantly increased (p<0.05) grain productivity (20.5%), NDF (15.5%), ADF (21%), cellulose (20.8%), hemicellulose (9.4%), and lignin (23.1%), however, it provided lower levels of crude protein (-9.6%). Green manure with stylosants promoted an increase in corn grain productivity and fiber content in corn plants.

**Keywords:** *Milho*, *Estilosantes*, green manure, leguminous plant, fiber quality.

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