

ABSTRACT

THE EFFICACY OF *Beauveria bassiana* FROM GROWTH MEDIUM CONTAINING THREE CARRIER SUBSTANCES ON THE MORTALITY OF *Helopeltis* spp. (Hemiptera: Miridae)

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Helopeltis spp. (Hemiptera: Miridae) is one of the important pests of cocoa. This pest attacks the fruit and cause retardation of fruit development. Several management methods such as cultural technique, frequently harvesting, sanitation, fruit wrapping and insecticide are reported inefficient and ineffective. Therefore, it needs an alternative method that is more effective for controlling *Helopeltis* spp. One of the efforts is *Beauveria bassiana* (white muscardine fungi). The efficacy of *B. bassiana* to control *Helopeltis* spp. is depend mainly on the isolate, spore density and growth medium quality. Thus, that in the growth medium needs additional materials that are able to improve the effectiveness of *B. bassiana*. The research objectives was to investigate the influence of addition of carrier substance (powder of cricket, Hongkong caterpillar, and shrimp shell) to the density and viability of the spore of *B. bassiana*, and to find out the efficacy of *B. bassiana* on the mortality of *Helopeltis* spp. This research was arranged by factorial randomized block design consist of two factors. The first factor was types of carrier substance contain 5 treatments; SDA medium + cricket powder, SDA medium + Hongkong caterpillar powder, SDA medium + shrimp shell powder, insecticide (permethrin), and sterile water as control. The second factor was the concentration of carrier substances in 5 levels; 0; 0,5; 1; 1,5; and 2%, each concentration was repeated three times. Observation was performed on the mortality of *Helopeltis* spp. after application. Data obtained were analyzed using analysis of variance (ANOVA), and continued with least significant difference (LSD) test at 5% of significant level. The result showed that growth diameter of *B. bassiana* did not show significant differences among treatments, on the contrary, spore density and viability showed significant differences among

treatments. Furthermore, addition of carrier substance had significantly affected to the density, viability, and mortality of *Helopeltis* spp. The carrier substance that gave the highest mortality (78.33%) was the cricket powder.

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