

EVALUATION OF THE EFFICACY OF THE BIOLOGICAL COMPOUND AFFECTED BY *TALAROMYCES FLAVUS* IN CONTROLLING TOMATO FUSARIUM WILT DISEASE IN THE FIELD CONDITIONS*

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ABSTRACT

Fusarium wilt is one of the most important tomato diseases. Since the pathogenic agent of this disease is soil-borne, therefore for its management, chemical control methods are not possible easily. In this regard, biological control by antagonistic soil-borne fungi is effective. At present study, based on the laboratory and greenhouse results related to previous experiments, the efficacy of four treatments affected by *Talaromyces flavus* with the most effective in decreasing disease incidence was investigated in the field conditions. These treatments included of *T. flavus* isolate No. TF-To-V-29 as addition to soil, *T. flavus* isolate No. TF-To-V-29 as both addition to soil and seed coating, *T. flavus* isolate No. TF-To-U-38 as addition to soil and *T. flavus* isolate as both addition to soil and seed coating. For preparation of *T. flavus* inoculum, every isolate of *T. flavus* was cultured on a medium substrate containing rice bran and peat moss. Field experiment was performed in a randomized complete block design with five treatments and four replications. Evaluation of the treatments were carried out as calculating disease severity percent one month after planting and continued to three months monthly. In the end of vegetative phase, the total yield was calculated for every treatment. Data were analyzed by ANOVA (Analysis of Variance) using the MS TAT C statistical software, while means were separated by the *Duncan's multiple range test*. Results showed that the most effective treatment in decreasing disease severity and increasing total yield belonged to the *T. flavus* isolate No. TF-To-V-29 as both addition to soil and seed coating.

KEYWORDS: Biological Control, *Fusarium oxysporum* f. sp. *lycopersici*, *Talaromyces flavus*, Tomato