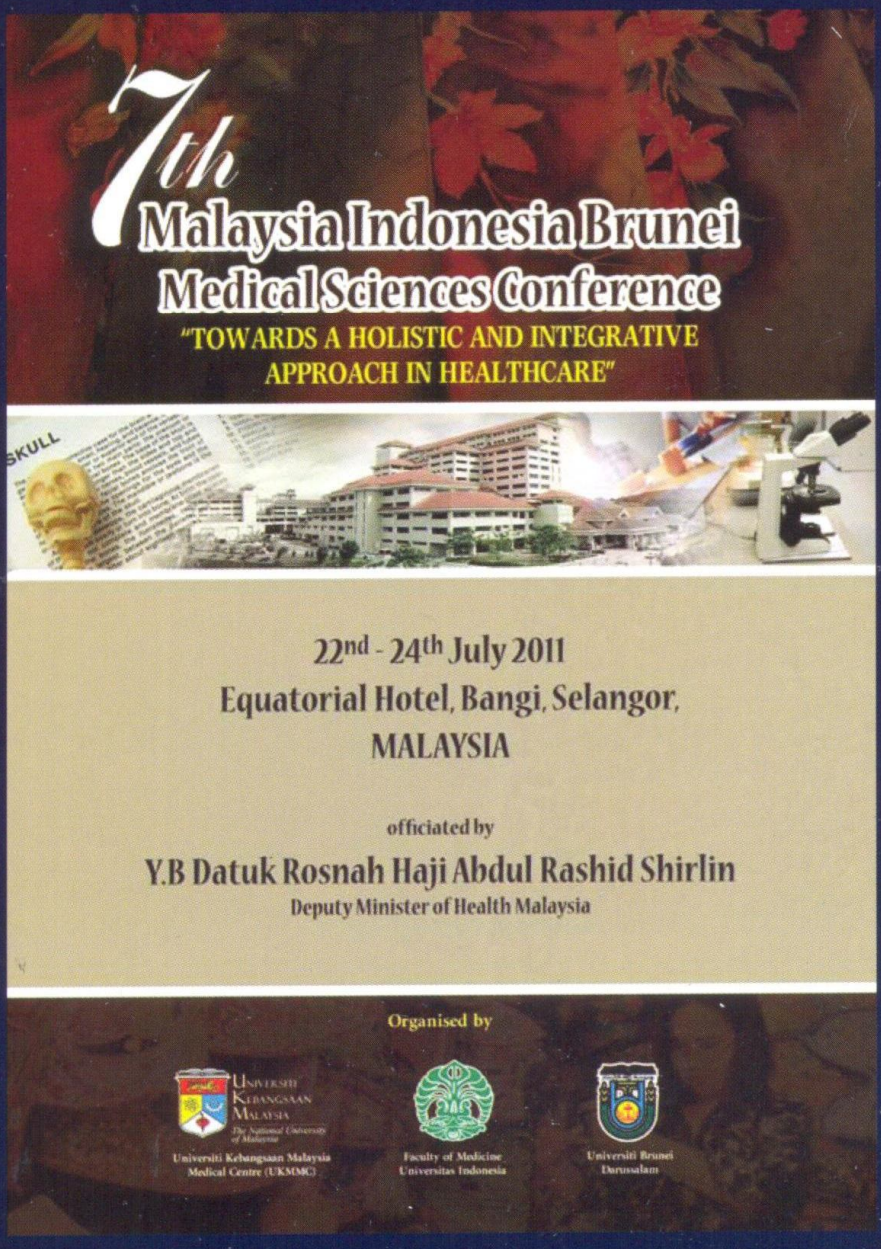
Volume 6, No. 1 (Supplement)
June 2011
ISSN 1823-2140

The National University with an INTERNATIONAL REACH

UNIVERSITI KEBANGSAAN MALAYSIA
National University of Malaysia

MEDICINE & Health

The Official Journal of The Faculty of Medicine UKM



EFFICACY TEST OF *BACILLUS THURINGIENSIS ISRAELENSIS* AGAINST LARVAE *CX.QUINQUEFASCIATUS, AE.AEGYPTI*, AND *AE.ALBOPICTUS* IN VARIOUS CONTAINERS AT LABORATORY OF PARASITOLOGY FACULTY OF MEDICINE, UNIVERSITAS INDONESIA

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Background:
Vector borne disease is still a public health problem, such as dengue hemorrhagic fever (DHF) which is transmitted by *Ae.aegypti* and *Ae.albopictus*, and *Cx.quinquefasciatus* which transmits filariasis. Nowadays the vector biological elimination, among others, is done using *Bacillus thuringiensis israelensis* (Bti). This study aims to determine the efficacy of Bti on those three larvae, by calculating lethal concentration and residual effects.

Materials & Method:
This study was conducted with experimental methods using larvae colonies in the laboratory of Parasitology FKUI between August 2010 till January 2011. To determine the lethal concentration, various concentrations of liquid Bti provided to 100 third instar larvae Ae.aegypti and Cx.quinquefasciatus, after 24 hours, number of dead larvae was counted. For residual effect, two millilitre per meter square of Bti was given to 100 third instar larvae of *Ae.aegypti*, *Ae.albopictus*, and *Cx.quinquefasciatus* inserted in fiberglass, ceramics, and cement container. The study was repeated the following weeks, and stopped until detection of died larvae under 70% without draining the container.

Results:
Probit Analysis showed LC50 and LC95 for *Cx.quinquefasciatus* was 0.575 (0.288-0.801)ml/m^2 and 2.839 (2.431-3.482)ml/m^2 (R^2=0.968) and on *Ae.aegypti* is 0.98 (0.68 to 1.24)ml/m^2 and 2.76 (2.31 to 3.57)ml/m^2 (R^2=0.905). Bti residual effect against *Ae.aegypti* and *Ae.albopictus* was seen in the third container for two weeks while on *Cx.quinquefasciatus* in cement and ceramic containers a week, and the fiberglass container two weeks. Bti residual effect worked better against *Ae.albopictus* and *Ae.aegypti* larvae (McNemar, $p<0.05$).

Conclusion:
For application in the field study, the highest concentration estimated at 3.48 and 3.57ml/m^2 respectively for *Cx.quinquefasciatus* on *Ae.aegypti* should be used. Bti residual effects work more hours in a row than *Ae.albopictus*, *Ae.aegypti*, and *Cx.quinquefasciatus*.

Keywords:
efficacy, *Bacillus thuringiensis israelensis*, *Culex quinquefasciatus*, *Aedes aegypti*, *Aedes albopictus*, lethal concentrations, residual effects