

**THE EFFECT OF LEMONGRASS (*Cymbopogon citratus*)
ESSENTIAL OIL CONCENTRATIONS ON THE
DEVELOPMENT OF BANANA LEAF ROLLER
(*Erionota thrax* L.)**

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ABSTRAK

The pest *Erionota thrax* L. can reduce banana crop productivity, and its control still relies on synthetic insecticides therefore, environmentally friendly alternatives such as lemongrass (*Cymbopogon citratus*) essential oil are needed. The study aimed to analyze the effectiveness of lemongrass essential oil in suppressing the development of *E. thrax*. The study was conducted in January–February 2026 at Jalan Waringinsari IV No. 40A, Condongcatur, Yogyakarta, and the CEOS UII Laboratory. The method used was a single factor completely randomized design (CRD) with five treatments: negative control, positive control (monosultap), and lemongrass essential oil at concentrations of 1.5%, 2.5%, and 3.5%. Each treatment was replicated four times, with 10 experimental units in each replication. The results showed that lemongrass essential oil at concentrations of 2.5% and 3.5% was as effective as the monosultap insecticide in suppressing pest development. These three treatments demonstrated effectiveness with mortality rates reaching 100.00% and a very rapid rate of death. There is directly proportional to the cessation of feeding activity, where no larvae were able to reach the food source, resulting in a leaf area consumed of 0.00 cm². Additionally, all larvae failed to complete their life cycle, as evidenced by the absence of any individuals successfully reaching the pupal or adult stage (0.00%). All three treatments also demonstrated an insecticidal efficacy of 100.00%.

Keywords: *Cymbopogon citratus*, *Erionota thrax* L., Essential Oil, Metamorphosis