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**HASIL PENILAIAN SEJAWAT SEBIDANG ATAU *PEER REVIEW***
**KARYA ILMIAH : JURNAL ILMIAH**

| | | |
|---|---|---|
| Judul Karya Ilmiah (Artikel) | : | Inhibitory Effects of Bruceine A Biolarvicide on Growth and Development of Aedes aegypty Larvae |
| Jumlah Penulis | : | 4 Orang (**Dwi Sutiningsih**, Mustofa, Tri Baskoro Tunggul Satoto, Edhi Martono) |
| Status Pengusul | : | Pertama dan Korespondensi |
| Identitas Jurnal Ilmiah | : | |
| a. Nama Jurnal | : | Journal of Entomology |
| b. Nomor ISSN | : | eISSN : 1812-5689 , pISSN : 1812-5670 |
| c. Vol, No. Bln, Thn | : | Vol. 14 No. 02 Februari 2017 |
| d. Penerbit | : | Asian Network for Scientific Information |
| e. DOI artikel (jika ada) | : | 10.3923/je.2017.104.111 |
| f. Alamat Web Jurnal | : | https://scialert.net/current.php?issn=1812-5670 atau artikel di https://scialert.net/abstract/?doi=je.2017.104.111 |
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**LEMBAR**
**HASIL PENILAIAN SEJAWAT SEBIDANG ATAU *PEER REVIEW***
**KARYA ILMIAH : JURNAL ILMIAH**

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Semarang, .....
Reviewer 2

Dr. dr. Suhartono, M.Kes
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Journal of Entomology
Volume 14, Issue 2, 2017, Pages 104-111

## Inhibitory effects of bruceine a biolarvicide on growth and development of aedes aegypti larvae (Article) (Open Access)

Sutiningsih, D.[a], Mustofa[b], Tunggul Satoto, T.B.[c], Martono, E.[d]

[a]Department of Epidemiology and Tropical Disease, Faculty of Public Health, Diponegoro University, Semarang, Indonesia
[b]Department of Pharmacology, Faculty of Medicine, Gadjah Mada University, Yogyakarta, Indonesia
[c]Department of Parasitology, Faculty of Medicine, Gadjah Mada University, Yogyakarta, Indonesia

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### Abstract

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Background and Objective: Bruceine A is a quassinoid compound isolated from the seeds of Makassar fruit (Brucea javanica L. Merr.) that has a biolarvicidal effect toward Aedes aegypti larvae with a lethal concentration fifty (LC50) and ninety (LC90) of 0.408 and 4.923 ppm, respectively. This study aimed to demonstrate the inhibitory effect of bruceine A on the growth and development of A. aegypti larvae at sublethal concentrations. Materials and Methods: The effect of bruceine A on A. aegypti larvae growth and development was tested using bioassays. Daily counts of the number of larvae that survived or died were taken until all the experimental larvae became either pupae or adults. Dead larvae were assessed for morphological and histological changes. The statistical analysis of growth and development inhibition was performed by using Kruskal Wallis test followed by Mann Whitney. The data from observation on morphological and histological changes were descriptively analyzed. Results: Inhibitory effects of bruceine A on the growth and development of A. aegypti larvae were seen at concentrations as low as 0.01 ppm. The morphological changes seen in larvae included damage to the gastrointestinal tract manifested as black spots, folded breathing tubes and detached cuticle and setae as well as smaller body sizes compared to the control group. Histological examination of the larvae indicated diffuse necrosis in the gastrointestinal epithelium accompanied by epithelial cell shrinkage, whereas the core was not visible. Conclusion: It is concluded that bruceine A inhibits growth and development of A. aegypti larvae, as shown by cuticle damage and necrosis of gastrointestinal and respiratory epithelial cells. © 2017 Dwi Sutiningsih et al.

