

**EFFECT OF BIOFERTILIZER AND PHOSPHORUS NUTRITION ON GROWTH,
(.YIELD AND QUALITY OF COMMON BEAN (*Phaseolus vulgaris* L**

A thesis

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In

Vegetable Crops

By

Rabab Farouk Abo El-Ali

SUMMARY

The current study was suggested to investigate the main effects of seed inoculation with two different types (Phosphorien and Mycorrhiza) and four different fertilization levels of mineral phosphorus (0, 30, 60 and 90 kg P₂O₅ fed-1) as well as their interactions on the vegetative growth characters, flowering traits, green pods yield and its components, seed yield and its components and some chemical contents of the leaves and dry seeds of common bean (*Phaseolus vulgaris* L.) cv. "Bronco

Two field experiments were carried out during the two successive fall seasons of 2004 and 2005 at the Experimental Farm, Faculty of Agriculture, Alexandria University in El-Bostan region, Behiera Governorate, Egypt. A factorial experiment in a complete randomized block design was used with four replicates. The obtained results are summarized as follows

:Vegetative Growth Characters

Inoculation common bean seeds either with Mycorrhiza or Phosphorien did not reflect any significant difference on plant height, root length, number of branches plant⁻¹, plant fresh weight, root fresh weight, stem fresh weight, leaves dry weight, stem dry weight, plant dry weight and leaf area, in both seasons -1

Fertilizing common bean plants with inorganic phosphorus at the rate of 30, 60 and 90 kg P₂O₅ fed⁻¹, significantly increased plant height, root length, number of branches plant⁻¹, plant fresh weight, root fresh weight, stem fresh weight, leaves dry weight, stem dry weight, plant dry weight and leaf area compared with the control treatment, in both seasons. The highest two phosphorus levels (60 and 90 kg P₂O₅ fed⁻¹) appeared to be sufficient for the plants to express their best performance on the vegetative growth parameters; however, the difference was not significant -2

The interaction effects of biofertilizer types and mineral phosphorus levels on all vegetative growth characters, except leaves fresh weight were significant in both seasons. The best valuable combinations were the inoculation of common bean seeds with either Mycorrhiza or Phosphorien and application 60 or 90 kg P₂O₅- fed-1, in both seasons