

PATHOGENITY TEST OF THE METARHIZIUM FUNGUS BY ADDING VARIOUS CONCENTRATION OF CHITIN TO THE PROPAGATION MEDIA AGAINST HORN BEETLE LARVAE (*Oryctes rhinoceros*)

ABSTRACT

The horn beetle (*Oryctes rhinoceros*) is a pest that can cause death to young coconut trees. Biological control using the entomopathogenic fungus *Metarhizium anisopliae* can be used to control horn beetle larvae. To increase its virulence, it can be done by adding chitin compounds. The Purpose of this research was to determine the effect of adding various concentrations of chitin to the propagation media on the development of *M. anisopliae* fungus conidia and on the virulence of the *M. anisopliae* fungus applied to *O. rhinoceros* larvae. This research was conducted at the Pakem Biological Laboratory, Department of Agriculture and Food Security, Sleman, D.I. Yogyakarta. Experiments in the laboratory used a Single Factor Completely Randomized Design as treatments with the addition of various concentrations of chitin, namely: control without the addition of chitin (P0); chitin with a concentration of 5% (P1); chitin with a concentration of 10% (P2); chitin with a concentration of 15% (P3); chitin with a concentration of 20% (P4). The research results showed that treatment with the addition of 10% chitin concentration to the propagation media increased the density, viability and virulence of the *M. anisopliae* fungus which is used to control horn beetle larval pests. Meanwhile, treatment with the addition of 15% and 20% chitin to the propagation media actually reduced the viability and density of fungal spores. The correlation test results showed that there was a strong influence between viability and the percentage of insect deaths.

Keywords: *Virulence, Oryctes rhinoceros, Metarhizium anisopliae, chitin*