

## **The Effects of Dosage and Isolate Origin of *Trichoderma* spp. on Fusarium Wilt Disease in Shallots (*Allium ascalonicum*)**

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### ***ABSTRACT***

Shallots is vulnerable to *Fusarium oxysporum* infection. *Trichoderma* spp. can be used as an antagonistic fungus to control plant diseases. This research aimed to determine the effectiveness of various isolate origin and dosage of *Trichoderma* spp. in comparison to fungicide Mankozeb 80%, through in vitro and in vivo tests in controlling *Fusarium oxysporum* wilt disease. The research employed a Completely Randomized Design (CRD) consisting of 2 factors + a negative control (without *Trichoderma* spp.) and a positive control (Mankozeb 80%). The first factor was the origin of *Trichoderma* spp. namely *Trichoderma* spp. from T1=Sawungan, T2= Tanen, T3= Gumawang, T4 = Sumber Tetes. The second factor was the dosage of *Trichoderma* spp., namely D1= 10 g/polybag, D2= 15g, D3= 20g. Data were analyzed using *Analysis of Variance* (ANOVA) at a 5% significance level, and if a significant difference was found, *Duncan's Multiple Range Test* (DMRT) at a 5% significance level was conducted. Orthogonal contrasts were performed to compare the control with all treatments. The research results showed that the percentage of inhibition in in-vitro antagonistic test for *Trichoderma* spp. from the four areas did not significantly differ one to the others. The in vivo test indicated that the longest incubation period was observed for plant treated with *Trichoderma* spp. from the Sumber Tetes at 15g and 20g dosages. *Trichoderma* spp. from various isolate origins, were as equally effective as fungicide Mankozeb 80% in controlling the severity of *Fusarium oxysporum* disease, and maintain fresh plant weight."

Keyword : Isolate Origin of *Trichoderma* spp, Dosage, *Fusarium oxysporum*