

## ABSTRACT

The rice weevil *S. oryzae* is a primary pest in cereals that attacks grain during storage while red flour beetle *T. castaneum* and Serrated Grain Beetle *O. surinamensis* are secondary pests in cereal commodities because they attack commodities that have been damaged by primary pests. Alternative environmentally friendly control technology using bay leaf essential oil. This study aims to study the testing and effectiveness of bay leaf essential oil on the repellent power and toxicity of *S. oryzae*, *T. castaneum* and *O. surinamensis* imago. The concentrations of bay leaf essential oil tested were 0.25%, 0.5%, 1%, 2%, 4% (v/v) and control. The experiment was repeated three times. The method used was the residue method on filter paper for testing the repellent power and toxicity of bay leaf essential oil. The relationship between the concentration of bay leaf essential oil and the mortality of *S. oryzae*, *T. castaneum* and *O. surinamensis* imago was determined by probit analysis. Mortality of repellent and imago at a concentration of 0.25% - 4% reached >50%. The LC50 value of bay leaf essential oil against *S. oryzae*, *T. castaneum* and *O. surinamensis* 2-7 days after application ranged from 1.68% - 0.14%, 1.23% - 0.17% and 1.07% - 0.15%. These results indicate that bay leaf essential oil can be used to control *S. oryzae*, *T. castaneum* and *O. surinamensis* imago in stored cereal products.

Key words: *Oryzaephilus surinamensis*, *Sitophilus oryzae*, Toxicity, *Tribolium castaneum*, *Syzygium polyanthum*