

Jasa Ekosistem Pengendalian Hama Serangga oleh Burung terhadap Bibit Tanaman Kelapa Sawit di FMIPA UI = Ecosystem Services of Insect Pest Control by Birds to Oil Palm Seedlings at FMIPA UI

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Abstrak

Telah dilakukan penelitian tentang jasa ekosistem pengendalian hama serangga oleh burung terhadap bibit tanaman kelapa sawit di FMIPA UI. Tujuan dari penelitian ini adalah untuk menganalisis spesies burung insektivora yang memberikan jasa ekosistem pengendalian hama serangga kepada bibit tanaman kelapa sawit di FMIPA UI. Penelitian dilakukan dengan mengelompokkan 10 bibit kelapa sawit menjadi 2 kelompok dengan perlakuan yang berbeda, yaitu perlakuan bird enclosure dan perlakuan kontrol. Setelah itu, dipilih 15 helai daun secara acak pada tiap bibitnya, baik yang sempurna maupun tidak, dan diberikan tanda menggunakan spidol permanen. Tiap daun yang sudah diberi tanda difoto secara digital, dan tingkat herbivora untuk tiap bibit dihitung berdasarkan proporsi rata-rata luas helai daun yang hilang per anak daun per hari. Luas helai daun dihitung dengan perangkat lunak ImageJ. Pengamatan burung dilakukan menggunakan metode point count selama 3 minggu waktu penelitian. Data yang didapat disusun ke dalam tabel, dan dilakukan hitung uji untuk hasil analisis. Analisis perbedaan tingkat herbivori perlakuan bird enclosure dan control dilakukan dengan menggunakan Uji U. Analisis korelasi antara jumlah individu spesies burung dan tingkat herbivori dihitung menggunakan analisis non-parametrik Spearman's Rank. Hasil menunjukkan bahwa ditemukan 6 spesies burung, antara lain Gereja eurasia (*Passer montanus*), Walet linci (*Collocalia linchi*), Cucak kutilang (*Pycnonotus aurigaster*), Nectarinidae, Tekukur biasa (*Streptopelia chinensis*), serta Cinenen jawa (*Orthotomus sepium*) dan 2 di antaranya adalah insektivora, yaitu Walet linci (*Collocalia linchi*) dan Cinenen jawa (*Orthotomus sepium*). Tingkat herbivori bibit kelapa sawit kontrol berkisar pada nilai 0,005 sampai 0,303, dan tingkat herbivori pada kelapa sawit bird enclosure berkisar pada nilai 0,013 sampai 0,295. Hasil uji U menunjukkan tidak ada perbedaan nyata antara tingkat herbivori bird enclosure dan kontrol, dan hasil uji korelasi Spearman menunjukkan bahwa tidak ada korelasi kuat antara tingkat herbivori dengan jumlah individu untuk semua spesies burung.

..... A Research about the ecosystem services of controlling insect pests by birds on oil palm seedlings at FMIPA UI has been conducted. The purpose of this research is to analyze insectivore bird species' that provide insect pest control to oil palm experimental seedlings at FMIPA UI. The research was done by grouping 10 experimental palm oil seeds into 2 groups with different treatments, namely bird exposure treatment and control treatment. After that, 15 leaves were randomly selected from each seedling, whether perfect or not, and marked using a permanent marker. Each tagged leaf was digitally photographed, and the herbivory level for each seedling was calculated based on the average proportion of leaf area lost per leaflet per day. Leaf blade area was calculated using ImageJ software. Bird observations were carried out using the point count method during the 3 weeks of research. The data obtained was arranged into a table, and a unique test was calculated for the results of the analysis. Analysis of the difference of herbivory rate in the bird enclosure treatment was done by using the U Test. Correlation analysis between the number of individual bird species and the level of herbivory was calculated using non-parametric Spearman's Rank analysis. The results showed that 6 species of birds were found, among them are Eurasian tree sparrow

(*Passer montanus*), Cave swiftlet (*Collocalia linchi*), Sooty-headed bulbul (*Pycnonotus aurigaster*), Nectarinidae, Spotted Dove (*Streptopelia chinensis*), and Olive-backed tailorbird (*Orthotomus sepium*) and 2 of them are insectivores, namely Cave swiftlet (*Collocalia linchi*) and Olive-backed tailorbird (*Orthotomus sepium*). The herbivory level of control oil palm plants ranged from 0.005 to 0.303, and the herbivory level of the bird exposed oil palms ranged from 0.013 to 0.295. The U test results from the research showed that There is no difference between the herbivory rate in bird enclosure and control, and the Spearman correlation test results showed that there was no correlation between the level of herbivory and the number of individuals for all bird species.