

**THE INFLUENCE OF VARIOUS FORMULATIONS OF ESSENTIAL
OILS OF KAFFIR LIME LEAVES AND CITRONELLA ON
MORTALITY, POPULATION GROWTH *Sitophilus zeamais*, AND
QUALITY OF STORED CORN SEED**

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ABSTRACT

Control efforts against *S. zeamais* in general, synthetic pesticides are still used, so an alternative control is needed using kaffir lime leaves and citronella essential oils with various formulations. The purpose of this study was to obtain the best types of kaffir lime leaf and citronella essential oil formulations that were the best for mortality and population growth *S. zeamais*, as well as determining the effect of the application of kaffir lime and citronella essential oils on the quality of stored corn seeds. This research was carried out at the Plant Protection Laboratory at the UPN "Veteran" Yogyakarta in February - April 2023. The experiment used a Completely Randomized Design (CRD) consisting of 7 treatments. The types of treatment were kaffir lime leaf essential oil in tablet (KT), powder (KP), and liquid (KL) formulations, citronella essential oil in tablet (CT), powder (CP) and liquid (CL) formulations, and control without treatment (C). Each treatment was repeated 4 times. Observations were analyzed using Anova test at 5% level followed by using Duncan's Multiple Range Test at 5% level. The results showed that the liquid formulation of kaffir lime leaf essential oil could increase mortality *S. zeamais* and suppress *S. zeamais* population growth. The application of kaffir lime leaf essential oil (tablet, powder, liquid) and citronella (powder and liquid) was better in maintaining germination compared to control and citronella tablets.

Keywords: *Sitophilus zeamais*, Types of Formulations, Essential Oils, Botanical Pesticides, Stored Corn Seeds