DIVERSITAS ANGGOTA ACARINA PADA KOMPOS DAUN DENGAN PENAMBAHAN KOTORAN KAMBING

Qurotul Ainia

Pembimbing: Dr. Dra. Rr. Upiek Ngesti, B.Sc., DAP&E., M.Biomed.

INTISARI

Acarina merupakan anggota Class Arachnida yang dikenal sebagai kelompok kutu, tungau, dan caplak. Acarina ditemukan pada bahan yang kaya akan unsur hara atau materi organik seperti kompos. Pengomposan merupakan proses penguraian materi organik oleh bantuan organisme. Penambahan kotoran kambing pada kompos dapat memperkaya unsur hara kompos. Kotoran kambing mengandung unsur yang seimbang baik unsur makro maupun mikro sehingga memberikan kondisi yang ideal bagi Acarina untuk merombak materi organik kompos. Penelitian dilakukan untuk mengetahui dan menjelaskan diversitas anggota Acarina pada kompos daun dengan Penambahan Kotoran Kambing. Kompos dibuat dari bahan dasar daun (1500 gr), dedak (120 gr), probiotik (15 mL) dengan penambahan kotoran kambing pada kontrol (0 gr), P1 (300 gr), P2 (600 gr), dan P3 (1200 gr) . Sampling dilakukan di minggu ke – 2, 4, 6, & 8 pasca pembuatan kompos. Acarina dikoleksi dengan alat modifikasi *Barlese Tullgreen* dan diamati dibawah mikroskop Stereo. Diversitas dihitung dengan indeks *Shannon – wiener* (H') dan dominansi *Simpson* (C). Parameter lingkungan yang diukur terdiri atas suhu, kelembapan, dan pH. Kualitas akhir kompos yang dianalisis diantaranya rasio C/N, kadar N, P, serta K. Anggota Acarina yang ditemukan terdiri dari 3 ordo, 6 family, 6 genus, dan 10 spesies. Hasil diversitas anggota Akarina perlakuan K, P1, P2, dan P3 tergolong sedang pada minggu ke 2 dan 6 pengamatan serta rendah pada minggu ke – 8. Diversitas Acarina minggu ke – 4 pada kontrol dan P1 tergolong rendah sedangkan P2 dan P3 tergolong sedang. Jumlah spesies yang ditemukan pada kelompok perlakuan lebih tinggi dibanding kelompok kontrol. Penambahan kotoran kambing tidak meningkatkan diversitas anggota Acarina tetapi, meningkatkan jumlah cacah individu Acarina pada kelompok perlakuan dibandingkan kelompok kontrol. Kompos P3 memberikan hasil kualitas C:N yang paling ideal dan kadar N, P, K tertinggi. Kadar C, N, P, dan K berkorelasi positif dengan jumlah *Parasitus* sp. yang mendominasi kompos. Jumlah *Parasitus* sp. terhadap perubahan kelembapan & pH berkorelasi secara positif sedangkan Jumlah Parasitus sp. dengan perubahan suhu berkorelasi secara negatif.

Kata kunci: acarina, diversitas, kompos, kotoran kambing, *Parasitus* sp.

THE DIVERSITY OF ACARINA IN LEAF COMPOST WITH ADDITION OF GOAT MANURE

Qurotul Ainia

Supervisor: Dr. Dra. Rr. Upiek Ngesti, B.Sc., DAP&E., M.Biomed.

ABSTRACT

Subclass Acarina member of Class Arachnida is known as a group of mites and ticks. Acarina is found in materials rich in nutrients or organic matter, such as compost. Composting is the process of decomposing organic matter that involves organisms. Adding goat manure to compost can enrich its nutrient content. Goat manure contains a balanced amount of both macro and micronutrients, creating an ideal condition for Acarina to decompose organic compost materials. A study was conducted to identify and explain the diversity of Acarina members in leaf compost with the addition of goat manure. The compost was made from leaves (1500 g), bran (120 g), probiotics (15 mL), with the addition of goat manure in the control (0 g), P1 (300 g), P2 (600 g), and P3 (1200 g). Sampling was done in the 2nd, 4th, 6th, and 8th weeks post-composting. Acarina was collected using a modified Barlese Tullgren apparatus and observed under a Stereo microscope. Diversity was calculated using the Shannon-Wiener index (H') and Simpson's dominance (C). Environmental parameters measured included temperature, humidity, and pH. The final quality of the compost analyzed included C:N ratio, N, P, and K content. The Acarina members found consist of 3 orders, 6 families, 6 genera and 10 species. The diversity results of Acarina in treatments K, P1, P2, and P3 were moderate in the 2nd and 6th weeks of observation and low in the 8th week. The diversity of Acarina in the 4th week in the control and P1 treatments was low, while in P2 and P3, it was moderate. The number of species found in the treatment groups was higher compared to the control group. The addition of goat manure did not increase the diversity of Acarina members but did increase the number of individual Acarina in the treatment groups compared to the control group. Compost P3 produced the most ideal C:N ratio and the highest N, P, and K content. The C, N, P, and K contents were positively correlated with the number of *Parasitus* sp. dominating the compost. The number of *Parasitus* sp. showed a positive correlation with changes in humidity and pH, while it had a negative correlation with changes in temperature.

Keywords**:** acarina, diversity, compost, goat manure, *Parasitus* sp.