

RINGKASAN

Makrofauna tanah adalah fauna tanah yang memiliki ukuran tubuh > 2 mm dan 90% spesiesnya dapat dilihat secara kasat mata. Makrofauna tanah berfungsi sebagai indikator yang sangat sensitif terhadap perubahan kondisi lahan khususnya dalam ekosistem tanah, sehingga dapat digunakan untuk menilai kualitas suatu lahan. Taman Hutan Kota Muhammad Sabki (THMKS) merupakan RTH dengan luas sekitar 11 Ha yang di dalamnya dapat hutan yang dibiarkan tumbuh secara alami dan ada juga yang dimanfaatkan sebagai taman. Saat ini belum dilakukannya kajian ilmiah tentang keanekaragaman makrofauna tanah serta perannya dalam ekosistem di Hutan Kota Muhammad Sabki. Tujuan penelitian ini adalah mengidentifikasi jenis makrofauna tanah, menganalisis indeks keanekaragaman jenis, indeks dominansi, indeks kemerataan makrofauna tanah, dan mendeskripsikan keanekaragaman jenis makrofauna tanah serta peranannya secara ekologis di kawasan Hutan Kota Muhammad Sabki Kota Jambi. Penelitian ini dilaksanakan mulai bulan April sampai Juli 2025 di Kawasan Taman Hutan Kota Muhammad Sabki Kota Jambi dan Laboratorium Jurusan MIPA, Fakultas Sains dan Teknologi, Universitas Jambi. Metode sampling yang digunakan adalah metode *pitfall trap*, *light trap*, *yellow sticky trap*, *berlese trap*, *monolith*, dan *hand collection*. Pengumpulan spesimen makrofauna tanah dilakukan sebanyak 8 kali pengulangan dengan interval waktu pengambilan dua hari sekali. Makrofauna tanah yang terperangkap kemudian diidentifikasi berdasarkan karakter morfologi. Hasil penelitian menunjukkan makrofauna tanah yang ditemukan sebanyak 5.649 individu, yang terbagi ke dalam 103 jenis, 90 genus, 46 famili dan 3 filum. Famili dengan jumlah jenis terbanyak adalah scarabaeidae dengan 12 jenis. Jenis makrofauna tanah yang paling banyak ditemukan adalah *Formica gagates* (1.492 individu). Indeks keanekaragaman jenis makrofauna tanah di Hutan Kota Muhamad Sabki Kota Jambi tergolong kategori sedang (2,81), indeks kemerataan tergolong kategori tinggi (0,61), serta indeks dominansi tergolong kategori rendah (0,11). Jumlah sampel yang paling banyak dikoleksi yaitu dari metode *pitfall trap* sebanyak 3.989 individu (70,56%) dan *monolith* sebanyak 1.335 (23,62%). Makrofauna memiliki peran ekologis yaitu sebagai predator, dekomposer serta memodifikasi struktur tanah. Makrofauna tanah yang ditemukan di Hutan Kota Muhammad Sabki umumnya sama yang ditemukan masing-masing stasiun, karena secara mikrohabitat tidak terlalu jauh berbeda, faktor lingkungan juga tidak terlalu jauh berbeda. Oleh karena itu makrofauna yang tersebar secara merata dan individu yang banyak ditemukan menunjukkan fungsi ekologisnya yang lebih dominan, serta diikuti morfologi dan fisiologinya yang fleksibel terhadap lingkungannya.

SUMMARY

Soil macrofauna are soil fauna that have a body size > 2 mm and 90% of their species can be seen directly with the eye. Soil macrofauna function as indicators that are very sensitive to land condition changes, especially in soil ecosystems, so they can be used to assess the quality of a land. Muhammad Sabki City Forest Park (THMKS) is a green open space with an area of approximately 11 hectares within the forests are allowed to grow naturally and some are used as parks. Currently, there has not been a scientific study on the diversity of soil macrofauna and their role in the ecosystem in Muhammad Sabki City Forest. The purpose of this study was to identify the types of soil macrofauna, analyze the species diversity index, dominance index, evenness index of soil macrofauna, and describe the diversity of soil macrofauna species, also their ecological roles in the Muhammad Sabki City Forest area of Jambi City. This research was conducted from April to July 2025 in the Muhammad Sabki City Forest Park Area of Jambi City and the Laboratory of the Mathematics and Natural Sciences Department, Faculty of Science and Technology, University of Jambi. The sampling methods used were pitfall trap, light trap, yellow sticky trap, berlese trap, monolith, and hand collection. The collection of soil macrofauna specimens was repeated 8 times with a sampling interval of every two days. The trapped soil macrofauna were then identified based on morphological characteristics. The results of the study show that 5.649 individuals of soil macrofauna were found, divided into 103 species, 90 genera, 46 families, and 3 phyla. The family with the most species was Scarabaeidae with 12 species. The most commonly found species of soil macrofauna was *Formica gagates* (1.492 individuals). The species diversity index of soil macrofauna in the Muhamad Sabki Urban Forest in Jambi City was classified as moderate (2.81), the evenness index was classified as high (0.61), and the dominance index was classified as low (0.11). The largest number of samples collected were from the pitfall trap method, totaling 3.989 individuals (70.56%), followed by the monolith method with 1.335 individuals (23.62%). Macrofauna play an ecological role as predators, decomposers, and soil structure modifiers. The soil macrofauna found in the Muhammad Sabki Urban Forest is generally the same as that found at each station, because the microhabitats are not too different, and the environmental factors are also not too different. Therefore, the evenly distributed macrofauna and the large number of individuals found indicate their more dominant ecological function, followed by their flexible morphology and physiology to their environment.