### SciVal Topic Prominence

Topic: Quassins | Brucea Javanica | Picrasma Quassioides

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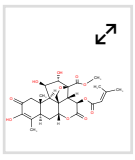

### Author keywords

Aedes aegypti larvae | Brucea javanica | Bruceine A | Development | Growth | Inhibition

# Source details

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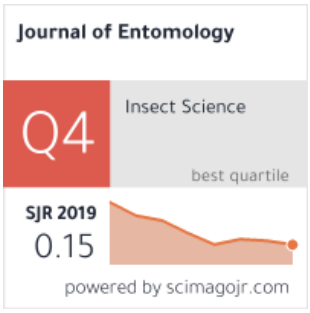


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## Volume 14, Number 2, 2017

**Incidence of Insect Pests on Rice in Nigeria: A Review**
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Journal of Entomology
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# Inhibitory Effects of Bruceine A Biolarvicide on Growth and Development of Aedes aegypti Larvae

Dwi Sutiningsih, Mustofa , Tri Baskoro Tunggul Satoto and Edhi Martono

**Abstract: Background and Objective:** Bruceine A is a quassinoid compound isolated from the seeds of Makassar fruit (Brucea javanica L. Merr.) that has a biolarvicidal effect toward Aedes aegypti larvae with a lethal concentration fifty ($LC_{50}$) and ninety ($LC_{90}$) of 0.408 and 4.923 ppm, respectively. This study aimed to demonstrate the inhibitory effect of bruceine A on the growth and development of A. aegypti larvae at sublethal concentrations. **Materials and Methods:** The effect of bruceine A on A. aegypti larvae growth and development was tested using bioassays. Daily counts of the number of larvae that survived or died were taken until all the experimental larvae became either pupae or adults. Dead larvae were assessed for morphological and histological changes. The statistical analysis of growth and development inhibition was performed by using Kruskal Wallis test followed by Mann Whitney. The data from observation on morphological and histological changes were descriptively analyzed. **Results:** Inhibitory effects of bruceine A on the growth and development of A. aegypti larvae were seen at concentrations as low as 0.01 ppm. The morphological changes seen in larvae included damage to the gastrointestinal tract manifested as black spots, folded breathing tubes and detached cuticle and setae as well as smaller body sizes compared to the control group. Histological examination of the larvae indicated diffuse necrosis in the gastrointestinal epithelium accompanied by epithelial cell shrinkage, whereas the core was not visible. **Conclusion:** It is concluded that bruceine A inhibits growth and development of A. aegypti larvae, as shown by cuticle damage and necrosis of gastrointestinal and respiratory epithelial cells.

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**DOI:** 10.3923/je.2017.104.111

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OPEN ACCESS Journal of Entomology

ISSN 1812-5670
DOI: 10.3923/je.2017.58.72

# Review Article
# Incidence of Insect Pests on Rice in Nigeria: A Review

[1]E.O. Ogah and [2]F.E. Nwilene

[1]Department of Crop Production and Landscape Management, Ebonyi State University, PMB 053 Abakaliki, Nigeria
[2]Africa Rice Center (AfricaRice), IITA Ibadan, Nigeria

## Abstract

Rice is an important cereal crop and is cultivated virtually in all agro-ecological zones in Nigeria. However, production capacity is far below national requirement. One of the major reasons for the low yields of rice in Nigeria is depredation by pests, particularly the insect pests. The rice plant is an ideal host for a large number of insect pests-root feeders, stems borers, leaf feeders and grain feeders. High yield losses associated with these insect pest categories portray the role of the insects in low rice yield in Nigeria and sub-Saharan Africa as a whole. Unfortunately, the potential for proper management of rice insect pests to enhance yield has not been fully realized in Africa. Proper management of rice pests therefore is a pre-requisite for enhanced and sustainable rice production amidst smallholder farmers that typify the rice production industry in Nigeria. In this review, major insect pests of rice were identified with emphasis on their pest status, distribution and control methods. Cultural, biological, host plant resistance and chemical controls and the development of integrated pest management programmes were reviewed. The long-term and wide adoption of integrated insect pest management of rice in Nigeria was advocated, emphasizing the use of host plant resistance and biological control but the current cultural practices should be evaluated from time to time for enhanced efficiency.

