

INTISARI

Latar belakang: Lalat rumah (*Musca domestica*) merupakan vektor penyakit lingkungan yang masih umum dikendalikan dengan insektisida kimia, meskipun berisiko menyebabkan resistensi dan pencemaran. Sebagai alternatif, penelitian ini mengkaji efektivitas ekstrak daun sirsak (*Annona muricata* L.) dan daun jambu biji (*Psidium guajava* L.) sebagai insektisida hayati serta pengembangan produk cair berbasis air (BioFly).

Tujuan: Mengetahui efektivitas ekstrak daun sirsak (*Annona muricata* L.) dan daun jambu biji (*Psidium guajava* L.) sebagai insektisida nabati, serta mengembangkan produk cair berbasis air (BioFly).

Metode: Penelitian dilakukan secara eksperimental menggunakan lima konsentrasi 10%, 12%, 14%, 16%, 18% dan satu kontrol, masing-masing dengan empat replikasi. Uji dilakukan pada lalat rumah dewasa, dengan pengamatan 30, 60, 90 menit, dan 24 jam pasca-paparan. Data dianalisis menggunakan uji Kruskal-Wallis dan Probit. Selain itu, uji stabilitas untuk kondisi penyimpanan dilakukan pada hari ke-0, 3, dan 7 dalam kondisi luar ruangan, dalam ruangan, dan lemari es (4°C). Pengamatan didasarkan pada kejernihan, warna, viskositas, dan bau.

Hasil: Hasil GC-MS menunjukkan ekstrak daun sirsak dan jambu biji mengandung senyawa *Bombykol* (terpenoid), serta *Celidoniol deoxy* (terpenoid) dan *1H-Purin-6-amine, (2-fluorophenyl) methyl* (alkaloid) yang memengaruhi mortalitas lalat. Ekstrak sirsak menunjukkan mortalitas lalat yang lebih tinggi (LC₅₀: 10,62%) dibandingkan daun jambu biji (LC₅₀: 12,20%). Produk BioFly berhasil diformulasikan dan penyimpanan di lemari es menunjukkan stabilitas tertinggi hingga 7 hari.

Kesimpulan: Kedua ekstrak tersebut efektif sebagai bioinsektisida, dengan sirsak yang bekerja cepat dan direkomendasikan untuk menyimpan di lemari es.

Kata kunci: Daun jambu biji, Daun sirsak, Insektisida nabati, *Musca domestica*, Stabilitas penyimpanan

ABSTRACT

Background: Houseflies (*Musca domestica*) are vectors of environmental diseases that are still commonly controlled with chemical insecticides, despite the risk of causing resistance and pollution. As an alternative, this study examined the effectiveness of soursop (*Annona muricata* L.) and guava (*Psidium guajava* L.) leaf extracts as biological insecticides and the development of a water-based liquid product (*BioFly*).

Objective: To determine the effectiveness of soursop leaf extract (*Annona muricata* L.) and guava leaf extract (*Psidium guajava* L.) as botanical insecticides, and to develop water-based liquid products (*BioFly*).

Methods: The study was conducted experimentally using five concentrations of 10%, 12%, 14%, 16%, and 18%, each with four replications. The test was conducted on adult houseflies, with observations at 30, 60, 90 minutes, and 24 hours post-exposure. Data were analysed using the Kruskal-Wallis and Probit tests. In addition, stability tests for storage conditions were conducted on days 0, 3, and 7 under outdoor, indoor, and refrigerator conditions (4°C). Observations were based on clarity, colour, viscosity, and odour.

Results: From the GCMS test results, soursop and guava leaves extracts contain *Bombykol* compounds (terpenoid), as well as *Celidoniol deoxy-* (terpenoid) and *1H-Purin-6-amine, (2-fluorophenyl) methyl* (alkaloid) which affect fly mortality. Soursop extract showed higher fly mortality (LC₅₀: 10.62%) compared to guava leaves (LC₅₀: 12.20%). *BioFly* product was successfully formulated and refrigerator storage showed the highest stability up to 7 days.

Conclusion: Both extracts were effective as bio-insecticides, with soursop being fast-acting and refrigerator was recommended for storage.

Keywords: Guava leaves, *Musca domestica*, plant-based insecticide, soursop leaves, storage stability



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Efektivitas Ekstrak Daun Sirsak (*Annona muricata* L.) dan Daun Jambu Biji (*Psidium guajava* L.) Sebagai Insektisida Alami Terhadap Lalat Rumah (*Musca domestica*)

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