MAPPING THE DISTRIBUTION AREA OF WOLBACHIA-CARRYING AEDES AEGYPTI BASED ON INCIDENCE RATE AND THE PERCENTAGE OF WOLBACHIA-CARRYING AEDES AEGYPTI PRESENCE IN BANTUL REGENCY

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ABSTRACT

Background: *Dengue fever (DBD) is one of the endemic public health issues in Indonesia. In the year 2022, there were 956 cases of DBD in Bantul Regency, with an Incidence Rate of 96.9 per 100,000 population (categorized as high). One of the initiatives undertaken by the Bantul Health Department to address the high incidence of DBD is the dengue control program using Aedes aegypti with Wolbachia, implemented in the Bantul region. The control program involves using Wolbachia bacteria in Aedes aegypti mosquitoes and can be represented through graphical mapping.*

Objective: *To understand the mapping overview of the distribution of Wolbachia-carrying Aedes aegypti based on Incidence Rate and the Percentage of Wolbachia-carrying Aedes aegypti presence in Bantul Regency.*

Method: *This research adopts an ecological design approach, utilizing spatial analysis and spatial statistical analysis. The study was conducted from July to August 2023, with data collected from 2022 to 2023. Secondary data was obtained from the Bantul Health Department.*

Results: *In the first quarter of 2022, 24 sub-districts in Bantul Regency had a high Incidence Rate, while in the second quarter, 18 sub-districts had high rates. In the third quarter, only 4 sub-districts had a high Incidence Rate, and in the first quarter of 2023, there were no sub-districts with a high Incidence Rate. The monitoring of the presence of Wolbachia-carrying Aedes aegypti was conducted six times. In the first two monitorings, no sub-districts showed a high frequency of mosquitoes carrying Wolbachia. In the third monitoring, 3 sub-districts had a high frequency, and in the fourth monitoring, 31 sub-districts had a high frequency. The fifth and sixth monitorings had 26 and 22 sub-districts with high frequencies, respectively.*

Conclusion: *Graphic mapping facilitates a geographical understanding of the distribution of Wolbachia-carrying Aedes aegypti based on Incidence Rate and the Percentage of their presence in Bantul Regency.*

Keywords: *Aedes aegypti with Wolbachia, Incidence Rate, Percentage of Wolbachia-carrying Aedes aegypti presence, Dengue Fever, Geographic Mapping.*

PEMETAAN WILAYAH PENYEBARAN *AEDES AEGYPTI* BER-*WOLBACHIA* BERDASARKAN *INCIDENCE RATE* DAN PERSENTASE KEBERADAAN *AEDES AEGYPTI* BER-*WOLBACHIA* DI KABUPATEN BANTUL

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INTISARI

Latar Belakang : DBD merupakan salah satu masalah kesehatan masyarakat yang endemis di Indonesia. Kasus DBD tahun 2022 di Kabupaten Bantul sebanyak 956 kasus, nilai *Incidence Rate* yaitu 96,9 per 100.000 penduduk (kategori tinggi). Salah satu yang dilakukan oleh Dinas Kesehatan Bantul untuk mengatasi kasus DBD tinggi adalah dengan program pengendalian *dengue* menggunakan *Aedes aegypti* ber-*wolbachia* yang dimplementasikan di wilayah Bantul**.** Program pengendalian DBD menggunakan bakteri *Wolbachia* pada nyamuk *Aedes aegypti* dapat disajikan dalam bentuk pemodelan berupa grafis pemetaan.

Tujuan : Mengetahui gambaran pemetaan wilayah penyebaran *Aedes aegypti* ber-*Wolbachia* berdasarkan *Incidence Rate* dan Persentase Keberadaan *Aedes aegypti* ber-*Wolbachia* di Kabupaten Bantul.

Metode : Penelitian ini dilakukan dengan pendekatan desain ekologi. Analisis yang digunakan dalam penelitian ini yaitu analisis spasial dan analisis statistik spasial. Penelitian ini dilaksanakan pada bulan Juli-Agustus 2023 dan pengambilan data diambil pada tahun 2022-2023. Pengambilan data sekunder diperoleh dari Dinas Kesehatan Bantul.

Hasil : *Incidence rate* dengan kategori tinggi di Kabupaten Bantul pada Caturwulan I tahun 2022 terdapat 24 kalurahan, Caturwulan II tahun 2022 terdapat 18 kalurahan, Caturwulan III tahun 2022 terdapat 4 kalurahan, dan Caturwulan I tahun 2023 tidak terdapat IR kategori tinggi. Persentase keberadaan *Aedes aegypti* ber-*Wolbachia* dilakukan *monitoring* sebanyak 6 kali. *Monitoring* I dan II tidak terdapat kalurahan frekuensi nyamuk *Aedes aegypti* ber-*Wolbachia* tinggi, *monitoring* III frekuensi tinggi sebanyak 3 kalurahan, dan *monitoring* IV frekuensi tinggi sebanyak 31 kalurahan, *monitoring* V frekuensi tinggi sebanyak 26 kalurahan, dan *monitoring* VI frekuensi tinggi sebanyak 22 kalurahan.

Kesimpulan : Penyajian secara grafis pemetaan dapat memudahkan dalam membaca secara kewilayahan pada penyebaran wilayah nyamuk *Aedes aegypti* ber-*wolbachia* berdasarkan *Incidence Rate* dan Angka Keberadaan *Aedes aegypti* ber-*wolbachia* di Kabupaten Bantul.

Kata Kunci : *Aedes aegypti* ber-*Wolbachia*, *Incidence Rate*, Persentase Keberadaan *Aedes aegypti* ber-*Wolbachia*, Demam Berdarah *Dengue*, Pemetaan Wilayah