The Effect of *Barringtonia asiatica* l. (Kurz) (Lecythidaceae) Seed Extract on *Spodoptera litura* Fabricius (Lepidoptera: Noctuidae)

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Abstract

Barringtonia asiatica (Lecythidaceae) seed extract has insecticidal activity, however it effect on Spodoptera litura (Lepidoptera: Noctuidae) is not obtained yet. The effect of B. asiatica seed extract on S. litura mortality and oviposition were tested at Pesticide and Application Technic Laboratory, Plant Protection Department, Agriculture Faculty, Universitas Padjadjaran, Jatinangor, during December 2010 to March 2011 (700 m above sea level). Experiment on toxicity test consisted of treatment: B. asiatica seed extract at concentration of 0.05%; 0.10%; 0.21%; 0.42%; 0.85% and control. Each of treatment was replicated three times. Treatment was done to get LC_{50}, LT_{50} analyzed by probit analysis, and also determine the leaf area of feed consumed, weight and time of growth on S. litura larvae were analyzed by ANOVA followed by Duncan multiple range test. The effect of B. asiatica seed extract on S. litura adult oviposition was done by spraying extract at concentration of 0.11%; 0.25%; 0.54% (equal with LC_{25}, LC_{50} and LC_{75}) and control on taro leaf. Data oviposition test were analyzed by ANOVA and followed by Duncan multiple range test. The result showed that B. asiatica seed extract were toxic on S. litura larvae with LC_{50} value at 12 days after application of 0.25%. Beside toxic, extract at concentration of 0.85% inhibit feeding activity (antifeedant), reduce weight and extend time of growth on S. litura larvae. B. asiatica seed extract treatment at concentration of 0.54% (equal with LC_{75}) inhibited oviposition of S. litura adult.

Keywords: ***Barringtonia asiatica, Spodoptera litura, mortality, lethal concentration, oviposition***

Introduction

The use of synthetic pesticide still becoming main choice by most of farmer in controling of plant pest. The farmers generally more interest applied synthetic insecticide because of fastest way in controling pest. High frequency application of synthetic insecticide could negative impact for environment and dangerous for consumer. Result some studies indicated that the application of synthetic insecticide had reduced population of natural enemy especially parasitoid and predator and other useful insect. There were also many report that some pest species were resistant to Organophosphate, carbamate and pyrethroid (Dadang & Prijono, 2008). Therefore, researcher explored about technology of pest control that friendly for environment. One of environment friendly technology of pest control was insecticide from plant origin (Samsudin, 2008).

Various active ingredient original from plant has known and tested againsr insect. At least 2000 plant species has been reported toxic to various of plant pests, and more than 850 active compound from plant had been tested against insect (Grainge & Ahmed, 1988; Prakash & Rao, 1997). During last decade there is improvement of big enthusiasm in seeking of insecticide compound from plant (Schmutterer, 1995).