

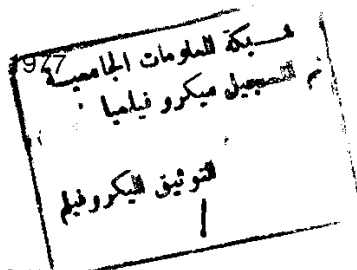
STUDY OF ENVIRONMENTAL EFFECTS OF FUNGICIDES USED  
FOR CONTROLLING SOIL BORNE DISEASES OF SOME  
VEGETABLE CROPS UNDER PROTECTED AGRICULTURE

By

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B. Sc (Cairo University)



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## APPROVAL SHEET

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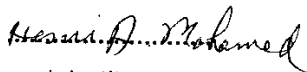
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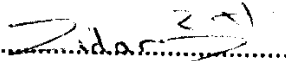
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## ABSTRACT

The present work was planned to study the effect of fungicides for controlling soil borne diseases as compared with soil mulching as physical process. The effect of such treatments on plant growth as well as the soil microflora was also concerned.

The most frequently isolated fungi from diseased tomato and pepper plants were *Fusarium oxysporum* and *Rhizoctonia solani*.

Rizolex and Rizolex T were the most effective fungicides on the mycelial linear growth of *R. solani*, while benlate was the most effective on linear growth of *F. oxysporum* f. sp. *lycopersici* and *F. annuum*.

In greenhouse, seed treatment with Rizolex T was the most effective in decreasing the pre-emergence damping-off and increasing the survival plants. Meanwhile, root length and root dry weight and shoot length, shoot dry weight were increased at different fungicidal applications in both tomato and pepper.

Benlate showed the highest efficiency in reducing the severity of tomato and pepper *Fusarium* wilt and also in increasing the root, shoot length and root, shoot dry weight and increasing number of leaves. However, the most phytotoxic fungicide was Vitavax thiram on yellowing or burning of leaves of tomato and pepper plants. Chlorophyll was decreased as result of fungicides treatment to detached leaves at higher doses. However, the higher applications to soil decreased root, shoot length and root, shoot dry weight of both hosts. Such treatments also decreased the total number of fungi, bacteria, actinomycetes and azotobacter in soil.

On the other hand, highest percentage of seed germination was obtained with rizolex T and benlate in seeds of tomato and pepper.

Covering the soil with plastic sheets for 30 days significantly decreased the percentage of post emergence damping-off of tomato and pepper and also decreased the number of total fungi, bacteria and actinomycetes. Such treatment raised the minimum and maximum soil temperatures over the uncovered soil.



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