

THE EFFECTIVENESS OF CHINABERRY LEAF BIOPESTICIDE (*Melia azedarach*) AGAINST ARMY WORM (*Spodoptera litura*) ON SOYBEAN PLANT (*Glycine max*)

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ABSTRACT

Armyworm (*Spodoptera litura* F.) is one of the main pests on soybeans that can cause yield losses of up to 40%. One way to control armyworm pests is the use of biopesticides made from mindi or chinaberry leaves (*Melia azedarach*). This research was conducted from April to July 2022 at the Jember State Polytechnic Plant Protection Laboratory and the research field in Tegalgede Village, Sumpalsari District, Jember Regency. This research was carried out in two stages, namely the mortality test in the laboratory and the field test. The first stage, namely the mortality test, was carried out to determine the concentration of mindi leaf biopesticide which would be applied in the field test. Mortality test was carried out by applying biopesticide of fresh mindi leaf and biopesticide of dried mindi leaf with four concentration levels, namely 20 ml/l, 40 ml/l, 60 ml/l, 80 ml/l against armyworms. From the mortality test, it was found that the concentration of mindi leaf biopesticide which was effective for killing pests was at a concentration level of 60 ml/l. The application of 60 ml/l biopesticide was determined by an insecticide efficacy test with an insecticide efficacy standard of >70%. The second stage is a field test by comparing the biopesticide treatment of fresh mindi leaves and the biopesticide treatment of dried mindi leaves. Observation parameters included pest population, intensity of damage, number of pods, dry weight of seeds, and weight per 100 seeds. The parameters of pest population, damage intensity, and seed dry weight showed significantly different results between fresh mindi leaf biopesticides and dried mindi leaf biopesticides, while the results showed no significant difference in weight per 100 seeds. Statistically, fresh mindi leaf biopesticide showed more number of pods (49,6 pods) than dried mindi leaf biopesticide (34 pods). In addition, the dry weight of seeds in fresh mindi leaf biopesticide showed a higher number (41,2 grams) compared to the dry weight of seeds in dried mindi leaf biopesticide (33,1 grams).

Keywords: Insecticide Efficacy, Soybean, Melia azedarach, Biopesticide, Spodoptera litura