

# Kelimpahan Mikroplastik saat Musim Hujan Tahun 2020 dan 2021 dan Kelimpahannya di Sepanjang Daun *Enhalus acoroides* (Linnaeus F.) Royle, 1839 di Pulau Lima, Teluk Banten = Microplastic Abundance during the 2020 and 2021 Rainy Seasons and Abundance Along with the Leaves of *Enhalus acoroides* (Linnaeus F.) Royle, 1839 on Lima Island, Banten Bay

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## Abstrak

Curah hujan di musim hujan berperan dalam mentransportasikan sampah, termasuk mikroplastik dari sungai ke laut. Peningkatan sampah, arus, dan peningkatan penduduk juga dapat memengaruhi kelimpahan mikroplastik. Mikroplastik di pesisir dapat menempel pada daun lamun. Daun lamun akan mengalami pertumbuhan, sehingga memungkinkan adanya perbedaan kelimpahan mikroplastik di sepanjang daun lamun. Penelitian ini bertujuan untuk menganalisis perbandingan kelimpahan mikroplastik pada daun *Enhalus acoroides*, air, dan sedimen di Pulau Lima, Teluk Banten pada musim hujan tahun 2020 dan 2021, serta menganalisis apakah ada perbedaan kelimpahan mikroplastik di sepanjang daun *E. acoroides*. Sampel daun diambil seluas 1 cm<sup>2</sup> dari helaian daun, kemudian dikerik menggunakan cutter. Sampel air sebanyak 20 L diambil menggunakan plankton net. Sampel sedimen sebanyak 200 g dikeringkan menggunakan oven. Rata-rata kelimpahan mikroplastik pada sampel daun lamun tahun 2020 sebesar 46,96±3,13 partikel/cm<sup>2</sup>, dan tahun 2021 sebesar 61,5±6,63 partikel/cm<sup>2</sup>. Sampel air tahun 2020 sebesar 130,66±14,19 partikel/L, sedangkan 2021 sebesar 162,22±7,82 partikel/L. Sampel sedimen tahun 2020 sebesar 12.066±4.017,6 partikel/Kg, sedangkan 2021 sebesar 17.354,67±2.341,95 partikel/Kg. Terdapat peningkatan kelimpahan mikroplastik pada semua sampel di Pulau Lima, Teluk Banten saat musim hujan tahun 2020 hingga 2021. Rata-rata kelimpahan mikroplastik pada jarak 20 cm dari pangkal daun sebanyak 36,7±7,8 partikel/cm<sup>2</sup> lebih rendah daripada jarak 50 cm sebanyak 144,4±23,74 partikel/cm<sup>2</sup>. Terdapat perbedaan kelimpahan mikroplastik di sepanjang daun lamun.

.....Rainfall in the rainy season plays a role in transporting waste, including microplastics from rivers to the sea. Increased waste, currents, and population growth can also affect the abundance of microplastics. Microplastics on the coast are attached to seagrass leaves. Seagrass leaves experienced growth, thus allowing for differences in the abundance of microplastics along with the leaves. This study aims to analyze the comparison of the abundance of microplastics in *Enhalus acoroides* leaves, water, and sediment on Lima Island, Banten Bay in the rainy seasons of 2020 and 2021, and analyze whether there are differences in the abundance of microplastics along with *E. acoroides* leaves. The leaves were taken 1 cm<sup>2</sup> from the leaf blade, then scraped using a cutter. The water (20 L) was taken using a plankton net. The sediment (200 g) was dried using an oven. The average abundance of microplastics in seagrass leaf samples in 2020 was 46.96±3.13 particles/cm<sup>2</sup>, while in 2021 was 61.5±6.63 particles/cm<sup>2</sup>. The water sample in 2020 was 130.66±14.19 particles/L, while in 2021 was 162.22±7.82 particles/L. The sediment sample in 2020 was 12,066±4,017.6 particles/Kg, while in 2021 was 17,354.67±2,341.95 particles/Kg. There was an increase in the abundance of microplastics in all samples on Lima Island, Banten Bay during the rainy season from 2020 to 2021. The average abundance of microplastics at a distance of 20 cm from the base of the leaf was

36.7±7.8 particles/cm<sup>2</sup>, lower than a distance of 50 cm at 144.4±23.74 particles/cm<sup>2</sup>. There were differences in the abundance of microplastics along with the seagrass leaves.