

ABSTRAK

Kalaithasan. Visaagan. 2013. **Uji Potensi Ekstrak Bunga Cengkeh (*Syzygium aromaticum*) Sebagai Insektisida Terhadap Kecoa (*Periplaneta Americana*)** Tugas Akhir, Fakultas Kedokteran Universitas Brawijaya. Dosen pembimbing: (1) Prof.Dr.dr.Teguh W. Sardjono, DTM&H, MSc,SpPark (2) dr.Eriko Prawestiningtyas, SpF.

Insektisida kimiawi memiliki efektifitas tinggi dalam membunuh kecoa tetapi juga memiliki efek samping yang merugikan terhadap manusia dan lingkungan sedangkan insektisida alami bersifat mudah terurai sehingga penggunaannya relatif aman. *Syzygium aromaticum* mengandung eugenol, eugenyl acetate, dan β -caryophyllene yang diduga mempunyai efek insektisida. Kecoa *Periplaneta americana* merupakan salah satu vektor mekanis untuk beberapa penyakit seperti *Diare*, *Disentri*, *Polio*, *Hepatitis A*, dan *Cholera*. Penelitian ini bertujuan untuk menguji potensi ekstrak bunga cengkeh sebagai insektisida terhadap kecoa *Periplaneta americana* dewasa. Penelitian ini merupakan 'penelitian *true experimental-post test only control group design*' dengan sampel yang digunakan adalah kecoa *Periplaneta sp.* dewasa. Pengulangan dilakukan sebanyak empat kali dengan jumlah perlakuan sebanyak lima jenis yaitu kontrol negatif (aquades), konsentrasi larutan ekstrak bunga cengkeh sebesar 20%, 30%, 40% dan kontrol positif (malathion 0,28%). Setiap perlakuan diamati pada tujuh interval waktu yaitu pada jam 1, jam 2, jam 3, jam 4, jam 5, jam 6, dan jam 24. Hasil penelitian menunjukkan bahwa pada konsentrasi 40%, dalam waktu 4,5 jam, 50% kecoa mati. Terdapat perbedaan yang bermakna pada konsentrasi 20%, 30% dan 40%. Hasil uji korelasi *Pearson* konsentrasi terhadap *Abbot* menunjukkan nilai signifikansi (*P-value*) = 0.000 ($p < 0.05$) dan koefisien korelasi (*r-value*) = 0.570 yang berarti korelasinya berbanding lurus, yang artinya semakin tinggi dosis ekstrak, maka semakin tinggi jumlah kematian serta menunjukkan korelasi yang sedang (r 0,500-0,599). Kesimpulan dari penelitian ini adalah ekstrak bunga cengkeh (*Syzygium aromaticum*) mempunyai potensi sebagai insektisida yang kurang bagus terhadap kecoa *Periplaneta americana*.

Kata kunci : ekstrak bunga cengkeh, insektisida, *Periplaneta americana*, *Syzygium aromaticum*.

ABSTRACT

Kalaithasan. Visaagan. 2013. **The Potential Effect Of *Syzygium Aromaticum* Extract On Cockroach (*Periplaneta Americana*) as a Insecticide.** Final Assignment, Faculty Of Medicine, Brawijaya University. Supervisors: (1) Prof.Dr.dr.Teguh W. Sardjono, DTM&H, MSc,SpPark (2) dr.Eriko Prawestiningtyas, SpF

Manmade chemical insecticides have proved to be highly effective in eradicating this pest but its negative effects upon human health and environmental safety were major drawbacks to its continued use. Hence, the search for alternative, natural substances such as *Syzygium aromaticum*, that were both environmentally safe as well as being effective insecticides. The extract of *Syzygium aromaticum* has known to contain high concentrations of eugenol, eugenyl acetate, and β -caryophyllene. These substances were thought to have insecticidal properties. *Periplaneta americana* was selected as the specimen for this study because it served as an important mechanical vector for many diseases endemic in the developing world such as Diarrhea, Dysentery, Polio, Hepatitis A, as well as Cholera. This study aimed to identify the potency of *Syzygium aromaticum* extract against adult *Periplaneta americana* using a contact poison method. A true experimental study was conducted, using adult specimens of *Periplaneta americana*. at three concentrations of *Syzygium aromaticum* extract; 20%, 30%, 40%, with one negative control using aquades solution, and also one positive control using 0.28% *Malathion*. The experiment was repeated four times and each repetition was observed at seven time intervals (1st, 2nd, 3rd, 4th, 5th, 6th and 24th hour). The results showed that at a concentration of 40%, 50% of *Periplaneta americana* specimens died within 4.5 hours. There was a significant and relevant difference between the results of the study at each concentration of the extract. A *Pearson correlation* analysis of extract concentration against the *Abbot* value showed a significant *P-value* = 0.00 ($p < 0.05$) and a correlation coefficient (*r-value*) of 0.570. The *r-value* indicates there was a moderate and linear correlation between increasing concentration of extract and increasing *Abbot* value (increasing potency of insecticide). It can be concluded from this study that *Syzygium aromaticum* is not a potent and effective insecticide.

Keywords : insecticide, *Periplaneta americana*, *Syzygium aromaticum* extract.