Evaluation of the efficiency of *Trichoderma viride* and organic fertilizer in the control of fusarium wilt and leaves spot leaves of the tomatoes

By

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Abstract

The study aimed to evaluate the efficiency of bioformulation of *Trichoderma viride* and organic fertilizer for controlling fusarium wilt caused by *Fusarium oxysporum* fsp *lycopersici* and leaves spotted caused by *Alternaria alternata*, on tomato, and detecting of the active compounds produced by *T. viride* by using GC-mass .

The results of the biological test of *T.viride* against *F.o*.fsp *lycopersici* and *A.alternata* in the laboratory showed high efficiency with 53.01and 39.73% inhibition percent respectively.

The results of the application of *T.viride* and organic fertilizer for controlling of *F.o*. f.sp *lycopersici* showed . The lowest incidence was in the M1Tv treatment at 0% compared to the control treatment of 80.33% . M1Tv recorded the highest length , wet weigh and productivity (77 cm ,67 g and 160.25g) respestivaly campard to control treatment which was 47.37cm , 28.50g and 34.14 g respestivaly .

The field experiment results showed decreasing in infection severity with *F.o*.fsp *lycopersici* and *A.alternata* in M1Tv treatment (6.25 and 9.33%) respectively compared to control treatment which was 85.71 and 51.67%

respectively. The highest plant length was in M1Tv treatment (89.84 cm) compared to the control treatment (58.67 cm) . The M1Tv recorded the highest wet weight of vegetative composition (212.17 g) compared to the control (53.67 g) and also recorded the highest productivity (592.63 g) compared to control treatment which was 211.37 g .

GC-mass results revealed that the treatment M1Tv cantained the compound 4-Cloro -3-hexyltrahydro-2H -pyran , while the compounds 1,5.9-Cyclododecanetriol and propanol 1-Cyclohexyl-1 were found in both M1Tv and Tv treatment . It was believed that these compounds have an effective role for reducing the infection rate and improving the growth and productivity of Tomato plant . .