# ABSTRAK


## POTENSI EKSTRAK ETANOL DAUN KERSEN *(Muntingia calabura* L.*)* TERHADAP MORTALITAS LARVA *Aedes aegypti* DAN PENGARUHNYA TERHADAP JARINGAN *Midgut* LARVA

**Oleh**

**MUTIA RATU INSANI**

Kasus Demam Berdarah Dengue (DBD) ditemukan hampir di seluruh dunia termasuk Indonesia. Kasus DBD di Indonesia selalu meningkat dan merupakan salah satu masalah kesehatan. Nyamuk *Aedes aegypti* merupakan vektor dari virus *dengue* penyebab demam berdarah yang ditularkan dari satu penderita ke penderita yang lain melalui nyamuk selaku vektor. Upaya pengendalian DBD sudah banyak dilakukan, baik secara kimia, maupun secara alami (biologi), pengendalian secara alami salah satunya menggunakan ekstrak tumbuhan sebagai larvasida. Salah satu tumbuhan yang diduga berpotensi sebagai larvasida yaitu ekstrak daun kersen (*Muntingia calabura* L.) yang mengandung senyawa metabolit sekunder berupa tanin, flavonoid, dan saponin. Penelitian ini bertujuan untuk mengetahui potensi ekstrak etanol daun kersen *(Muntigia calabura* L.*)* terhadap mortalitas larva *Aedes aegypti* dan pengaruhnya terhadap jaringan *midgut* larva. Penelitian menggunakan rancangan acak kelompok (RAK) dengan perlakuan konsentrasi: 0%; 0,25%; 0,50%; 0,75; 1% dan empat kali ulangan. Data dianalisis dengan *One-way* ANOVA, dan dilanjutkan ke uji LSD. Hasil uji fitokimia pada ekstrak daun kersen menunjukan positif saponin, tanin, flavonoid, steroid, dan alkaloid. Berdasarkan hasil uji lanjut LSD diperoleh mortalitas nyamuk *Aedes aegypti* meningkat seiring dengan bertambah pemberian konsentrasi ekstrak. Pengaruh perubahan morfologi larva setelah terpapar ekstrak terlihat perubahan warna pada tubuh larva menjadi lebih gelap dan dari hasil pengamatan jaringan *midgut* larva terjadi kerusakan pada membran peritropik, sel epitel dan membran basalis.



***Kata Kunci :*** Demam Berdarah Dengue (DBD), larva, *Aedes aegypti*, daun kersen, *Midgut,* dan mortalitas.

## ABSTRACT

**POTENTIAL OF KERSEN LEAF ETHANOL EXTRACT (*Muntingia calabura* L.) ON *Aedes aegypti* LARVA MORTALITY AND EFFECT ON LARVA Midgut TISSUE**

**By**

**MUTIA RATU INSANI**

Dengue Hemorrhagic Fever (DHF) are found almost all over the world, including Indonesia. Dengue cases in Indonesia are always increasing and are one of the health problems. The Aedes aegypti *mosquito* is a vector of *the dengue* virus that causes dengue fever which is transmitted from one patient to another through mosquitoes as a vector. Many efforts to control dengue fever have been carried out, both chemically and naturally (biological), one of which is natural control using plant extracts as larvicides. One of the plants that is suspected to have the potential to be a larvicide is kersen leaf extract (*Muntingia calabura* L.) which contains secondary metabolite compounds in the form of tannins, flavonoids, and saponins. This study aims to determine the potential of ethanol extract of kersen leaves *(Muntigia calabura* L*.)* on the mortality of *Aedes aegypti* larvae and their effect on *the midgut tissue* of the larvae. The study used a group randomized design (RAK) with concentration treatment: 0%; 0,25%; 0,50%; 0,75; 1% and four repetitions. The data was analyzed with *One-way* ANOVA, and continued to the LSD test. The results of phytochemical tests on kersen leaf extract showed positive for saponins, tannins, flavonoids, steroids, and alkaloids. Based on the results of further LSD tests, the mortality of *Aedes aegypti mosquitoes* increased along with the increase in the concentration of extracts. The effect of changes in larval morphology after exposure to the extract showed that the color change on the larvae's body became darker and from the observation of *the larval midgut* tissue, damage to the peritropic membrane, epithelial cells and basal membrane occurred.



**Keywords:** Dengue Hemorrhagic Fever (DHF), Larvae, *Aedes aegypti*, Cherry Leaves, *Midgut*, and Mortality.