

***Identification and Antagonistic Test of Trichoderma sp. Against Fusarium sp. Pathogens In Vitro.***

*Supervised by Ir. Iqbal Erdiansyah, S.P., M.P.*

**Annisa Nur Syafira**

*Study Program of Food Crop Production Technology  
Department of Agricultural Production*

***ABSTRACT***

*The percentage decrease in corn crop production is quite high due to the attack of the pathogen causing Fusarium sp. stem rot disease. Excessive use of synthetic pesticides for disease control has negative environmental impacts, necessitating biological control alternatives such as the use of Trichoderma sp. This study aims to evaluate the inhibitory power of Trichoderma sp. against Fusarium sp., and to determine the in vitro growth of Trichoderma sp. and Fusarium sp. This research was conducted from January to February 2025, at the Plant Protection Laboratory of Jember State Polytechnic. This research used the dual culture antagonism test method with a non-factorial Completely Randomized Design (CRD) with 3 treatment levels and 3 replications. The 3 treatment levels of conidia density were: T1 = 0 (control), T2 =  $10^7$ , T3 =  $10^8$ . The data from the antagonism test were then analyzed using ANOVA, followed by an LSD test at the 5% level. The results of the study showed that Trichoderma sp. was able to inhibit the growth of Fusarium sp. with the highest percentage of 104,14% at 72 hours after incubation. The growth of Trichoderma sp.  $10^7$  colonies showed the highest colony growth at the 72-hour observation, with Trichoderma sp. measuring 7.7 cm and Fusarium sp. measuring 2.6 cm. Based on these results, Trichoderma sp. has the potential to be an effective biological control agent against the Fusarium sp. pathogen in vitro.*

**Keywords:** *Trichoderma sp., Fusarium sp., antagonistic test, biocontrol.*