

**EFFECTIVENESS OF BIO-INSECTICIDES MADE FROM GREEN
BETEL LEAVES AND BASIL LEAVES EXTRACTS TO CONTROL
ARMYWORMS (*Spodoptera frugiperda*) IN CORN CROPS**

Supervised by Rudi Wardana, S.Pd., M.Si.

Karine Charnesya Brianne Putri
Study Program of Crops Production Technology
Department of Agricultural Production

ABSTRACT

*Armyworm (*Spodoptera frugiperda*) attacks can reduce corn yields by more than 40%. Meanwhile, green betel leaves and basil leaves are potential organic control of armyworms. This research was conducted from June to October 2022 at the Plant Protection Laboratory of the Jember State Polytechnic and research area in Tegalgede Village, Summersari District, Jember Regency. This research was carried out in two stages, namely the toxicity test and the field test. A toxicity test is conducted to determine the effective concentration of green betel and basil leaves insecticides. Using the LC_{50} test and LC_{95} test at four concentration levels of organic insecticides 30%, 40%, 50%, and 60%, the toxicity test showed that the concentration of 60% was the most effective in controlling armyworms. In the field tests, the bio-insecticides with 60% of concentration were then compared to synthetic insecticides with active methomyl 40% active ingredient. Through Mann-Whitney data analysis, bio-insecticides of 60% concentration and methomyl 40% insecticides showed no significant difference in all observed parameters namely population numbers, armyworm attack intensity, plant height, fresh cob weight, dry cob weight, and corn kernels weight. It can be concluded that bio-insecticides made from a mixture of green betel and basil leaves are as effective as the synthetic insecticide of methomyl 40% in controlling armyworms.*

Keyword : Basil Leaves, Betel Leaves, Corn Crop, Insecticide Efficacy, *Spodoptera frugiperda*