

The Effect Of *Metarhizium anisopliae* Isolate Diversity at Various Volumes of Watering on White Grub (*Lepidiota stigma*) Mortality

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ABSTRACT

Lepidiota stigma is a major pest of sugarcane that can reduce productivity by up to 50%. Biological agents that can be used to control white grub (*Lepidiota stigma*) pests can be in the form of entomopathogenic microorganisms, one of which is the fungus *Metarhizium anisopliae*. The purpose of this research is to examine the effect of *Metarhizium anisopliae* isolate diversity at various volumes of watering on the mortality of white grub (*Lepidiota stigma*). The research was conducted at the Plant Protection Laboratory of the Faculty of Agriculture UPN "Veteran" Yogyakarta in February–July 2023. The research was conducted using a completely randomized design (CRD) with two factors: the diversity of isolate origins (without isolates, *Metarhizium anisopliae* from *Lepidiota stigma* Lab. UGM, *Metarhizium anisopliae* from *Oryctes rhinoceros* LPHPT Bantul, and *Metarhizium anisopliae* from *Oryctes rhinoceros* Lab. Hayati Pakem), and watering volume (7,5 mL, 15 mL, 30 mL) with 3 repetitions for each treatment. The research parameters tested are mortality of *Lepidiota stigma*, death rate of *Lepidiota stigma*, medium humidity, and pest feeding ability. Data analysis will be carried out using the ANOVA test and continue with Duncan's Multiple Range Test (DMRT) at the 5% level. treatment of the origin diversity of *Metarhizium anisopliae* isolates and the treatment of watering volume on the mortality of white grub (*Lepidiota stigma*). A watering volume treatment of 30 mL was able to increase the mortality of *Lepidiota stigma*, the death rate of *Lepidiota stigma*, media humidity, and decrease the pest's feeding ability.

Keywords : White grub, *Metarhizium anisopliae*, entomopathogen, mortality, sugarcane.