

**THE EFFECT OF VARIOUS DOSES OF *Trichoderma Harzianum* AND
Gliocladium Virens IN CONTROLLING *Fusarium Oxysporum* WILT
DISEASE AND INCREASING TOMATO YIELD**

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ABSTRACT

The aims of this research were (1) to examine the effectiveness of a mixture of *Trichoderma harzianum* and *Gliocladium virens* in controlling fusarium wilt and increasing tomato yields, (2) to determine the most effective dose of *Trichoderma harzianum* and *Gliocladium virens* in controlling fusarium wilt and increasing tomato yields. This research was conducted in Bangunjiwo, Grahayasa, Kasihan, Bantul in March-June 2022. This experiment was arranged in a Completely Randomized Design (CRD). The treatments were negative Control (Without Biological Control Agent), positive control (fungicide with active ingredient Benomyl), 40g/plant *T.harzianum*, 150g/plant *G.virens*, 20g/plant *T.harzianum* + 100g/plant *G.virens*, 30g/plant *T.harzianum* + 50g/plant *G.virens*. The data were analyzed using analysis of variance (ANOVA). If there was a significant effect of the treatment used, it was continued with a different test using the DMRT (*Duncan Multiple Range Test*) method with a significance level of 5%. Application of Biological Control Agents (BCA) *T. harzianum* and *G. virens* either single or in combination was effective for controlling fusarium wilt disease in tomato plants. The use of Biological Control Agents (BCA) was more effective than fungicide *Benomyl* in controlling fusarium wilt. The effective dose of BCA to control fusarium wilt in tomato plants was a combination of 20g/plant *T.harzianum* + 100g/plant *G.virens* or 30g/plant *T.harzianum*+50g/plant *G.virens* and *T.harzainum* 40g or *G.virens* 150g. The fruit weight of treatments combination 30g/plant *T.harzianum*+50g/plant *G.virens* was higher than the negative control, but the number of fruit was not significantly different between all treatments.

Keyword: *Trichoderma harzianum*, *Gliocladium virens*, Tomato, *Fusarium oxysporum*.