ABSTRAK

IDENTIFIKASI DAN KARAKTERISASI MIKROPLASTIK PADA INSANG DAN PENCERNAAN IKAN BAWAL PUTIH *(Pampus argenteus)* DI WILAYAH LAUT JAWA MENGGUNAKAN SPEKTROSKOPI FT-IR

Mikroplastik merupakan partikel plastik yang berukuran 0,1µm-5mm. Keberadaannya semakin meningkat di lingkungan perairan dan berpotensi terhadap biota laut dan tubuh manusia. Mikroplastik sangat berbahaya bagi biota laut khususnya ikan konsumsi yang berpotensi masuk ke dalam tubuh manusia melalui rantai makanan. Studi ini bertujuan untuk mengidentifikasi kelimpahan mikroplastik pada ikan bawal putih (*Pampus argenteus*) di wilayah Laut Jawa bagian utara Jawa Barat dan menganalisis jenis polimer pada mikroplastik yang ada di insang dan pencernaan ikan. Sampel ikan bawal putih diambil 4 ekor/stasiun dibeberapa wilayah Laut Jawa yaitu di TPI Ciparage Karawang, TPI Blanakan Subang, dan TPI Karangsong Indramayu dengan metode *purposive sampling*. Mikroplastik pada sampel diekstraksi dengan metode *digestion-density separation* menggunakan larutan KOH (ρ = 1,32 g/mL). Sampel mikroplastik hasil *digestion-density separation* dianalisis dengan mikroskop untuk identifikasi bentuk, warna dan kelimpahan. Mikroplastik yang teridentifikasi dianalisis dengan *Fourier Transform Infrared* (FTIR) untuk mengidentifikasi jenis polimer pada Mikroplastik. Hasil penelitian menunjukkan kelimpahan mikroplastik dengan bentuk fragmen dan film ditemukan di pencernaan ikan Bawal putih (*Pampus argenteus)* di TPI Ciparage Karawang dengan total 6,25 partikel/individu dengan bentuk mikroplastik didominasi oleh fragmen, kemudian pada TPI Blanakan Subang dan TPI Karangsong Indramayu tidak ditemukan partikel mikroplastik. Jenis polimer pada mikroplastik yang ditemukan polipropilena isotaktik, polipropilena kopolimer dan Polietilena teroksidasi. Jenis polimer didominasi oleh polipropilena kopolimer

Kata kunci: bawal putih, fragmen, Laut Jawa, mikroplastik.

ABSTRACT

IDENTIFICATION AND CHARACTERIZATION OF MICROPLASTICS IN THE GILLS AND DIGESTIVE TRACT OF WHITE POMFRET (Pampus argenteus) IN THE JAVA SEA REGION USING FT-IR SPECTROSCOPY

Microplastics are plastic particles that measure 0.1µm-5mm. Their presence is increasingly rising in aquatic environments and poses potential risks to marine biota and the human body. Microplastics are particularly dangerous for marine life, especially edible fish, which can potentially enter the human body through the food chain. This study aims to identify the abundance of microplastics in white pomfret (Pampus argenteus) fish in the northern part of West Java in the Java Sea and to analyze the types of polymers in the microplastics found in the gills and digestive tracts of the fish. Samples of white pomfret fish were collected at 4 fish /station in several areas of the Java Sea, namely at TPI Ciparage Karawang, TPI Blanakan Subang, and TPI Karangsong Indramayu using purposive sampling methods. Microplastics in the samples were extracted using the digestion-density separation method with a KOH solution (ρ = 1.32 g/mL). The microplastic samples resulting from digestion-density separation were analyzed under a microscope to identify their shapes, colors, and abundance. The identified microplastics were analyzed using Fourier Transform Infrared (FTIR) to identify the types of polymers in the microplastics. The results showed that the abundance of microplastics in the form of fragments and films was found in the digestive tract of silver pomfret (Pampus argenteus) at TPI Ciparage Karawang with a total of 6.25 particles per individual, with microplastic shapes dominated by fragments. Meanwhile, at TPI Blanakan Subang and TPI Karangsong Indramayu, no microplastic particles were found. The types of polymers found in the microplastics were isotactic polypropylene, polypropylene copolymer, and oxidized polyethylene. The polymer type was dominated by polypropylene copolymer.

Keywords: *fragment, Java Sea, microplastic, pomfret.*