Key words: Insect pests of rice, management strategies, increase rice yield, sustainable rice production, stem borers

Received: October 21, 2016 Accepted: January 12, 2017 Published: February 15, 2017

Citation: E.O. Ogah and F.E. Nwilene, 2017. Incidence of insect pests on rice in Nigeria: A review. J. Entomol., 14: 58-72.

Corresponding Author: E.O. Ogah, Department of Crop Production and Landscape Management, Ebonyi State University, PMB 053 Abakaliki, Nigeria



Competing Interest: The authors have declared that no competing interest exists.

Data Availability: All relevant data are within the paper and its supporting information files.

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# Research Article
# Controlling the 2nd Instar Larvae of *Tuta absoluta* Meyrick (Lepidoptera: Gelechiidae) by Simmondsin Extracted from Jojoba Seeds in KSA

[1,2]Nagdy Farouk Abdel-Baky and [1,2]Abdulrahman Abdulla Al-Soqeer

[1]Department of Plant Production and Protection, College of Agriculture and Veterinary Medicine, Qassim University, Buraydah, Saudi Arabia
[2]The Promising Research Center in Biological Control and Agricultural Information (BCARC), Qassim University, Buraydah, Saudi Arabia

## Abstract

**Background and Objective:** Tomato leaf miner, *Tuta absoluta* (Gelichiidae: Lepidoptera) is a destructive pest of tomato crops worldwide. So, the main objective was to evaluate simmondsin extracted from Jojoba seeds against *T. absoluta* larvae, which are considered to be the most dangerous pests of the family, especially tomato. **Materials and Methods:** Individuals of the tomato leaf larvae, pupa and adults were collected from green houses and tomato leaves were infested and incubated under lab condition until the emerging of adults. Newly laid eggs ( 24 h old) were carefully collected from tomato plants that had previously been exposed to *T. absoluta* adults (both sexes). The effects of simmondsin extracts on mortality were tested using one-way ANOVA and corrected by using Abbott's formula. **Results:** Several simmondsin extracts were used (by ammonium hydrogine peroxide, isopropanol, acetone, or water at concentrations of 25, 50, 75 or 100%. The result obtained showed that simmondsin extracts by acetone and water significantly reduced (at 5%) *T. absloуata* populations in comparison with data oblations from simmondsin extracted by ammonium hydrogen peroxide and by isopropanol. A strong correlation between the susceptibilities of *T. absoluta* populations to extraction methods and concentrations were observed. **Conclusion:** Simmondsin extractions were more effective in controlling the 2nd instar larvae of *T. absoluta*. It may be concluded that use of simmondsin extracts could be useful within IPM programs. This finding indicates that biorational insecticides are a good alternative than synthetic ones particularly with fresh vegetables. Possible use of biorational insecticides in the management of *T. absoluta* in organic farming system is being discussed. Poor-resource farmers of tomato could therefore adopt jojoba extracts as alternatives to synthetic insecticide.

Key words: Tomato leaf-miner, *Tuta absoluta*, jojoba, simmondsin, biorational control, botanical extracts, IPM

Received: December 26, 2016 Accepted: February 02, 2017 Published: February 15, 2017

Citation: Nagdy Farouk Abdel-Baky and Abdulrahman Abdulla Al- Soqeer, 2017. Controlling the 2nd instar larvae of *Tuta absoluta* meyrick (Lepidoptera: Gelechiidae) by simmondsin extracted from jojoba seeds in KSA. J. Entomol., 14: 73-80.

Corresponding Author: Nagdy Farouk Abdel-Baky, Department of Plant Production and Protection, College of Agriculture and Veterinary Medicine, Qassim University, Buraydah, Saudi Arabia



Competing Interest: The authors have declared that no competing interest exists.

Data Availability: All relevant data are within the paper and its supporting information files.