SUMMARY

INDAH KURNIA HAPSARI. 125040201111200. Bioactivity of *Evodia suaveolens* extract to Cigarette Beetle *Lasioderma serricorne* Fabricius. (Coleoptera: Anobiidae). Supervised by Dr. Ir. Toto Himawan, SU. and Silvi Ikawati SP., MP., MSc.

Tobacco is one of the important commodity in Indonesia that played an important role in improving the economy of Indonesia. Tobacco leaf can generally be stored in a long period of time in the warehouse. The duration of the retention period would provide an opportunity for the tobacco beetle *Lasioderma serricorne* to grow and reproduce. *L. serricorne* caused the leaf perforated so it didn't have any value to be sold again. Control effort that has been done was phosphine fumigation. It should be more important to pay attention while using phosphine to work because it was very poisonous for humans. Another alternative might be chosed was using natural insecticides because of its environmentally safety. One of them was a plant extract of *Evodia suaveolens*. The content of linalool in *E. suaveolens* has been known to have toxic effects and repellent against insects. This study was aimed to determine the activity of the fumigant and repelent of *E. suaveolens* leaf extract against L. serricorne.

The study was conducted by using 6 treatments and repeated 4 times. The treatments was used by comparing various concentrations, were 0 ppm (control), 50,000 ppm; 150,000 ppm; 250,000 ppm; 350,000 ppm; and 450,000 ppm. Each concentration was added with acetone until 1 mL. Tests performed included testing the activity of the fumigant and attractant / repellent *E. suaveolens* leaf extract against *L. serricorne*. Fumigant activity test was done by exposing 20 eggs, 20 larvae, 20 pupae and 20 imago in each jar of treatment. Testing of attractant / repellent was made on 20 imago *L. serricorne*. Fumigant test result data analyzed in the Analysis of Variance (ANOVA), and if there was a significant difference in the treatment, then LSD tests (5%) would be conducted to know the differences between treatments. LC_{50} (Median Lethal Concentration 50%) were calculated by using Probit analysis with Hsin-chi program. Whereas the test result of data attractant / repellent were calculated by using repellent Index (IR) and than analyzed by using nonparametric Kruskal Wallis to know how the repellent effect of *E. suaveolens* leaf extract to *L. serricorne*.

The results of the research activity of the fumigant could be seen that the leaf extract of *E. suaveolens* have toxic effects on the four phases of *L. serricorne*. Based on the results of LSD test from mortality percentage *L. serricorne* fourth phase showed that the best concentration that could be applied was 450,000 ppm because the concentration has been able to kill *L. serricorne* with an average mortality up to 100%. LC_{50} needed for egg, larvae, pupae, and imago in sequence were 140,092 ppm/300 ml (462,304 ppm/L); 150,499 ppm/250 ml (601,996 ppm/L); 150,302 ppm/250 ml (601,208 ppm/L); dan 412,698 ppm/250 ml (1,650,792 ppm/L). *E. suaveolens* leaf extract also has repellent activity against *L. serricorne*. The higher concentration used in the test, then the resulting of repellent level was also higher.