

## EFFECTIVENESS OF BIOFERTILIZER WITH DIAZOTROPHIC BACTERIA AND FUNGI CHITOSAN ON LETTUCE AND SOIL ATTRIBUTES

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Soluble fertilizers is one of the most used agricultural practices with great economic cost and consumes a lot of energy. The mixed biofertilizers (NPKB) produced from PK powdered rocks with organic matter and the protector with fungi chitosan (NPKP) should be alternative for conventional fertilizers (NPKF). The aim of this study was to evaluate the effectiveness of BNPK biofertilizer with diazotrophic bacteria and bioprotector with the fungi *Cunninghamella elegans*, compared with soluble fertilizers (NPKF), on the yield and nutritional status of lettuce in two consecutive cycles, and in soil chemical attributes. The study was conducted in a split-plot design (factorial 8x2), with 8 fertilization treatments and 2 sub treatments (with and without foliar application of chitosan from shrimps), with four replicates. The fertilization treatments were: (1) NPKF in recommended rate (RR) for lettuce; (2) Biofertilizer (NPKB) 50 % RR; (3) NPKB 100 % RR; (4) NPKB 150 % RR; (5) protector (NPKP) 50 % RR; (6) NPKP 100 % RR; (7) NPKP 150 % RR; (8) Control (earthworm compost - 2.4 L plant<sup>-1</sup>). The experiment had two consecutive harvests, and used chitosan applied in leaves against natural microbial diseases in the field. The biofertilizer N positively affected the lettuce characteristics. The application of chitosan in leaves were not evaluated because do not occurred natural disease in the used area. The fertilization treatments increased the available P and K in the soil with residual effect in the two consecutive harvests. We conclude that the biofertilizer has potential to increase lettuce characteristics and may represent an alternative to soluble fertilizers.

**Keywords:** *Cunninghamella elegans*. Mineral Nutrition. Nutrient availability. Organic fertilization. Rock biofertilizers

Acknowledgements: CNPq, FACEPE, CAPES.