

## ABSTRAK

DBD menjangkit melalui gigitan nyamuk *Aedes aegypti* betina terdapat virus *dengue* pada tubuhnya. Menurut data Dinas kesehatan angka kasus Demam Berdarah Dengue di Provinsi Jawa Timur di 2022 sebesar 13.236 menjadi 3.445. Untuk angka kematian sebesar 154 serta menurun jadi 32. Penelitian ini dilaksanakan pada tanggal 17-19 April 2024. Tujuan dari Penelitian ini agar Mengetahui hasil deteksi nyamuk *Aedes aegypti* pada insektisida Dimethoat metode *Real-Time PCR (Polymerase Chain Reaction)*, Menganalisis presentase kematian nyamuk *Aedes aegypti* terhadap insektisida dimethoat. Penelitian ini ialah penelitian deskriptif kuantitatif metode analitik data observasi yang dijalankan di Laboratorium Entomologi Dinas Kesehatan Provinsi Jawa Timur guna tes resistensi nyamuk serta Laboratorium Biologi Molekuler Jurusan Laboratorium Medis Poltekkes Surabaya, guna deteksi gen *Ace-1* metode Real Time PCR. Ragamnya tindakan penelitian ini terdiri atas 5 kelompok (4 botol uji juga 1 botol kontrol). Sesudah dijalankan tes resistensi lalu sampel dijadikan suspense agar dijalankan ekstraksi DNA. Sesudah dilakukan ekstraksi DNA, selanjutnya tes kemurnian serta konsentrasi DNA. Hasil Kemurnian juga konsentrasi DNA penelitian ini sudah dapat nilai yang pas standart. Dijalankan deteksi gen *Ace-1* memakai RT-PCR hasil timbul nilai CT. Hasil penelitian terkait deteksi gen *Ace-1* sebagai penyandi resistensi insektisida organofosfat Dimethoat pada nyamuk *Aedes aegypti* metode *Real-Time PCR (Polymerase Chain Reaction)* yang sudah dijalankan bisa disimpulkan bahwasannya hasil akhir deteksi gen *Ace-1* memperlihatkan keseluruhan sampel negatif tidak ditemukan Gen *Ace-1*/ tidak punya nilai CT. Pada Kontrol positif ditemukan nilai CT.

**Kata kunci :** Nyamuk *Aedes aegypti*, gen *Ace-1*, RT-PCR, nilai CT

## ABSTRACT

Dengue fever is spread through mosquito bites *Temples of the Egyptians* female with virus *dengue* in his body. According to data from the Health Service, the number of cases Dengue Hemorrhagic Fever in East Java Province in 2022 there will be 13,236 to 3,445. The death rate was 154 and decreased to 32. This research was carried out on April 17-19 2024. The aim of this research is to determine the results of mosquito detection *Temples of the Egyptians* against the insecticide Dimethoate method *Real-Time PCR ( Polymerase Chain Reaction )*, Analyzing the percentage of mosquito deaths *Temples of the Egyptians* against the insecticide dimethoate. Dimethoat This research is a quantitative descriptive research using observational data analytical methods carried out at the Entomology Laboratory of the East Java Provincial Health Service for testing mosquito resistance and the Molecular Biology Laboratory of the Technology Department Medical Laboratory of the Health Polytechnic of Surabaya for gene detection. *Ace-1* Real Time PCR method. The number of treatments in this study consisted of 5 groups (four test bottles and one control bottle). After carrying out the resistance test, the sample is then made into a suspension for DNA extraction. After DNA extraction, the sample continues to test DNA purity and concentration. Results: The purity and concentration of DNA in this study have obtained values that are in accordance with standards. Next, gene detection is carried out *Ace-1* using RT-PCR with the results appearing in the form of CT values. From the results of research on gene detection *Ace-1* as an agent for resistance to the organophosphate insecticide Dimethoate in mosquitoes *Temples of the Egyptians* method *Real-Time PCR (Polymerase Chain Reaction)* that has been carried out can be concluded that the final result of gene detection *Ace-1* showed that all samples were negative and no gene was found *Ace-1* or has no CT value. While the positive control was found to have a CT value.

**Keywords :** *Aedes aegypti* Mosquito , *Ace-1* gene , RT-PCR, CT value