

# Analisis kelimpahan mikroplastik pada insang dan saluran pencernaan Ikan Nila *Oreochromis niloticus* (Linnaeus, 1758) di Ciliwung daerah Srengseng Sawah, Jakarta Selatan = Analysis of microplastic abundance in gills and digestive tract of Nile Tilapia Fish *Oreochromis niloticus* (Linnaeus, 1758) in Ciliwung Srengseng Sawah, South Jakarta

Kintan Dienda Dienizar, author

Deskripsi Lengkap: <https://lib.ui.ac.id/detail?id=20509609&lokasi=lokal>

---

## Abstrak

Mikroplastik merupakan partikel plastik yang terdegradasi di lingkungan dengan ukuran < 5 mm. Kandungan mikroplastik di perairan tawar berpotensi membahayakan kelangsungan hidup biota di dalamnya. Penelitian ini bertujuan menganalisis kelimpahan dan persentase komposisi bentuk mikroplastik pada insang dan saluran pencernaan ikan nila *Oreochromis niloticus* (Linnaeus, 1758) di Ciliwung daerah Srengseng Sawah, Jakarta Selatan. Insang dan saluran pencernaan (lambung dan usus) dari 10 sampel ikan nila diekstraksi dan dihancurkan menggunakan larutan asam nitrat (HNO<sub>3</sub>) 65%. Sampel yang telah diekstraksi kemudian diberi larutan NaCl jenuh agar mikroplastik mengapung ke permukaan. Sampel diteteskan sebanyak 1 ml pada *Sedgwick Rafter Chamber* kemudian diamati di bawah mikroskop dan dihitung jumlah mikroplastik berdasarkan bentuk partikelnya. Hasil penelitian terdapat kelimpahan mikroplastik pada sampel insang, lambung, dan usus ikan nila diantaranya bentuk fiber, film, fragmen, dan granula. Total kelimpahan rata-rata mikroplastik di insang sebanyak  $4.135 \pm 3.297,20$  partikel/ind, di lambung sebanyak  $2.772 \pm 1.030,43$  partikel/ind, dan di usus sebanyak  $3.598 \pm 1.582,18$  partikel/ind ditemukan pada ikan nila. Persentase komposisi bentuk mikroplastik yang ditemukan dominan pada ikan nila terdapat bentuk fiber sebesar 57,85% di insang; 53,21% di lambung dan 53,06% di usus.

Microplastics are plastic particles that degrade in the environment with a size of <5 mm. The content of microplastics in freshwater has the potential to endanger the survival of the biota in it. This study aims to analyze the abundance and percentage composition of microplastic forms in the gills and digestive tract of Nile Tilapia fish *Oreochromis niloticus* (Linnaeus, 1758) in Ciliwung, Srengseng Sawah, South Jakarta. The gills and digestive tract (stomach and intestines) of 10 samples of nile tilapia fish were extracted and crushed using a 65% nitric acid (HNO<sub>3</sub>) solution. The extracted sample is then given a saturated NaCl solution so that the microplastic floats to the surface. The sample was dropped as much as 1 ml into the *Sedgwick Rafter Chamber* and then observed under a microscope and the number of microplastics was calculated based on the shape of the particles. The results showed an abundance of microplastics in the samples of gill, stomach, and intestines of tilapia including the form of fiber, film, fragments, and granules. The total abundance of microplastics in the gills was  $4.135 \pm 3.297,20$  particles / ind,  $2.772 \pm 1.030,43$  particles / ind in the stomach, and  $3.598 \pm 1.582,18$  particles / ind in the intestine, which was found in tilapia. The percentage composition of the microplastic form that was found predominantly in tilapia contained a fiber form of 57,85% in the gills; 53,21% in the stomach and 53,06% in the intestine.