

## ABSTRAK

Putra, Sunny Aghni Ilmi Riza. 2016. *Uji Ekstrak Etanol Daun Tomat (Solanum lycopersicum Linn) sebagai Insektisida terhadap Musca domestica sp. dengan Metode Semprot*. Tugas Akhir, Program Studi Pendidikan Dokter Fakultas Kedokteran Universitas Brawijaya. Pembimbing: (1) Dr. dr. Sri Poeranto, Sp.Par.K, M. Kes (2) Aswaty Nur, S. Si, M. Kes.

Lalat *Musca domestica* sp. berperan sebagai vektor penyakit dari poliomiелitis, hepatitis, disentri, salmonellosis, cholera, dan lain-lain sehingga diperlukan pengendalian populasi lalat agar tidak membahayakan lingkungan. Pengendalian populasi lalat menggunakan insektisida sintesis dapat menimbulkan bahaya dan berpengaruh buruk bagi kesehatan. Insektisida alternatif berasal dari bahan alami diperlukan karena ramah lingkungan. Daun tomat (*Solanum lycopersicum* Linn) dapat dimanfaatkan sebagai alternatif insektisida karena mengandung *alkaloid solanidine* dan *alkaloid solanine*. Penelitian ini bertujuan untuk membuktikan potensi ekstrak etanol daun tomat (*Solanum lycopersicum* Linn) sebagai insektisida terhadap lalat *Musca domestica* sp. dengan metode semprot. Konsentrasi ekstrak etanol daun tomat yang digunakan dalam penelitian ini yaitu 10%, 12,5%, 15%, 17,5, dan 20%. Pada setiap konsentrasi digunakan 10 ekor lalat *Musca domestica* sp. Penelitian ini dilakukan pengulangan sebanyak 5 kali dan diamati pada jam ke-1, 2, 3, 4, 5, 6, dan 24. Hasil penelitian menunjukkan bahwa pada pengamatan jam ke-24 didapatkan konsentrasi 20% dan 17,5%, keduanya mampu mencapai potensi insektisida paling optimal yaitu membunuh 100% lalat sama dengan hasil dari kontrol positif (malathion 0,28%). Konsentrasi 15% mencapai potensi insektisida sebesar 92%, konsentrasi 12,5% mencapai potensi insektisida sebesar 86%, dan konsentrasi 10% mencapai potensi insektisida sebesar 76%. Berdasarkan uji Kruskal Wallis, hubungan antara konsentrasi terhadap potensi didapatkan nilai signifikansi 0,000 ( $<0,05$ ) serta hubungan antara waktu paparan terhadap potensi insektisida didapatkan hasil signifikansi 0,000 ( $<0,05$ ), hal ini menunjukkan bahwa konsentrasi dan waktu paparan memberikan pengaruh yang bermakna terhadap potensi insektisida. Uji korelasi *Spearman* untuk konsentrasi dan waktu ekstrak daun tomat menunjukkan korelasi yang bermakna terhadap potensi yang dihasilkan ( $p = 0,000$ ) dengan kekuatan hubungan kategori kuat. Berdasarkan hasil analisis regresi menunjukkan bahwa potensi insektisida pada lalat *Musca domestica* sp. dipengaruhi oleh konsentrasi ekstrak daun tomat dan waktu pengamatan sebesar 62,6%. Secara keseluruhan dapat disimpulkan bahwa zat-zat aktif yang terdapat di dalam ekstrak daun tomat (*Solanum lycopersicum* Linn) memiliki potensi sebagai insektisida dengan metode semprot.

Kata kunci: daun tomat, *Solanum lycopersicum* Linn, insektisida, lalat rumah, *Musca domestica* sp., metode semprot.

## ABSTRACT

Putra, Sunny Aghni Ilmi Riza. 2016. *Ethanol Test of Tomato Leaf (Solanum lycopersicum Linn) Extract as an Insecticide against Musca domestica sp. by Using Spray Method*. Final Assignment, Medical Program Study, Faculty of Medicine Universitas Brawijaya. Advisors: (1) Dr. dr. Sri Poeranto, Sp.Par.K, M. Kes (2) Aswaty Nur, S. Si, M. Kes.

*Musca domestica* sp. flies act as vectors of protozoa, worms, viruses, bacteria, and fungi diseases such as poliomyelitis, hepatitis, dysentery, salmonellosis, cholera, and others so that the necessary control flies populations that do not harm the environment. Control of the fly population using synthetic insecticides may pose a danger and a bad influence for health. Alternative insecticides derived from natural ingredients necessary for being environmentally friendly. Leaves of tomato (*Solanum lycopersicum* Linn) can be used as an alternative to insecticide because it contains alkaloid solanidine and alkaloid solanine. This study aims to demonstrate the potential of ethanol extract of leaves of tomato (*Solanum lycopersicum* Linn) as an insecticide against *Musca domestica* sp. flies by spray method. The concentration of ethanol extract of tomato leaves were used in this study is 10%, 12.5%, 15%, 17.5, and 20%. At each concentration used 10 flies *Musca domestica* sp. This research was conducted repetition as much as 5 times and observed on hour-1, 2, 3, 4, 5, 6, and 24. The results showed that at the 24<sup>th</sup> hour observation found that both concentration of 20% and 17.5% are equally capable achieve the most optimal potential insecticide that kills 100% of flies as potential as the results of the positive control (0.28% malathion). Concentration of 15% reach potential insecticides by 92%, the concentration of 12.5% treach potential insecticides by 86%, and a concentration of 10% treach potential insecticides by 76%. Based on the Kruskal Wallis test, the relationship between the concentration of the potential obtained significance value of 0.000 (<0.05) and the relationship between the time of exposure to potential insecticides showed a significance of 0.000 (<0.05), suggesting that the concentration and exposure time gives meaningful effect to a potential insecticide. Spearman correlation test for the concentration and time of tomato leaf extract showed significant correlation to the potential generated ( $p = 0.000$ ) with the strength of the relationship included in the strong category. Based on the results of regression analysis showed that the potential of insecticide on the *Musca domestica* sp. flies influenced by tomato leaf extract concentration and observation time amounted to 62.6%. Overall it can be concluded that the active substances contained in the leaf extract of tomato (*Solanum lycopersicum* Linn) has potential as an insecticide by spray method.

Keywords: leaves of tomato, *Solanum lycopersicum* Linn, insecticides, house fly, *Musca domestica* sp., spray method.