

# INTERNATIONAL BIOTECHNOLOGY SEMINAR & 5<sup>th</sup> KBI Congress 2010

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**Biotechnology :**  
*Breakthrough for the Future of  
Industrial Challenges in Developing Countries*

PROCEEDING

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Saidatul Idiyah  
Aris Winaya



PROCEEDING OF THE INTERNATIONAL BIOTECHNOLOGY SEMINAR  
AND 5<sup>th</sup> KBI CONGRESS

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**Chief Editor:**

**Suharsono**

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We've tried to book this program and abstracts can be published with the substance of the best, but certainly there are many drawbacks to it we ask that the maximum.

Finally we hope that this book is useful for speakers, participants, and all parties that need.

*Wassalamualaikum. Wr. Wb.*

W. Saldatul Idiyah, MP

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## Chemical composition and Larvicidal Activities of essential oil of Piper betle from the Indonesian Plants against *Aedes aegypti* L

DWIWAHYUNI

Department of Biology, Faculty of Teacher Training and Education- University of Jember, Indonesian  
May,2010

### Abstract

*Aedes aegypti* are the most important of insects well-known for their public health importance, since they act as vector for many tropical and subtropical diseases such as dengue fever, yellow fever. *Aedes aegypti* L. is the major vector of dengue fever, an endemic disease in Indonesian. In view of the recently increased interest in developing plant origin insecticides as an alternative to chemical insecticide, this study was undertaken to assess the larvicidal potential of the essential oil composition chemical of Piper betle from the Indonesian plants against medically important species of mosquito vectors, *Aedes aegypti* L'. Methods: The essential oil was extracted by steam distillation and their chemical composition determined by GL -Chromatography couple to mass spectroscopy. Bioefficacy of the essential oil composition chemical was evaluated under laboratory conditions using III - IV instars *Aedes aegypti* larvae. were analyzed by measurement of their LC50. Results: Among the chemical composition of the essential oil are eugenol, kavikol and estragol, eugenol was the most sensitive (LC 50 = 40, 6 ppm), followed by kavikol (54, 9 ppm) and estragol (57, 6 ppm). Interpretation & Conclusion: From the results it can be concluded that the *Aedes aegypti* larvae was susceptible to the eugenol. Such findings would be useful in promoting research aiming at the development of new agent for *Aedes aegypti* larvae chemical compounds from indigenous plant sources as an alternative to chemical larvisides. based on bioactive

**Key words:** larvicidal activity - *Aedes aegypti* - essential oils - eugenol, dengue