

COMPARISON OF EFFECTS BETWEEN EXTRACTS OF
Eleusine indica AND *Commiphora*
gambogiana IN THE TREATMENT OF
DIPHTHERIA (THERAPY : GUNG DUE)

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Comparison of effects between extracts of *tinospora tuberculata*
and *lumnizera racemosa* plants against *aedes aegypti* larvae
(diptera:culicidae) / Sri Shasita A/P Ratnam.

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COMPARISON OF EFFECTS BETWEEN EXTRACTS OF *Tinospora tuberculata* AND
Lumnitzera racemosa PLANTS AGAINST *Aedes aegypti* LARVAE (DIPTERA:
CULICIDAE).

By

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Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk: COMPARISON OF EFFECTS BETWEEN EXTRACTS OF *Tinospora tuberculata* AND *Lumnitzera racemosa* PLANTS AGAINST *Aedes aegypti* LARVAE (DIPTERA: CULICIDAE) oleh SRI SHASITA A/P RATNAM, no. matrik: UK10963 telah diperiksa dan semua pembedaan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains Biologi sebagai memenuhi sebahagian daripada keperluan memperoleh ijazah Sarjana Muda Sains Gunaan (Pemuliharaan Dan Pengurusan Biodiversiti), Fakulti Sains dan Teknologi, Universiti Malaysia Terengganu.

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LIST OF ABBREVIATIONS

AZA	-	azadirachtin
β	-	Beta
cm	-	centimeter
DEN	-	dengue
$^{\circ}\text{C}$	-	degree celcius
DHF	-	dengue hemorrhagic fever
DF	-	dengue fever
DMSO	-	Dimethyl sulfoxide
g	-	gram
IMR	-	Institute of Medical Research
kg	-	kilogram
l	-	litre
LC ₅₀	-	lethal concentration that cause 50% mortality of test organism
M	-	concentration of solution
MARDI	-	Malaysian Agriculture and Research Development Institute
mg	-	miligram
ml	-	mililiter
No.	-	number
P _C	-	corrected percentage mortality
P _U	-	percentage of dead test organisms
P _T	-	percentage of dead control organism
RH	-	relative humidity
V	-	volume of solution
WHO	-	World Health Organization
%	-	percentage

ABSTRACT

In recent years, the usage of environmentally friendly and biodegradable natural insecticides of plant origin have received and renewed attention as an effective agent for disease vector control. Thus, this study was carried out to examine the comparison of effect between herbal and mangrove plant in which the plants were extracted according to parts and tested against *Aedes aegypti* larvae. Leaf and stem of *Tinospora tuberculata* and *Lumnitzera racemosa* was extracted using 95% of Methanol and tested against 3rd instar *Ae. aegypti* (Diptera: Culicidae) larvae under laboratory condition. Exposure was done for 24 hours in the concentrations of 0.125mg/ml, 0.25mg/ml, 0.5mg/ml, 1mg/ml and 2mg/ml. LC₅₀ values obtained for crude extract of *T. tuberculata* stem and leaf were 0.5816 mg/ml and 0.7126 mg/ml whereas for *L. racemosa*, LC₅₀ value for stem and leaf were 1.5664 mg/ml and 1.7214 mg/ml. There were no significant difference for stem and leaf of both plant. This study indicated that both plant produce compounds for vector control which are friendly to the environment

PERBEZAAN KESAN KETOKSIKAN EKSTRAK KASAR
Tinospora tuberculata* DAN *Lumnitzera racemosa
TERHADAP LARVA NYAMUK *Aedes aegypti*
(DIPTERA: CULICIDAE)

ABSTRAK

Sejak kebelakangan ini, penggunaan racun serangga yang bersifat mesra alam dan mudah mengurai telah diterima dan digunapakai sebagai agen yang efektif dalam kawalan serangga pembawa penyakit. Kajian ini telah dijalankan bagi menguji kesan ketoksikan tumbuhan herba dan pokok bakau, di mana ia diasingkan mengikut bahagian, diekstrak dan diuji ke atas larva *Aedes aegypti*. Daun dan batang *Tinospora tuberculata* serta *Lumnitzera racemosa* telah diekstrak dengan menggunakan 95% Metanol dan diuji ke atas instar ke-3 larva *Aedes aegypti* (Diptera: Culicidae) di dalam makmal. Pendedahan larva ke atas ekstrak telah dilakukan selama 24 jam pada kepekatan 0.125 mg/ml, 0.25 mg/ml, 0.5 mg/ml, 1 mg/ml dan 2 mg/ml. Nilai LC₅₀ diperolehi dari ekstrak kasar batang dan daun *T. tuberculata* adalah 0.5816 mg/ml dan 0.7126 mg/ml manakala untuk batang dan daun *L. racemosa* pula 1.5664 mg/ml bagi batang dan 1.7214 mg/ml bagi daun. Tiada perubahan yang ketara di antara batang dan daun kedua-dua tumbuhan. Ini menunjukkan kedua-dua tumbuhan menghasilkan sejenis sebatian untuk pengawalan vektor yang bersifat mesra alam.