BIOLOGICAL AND CHEMICAL CONTROL OF RHIZOCTONIA ROOT-ROT DISEASE OF BEAN UNDER GREENHOUSE AND FIELD CONDITIONS.

By: Bakeer, A.T. and Shalaby, O.Y.
Agric. Botany Dept., Fac. Agric., Fayoum, Cairo University

ABSTRACT

Effect of two bioagents, two commercial biocide products and one fungicide on the incidence of bean root-rot was evaluated and compared by seed-dip and soil drench treatment under greenhouse and field conditions. The bioagents were *Trichoderma viride* and *Bacillus subtilis*, commercial biocide products were Plant Gaurd (a formula *Trichoderma harzianum)* and Rizo-N (a formula *B. Subtilis)* and the fungicide was vitavax-thiram.

Through *in vitro* studies, *B. subtilis* caused the highest percentage decrease in the linear growth of *R. solani* followed by *T. viride*. On the other hand, vitavax-thiram caused completely inhibition of the growth of *R. solani* at 100 ppm.

All treatments, significantly reduced percentage of pre-, post-emergence damping-off and root-rot in both greenhouse and the field. *B. subtilis* followed by *T. viride* were more effective than Plant Gaurd, Rizo-N and vitavax-thiram in reduction the percentage of pre-, post- emergence damping-off and root-rot. Soil drench treatment with *B. subtilis* followed by *T. viride* gave the highest protection against pre-, post-emergence damping-off and root-rot compared with Plant Gaurd, Rizo-N and vitavax-thiram. Concerning of method of application data indicate seeds-dip treatments in bioagent, commercial biocide products and fungicide were less effective than soil drench treatments in reduction of the percentage of pre-,post- emergence damping-off and root-rot. All treatments significantly increased dry seed yield of bean compared with the control treatments. The soil drench treatment with *B. subtilis* gave best results in controlling of bean root-rot disease.