

THE EFFECTIVENESS OF VARIOUS TYPES OF PLANT-BASED INSECTICIDES AND POWDER DOSAGES ON CONTROLLING *CALLOSOBRUCHUS ANALIS* F. PEST, MAINTAINING THE VIABILITY AND VIGOR OF SOYBEANS

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ABSTRACT

Soybean is a leguminous crop and is the world's main source of protein and vegetable oil. Soybean is the most important strategic main food crop after rice and corn. In an effort to increase soybean production, there are a lot of problems encountered. One of the factors causing the demand reduction for soybeans is the decreased quality of seeds during storage, storage without special treatment can increase the risk of seed attack by *C. analis*. One effort to reduce damage to soybean seeds due to pests is by treating with plant-based pesticides made from bintaro seed powder, soursop seeds, and neem seeds. The aim of the study was to determine the effect of bintaro seed powder, soursop seeds, and neem seeds in various doses and determine the effective dose to suppress *C.analis* pests and maintain soybean seed viability and vigor. The research was conducted in East Imogiri street Km. 10, Padukuhan Blawong, Trimulyo Village, Jetis District, Bantul Regency, Yogyakarta in March 2023 to June 2023. The research method used a one-factor Completely Randomized Design, namely the type of plant-based insecticide with doses including bintaro seeds (TB), soursop seeds (TS), and neem seeds (TM) of 1 grams, 1.50 grams and 2 grams. Data were analyzed for variances with ANNOVA at the 5% level and continue the Duncan test or DMRT at the 5% level. The results showed that various types of plant-based insecticides and doses had an effect on suppressing *C. analis* pests on stored soybean seeds by increasing mortality, reducing seed weight loss, and seed damage. The best plant-based insecticides and doses for suppressing *C.analis* pests are TB2 (1.50 gram bintaro seed powder), which can increase pest mortality by up to 100% on the 6th day after application.

Key word : *Callosobruchus analis* F., soybean seeds, doses, bintaro seeds, soursop seeds, neem seeds.