

**STUDIES ON ROOT-ROT AND WILT DISEASES
OF WATERMELON IN NEW
CULTIVATED LANDS**

BY

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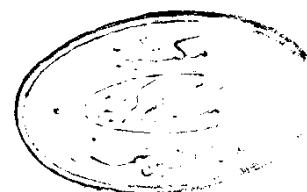
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ABSTRACT

Wilt disease of Watermelon is wide spread all over the cultivated area. It attacks plants through the growing season. The maximum infection occurs after 60 days from sowing in different villages of Noubaria. The infection alternates between 37 and 78%. The fungus responsible of the wilt is Fusarium oxysporum f.sp.niveum. It has a very narrow host range restricted to Watermelon varieties.

The surviving propagules of the fungus after successive exposure to sublethal temperature resulted in H-1 and H-2 isolates. They tolerate relatively high temperature than the mother isolate. They have less enzymatic (PME, PG and Cx)

activity than the mother isolate reflecting their less virulence to cause wilt on Watermelon plants. Soil mulching resulted in raise of its temperature by 9.8°C than unmulched one. Population of Fusarium oxysporum f.sp. niveum buried in mulched soil was reduced by 54.7 - 91.8% in artificially infested and mulched soil, consequent reduction in pre-emergence and wilted plants of Watermelon Gorma and Giza 1 varieties. Soil mulching reduced the total bacterial count, total fungal count, total Fusarium spp. count and total actinomycetes count by different values. Mulching the naturally infested field reduced the pre-emergence damping-off and wilted plants and increased yield of surviving plants. Benlate 50% and Homi 80% completely inhibited the fungal growth and sporulation on media at 5 ppm, while Rhizolex-T 50% and Vitavax-captan 75% gave the same result at concentration of 200 and 800 ppm respectively, However, Topsin-M 70% inhibited growth and sporulation at 25 ppm. In greenhouse, Benlate 50% and Topsin-M 70% were effective more than the other 3 fungicides in controlling wilt disease. Field experiment clarified that Benlate 50% and Topsin-M 70% were effective in controlling wilt disease, while Vitavax-captan 75% followed by Homi 80% and Rhizolex-T 50% controlled pre-emergence damping-off with higher rate than wilt disease. All tested fungicides increased the yield of surviving Watermelon plants.

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INTRODUCTION