

Insecticidal Activity of Piper aduncum Fruit and Tephrosia vogelii Leaf Mixed Formulations against Cabbage Pest Plutella xylostella (L.) (Lepidoptera: Plutellidae)

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Abstract : The emulsifiable concentrate (EC) and wettable powder (WP) of Piper aduncum and Tephrosia vogelii mixed formulations were tested for their activities in the laboratory and their effectiveness in the field against cabbage pest Plutella xylostella. Cabbage leaves soaked in six different mixed formulation concentrations were tested to 2nd instar larvae of P. xylostella with six replications. The observation was conducted everyday until larvae reached 4th instar stage. Correlation between concentration and larvae mortality was analyzed using probit (POLO-PC). The survived larvae was observed by looking at the growth and development, as well as the antifeedant effects. Field efficacy test was based on LC₉₅ value from laboratory test result. The experiment used a randomized block design with 5 treatments and 3 replications to test the populations of P. xylostella larvae and insecticide effectivity. The results showed that the EC and WP mixed formulations showed insecticidal activity against P. xylostella larvae, with LC₉₅ value of 0.35% and 0.37%, respectively. The highest antifeedant effect on EC mixed formulation was 85.01% and WP mixed formulation was 86.23%. Both mixed formulations also slowed the development of larvae when compared with control. Field efficacy result showed that applications of EC mixed formulation were able to restrain the population of P. xylostella, with effectivity value of 71.06%. Insecticide effectivity value of EC mixed formulation was higher than WP mixed formulation and Bacillus thuringiensis formulation.

Keywords : botanical insecticide, efficacy, emulsifiable concentrate (EC), Plutella xylostella, wettable powder (WP)

Conference Title : ICE 2018 : International Conference on Entomology

Conference Location : Paris, France

Conference Dates : October 29-30, 2018