

## **DIVERSITAS MESOFAUNA TANAH PADA KOMPOS DENGAN VARIASI KOMPOSISI BIOMASSA SERASAH DAUN**

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### **INTISARI**

Kompos merupakan alternatif dalam pengelolaan limbah organik taman, pertanian, dan rumah tangga. Kompos daun memiliki manfaat efektif mengurangi limbah, meningkatkan daya ikat tanah, serta meningkatkan kesuburan tanah. Keragaman mesofauna tanah yang ada didalam kompos membantu dalam mengurai nutrien organik. Tujuan dari penelitian ini adalah untuk menganalisis diversitas mesofauna tanah yang ditemukan pada kompos dengan variasi komposisi biomassa serasah daun. Penelitian dilakukan di Fakultas Biologi UGM. Tahap penelitian dimulai dengan pembuatan kompos dengan empat variasi komposisi biomassa daun dan tiga kali pengulangan. Selama proses pengomposan diamati parameternya berupa temperatur, pH, kelembaban, dan senyawa organik. Pengambilan sampel dilakukan pada lima titik sampling di minggu ke- 2, 4, 6, dan 8. Isolasi mesofauna tanah dilakukan dengan menggunakan *Berlese Tullgren*. Data dianalisis menggunakan Indeks Dominansi, Indeks Kemerataan, Indeks Keanekaragaman Shannon – Wiener, dan analisis korelasi. Hasil penelitian menunjukkan ditemukan 9 family Acarina dan 2 family Collembola. Perbedaan variasi komposisi biomassa serasah daun berpengaruh terhadap indeks dominansi kompos (0,53 - 0,55), indeks kemerataan (0,29 – 0,44), indeks keanekaragaman (0,77 – 1,14), dan peningkatan variasi komposisi biomassa serasah daun linier dengan peningkatan jumlah individu mesofauna tanah. Parameter fisiko-kimia berppengaruh terhadap diversitas mesofauna tanah.

Kata Kunci: Acarina, biomassa, Collembola, diversitas, kompos

## **DIVERSITY OF SOIL MESOFAUNA IN COMPOST WITH VARIATIONS IN LEAF LITTER BIOMASS COMPOSITION**

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### **ABSTRACT**

Compost is an alternative way to manage the organic waste of garden, agricultural and households. Leaf litter compost has the benefits of effectively reducing waste, increasing soil binding capacity, and improving soil fertility. The diversity of soil mesofauna in compost helps in nutrient recycling. The aim of this research is to analyze the diversity of soil mesofauna found in compost with variations in leaf litter biomass composition. The research was conducted at the UGM Faculty of Biology. The research began by making compost with four variations in leaf biomass composition and three repetitions. During the composting process, parameters such as temperature, pH, humidity and organic compounds were measured. Sampling was done at five sampling points in weeks 2, 4, 6, and 8. Isolation of soil mesofauna was done using Berlese Tullgren. Data were analyzed using the Dominance Index, Evenness Index, Shannon – Wiener Diversity Index, and correlation analysis. The research results showed that 9 Acarina families and 2 Collembola families were found. Differences in variations in leaf litter biomass composition influence the compost dominance index (0.53 - 0.55), evenness index (0.29 - 0.44), diversity index (0.77 - 1.14), and increase in variations in biomass composition. linear leaf litter with an increase in the number of soil mesofauna individuals. Physico-chemical parameters influence soil mesofauna diversity.

Keyword: Acarina, biomass, Collembola, compost, diversity