PENGARUH FAKTOR LINGKUNGAN TERHADAP AKTIVITAS HARIAN DAN PRODUKSI MADU DAN PROPOLIS (*Tetragonula laeviceps* Smith, 1857) DI DESA SIRAHAN DAN STASIUN PENELITIAN SAWITSARI

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INTISARI

Lebah klanceng atau *Tetragonula laeviceps* merupakan lebah tanpa sengat atau *stingless bee.* Lebah menghasilkan produk berupa madu dan propolis. Hasil produktivitas madu dan propolis dapat disebabkan oleh faktor lingkungan. Faktor lingkungan yang berpengaruh yakni suhu dan kelembaban. Penelitian ini memiliki tujuan mempelajari faktor lingkungan yang mempengaruhi aktivitas lebah dalam memproduksi madu dan propolis serta mempelajari keanekaragaman polen untuk menentukan famili tanaman akibat aktivitas harian lebah di Desa Sirahan dan Sawitsari. Penelitian yang dilakukan dengan pengamatan secara langsung terhadap aktivitas lebah klanceng serta koleksi sampel madu dan propolis. Penelitian dilakukan dengan uji morfometri pada 10 sampel lebah, aktivitas harian yang dipengaruhi oleh suhu dan kelembapan, serta pengujian produk berupa identifikasi keanekaragaman polen sumber pakan, uji kadar air dan uji organoleptik madu, serta uji GC-MS propolis. Hasil penelitian menunjukkan suhu dengan aktivitas lebah berbanding lurus, kelembapan dengan aktivitas lebah berbanding terbalik dengan nilai koefisien korelasi tinggi di Desa Sirahan. Keanekaragaman polen lebah *Tetragonula laeviceps* teridentifikasi 8 famili di Desa Sirahan dan 10 famili di Sawitsari dengan kadar air madu di Desa Sirahan 23% dan di Sawitsari 23,33% yang sesuai standar SNI 8664-2018. Analisis GC-MS Sirahan terdapat 7 senyawa dengan senyawa terbanyak Desulphosinigrin dan di Sawitsari terdapat 10 senyawa dengan senyawa terbanyak 4H-pyran – 4one, 2, 3, dihydro-3, 5-dihydroxy – 6 – methyl.

KATA KUNCI: Aktivitas harian, Faktor Lingkungan, Keanekaragaman polen, *Tetragonula laeviceps.*

THE INFLUENCE OF ENVIRONMENTAL FACTORS ON THE DAILY ACTIVITIES AND PRODUCT OF HONEY AND PROPOLIS OF STINGLESS BEES (*Tetragonula laeviceps* Smith, 1857) IN SIRAHAN VILLAGE AND SAWITSARI RESEARCH STATION

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ABSTRACT

Tetragonula laeviceps are stingless bees. Bees produce products in the form of honey and propolis. Environmental factors can cause the productivity of honey and propolis. Environmental factors that influence temperature and humidity. This study was aims to investigate environmental factors that influence bee activity in honey and propolis production and to examine pollen diversity to identify plant families resulting from daily bee activities in Sirahan and Sawitsari Villages. The study was conducted by direct observation of stingless bee activity and collection of honey and propolis samples. The study was conducted with morphometric tests on 10 bee samples, daily activities influenced by temperature and humidity, as well as product testing in the form of identifying the diversity of food source pollen, water content tests and honey organoleptic tests, and GC-MS propolis tests. The results showed that temperature and bee activity were directly proportional, humidity and bee activity were inversely proportional with a high correlation coefficient value in Sirahan Village. The diversity of *Tetragonula laeviceps* bee pollen was identified as 8 families in Sirahan Village and 10 families in Sawitsari with honey water content in Sirahan Village of 23% and in Sawitsari 23.33% which complies with SNI 8664-2018 standards. GC-MS analysis of Sirahan revealed 7 compounds, with Desulphosinigrin being the most abundant. In Sawitsari, 10 compounds were identified, with 4H-pyran-4-one, 2,3–dihydro–3,5–dihydroxy–6–methyl being the most prevalent.

Key word: Daily Activity, Environmental factors, Pollen Diversity, *Tetragonula laeviceps*