

SUMMARY

Lia Ni'matul Ulya. 105040200111216. Test of Pathogenicity Entomopathogenic Fungus *Metarhizium anisopliae* (Moniliales: Moniliaceae) Against Pests *Lepidiota stigma* F. (Coleoptera: Scarabaeidae). Supervisor: Dr. Ir. Toto Himawan, SU. and Dr. Ir. Gatot Mudjiono

Larvae of *Lepidiota stigma* F. (Coleoptera: Scarabaeidae) is a pest that is often found in soil. Some commodities as host of *L. stigma* are sugarcane, pineapple, papaya, corn, and bananas. *Lepidiota stigma* has a curve body like the letter C, the anus shape is like the letter V, and moves by using one side of his body. In the larvae stage, *L. stigma* strikes at the roots of plants and the imago phase attack on the leaves. In accordance with the concept of IPM, use of chemicals is gradually reduced. Because it has caused serious problems to the environment. Improper use of pesticides results in the emergence of pests resistant to chemicals. Reducing the use of chemicals can apply natural enemies of pests, such as predators, parasitoids, and pathogens (Untung, 1993). One of the entomopathogenic fungus is produced as a biopesticide *Metarhizium anisopliae* (Moniliales: Moniliaceae). *Metarhizium anisopliae* fungus can infect insects with a high degree of pathogenicity.

This research aimed to determine the degree of pathogenicity of the entomopathogenic fungus *M. anisopliae* larvae instar *L. stigma* instar 2 and 3. The experiment was conducted at the Laboratory of Pest Plant Pests and Diseases Department of the Faculty of Agriculture, University of Brawijaya from May to July 2014. This research used randomized block design (RBD) Factorial, as the first factor was the concentration of 10^8 conidia/ml (M_1), 10^9 conidia/ml (M_2), 10^{10} conidia/ml (M_3), and 10^0 conidia/ml (M_0). the second factor was the second instar (I_2) and the third instar (I_3) was repeated 3 times.

The results showed that the mortality of *L. stigma* was significantly affected by the density of *M. anisopliae* spores. The average mortality of *L. stigma* instar 2 was higher than the average mortality of *L. stigma* instar 3. On the eighth to the tenth day of observation, after application, it showed that the interaction between concentration and instar influenced significantly. The average mortality on tenth day of observation, after application, was the highest for the M_3I_2 (the density of *M. anisopliae* 10^{10} conidia/ml applied to *L. stigma* instar 2) treatment amounted to 68.86% and the lowest was for the treatment M_1I_3 (density of *M. anisopliae* 10^8 applied to the *L. stigma* instar 3) of 41.16%. Lethal concentration (LC_{50}) of second instar *L. stigma* at a concentration of 2.9×10^{10} conidia/ml and lethal time (LT_{50}) reached 5.8 days. Lethal concentration (LC_{50}) of third instar *L. stigma* at a concentration of 8.2×10^9 conidia/ml and lethal time (LT_{50}) reached 7.7 days.