

Nurul Qomaria. 220311100005. Efektivitas Ekstrak *Annona Squamosa* L., Biji *Annona Muricata* L., Dan Campuran Keduanya Terhadap Mortalitas Larva *Spodoptera Litura*. Dibimbing oleh: Ir. H. Suhartono, M.P dan Ir. Achmad Djunaedy, M.P

ABSTRAK

Penggunaan insektisida sintetik secara terus-menerus memicu resistensi hama dan kerusakan ekosistem, sehingga diperlukan alternatif ramah lingkungan seperti insektisida nabati. Penelitian ini bertujuan mengevaluasi efektivitas ekstrak metanol biji *Annona muricata* L., biji *Annona squamosa* L., dan campuran keduanya terhadap aktivitas makan, mortalitas, dan kesintasan larva *Spodoptera litura* instar II. Metode ekstraksi menggunakan maserasi dengan variasi konsentrasi perlakuan 0%–10%. Hasil uji fitokimia mengonfirmasi adanya senyawa metabolit sekunder berupa alkaloid, flavanoid, saponin, tanin, dan Annonaceous acetogenins. Hasil uji menunjukkan peningkatan konsentrasi berbanding lurus dengan penurunan daya makan dan peningkatan mortalitas larva. Pada konsentrasi 10%, ekstrak tunggal *A. muricata* menghasilkan efek *antifeedant* hingga 80% dan mortalitas puncak 87%, setara dengan performa ekstrak campuran (87%). Dosis tinggi pada kedua perlakuan juga berhasil menekan kesintasan larva menjadi pupa hingga 0%. Berdasarkan Analisis Probit, ekstrak tunggal *A. muricata* memiliki efisiensi tertinggi dengan nilai LC_{50} terendah sebesar 4,753% dan laju bunuh tercepat LT_{50} 4,307 hari pada konsentrasi 5%. Ekstrak campuran menunjukkan LC_{50} sebesar 5,548%, menunjukkan gejala antagonisme ringan pada konsentrasi rendah, namun kembali optimal pada konsentrasi tinggi. Penelitian ini menyimpulkan bahwa limbah biji *genus Annona* berpotensi besar dikembangkan sebagai insektisida nabati komersial yang mendukung pertanian berkelanjutan.

Kata Kunci: *Annona muricata*, *Annona squamosa*, Antifeedant, Mortalitas, *Spodoptera litura*.

Nurul Qomaria. 220311100005. The Effectiveness of *Annona Squamosa* L., Seed Extract, *Annona Muricata* L. and Their Combination on the Mortality of *Spodoptera Litura* Larvae. Supervised by: Ir. H. Suhartono, M.P and Ir. Achmad Djunaedy, M.P

ABSTRACT

Continuous use of synthetic insecticides triggers pest resistance and damages ecosystems, so environmentally friendly alternatives like plant-based insecticides are needed. This study aims to evaluate the effectiveness of methanol extracts from *Annona muricata* L. seeds, *Annona squamosa* L. seeds, and their mixture on the feeding activity, mortality, and survival of *Spodoptera litura* second instar larvae. The extraction method used maceration with treatment concentrations ranging from 0% to 10%. Phytochemical tests confirmed the presence of secondary metabolites such as alkaloids, flavanoids, saponins, tannins, and Annonaceous acetogenins. The results showed that increasing concentrations were directly proportional to decreased feeding activity and increased larval mortality. At a 10% concentration, the single extract of *A. muricata* produced antifeedant effects up to 80% and peak mortality of 87%, which is comparable to the performance of the mixed extract (87%). High doses in both treatments also successfully reduced the survival of larvae to pupae to 0%. Based on Probit Analysis, the single extract of *A. muricata* had the highest efficiency with the lowest LC_{50} value of 4.753% and the fastest lethal time LT_{50} 4,307 days at a 5% concentration. The mixed extract showed a LC_{50} of 5.548%, indicating mild antagonistic symptoms at low concentrations, but returned to optimal at high concentrations. This study concludes that *Annona* seed waste has great potential to be developed as a commercial botanical insecticide supporting sustainable agriculture.

Keywords: *Annona muricata*, *Annona squamosa*, Antifeedant, Mortality, *Spodoptera litura*.