THE EFFECT OF PAPAYA LEAF AND LEMONGRASS EXSTRACT IN AFFECTING THE MORTALITY AND DEVELOPMENT OF INSTAR 2 AND 3 LARVES OF THE CABBAGE LEAF CATERPILLAR (*Plutella xylostella L.*)

By : Anas Firgiawan
Supervised by : Chimayatus Solichah

ABSTRACT

One of the problems in cabbage cultivation is the *Plutella xylostella* pest attack. The study aims to determine the effect of using vegetable pesticides on the mortality rate and development of cabbage leaf caterpillar pests (*P. xylostella*) instar 2 and 3, determine effective vegetable pesticides to increase mortality and suppress the development of *P. xylostella* and determine the most effective instar larval stage for control using vegetable pesticides. The research conducted from September to November 2023 at the Plant Protection Laboratory, Faculty of Agriculture, National Development University "Veteran" Yogyakarta. This study used a completely randomized designwith 2 factors and 3 replicates. The first factor is the type of vegetable pesticide. The second factor is the instar of *P.* xylostella larvae. The parameters observed were mortality of *P. xylostella* larvae, speed of death of *P. xylostella* larvae, percentage of larvae becoming pupae, time of larvae becoming pupae, percentage of pupae becoming imago, time of larvae becoming imago, effectiveness and percentage of feeding activity. Observation data were analyzed by ANOVA at the 5% level, then the data were further tested by DMRT at the 5% level. The results showed that the combination extract had an effect on mortality and development of *P. xylostella* larvae. There was an interaction between the type of extract treatment and the type of instar larvae in observing mortality on days 2 and 3 after application, where the highest mortality value was found in the mixed extract treatment on the 3rd instar.

Keywords: *Plutella xylostella*, papaya leaf extract, lemongrass extract, instars *P. xylostella* larvae.