

**KEANEKARAGAMAN JENIS, KEMELIMPAHAN DAN POTENSI  
PERAN SERANGGA PADA TANAMAN PEPAYA GUNUNG (*Carica  
candamarcensis* Hook. f.) DI DIENG, JAWA TENGAH**

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**INTISARI**

Penelitian tentang keanekaragaman jenis serangga perlu dilakukan di tanaman pepaya gunung (*C. candamarcensis*. Hook. f.) di Dieng karena tanaman pepaya gunung memiliki nilai ekonomi. Tujuan penelitian ini adalah untuk mengetahui keanekaragaman jenis dan kemelimpahan serangga pada lahan monokultur dan polikultur dan untuk mengetahui potensi peran serangga yang ditemukan pada tanaman *C. candamarcensis*. Pengambilan data dilakukan dengan melakukan koleksi serangga pada masing-masing 30 tanaman *C. candamarcensis* di lahan monokultur dan polikultur. Identifikasi serangga secara morfologi dilakukan di Laboratorium Entomologi Fakultas Biologi UGM. Data keanekaragaman jenis serangga dianalisis menggunakan indeks keanekaragaman Shannon-Wiener, indeks dominansi Simpson dan indeks kesamaan Sorenson. Potensi peran serangga ditentukan berdasarkan tipe mulut serangga. Hasil identifikasi serangga di lahan monokultur dan polikultur pada 94 spesimen digolongkan ke dalam 9 ordo yang terdiri dari 21 famili, 21 genus, dan 6 spesies. Berdasarkan nilai indeks keanekaragaman Shannon-Wiener, lahan monokultur ( $H'=3,201$ ) lebih beragam daripada lahan polikultur ( $H'=1,139$ ). Berdasarkan nilai indeks dominansi Simpson, pada lahan polikultur ( $D=0,047$ ) lebih banyak spesies dominan daripada lahan monokultur ( $D=0,539$ ). Berdasarkan nilai indeks kesamaan jenis serangga, kedua lahan mempunyai keragaman jenis serangga yang berbeda ( $C_s=0,128$ ). Potensi peran serangga pada tanaman *C. candamarcensis* adalah sebagai vektor (48%) lebih banyak dibandingkan parasitoid (14%), herbivor (12%), predator (11%), polinator (11%), omnivor (2%), dan dekomposer (2%).

Kata kunci: Keanekaragaman jenis, serangga, potensi peran, *C. candamarcensis*

## SPECIES DIVERSITY, ABUNDANCE AND POTENTIAL ROLE OF INSECTS ON *Carica candamarcensis* Hook. f. IN DIENG, CENTRAL JAVA

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### **ABSTRACT**

Research diversity of insect species was important to be held on carica plant (*Carica candamarcensis* Hook. f.) in Dieng as because of it economic value. The aims of the research were to determine the insect species diversity, the potential role of collected insects, and also the abundance of insects on monoculture and polyculture of *C. candamarcensis*. Insects were collected by using direct method from 30 plants of *C. candamarcensis* for each monoculture and polyculture agricultural systems. The insect species diversity was identified based on morphological character using determination keys. Insect species diversity index was calculated by Shannon-Wiener methods. Dominance index was measured by Simpson method, while the similarity index was computed by Sorenson method. Potential role of insects was determined depend on the types of insect mouth. The result showed that the 94 specimen insects were collected on monoculture and polyculture belong to 9 orders consists of 21 families, 21 genera, and 6 were identified to species. The species diversity index on the monoculture was  $H'=3.201$  and the polyculture was  $H'=1.139$ . Based on the index value, the insect species diversity on the monoculture was more diverse than the polyculture. The dominance index on the monoculture was  $D=0.047$  and the polyculture was  $D=0.539$ . According to the value, the polyculture had more species dominant than the monoculture. The species similarity index on monoculture and polyculture agricultural systems was  $C_s=0,128$  that means both agricultural systems had different of insect species. Potential role of insects as vectors (48%) were more than as parasitoids (14%), herbivores (12%), predators (11%), pollinators (11%), omnivores (2%), and decomposers (2%).

Key words: Species diversity, insects, potential roles, *C. candamarcensis*