

## **KEANEKARAGAMAN ARTROPODA DAN PERAN SERTA FUNGSINYA PADA EKOSISTEM CAISIM**

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### **Intisari**

Penelitian bertujuan untuk mengetahui diversitas peran dan fungsi artropoda di ekosistem caisim pada periode sebelum tanam dan sesudah tanam yang merupakan langkah awal pengendalian hama terpadu. Pengambilan sampel artropoda dengan *pitfall trap* dan *yellow sticky trap*. Penelitian dilaksanakan pada bulan April - Juni di daerah Kabupaten Sleman. Identifikasi spesimen di Laboratorium Hama Tanaman, Sub Laboratorium Avertebrata Hama, Departemen Hama dan Penyakit Tanaman, Fakultas Pertanian, Universitas Gadjah Mada. Fungsi dan peran artropoda ditentukan berdasarkan informasi dari berbagai referensi. Metode analisis Shannon Winner untuk menentukan indeks keanekaragaman famili, analisis Margalef untuk menentukan indeks kekayaan famili, analisis Piellou untuk menentukan indeks pemerataan famili, dan analisis Simpson untuk menentukan indeks dominansi famili. Kelimpahan arthropoda meningkat secara signifikan pada perangkap *pitfall trap* 8%, dan pada *sticky trap* 104% pada ekosistem caisim sebelum dan sesudah tanam. Proporsi artropoda herbivor (37% dan 41%) artropoda karnivor (predator dan parasitoid) (41% dan 40%), artropoda dekomposer (20% dan 17%), dan untuk artropoda lainnya sama yaitu (2%), baik sebelum tanam maupun sesudah tanam pada *pitfall trap* maupun *sticky trap*. Indeks diversitas artropoda hama (0,98-1,50) dan predator (1,23-1,46) termasuk sedang, untuk parasitoid (0-0,40), dekomposer (0,07-0,68), dan lainnya (0-0,13) termasuk rendah ( $1 < H' < 3$ ). Kekayaan jenis artropoda hama (0,99-1,63), predator (1,17-1,81), parasitoid (0,28-0,52), dekomposer (0,04-0,57), dan lainnya (0-0,05) termasuk rendah ( $R < 3,5$ ). Kemerataan jenis artropoda hama (0,65-0,78), predator (0,67-0,89), parasitoid (0,20-0,33), dekomposer (0,11-0,76), dan lainnya (0-0,19) termasuk kurang merata ( $0,05 < E < 0,75$ ). Indeks dominansi artropoda hama (0,35-0,57), predator (0,39-0,51), parasitoid (0,2-0,4), dekomposer (0,42-0,97), dan lainnya (0-0,9) termasuk tidak ada dominansi artropoda ( $D < 0,5$ ), baik sebelum tanam maupun sesudah tanam pada *pitfall trap* maupun *sticky trap*.

Kata kunci: artropoda, diversitas, caisim.

## **ARTHROPODIC DIVERSITY AND THE ROLE AND ITS FUNCTIONS IN THE CAISIM ECOSYSTEM**

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### **Abstract**

The research aimed to determine the diversity of the role and function of arthropods in the caisim ecosystem in the before planting and after planting period which is the first step in integrated pest control. Arthropod samples were taken by pitfall trap and yellow sticky trap. The research was conducted in April - June in Sleman Regency. The specimens were identified at the Plant Pest Laboratory, Pest Invertebrate Sub Laboratory, Department of Crop Protection, Faculty of Agriculture, Gadjah Mada University. The functions and roles of arthropods were determined based on information from various references. The Shannon Winner analysis method for determining the family diversity index, Margalef analysis to determine the family wealth index, Piellou analysis to determine the family evenness index, and Simpson analysis to determine the family dominance index. The abundance of arthropods increased significantly in the 8% pitfall trap, and in the sticky trap 104% in the caisim ecosystem before and after planting. The proportion of herbivorous arthropods (37% and 41%), carnivorous arthropods (predators and parasitoid) (41% and 40%), decomposer arthropods (20% and 17%), and for other arthropods that are (2%), both before planting and after planting in a pitfall trap or sticky trap. The index of diversity of pest arthropods (0.98-1.50) and predators (1.23-1.46) is moderate, for parasitoid (0-0.40), decomposers (0.07-0.68), and others (0-0.13) including low ( $1 < H' < 3$ ). Wealth of pest arthropods (0.99-1.63), predators (1.17-1.81), parasitoid (0.28-0.52), decomposers (0.04-0.57), and others (0-0.05) including low ( $R < 3.5$ ). Evenness of pest arthropod types (0.65-0.78), predators (0.67-0.89), parasitoid (0.20-0.33), decomposers (0.11-0.76), and others (0-0.19) including less evenly ( $0.05 < E < 0.75$ ). Index of dominance of pest arthropods (0.35-0.57), predators (0.39-0.51), parasitoids (0.2-0.4), decomposers (0.42-0.97), and others (0-0.9) including no arthropod dominance ( $D < 0.5$ ), both before planting and after planting in a pitfall trap or sticky trap.

**Keyword:** arthropods, caisim, diversity