International Research Journal of Agricultural Science and Soil Science (ISSN: 2251-0044) Vol. 2(11) pp. 469-475, November, 2012
Available online http://www.interesjournals.org/IRJAS

Full Length Research Paper

Bioactivity of methanolic seed extract of *Barringtonia asiatica* L. (Kurz) (Lecythidaceae) on biological characters of *Spodoptera litura* (Fabricius) (Lepidoptera: Noctuidae)

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ABSTRACT

Plants are known to have various chemical compounds that have potential to be developed as insecticides. One of the potential plants to be developed as a source of insecticides is *Barringtonia asiatica* (Lecythidaceae). This research was conducted to determine toxicity of methanolic seed extract of *Barringtonia asiatica* to mortality and biological character of *Spodoptera litura*. The evaluation of toxicity was carried out using feeding method. Result of this research indicated that methanolic seed extract of *B. asiatica* had insecticidal activity with LC_{50} at concentration of 0.30% and LC_{90} at concentration of 0.80% in 13 days after treatment with LT_{50} at 4.8 days. In addition, methanolic seed extract of *B. asiatica* caused decrease of larval weight, tend to increase duration time of development, reduced leaf consumption and decrease of egg amount oviposited by female of *S. litura*.

Keywords: *Barringtonia asiatica*, seed, extract, mortality, biological character, *Spodoptera litura.*

INTRODUCTION

Various active ingredients originally from plants have been known and tested against insects. At least 2000 plant species have been reported toxic to various plant pests, and more than 850 active compounds from plants have been tested against insects (Grainge and Ahmed, 1988; Prakash and Rao, 1997). During the last decade there is improvement of big enthusiasm in seeking of insecticide compounds from plant (Schmutterer, 1995). Syahputra (2001) reported from various districts in Indonesia, there were more than 40 potential plant species that could be used as botanical insecticides.

Botanical insecticides have long been applied by the farmers. One of the plants having a potency to be developed as insecticide is *Barringtonia asiatica* Kurz (Lecythidaceae) with common name sea poison tree or in Indonesia known as bitung (Ecology and Evolutinonary Biology Greenhouse (EEBG), 2006).

B. asiatica is known to have active compounds which cause mortality to insect pests. Methanolic seed extract of *B. asiatica* was toxic to *Crocidolomia pavonana* with value of LC_{50} equal to 0.66% at 7 days after treatment (dat). The application of seed extract of *B. asiatica* also has influenced oviposition with effective concentration equal to 0.96% which causes *C. pavonana* female not to lay the eggs at the crop. Larval response indicated that the extract of *B. asiatica*, besides had toxic character also had antifeedant activity (Dono and Sujana, 2007). Therefore, methanolic seed extract of *B. asiatica* had a potency as insecticide. One of the active compounds in seed of *B. asiatica* is saponin (Herltz *et al*., 2002; Burton *et al*. 2003, Cannon *et al.* 2004). At some places *B.*

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