

**APPLICATIONS OF CITRONELLA, CLOVE, AND KAFFIR LIME LEAF
ESSENTIAL OILS FOR CONTROLLING RICE WEEVIL (*Sitophilus
oryzae*) IN RICE STORAGE**

By: Serina Indira Mulyani Silaban
Supervised by: Chimayatus Solichah and Abdul Rizal

ABSTRACT

Control of *Sitophilus oryzae* in general still relies on synthetic pesticides which can potentially damage to the environment and disturb human health. Application of essential oil such as citronella essential oil, clove, and kaffir lime as a organic pesticides, can able to replace usage of synthetic pesticides. This research aim to definds impact of applicaton citronella essential oil, clove, and kaffir lime to againts *Sitophilus oryzae*. This research was conducted at Plant Protection Laboratory, Department of Agrotechnology, Faculty of Agriculture, UPN “Veteran” Yogyakarta. The research method used Completely Randomized Design with one factor which consists of 10 treatments, such as control without treatment (A0), citronella essential oil concentrations 4% (A1), 7% (A2), and 10% (A3), clove essential oil concentrations 4% (A4), 7% (A5), and 10% (A6), kaffir lime essential oil concentrations 4% (A7), 7% (A8), and 10% (A9). Data were analyzed using Analysis of Variance (ANOVA) at 5% level, if significant difference, then ScottKnott test. The results show that the concentration treatments of citronella, clove, and kaffir lime essential oils were significantly different. The 10% concentrations of clove and kaffir lime essential oils were the most effective concentration in increasing mortality and suppressing the growth populasi of *S. oryzae*. In addition, it could mantain rice weight loss and made rice smell a bit fragrant, but affected the color of rice to be slightly yellow and taste bad.

Keywords : *Sitophilus oryzae*, citronella, kaffir lime, clove, organic pesticides.