ABSTRAK

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PENGARUH KETINGGIAN DAN KONDISI CUACA TERHADAP TINGKAT KEMATIAN NYAMUK *AEDES AEGYPTI* (Studi Lapangan Kota Batu Jawa Timur Tahun 2025)
xiii + 58 Halaman + 27 Tabel + 5 Lampiran

Demam berdarah dengue (DBD) merupakan salah satu penyakit endemis di Indonesia yang disebabkan oleh virus dengue dan ditularkan melalui nyamuk Aedes aegypti. Meskipun wilayah dataran tinggi umumnya memiliki kondisi lingkungan yang kurang mendukung perkembangan nyamuk, kasus DBD tetap ditemukan di Kota Batu, Jawa Timur, yang berada di dataran tinggi. Penelitian ini bertujuan untuk menganalisis pengaruh ketinggian dan kondisi cuaca terhadap tingkat kematian nyamuk Aedes aegypti.

Penelitian menggunakan desain rancangan eksperimen faktorial satu arah (one-way factorial design) dengan pendekatan between-subjects. Sampel berupa nyamuk Aedes aegypti dewasa diletakkan pada lima titik ketinggian berbeda (1000, 1050, 1100, 1150, dan 1200 mdpl) di Kota Batu. Data kondisi cuaca dikumpulkan setiap 1 jam selama 4 jam observasi. Data dianalisis menggunakan uji normalitas dan Kruskall Wallis untuk mengetahui pengaruh antar variabel.

Hasil penelitian menunjukkan bahwa suhu cenderung menurun seiring peningkatan ketinggian, sedangkan kelembapan dan kecepatan angin bersifat fluktuatif antar titik. Tingkat kematian nyamuk tertinggi terjadi pada titik 1200 mdpl yang memiliki suhu rata-rata lebih rendah (<23°C) dan kelembapan yang kurang stabil. Uji statistik menunjukkan bahwa terdapat hubungan antara kondisi lingkungan dan tingkat kematian nyamuk, di mana suhu dan kelembapan rendah secara signifikan meningkatkan angka kematian.

Kesimpulan dari penelitian ini adalah bahwa variasi ketinggian antara 1000 hingga 1200 mdpl memberikan pengaruh terhadap tingkat kematian nyamuk *Aedes aegypti* melalui perubahan kondisi mikroklimat. Oleh karena itu, wilayah dataran tinggi tetap memiliki potensi risiko vektor penyakit yang perlu diwaspadai, terutama nyamuk *Aedes Aegypti*.

Kata kunci : *Aedes Aegypti* , Ketinggian, Kondisi Cuaca, Tingkat Kematian
Daftar bacaan : 25 jurnal (2015-2024)

ABSTRACT

Aulia Bastian Hadi Nugroho
The Effect Of Altitude And Weather Conditions On The Mortality Rate Of Aedes Aegypti Mosquitoes (Field Study Of Batu City, East Java, in 2025)
xiii + 58 *Pages* + 27 *Tables* + 5 *Appendices*

Dengue hemorrhagic fever (DHF) is one of the endemic diseases in Indonesia caused by the dengue virus and transmitted by Aedes Aegypti mosquitoes. Although highland areas generally have environmental conditions less suportive of mosquito development, DHF cases are still found in Batu City,East Java,which is located in highland areas. This study aimed to analyze the effect of altitude and weather conditions on the mortality rate of Aedes aegypti mosquitoes.

The research used a one way factorial experimental design with a between-subjects approach. Samples of adult Aedes aegypti mosquitoes were placed at five different altitudes (1000, 1050, 1100, 1150, and 1200 meters above sea level) in Batu City. Weather condition data were collected every hour for 4 hours of observation. The data were analyzed using normality tests and ANOVA to determine the effects between variables.

The research results showed that temperature tended to decrease with increasing altitude, while humidity and wind speed fluctuated among points. The highest mosquito mortality rate occured at the 1200 meters above sea level point, which had a lower average temperature < 23°C and less stable humidity. Statistical tests showed that there was a relaitonship between environmental conditions and mosquito mortality rates, where low temperature and humidity significantly increased death rates.

The conclusion of this study was that the variation in altitude between 1000 and 1200 meters above sea level influenced the mortality rate of Aeedes Aegypti mosquitoes through changes in microclimate conditions. Therefore, highland areas still pose a potential disease vector risk that needed to be monitored, especially the Aedes Aegypti mosquito.

Keywords : Aedes Aegypti, Altitude, Weather Conditions, Mortality Rate
References : 25 journal (2015-2024)