

THE EFFECTIVENESS OF GREEN BETEL LEAVES (*Piper betle* L.) EXTRACTED WITH ETHANOL OR N-HEXANE ON MORTALITY AND SURVIVORSHIP OF DIAMONDBACK MOTH (*Plutella xylostella*)

By: Asa Tsania Khoirunnisa

Supervised by: Mofit Eko Poerwanto

ABSTRACT

Green betel leaves (*Piper betle* L.) have the potential as bioinsecticide on Diamondback Moth (*Plutella xylostella*). This research aimed to determine the effectiveness of green betel leaves (GBL) extracted with different solvents (ethanol or n-hexane) on the mortality and survivorship of diamondback moth. The research was conducted at the Plant Protection Laboratory of UPN “Veteran” Yogyakarta in April-June 2024. This research used a Completely Randomized Design (CRD) consisting of 7 treatments: control (without extract), P1 (0.5% GBL extracted with ethanol), P2 (1% GBL extracted with ethanol), P3 (1.5% GBL extracted with ethanol), P4 (0.5% GBL extracted with n-hexane), P5 (1% GBL extracted with n-hexane), and P6 (1.5% GBL extracted with n-hexane). Observation parameters included mortality of larvae, larval death time, feeding activity, percentage and time of larvae becoming pupae, percentage of larvae becoming imago, time for pupae becoming imago, and effectiveness of extracts. The data obtained were analyzed using ANOVA and then tested further using the LSD test at a 5% level. 1.5% GBL extracted with ethanol gave the highest larval mortality, decreased feeding activity, and effectiveness extracts and gave the lowest percentage and time of larvae becoming pupae, percentage of larvae becoming imago, and time for pupae becoming imago.

Keywords: *green betel leaves extract, ethanol, n-hexane, diamondback moth, bioinsecticide*