

**Biopesticide from Combination of Bitung
(*Barringtonia Asiatica* L.Kurtz) Seed and Papaya
(*Carica Papaya*) Sap**

Viola M. A. Weismann^{1*}, Max Tulung^{2,3},
Christina M. Salaki^{2,3} and Ventje V. Memah²

¹PhD Student, Postgraduate Program, Department of Entomology,
Sam Ratulangi University, Manado, Indonesia

²Postgraduate Program, Department of Entomology, Sam Ratulangi University,
Manado, Indonesia

³Professor in Entomology, Department of Plant Pest and Diseases, Faculty of
Agriculture, Sam Ratulangi University, Manado, Indonesia

Abstract : *Crociodolomia pavonana* (Lepidoptera: Pyralidae) is one of *Brassicaceae* family plant pest such as cabbage, broccoli, cauliflower, mustard greens and turnips. Pest control using biopesticides such as *Barringtonia asiatica* L. (Kurz) has been studied. The development of biopesticides combined with papaya sap (*Carica papaya*) has never been done. The purpose of the study was to obtain a biopesticide formulation from a mixture of bitung seed (*B. asiatica*) extract and papaya (*C. papaya*) sap which can control *C. pavonana* pests on cabbage plants. This research is an experimental study using a completely randomized design. *Barringtonia asiatica* extraction using a solvent fractionation method. The bioactivity of the biopesticide formula was evaluated based on the mortality of *C. pavonana*. The compound content in biopesticides was analyzed using LCMS. The results showed that bitung seed extract could kill *C. pavonana* larvae with LC₅₀ values of 5.325 g/L. Papaya sap can increase the toxic effect of deadly bitung seed extract from *C. pavonana* larvae with LC₅₀ value of 2.390 cc/l. The LCMS analysis showed that biopesticides contained 5 compounds considered as tetraheptacontylbenzene and 4 unknown compounds. The conclusion of this study is that biopesticides from a mixture of bitung seed (*B. asiatica*) and papaya (*C. papaya*) sap were effective in controlling *C. pavonana* pest on cabbage.

Keywords : biopesticide, *Barringtonia asiatica*, *Carica papaya* sap, *Crociodolomia pavonana*, *Brassica oleraceae*.