

TITLE: CORN YIELD RESPONSE TO BIO-INDUCERS

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ABSTRACT:

Costs of nitrogen fertilization represent an average of 5.34% of total cost to produce corn in Brazil. Hence one alternative to decrease the use of nitrogen fertilizers is the application of bacterial inoculants. However, traditional inoculation methods result in high microbial mortality rates given the exposition of bacteria to chemical products used in seed treatments. An alternative to mitigate this problem is the application of bio-inducers once they do not contain living bacteria, but only their metabolites. This study aimed to evaluate corn yield response to two pre-commercial bio-inducers (Stamina and Simetria) composed mainly by amino acids and auxins. The experiment was carried on in 2016 at Ponte Alta – SC in a completely randomized design with nine treatments and five repetitions: T1: control; T2: 75% of the recommended N fertilization; T3: 100% of the recommended N fertilization; T4: 75% of the recommended N fertilization + application of Simetria up to V3 stage; T5: 75% of the recommended N fertilization + application of Simetria at V6 stage; T6: 75% of the recommended N fertilization + application of Simetria at both V3 and V6 stage; T7: 75% of the recommended N fertilization + application of Simetria at V3 and Stamina at V6 stage; T8: 75% of the recommended N fertilization + application of Simetria and Stamina at V6 stage; T9: 75% of the recommended N fertilization + application of Simetria and Stamina at V3 stage. All bio-inducers were applied at 200mL/ha. Results were submitted to ANOVA using the R Software. The average yield was 13,836.78 kg/ha and no statistical difference was observed among treatments. Based on our findings, bio-inducers are not recommended to increase corn yield. However, these products may be an alternative to reduce nitrogen fertilization to 75% and obtain the same yield observed with 100% of the recommended fertilization.

Keywords: *Zea mays*; auxins, amino-acids

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