



## **Diversitas Serangga pada Tiga Tipe Intensitas Kelola Lahan**

Oleh:

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### **Abstrak**

Ekosistem stabil dicirikan dengan adanya interaksi yang seimbang antara komponen penyusun di dalamnya (trofik level) serta berkelanjutan. Salah satu indikator dalam menentukan keseimbangan suatu ekosistem adalah melihat diversitas serangga. Serangga dipilih karena memiliki sifat yang sensitif terhadap perubahan lingkungan serta karakter lainnya (kemelimpahan, jenis, dan peran). Hutan Pendidikan Wanagama I (HPW I) dan sekitarnya memiliki berbagai tipe lahan dengan intensitas kelola lahan yang berbeda, serta informasi diversitas serangga belum diketahui. Penelitian ini ingin mengetahui komunitas serangga berdasarkan intensitas kelola lahan serta pengaruh intensitas kelola lahan pada komunitas serangga.

Penelitian ini dilakukan pada tiga tipe intensitas kelola lahan yang berbeda yaitu aktif (agroforestri), semi-aktif (hutan rakyat), dan alami (pionir). Pengamatan dan koleksi serangga dilakukan pada bulan Agustus—Oktober 2019 menggunakan *pitfall trap*, *sticky trap*, dan *sweeping net*. Identifikasi langsung dan studi referensi digunakan untuk menentukan serangga beserta peranannya hingga level morfospesies. Indeks keanekaragaman ( $H'$ ) dihitung untuk menggambarkan komunitas serangga. ANOVA satu arah dilakukan untuk mengetahui pengaruh variasi intensitas kelola lahan terhadap komunitas serangga pada level famili, serta didukung data lingkungan dan visualisasi struktur horizontal vertical vegetasi.

Hasil penelitian menunjukkan bahwa terdapat perbedaan komunitas serangga pada intensitas kelola lahan yang berbeda. Kemelimpahan serangga tertinggi adalah Famili Formicidae (Hymenoptera) dan Cicadellidae (Homoptera) yang dijumpai disemua tipe intensitas kelola lahan. Berdasarkan peranannya terdapat tujuh kelompok serangga yang ditemukan yaitu fitofagus, predator, parasitoid, pollinator, detritivor, mycophagus, dan scavenger. Intensitas kelola lahan memberikan pengaruh terhadap serangga pada level famili yaitu Cicadellidae, Tephritidae, Thripidae, Coccinellidae, dan Scelionidae.

Kata kunci: Ekosistem, intensitas kelola lahan, trofik level, komunitas serangga

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## **Insect Diversity in Three Types of Land Management Intensities**

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### **Abstract**

A stable ecosystem is characterized by a balanced interaction between the constituent components in it (trophic level) and is sustainable. One indicator in determining the balance of an ecosystem is looking at insect diversity. Insects were chosen because they are sensitive to environmental changes and other characteristics (abundance, species, and role). "Hutan Pendidikan Wanagama I" (HPW I) and its surroundings have various types of land with different land management intensities, and information on insect diversity is not yet known. This study wanted to determine the insect community based on the intensity of land management and the influence of the intensity of management on the insect community.

This research was conducted on three different types of land management intensity, namely active (agroforestry), semi-active (agroforest), and natural (pioneer). Observation and collection of insects were carried out in August-October 2019 using pitfall traps, sticky traps, and sweeping nets. Direct identification and reference studies were used to determine insects and their roles at the morphospecies level. The diversity index ( $H'$ ) was calculated to describe the insect community. One-way ANOVA was carried out to determine the effect of variation in land management intensity on insect communities at the family level, supported by environmental data and visualization of the horizontal-vertical structure of vegetation.

The results showed that there were differences in insect communities at land management intensity. The highest insect abundance was the Formicidae (Hymenoptera) and Cicadellidae (Homoptera) families which were found in all types of land management intensity. Based on their role, there are seven groups of insects found, namely the phytophagous, predator, parasitoid, pollinator, detritivore, mycophagous, and scavenger. The land management intensity had effect on insects at the family level, namely Cicadellidae, Tephritidae, Thripidae, Coccinellidae, and Scelionidae.

Keywords: Ecosystem, land management intensity, trophic level, insect community

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