

DIVERSITAS COLLEMBOLA PADA BERBAGAI TUTUPAN LAHAN DI WANAGAMA I GUNUNGKIDUL

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Intisari

Mesofauna merupakan organisme tanah yang berperan penting dalam menjaga kestabilan ekosistem di bawah tanah, karena berkaitan erat dengan aktivitas bakteri dan jamur serta siklus hara. Salah satu mesofauna yang representatif dan sensitif terhadap perubahan lingkungan ialah Collembola. Berbagai tutupan lahan yang ada di Wanagama I dapat mempengaruhi terbentuknya iklim mikro dan kualitas tanah yang merupakan faktor penting terhadap keberadaan Collembola. Penelitian ini bertujuan untuk mengetahui keragaman dan kelimpahan Collembola serta kaitannya dengan kondisi lingkungan pada berbagai tutupan lahan.

Penelitian dilakukan pada tiga tutupan lahan yaitu, tutupan lahan jati (TL Jati), tutupan lahan rerumputan (TL Rerumputan), dan tutupan lahan campuran (TL Campuran). Pengambilan data berupa data lingkungan, koleksi Collembola, dan sampel tanah untuk uji kesuburan fisik dan kimia tanah dalam petak ukur 20 x 20 m yang diletakkan secara *purposive*. Kondisi lingkungan diukur untuk mendapatkan data kelembaban tanah, ketebalan seresah, intensitas cahaya, dan suhu tanah. Collembola dikoleksi dengan menggunakan *pitfall trap*, metode monolit tanah, dan sampel seresah. Ekstraksi Collembola dari sampel tanah dan seresah dibantu dengan menggunakan Corong Berlese selama 6 hari. Sampel tanah dianalisis di laboratorium untuk mendapatkan nilai sifat fisik dan kimia tanah.

Dari penelitian ini didapatkan bahwa kelimpahan individu Collembola tertinggi secara berurutan terdapat pada TL Jati, TL Campuran, dan TL Rerumputan. Indeks Diversitas menunjukkan bahwa keragaman dengan kategori sedang terdapat pada TL Rerumputan (2,31), sedangkan TL Jati (2,06) dan TL Campuran (1,79) tergolong rendah. Terdapat famili yang memiliki hubungan dengan faktor lingkungan yaitu Cyphoderidae, Brachystomellidae, Katiannidae, Isotomidae, Oncopoduridae, dan Isotogastruridae.

Kata kunci: Collembola, Wanagama, kesuburan tanah, rehabilitasi, tutupan lahan

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COLLEMBOLA DIVERSITY ON VARIOUS LAND COVERS IN WANAGAMA I GUNUNGKIDUL

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Abstract

Mesofauna is one of soil organism which has important roles to maintain stability of subterranean ecosystem because its relation to bacteria and fungi activities, and nutrient cycling. One of the representative and sensitive mesofauna due to environmental change is Collembola. Various land covers in Wanagama I have impacts to microclimate and soil quality which being important factors to Collembola present. This study aims to determine the diversity and abundance of Collembola and its relation to environmental factors on various land covers.

This research conducted on three different land covers, such as teak land cover (TL Jati), grasses land cover (TL Rerumputan), and mixed stand land cover (TL Campuran). Data was collected in observation plot 20 m x 20 m using purposive sample, included environmental measurement, Collembola collection, and soil samples for physical and chemical analysis. Environment factors were measured to obtain litter thickness, soil humidity, and soil temperature. Pitfal trap, monolith methods, and litter samples were used to collect Collembola. Soil and litter samples were extracted using Berlese Funnel for 6 days. Physical and chemical properties obtained by analysing soil samples in laboratory.

The result showed that the highest abundance of Collembola was in TL Jati, TL Campuran, and TL Rerumputan respectively. The Shannon-Wiener diversity (H') indices shows TL Rerumputan has intermediate diveristy of Collembola (2,31) while TL Jati and TL Campuran have the low diversity (2,06 and 1,79). A few families of Collembola such as Cyphoderidae, Brachystomellidae, Katiannidae, Isotomidae, Oncopoduridae, dan Isotogastruridae show their correlation to climatic and edaphic factors in a certain land cover.

Keywords: Collembola, Wanagama, soil properties, rehabilitation, land covers

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