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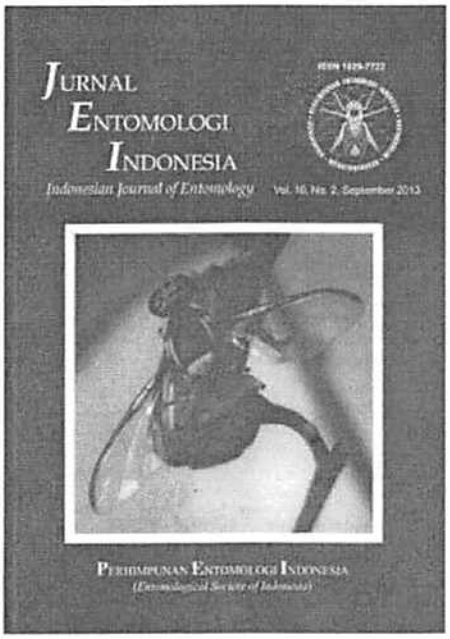

Vol 11, No 2 (2014)

Table of Contents

Articles

Jurnal Entomologi Indonesia

Editorial Team

Dewan Penyunting

Penyunting Pelaksana

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Jurnal Entomologi Indonesia

Vol 7, No 1 (2010)

Table of Contents

Articles

Jurnal Entomologi Indonesia dapat diakses juga melalui website: http://pei-pusat.org/jurnal/

Perhimpunan Entomologi Indonesia

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Status dan Mekanisme Resistensi Biokimia *Crocidolomia pavonana* (F.) (Lepidoptera: Crambidae) terhadap Insektisida Organofosfat serta Kepekaannya terhadap Insektisida Botani Ekstrak Biji *Barringtonia asiatica*

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ABSTRACT

Status and Biochemical Resistance Of *Crocidolomia pavonana* (F.) (Lepidoptera: Crambidae) to Organophosphate Insecticide and Its Sensitivity to Botanical Insecticide. An examination of insect resistance was determined by several steps, i.e. standard sensitivity, resistance diagnosis, and determination of resistance level. Each phase was tested with feeding and residue contact methods at glass tube. Resistance ratio (RR) was determined by comparing LC_{50} value of field population with standard population. Field population of *C. pavonana* was classified resistant if it had RR $\geq$ 4. Biochemistry analysis of resistance was conducted to population of *C. pavonana* showing resistance to prophenophos insecticide. The activity analysis of acetylcholine esterase (ACHE), esterase, and Glutation S-transferase was done with spectrophotometer method. Insect which are resistant to prophenophos insecticide was tested for its sensitivity to *Barringtonia asiatica* seed extract. Result indicated that *C. pavonana* population from Pengalengan showed resistance to prophenophos synthetic insecticide. Using contact test, the highest resistance ratio value was 4.04, while by feeding assay the RR was 2.78. The study on biochemical resistance mechanisms of each field population of *C. pavonana* showed various activities of enzymatic detoxification. This could be due to the difference in the kind of insecticides exposed to each field population of *C. pavonana*. Since RR value from the contact test was higher than that of the feeding test, the resistance development of *C. pavonana* to synthetic insecticides was probably caused by physiological and biochemical changes in insect cuticle rather than the activity of detoxification enzyme. Methanolic seed extract of *B. asiatica* can be used as an alternative of resistance management of *C. pavonana* to prophenophos synthetic insecticide.

KEY WORDS: Resistance, enzyme, organophosphat, botanical insecticide