



## INTISARI

### DIVERSITAS DAN FUNGSI ARTHROPODA PADA LIMBAH BATANG KELAPA SAWIT

Muhammad Rahadian Fakhri  
19/442799/PN/16205

Berbagai arthropoda berasosiasi dengan limbah batang kelapa sawit (LBKS). Kelimpahan, diversitas, dan fungsi arthropoda pada LBKS tersebut belum diungkap. Penelitian bertujuan untuk mengetahui diversitas dan fungsi arthropoda pada LBKS. Penelitian dilaksanakan pada Januari – Mei 2023, di suatu blok kebun kelapa sawit belum menghasilkan (TBM) dengan LBKS umur 10 bulan setelah chipping dan di Laboratorium PPKS Marihat. Plot pengamatan berukuran 50 m x 50 m terletak di posisi Utara, Tengah, Selatan, Timur, dan Barat pada blok kebun sawit seluas 31 Ha. Pada setiap plot diambil lima titik subplot berukuran 2 m x 2 m. Koleksi arthropoda di lapangan dilakukan dengan tiga metode yaitu bongkar (2 jam), jaring (25 kali ayunan ganda), dan pitfall trap (semalam). Arthropoda yang didapatkan diidentifikasi hingga tingkat morfospesies dan dikelompokkan berdasar fungsinya. Rumus Shannon Wiener digunakan untuk analisis diversitas. Analisis lain meliputi indeks kekayaan, pemerataan dan dominansi. Anova dilakukan untuk menentukan pengaruh posisi plot pengamatan dan metode koleksi terhadap arthropoda yang ditemukan. Hasil penelitian menunjukkan jumlah seluruh arthropoda yang tertangkap dengan tiga metode koleksi sebanyak 2.531 individu meliputi 18 ordo, 58 famili dan 97 morfospesies. Kelimpahan arthropoda di bagian tengah kebun kelapa sawit (846 individu) hampir dua kali lipat daripada di bagian tepi kebun yaitu Utara, Selatan, Timur, dan Barat masing-masing 456, 308, 493 dan 428 individu. Diversitas arthropoda pada LBKS termasuk tinggi; indeks diversitas 2,754–3,464. Indeks kekayaan 7,592–9,473 termasuk tinggi. Indeks pemerataan 0,678–0,858 termasuk hampir merata. Indeks dominansi 0,046–0,168 termasuk dominansi rendah. Posisi plot pengamatan tidak berpengaruh signifikan terhadap hasil koleksi arthropoda. Teknik koleksi berpengaruh signifikan, penggunaan jaring serangga mendapatkan arthropoda signifikan lebih banyak daripada pitfall trap dan pembongkaran LBKS. Arthropoda pada limbah batang kelapa sawit tersebut berfungsi sebagai detritivora (17,2%), fitofag (29,3%), predator (29,3%), omnivor (8,6%), parasitoid (8,6%), pollinator (3,4%) dan fungivor (3,4%).

Kata kunci : arthropoda, diversitas, fungsi, LBKS, peremajaan, sawit



## ABSTRACT

### DIVERSITY AND FUNCTION OF ARTHROPODS IN OIL PALM TRUNK WASTE

Muhammad Rahadian Fakhri  
19/442799/PN/16205

Various arthropods associate with oil palm trunk waste (OPTW). The abundance, diversity, and function of the arthropods in the OPTW have not been disclosed. Research aimed to determine the diversity and function of arthropods in the OPTW. The research was conducted in January - May 2023, at a block of immature oil palm plantations with OPTW aged 10 months after chipping and at the Laboratory of Marihat Research Center for Oil Palm. Observation plots measuring of 50 m x 50 m were located in the North, Central, South, East and West positions in an oil palm plantation block of 31 ha. In each plot, five subplot points measuring of 2 m x 2 m were taken. Arthropod collection was carried out using three methods, namely unloading (2 hours), netting (10 double swings), and pitfall trap (overnight). Arthropods obtained were identified to the morphospecies level and grouped based on their function. The Shannon Wiener formula was used for diversity analysis. Other analyzes include index richness, equity and dominance. ANOVA was performed to determine the effect of the position of the observation plots and the collection method on the arthropods found. The results showed that the total number of arthropods caught using the three collection methods was 2,531 individuals covering 18 orders, 58 families and 97 morphospecies. The abundance of arthropods in the center of the oil palm plantation (846 individuals) was almost double that at the edges of the plantation namely North, South, East, and West 456, 308, 493 and 428 individuals respectively. Arthropod diversity in OPTW is high; diversity index was 2.754–3.464. Richness index was 7,592–9,473 includes high. Evenness index was ,678–0,858 including almost evenly. Dominance index was 0,046–0,168 include low dominance. The position of the observation plot had a no significant effect on the results of arthropod collection. Collection techniques also had a significant effect, the use of insect nets obtained significantly more arthropods than pitfall traps and OPTW demolition. The functions of arthropods in OPTW were as detritivores (17.2%), phytophagous (29.3%), predators (29.3%), omnivores (8.6%), parasitoids (8.6%), pollinators (3.4%) and fungivores (3.4%).

Keywords: arthropods, diversity, function, oil palm, OPTW, rejuvenation