EFFECTIVENESS OF JICAMA (*Pachyrhizus erocus*) SEEDS POWDER AT VARIOUS DOSES AND APPLICATION POSITIONS ON THE MORTALITY OF FLOUR BEETLE (*Tribolium castaneum*) AND WHEAT FLOUR QUALITY

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ABSTRACT

Wheat flour is one of the most widely consumed post-harvest commodities. Weight loss and quality deterioration of wheat flour during storage are mainly caused by flour beetle (*Tribolium castaneum*). This study aimed to determine the effectiveness of *Jicama* seeds powder at various doses and application positions on *T. castaneum* mortality and its effect on wheat flour quality. The research was carried out from November 2023 to March 2024 at the Plant Protection Laboratory, Faculty of Agriculture, Universitas Pembangunan Nasional "Veteran" Yogyakarta. This research conducted using a completely randomised factorial design (CRD) with two factors, three replications, and control. The first factor was the dosage of *Jicama* seeds powder in 100 grams of wheat flour which consisted of 3 levels, namely 2.5g/100g (D1); 5g/100g (D2); and 10g/100g (D3). The second factor was the application positions of *Jicama* seeds powder in wheat flour which consisted of 3 levels, namely surface position (P1), middle position (P2) and base position (P3). The data were analysed using Analysis of Variance (ANOVA) and further tested with Duncan Multiple Range Test (DMRT) at 5% level. The results showed that 10 g/100 g (D3) *Jicama* seeds powder dose treatment and the middle application positions (P2) treatment had the highest percentage of mortality and effectiveness. The use of *Jicama* seeds powder was able to suppress the population of new imago, weight loss of wheat flour, and maintaining the quality of wheat flour.

Keywords: *Tribolium castaneum*, *Jicama* seeds, wheat flour