ABSTRAK

Sulastri Tarihoran, NIM 4213520014 (2025) : Bentuk dan Kelimpahan Mikroplastik pada Lobster Air Tawar (*Cherax quadricarinatus*) di Danau Toba Kabupaten Simalungun

Mikroplastik merupakan partikel plastik berukuran kurang dari 5 µm yang telah banyak mencemari lingkungan perairan dan berpotensi terakumulasi dalam tubuh organisme akuatik, termasuk lobster air tawar. Penelitian ini bertujuan untuk mengetahui bentuk, warna, perbedaan kelimpahan mikroplastik pada lobster air tawar (*Cherax quadricarinatus*) antar stasiun serta perbedaan kelimpahan mikroplastik berdasarkan jenis kelamin lobster air tawar (*Cherax quadricarinatus*) di Danau Toba. Pengambilan sampel dilakukan di tiga stasiun berbeda, masing-masing diambil 20 sampel/stasiun. Bentuk mikroplastik yang ditemukan yaitu fiber, film, dan fragmen dengan warna merah, kuning, hijau, biru, ungu, coklat, hitam, dan transparent. Hasil penelitian diperoleh kelimpahan rata-rata mikroplastik yang ditemukan di Stasiun 1 yaitu 40,1 ± 20,1, Stasiun 2 dengan rata-rata 33 ± 10,6, dan Stasiun 3 dengan rata-rata 41 ± 17,9. Berdasarkan uji *one way* ANOVA diperoleh nilai P = 0,264 (P > 0,05) menandakan tidak terdapat perbedaan signifikan kelimpahan mikroplastik terhadap stasiun sampling. Sedangkan hasil penelitian kelimpahan mikroplastik berdasarkan jenis kelamin, ditemukan pada lobster jantan sebesar 47 ± 16,5 dan kelimpahan mikroplastik pada lobster betina sebesar 29 ± 11,3. Berdasarkan hasil uji t antara rata-rata kelimpahan mikroplastik pada lobster jantan dan lobster betina didapatkan P < 0,001. Menandakan terdapat perbedaan yang signifikan. Hasil ini mengindikasikan bahwa aktivitas manusia di sekitar danau toba berpengaruh terhadap tingkat pencemaran mikroplastik.

Kata kunci: mikroplastik, lobster air tawar, kelimpahan, jenis kelamin, danau toba.

ABSTRACT

Sulastri Tarihoran, NIM 4213520014 (2025) : The Form and Abundance of Microplastics in Freshwater Lobsters (*Cherax quadricarinatus*) in Lake Toba, Simalungun

Microplastics are plastic particles smaller than 5 µm that have widely polluted aquatic environments and have the potential to accumulate in the bodies of aquatic organisms, including freshwater crayfish. This study aims to determine the shape, color, and differences in microplastic abundance in freshwater lobsters (*Cherax quadricarinatus*) between stations, as well as differences in microplastic abundance based on the gender of freshwater lobsters (*Cherax quadricarinatus*) in Lake Toba. Sampling was conducted at three different stations, with 20 samples taken at each station. The shapes of microplastics found were fibers, films, and fragments with colors of red, yellow, green, blue, purple, brown, black, and transparent. The results showed that the average abundance of microplastics found at Station 1 was 40.1 ± 20.1, Station 2 had an average of 33 ± 10.6, and Station 3 had an average of 41 ± 17.9. Based on the one-way ANOVA test, the data significance value P = 0,264 (P>0.05) indicates that there is no significant difference in microplastic abundance between sampling stations. Meanwhile, the results of the study on microplastic abundance based on gender found that male lobsters had an abundance of 47 ± 16.5 and female lobsters had an abundance of 29 ± 11.3. Based on the t-test results between the average microplastic abundance in male and female lobsters, P < 0.001 was obtained, indicating a significant difference. These results indicate that human activities around Lake Toba affect the level of microplastic pollution.

Keywords: microplastics, freshwater lobsters, abundance, gender, Lake Toba.