Perbandingan Kelimpahan Mikroplastik pada Terebralia palustris (Linnaeus, 1767) dan Sedimen di Hutan Mangrove Suaka Marga Satwa Pulau Rambut, Teluk Jakarta, DKI Jakarta Tahun 2022 dan 2023 = Comparison of Microplastic Abundance in Terebralia palustris (Linnaeus, 1767) and Sediment in the Mangrove Forest Rambut Island Wildlife Reserve, Jakarta bay, DKI Jakarta in 2022 and 2023

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Abstrak

Increased plastic waste in the environment, particularly in the mangrove forest of Pulau Rambut, Jakarta Bay, has the potential to affect the abundance of microplastics in the surrounding waters. Microplastics, which are very small in size (<5mm), can be accidentally ingested by marine organisms such as Terebralia palustris and have negative effects on marine life, the environment, and humans. This study aims to analyze the comparison of microplastic abundance in T.palustris and sediment in the mangrove forest of Pulau Rambut, Jakarta Bay, in 2022 and 2023, as well as to determine the correlation between microplastic abundance in T.palustris and sediment. Twenty samples of T.palustris and sediment were collected at four stations in 2022 and 2023. The body tissue of T.palustris was separated from its shell, then dissolved with HNO3 and added to saturated NaCl. Sediment samples were dissolved with saturated NaCl. Microplastic abundance was observed and calculated using a Sedgwick Rafter Chamber under a microscope. Four forms of microplastics were observed in the T. palustris and sediment samples, namely fibers, fragments, films, and granules. The results showed an increase in microplastic abundance from 2022 to 2023. In 2022, the microplastic abundance was 363,592 ± 11,511 particles/g in T. palustris and 66,69 ± 7,638 particles/g in sediment, while in 2023, it reached 406,574 ± 6,154 particles/g in T. palustris and 79,7 ± 12,992 particles/g in sediment. From 2022 to 2023, the abundance of microplastic in T.palustris (particle/g) increased by 5%, T.palustris (particle/individual) increased by 37%, and sediment by 19%. There is a positive correlation between the microplastic abundance of T.palustris and sediment, with value of 0,768 obtained from the Spearman correlation test.Increased plastic waste in the environment, particularly in the mangrove forest of Pulau Rambut, Jakarta Bay, has the potential to affect the abundance of microplastics in the surrounding waters. Microplastics, which are very small in size (<5mm), can be accidentally ingested by marine organisms such as Terebralia palustris and have negative effects on marine life, the environment, and humans. This study aims to analyze the comparison of microplastic abundance in T.palustris and sediment in the mangrove forest of Pulau Rambut, Jakarta Bay, in 2022 and 2023, as well as to determine the correlation between microplastic abundance in T.palustris and sediment. Twenty samples of T.palustris and sediment were collected at four stations in 2022 and 2023. The body tissue of T.palustris was separated from its shell, then dissolved with HNO3 and added to saturated NaCl. Sediment samples were dissolved with saturated NaCl. Microplastic abundance was observed and calculated using a Sedgwick Rafter Chamber under a microscope. Four forms of microplastics were observed in the T. palustris and sediment samples, namely fibers, fragments, films, and granules. The results showed an increase in microplastic abundance from 2022 to 2023. In 2022, the microplastic abundance was 363,592 ± 11,511 particles/g in T. palustris and 66,69 ± 7,638 particles/g in sediment, while in 2023, it reached 406,574 ± 6,154 particles/g in T. palustris and 79,7 ±

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