

TITLE: Growth and yield of corn (*Zea mays*) in response to inoculation with *Azospirillum brasilense* and use of bio-inducers.

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ABSTRACT:

Along with innovations in agricultural and livestock sector, mainly in search of higher yield and reduced costs, attention to the used of inoculants and bio-inducers rises. These techniques are good alternatives to increase crop yield without harming the environment, and also to positively impact economy and social development. This study was conducted with the aim to observe growth and yield responses of corn (*Zea mays*) when cultivated with products developed by Total Biotecnologia. The experiment was conducted in Ponte Alta – SC, in an completely randomized block design with eight treatments and five repetitions. Each experimental unit measured 29.25m² (6.5x4.5m). Treatments employed were: T1) control, with no nitrogen fertilization; T2) 75% of the recommended N fertilization (300 kg/ha); T3: 100% of the recommended N fertilization (400 kg/ha); T4) 75%N + bio-inducer Raiz (applied at 100ml/60,000 seeds); T5) 75%N + bio-inducer Raiz (applied at 100ml/60,000 seeds) and Simetria (200ml/ha applied on row up to V6 stage); T6) 75%N + bio-inducer Raiz (applied at 100ml/60,000 seeds) and Stamina (200ml/ha applied on row up to V6 stage); T7) 75%N + bio-inducer Raiz (applied at 100ml/60,000 seeds) and both Simetria + Stamina (each at 200ml/ha applied on row up to V6 stage). We evaluated plant height, ear insertion height, shoot dry weight and yield. Results were submitted to ANOVA and means were separated by the Duncan test at 5%. Values of plant height and ear insertion height were higher in treatments 1 through 4. Regarding grain yield, T6 had the highest mean, 18.4% higher than T1 and T3. As the main objective of corn producers is to have high yield combined with lower costs, we may state that farmers can reduce nitrogen fertilization by 25% and still harvest 2,812 kilograms more grains if using both products, Simetria and Stamina.

Keywords: *Azospirillum*, Corn, Bio-inducers.

Development Agency: Total biotecnologia