

**APPLICATION SEVERAL DOSES OF SUGAR APPLE SEED POWDER
(*Annona squamosa*) FOR CONTROLLING RED FLOUR BEETLE PESTS
(*Tribolium castaneum*) ON VARIOUS TYPE OF FLOUR**

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ABSTRACT

Flour is one of the most widely consumed food ingredients. The decrease in quality and weight lost of flour is caused by attack of the red flour beetle (*Tribolium castaneum*). This study aims to identify the effect of different types of flour on the growth of *T. castaneum*, as well as the best dose of sugar apple seed powder to control *T. castaneum* in several types of flour. The research was conducted from February until May 2024 at the Plant Protection Laboratory, Faculty of Agriculture, National Development University "Veteran" Yogyakarta. This study used a completely randomized design with two factors and three replicates. The first factor is the type of flour consisting of three levels, namely wheat flour, corn flour, and rice flour. The second factor is the dose of sugar apple seed powder consisting of three levels, namely D1 (0 g/100 g of flour); D2 (5 g/100 g of flour); and D3 (10 g/100 g of flour). Observation data were analyzed using analysis of variance (ANOVA) at the 5% level, then, the test was continued using the DMRT (Duncan Multiple Range Test) test at the 5% level. It is suspected that the treatment of sugar apple seed powder with a dose of 10 g/100 g of rice flour can cause the highest mortality of *T. castaneum*. The results showed that the application of several doses of *Annona squamosa* seed powder at higher doses, as well as flour with lower nutritional content, can increase mortality and suppress the development of *T. castaneum*. The application of the treatment dose of 10 grams of *A. squamosa* seed powder / 100 grams of flour combined with rice flour can increase mortality and suppress the development of *T. castaneum*. The population of *T. castaneum* on rice flour has the smallest growth where the flour could maintain its quality in storage for two months compared to corn flour and wheat flour where the quality decreases drastically due to the rapid growth of *T. castaneum*.

Keywords: *Tribolium castaneum*, sugar apple seed, flour.