

**INSECTICIDE EFFICACY OF LIQUID SMOKE HUSK  
CHARCOAL AGAINST GRAY WORN (*Spodoptera  
litura L.*) ON EDAMAME SOYBEAN PLANTS.**

Supervised by: Dr. Ir. Mochamad Syarief, MP

**Ahmad Farikh Maulana**

Food Crops Production Technology

Agricultural Production Department

**ABSTRACT**

of the problem in this research is how much insecticide efficacy and optimum concentration of husk charcoal liquid smoke on armyworm mortality in edamame plants, how many armyworm populations are treated with husk charcoal liquid smoke compared to deltamethrin, what is the effect of attack intensity on husk charcoal liquid smoke compared to deltamethrin, how does it affect liquid smoke of husk charcoal on the wet weight of pods per plant compared to deltamethrin. This research was carried out in two stages, namely the first stage of research was carried out at the Jember State Polytechnic Plant Protection Laboratory and the second stage was a field test, carried out on the Jember State Polytechnic field. The purpose of the first stage was to determine the reference concentration in the field based on mortality and insecticidal efficacy tests, then the objective of stage 2 was to observe the intensity of armyworm attack with the application of liquid smoke and compared it to the land where the synthetic chemical insecticide with active ingredient Deltamethrin was applied and *observe* the weight of wet pods and pods. dry per plant. Phase 1 data analysis used a completely randomized design with 6 treatments repeated 3 times. Further test using the smallest significant difference (BNT) 5%. Test data analysis in the field using Mann Whitney. The result of this research is that the efficacy of liquid smoke insecticides to control caterpillar pests is 15ml/L and becomes the reference concentration in the field. The results in the field also showed that the application of liquid smoke compared to the application of synthetic insecticides with the active ingredient deltamethrin with a concentration of 2 ml/liter was significantly different in its effect on controlling armyworm pests, which means that the use of liquid smoke can replace synthetic insecticides with the active ingredient deltamethrin in controlling armyworm pests on soybeans. edamame. The population of armyworm pests on land with the application of liquid smoke of husk charcoal is 0.3 tails and the application of synthetic insecticides with the active ingredient deltamethrin 0.7 tails. The intensity of the attack on the land of application of liquid smoke of husk charcoal was 5.8% and on the field of application of synthetic insecticides with the active ingredient deltamethrin 6.4%. The weight of wet pods on land with liquid smoke application is 42.2 grams and the weight of wet pods on land with deltamethrin application is 37.5 grams.