



# Jurnal Entomologi Indonesia

Indonesian Journal of Entomology

HOME ABOUT LOGIN REGISTER SEARCH CURRENT ARCHIVES ANNOUNCEMENTS

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Home > Vol 11, No 2 (2014)

Journal Help

## Jurnal Entomologi Indonesia

USER

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 Password   
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 Akreditasi: 56/DIKTI/Kep/2011, Tanggal 24 Juli 2012  
 ISSN: 1829-7722  
 Online ISSN: 2089-0257  
 Mulai terbit: Vol 1 No 1, September 2004  
 Cakupan: entomologi tropika

JOURNAL CONTENT

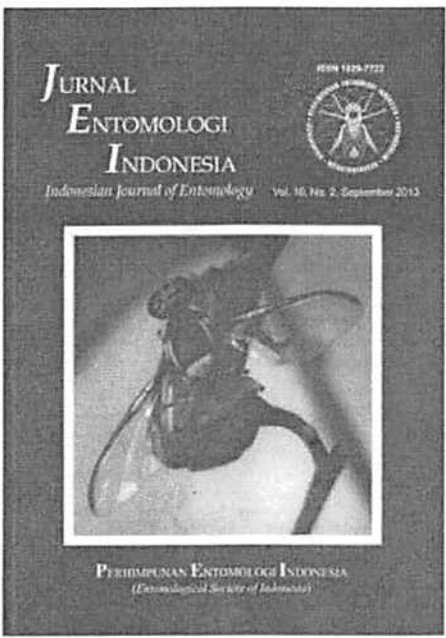
Search   
 Search Scope  
 All

Browse

- By Issue
- By Author
- By Title
- Other Journals

INFORMATION

- For Readers
- For Authors



Vol 11, No 2 (2014)

### Table of Contents

#### Articles

Keanekaragaman jenis dan perilaku menggigit vektor malaria ( <i>Anopheles spp.</i> ) di Desa Lifuleo, Kecamatan Kupang Barat, Kabupaten Kupang, Nusa Tenggara Timur Ety Rahmawati, Upik Kesumawati Hadi, Susi Soviana	PDF 53-64
Keanekaragaman dan struktur komunitas semut pada perkebunan jada di Lampung Yudiyanto Yudiyanto, Ibnuq Qayim, Abdul Munif, Dede Setiadi, Akhmad Rizali	PDF 65-71
Pengendalian <i>Aphis craccivora</i> Koch. dengan kitosan dan pengaruhnya terhadap penularan Bean common mosaic virus strain Black eye cowpea (BCMV-BIC) pada kacang panjang Dita Megasari, Tri Asmira Damayanti, Sugeng Santoso	PDF 72-80
Pola sebaran kelompok telur <i>Ostrinia furnacalis</i> Guenée (Lepidoptera: Crambidae) pada lahan jagung Yosefus F. da-Lopez, Y. Andi Trisyono, Witjaksono Witjaksono, Subiadi Subiadi	PDF 81-92
Potential damages, seasonal abundance and distribution of <i>Empoasca terminalis</i> Distant (Homoptera: Cicadellidae) on soybean in South Sulawesi Andi Nasruddin, Abdul Fattah, Muhammad Said Baco, Ahwiyah Ekawati Said	PDF 93-102

# Jurnal Entomologi Indonesia

HOME ABOUT LOGIN REGISTER SEARCH CURRENT  
ARCHIVES ANNOUNCEMENTS

[OPEN JOURNAL SYSTEMS](#)

[Journal Help](#)

Home > About the Journal > Editorial Team

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Browse

- [By Issue](#)
- [By Author](#)
- [By Title](#)
- [Other Journals](#)

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- [For Readers](#)
- [For Authors](#)

# Jurnal Entomologi Indonesia

HOME ABOUT LOGIN REGISTER SEARCH CURRENT  
ARCHIVES ANNOUNCEMENTS

[OPEN JOURNAL  
SYSTEMS](#)

[Journal Help](#)

Home > Archives > Vol 7, No 1 (2010)

## Vol 7, No 1 (2010)

### Table of Contents

#### Articles

- |   |                  |
|---|------------------|
| <u><a href="#">Penelitian Ekstrak Tumbuhan <i>Vitex trifolia</i> L., <i>Acorus colomus</i> L., dan <i>Andropogon nardus</i> L. terhadap Hama Pasca Panen <i>Araecerus fasciculatus</i> De Geer (Coleoptera: Anthribidae) pada Biji Kakao</a></u>              | <u>PDF</u><br>1  |
| SYLVIA SJAM, MELINA ., SULAEHA THAMRIN  |                  |
| <u><a href="#">Status dan Mekanisme Resistensi Biokimia <i>Crocidolomia pavonana</i> (F.) (Lepidoptera: Crambidae) terhadap Insektisida Organofosfat serta Kepekaannya terhadap Insektisida Botani Ekstrak Biji <i>Barringtonia asiatica</i> Penulis:</a></u> | <u>PDF</u><br>9  |
| DANAR DONO, SYAFRI ISMAYANA, IDAR ., DJOKO PRIJONO, IKHA MUSLIKHA   |                  |
| <u><a href="#">Perkembangan dan Kandungan Nutrisi Larva <i>Hermetia illucens</i> (Linnaeus) (Diptera: Stratiomyidae) pada Bunokil Kelapa Sawit</a></u>  | <u>PDF</u><br>28 |
| RACHMAWATI ., DAMAYANTI BUCHORI, PURNAMA Hidayat, SAURIN HEM, MELTA R. FAHMI  |                  |
| <u><a href="#">Hubungan Iklim, Kepadatan Nyamuk <i>Anopheles</i> dan Kejadian Penyakit Malaria</a></u>  | <u>PDF</u><br>42 |
| SUWITO ., UPIK KESUMAWATI HADI, SINGGIH H SIGIT, SUPRATMAN SUKOWATI   |                  |
| <u><a href="#">Pengelompokan dan Struktur Populasi Parasitoid Telur <i>Trichogrammatoidea armigera</i> pada Telur <i>Helicoverpa armigera</i> pada Jagung Berdasarkan Karakter Molekuler</a></u>  | <u>PDF</u><br>54 |
| BAHAGIAWATI ., DWINITA W UTAMI, DAMAYANTI BUCHORI   |                  |

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

#### USER

Username

Password

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#### JOURNAL CONTENT

Search

Search Scope

All

#### Browse

- [By Issue](#)
- [By Author](#)
- [By Title](#)
- [Other Journals](#)

#### INFORMATION

- [For Readers](#)
- [For Authors](#)



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

DANAR DONO<sup>1)</sup>, SYAFRI ISMAYANA<sup>2)</sup>, IDAR<sup>2)</sup>, DJOKO PRIJONO<sup>3)</sup>,  
DAN IKHA MUSLIKHA<sup>4)</sup>

<sup>1)</sup>Jurusan Hama dan Penyakit Tumbuhan,  
Fakultas Pertanian Universitas Padjadjaran

<sup>2)</sup>Jurusan Kimia Fakultas MIPA Universitas Padjadjaran

<sup>3)</sup>Departemen Proteksi Tanaman Fakultas Pertanian Institut Pertanian Bogor

<sup>4)</sup>Alumnus Jurusan Hama dan Penyakit Tumbuhan,  
Fakultas Pertanian Universitas Padjadjaran

(diterima Juli 2009, disetujui Januari 2010)

### 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<sub>50</sub> 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