

**ANALISIS KARAKTERISTIK DAN KELIMPAHAN MIKROPLASTIK
PADA IKAN TONGKOL (*Euthynnus affinis*) DAN IKAN KEMBUNG
(*Rastrelliger kanagurta*) DI PASAR SWALAYAN KOTA BANDUNG**

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ABSTRAK

Pencemaran mikroplastik di lingkungan perairan telah menyebabkan kontaminasi pada berbagai jenis ikan konsumsi yang berpotensi mengancam ekosistem dan kesehatan manusia. Penelitian ini bertujuan menganalisis karakteristik dan kelimpahan mikroplastik pada ikan tongkol (*Euthynnus affinis*) dan ikan kembung (*Rastrelliger kanagurta*) yang dijual di pasar swalayan Kota Bandung meliputi karakteristik, kelimpahan, dan jenis polimer mikroplastik. Penelitian menggunakan metode observasi deskriptif dengan metode pengambilan sample yaitu *purposive sampling* sehingga sampel ikan diperoleh dari tiga pasar swalayan di Kota Bandung. Analisis mikroplastik dilakukan melalui proses destruksi menggunakan larutan KOH 10% dan H₂O₂ 30%, kemudian dilanjutkan dengan filtrasi serta identifikasi visual menggunakan mikroskop. Karakteristik mikroplastik dianalisis berdasarkan bentuk, warna, dan ukuran partikel, sedangkan identifikasi polimer dilakukan menggunakan *Fourier Transform Infrared Spectroscopy* (FTIR). Data dianalisis secara deskriptif dan menggunakan uji korelasi dengan analisis non-parametrik Spearman untuk mengetahui hubungan jumlah mikroplastik dengan bobot dan panjang tubuh ikan. Hasil penelitian menunjukkan bahwa mikroplastik ditemukan pada seluruh sampel ikan dengan prevalensi 100%. Mikroplastik ditemukan pada saluran pencernaan maupun otot ikan tongkol dan ikan kembung. Karakteristik mikroplastik didominasi oleh bentuk fiber dengan rerata (22,25 partikel), diikuti film (2 partikel) dan fragment (1,25 partikel). Berdasarkan warna, mikroplastik didominasi oleh warna transparan dengan rerata (21 partikel), diikuti merah (2,50 partikel), biru (1 partikel), hitam (0,25 partikel), dan hijau (0,50 partikel). Berdasarkan ukuran, mikroplastik didominasi oleh partikel berukuran <1000 µm pada kedua spesies ikan. Rata-rata kelimpahan mikroplastik per individu relatif serupa, yaitu $49,67 \pm 18,43$ partikel pada ikan tongkol dan $49,50 \pm 20,29$ partikel pada ikan kembung, dengan kelimpahan yang lebih tinggi pada saluran pencernaan dibandingkan jaringan otot. Hasil identifikasi FTIR menunjukkan empat kelompok polimer utama, yaitu *Polyethylene* (PE), *Polypropylene* (PP), *Polyamide* (PA/Nylon), dan *Polyethylene Terephthalate* (PET/Polyester). Penelitian ini menunjukkan bahwa ikan konsumsi yang dijual di pasar swalayan Kota Bandung telah terkontaminasi mikroplastik dan berpotensi menjadi jalur paparan mikroplastik bagi manusia.

Kata Kunci: ikan kembung, ikan tongkol, mikroplastik, otot, pasar swalayan

**ANALYSIS OF MICROPLASTIC CHARACTERISTICS AND ABUNDANCE
IN KAWAKAWA (*Euthynnus affinis*) AND INDIAN MACKEREL
(*Rastrelliger kanagurta*) SOLD IN SUPERMARKETS
IN BANDUNG CITY**

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ABSTRACT

Microplastic pollution in aquatic environments has resulted in the contamination of various edible fish species, posing potential threats to ecosystems and human health. This study aimed to analyze the characteristics, abundance, and polymer types of microplastics in kawakawa (*Euthynnus affinis*) and Indian mackerel (*Rastrelliger kanagurta*) sold in supermarkets in Bandung City, Indonesia. This research employed a descriptive observational method with purposive sampling, in which fish samples were collected from three supermarkets in Bandung City. Microplastic analysis was carried out through sample digestion using 10% KOH and 30% H₂O₂ solutions, followed by filtration and visual identification under a microscope. Microplastic characteristics were analyzed based on particle shape, color, and size, while polymer identification was performed using Fourier Transform Infrared Spectroscopy (FTIR). Data were analyzed descriptively, and the non-parametric Spearman correlation test was used to determine the relationship between microplastic abundance and fish body weight and length. The results showed that microplastics were detected in all fish samples, with a prevalence of 100%. Microplastics were found in both the digestive tract and muscle tissues of kawakawa (*Euthynnus affinis*) and Indian mackerel (*Rastrelliger kanagurta*). The physical characteristics of microplastics were dominated by fiber, with a mean abundance of 22.25 particles, followed by film (2.00 particles) and fragment (1.25 particles). Based on color, transparent microplastics were the most dominant, with a mean abundance of 21.00 particles, followed by red (2.50 particles), blue (1.00 particle), black (0.25 particles), and green (0.50 particles). In terms of size, microplastics measuring <1,000 µm were the most abundant in both fish species. The mean abundance of microplastics per individual was relatively similar, with 49.67 ± 18.43 particles in kawakawa and 49.50 ± 20.29 particles in Indian mackerel, while the digestive tract contained a higher abundance of microplastics than the muscle tissue. FTIR analysis identified four major polymer groups, namely Polyethylene (PE), Polypropylene (PP), Polyamide (PA/Nylon), and Polyethylene Terephthalate (PET/Polyester). These findings indicate that edible fish sold in supermarkets in Bandung City have been contaminated with microplastics and may serve as a potential pathway for human exposure to microplastics.

Keywords: Indian mackerel, kawakawa, microplastics, muscle tissue, supermarkets