

**KONTAMINASI MIKROPLASTIK PADA IKAN NILA,
Oreochromis niloticus (Linnaeus, 1758), DI MINA PADI
SAMBEREMBE, SLEMAN, DAERAH ISTIMEWA
YOGYAKARTA**

Della Thasya Liona Safitri
21/476868/BI/10739

Dosen Pembimbing: Prof. Dr. rer. nat. Andhika Puspito Nugroho

INTISARI

Penggunaan plastik dalam kehidupan sehari-hari semakin tidak terkendali, sehingga menghasilkan sampah plastik yang mencemari lingkungan, terutama ekosistem perairan. Sampah plastik ini lambat laun terurai menjadi partikel kecil yang dikenal sebagai mikroplastik. Mikroplastik dapat terakumulasi dalam fauna akuatik melalui rantai makanan, yang pada akhirnya dapat membahayakan kesehatan manusia. Penelitian ini bertujuan untuk mengevaluasi kontaminasi mikroplastik pada air, sedimen, dan organ ikan nila di Mina Padi Samberembe, Yogyakarta, serta menganalisis potensi risiko kesehatan berdasarkan jenis polimer yang ditemukan. Mikroplastik diekstraksi dari sampel air, sedimen, dan organ ikan, termasuk insang, saluran pencernaan, dan otot, untuk kemudian dikarakterisasi berdasarkan bentuk, warna, dan jenis polimernya menggunakan analisis FTIR. Selain itu, dilakukan analisis indeks potensi risiko ekologis (PERI), indeks bahaya polimer (PHI), dan indeks beban pencemaran (PLI) guna menilai risiko kesehatan. Hasil penelitian menunjukkan bahwa air, sedimen, dan ikan nila yang dibudidayakan di Mina Padi Samberembe telah terkontaminasi mikroplastik. Akumulasi tertinggi mikroplastik pada organ pencernaan ikan nila dan sedimen ditemukan di titik sampling T3, sedangkan pada air di titik T2. Mikroplastik yang ditemukan memiliki berbagai bentuk, seperti serat, fragmen, dan film. Jenis polimer yang teridentifikasi melalui analisis FTIR adalah polyethylene terephthalate (PET). Tingkat risiko kontaminasi mikroplastik di Mina Padi Samberembe tergolong rendah dengan tingkat bahaya polimer berada pada kategori tiga.

Kata Kunci: degradasi, kontaminasi, mikroplastik, mina padi, plastik.

**MICROPLASTIC CONTAMINATION IN NILE TILAPIA,
Oreochromis niloticus (Linnaeus, 1758), IN MINA PADI
SAMBEREMBE, SLEMAN, SPECIAL REGION OF
YOGYAKARTA**

Della Thasya Liona Safitri
21/476868/BI/10739

Supervisor: Prof. Dr. rer. nat. Andhika Puspito Nugroho

ABSTRACT

The use of plastic in everyday life is increasingly uncontrolled, resulting in plastic waste that pollutes the environment, especially aquatic ecosystems. This plastic waste slowly decomposes into small particles known as microplastics. Microplastics can accumulate in aquatic fauna through the food chain, which can ultimately endanger human health. This study aims to evaluate microplastic contamination in water, sediment, and tilapia organs in Mina Padi Samberembe, Yogyakarta, and to analyze potential health risks based on the types of polymers found. Microplastics were extracted from water, sediment, and fish organ samples, including gills, digestive tract, and muscles, and then characterized based on their shape, color, and polymer types using FTIR analysis. In addition, a comprehensive analysis of the ecological risk potential index (PERI), polymer hazard index (PHI), and pollution load index (PLI) was carried out to assess health risks, demonstrating the thoroughness of the study. The results showed that water, sediment, and tilapia cultivated in Mina Padi Samberembe had been contaminated with microplastics. The highest accumulation of microplastics in the digestive organs of tilapia and sediment was found at sampling point T3 while in water at point T2. Microplastics have various forms, such as fibers, fragments, and films. The type of polymer identified through FTIR analysis is polyethylene terephthalate (PET). The risk level of microplastic contamination in Mina Padi Samberembe is classified as low with the polymer hazard level in category three.

Keywords: contamination, degradation, microplastic, mina padi, plastic.