

**KONTAMINASI MIKROPLASTIK PADA UDANG VANAME
(*Penaeus vannamei* Boone, 1931) DAN IKAN BANDENG
(*Chanos chanos* Forsskål, 1775) DARI TAMBAK DI MARUNDA,
JAKARTA UTARA**

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INTISARI

Pembuangan plastik dari aktivitas antropogenik membuat sampah plastik menjadi masalah utama di ekosistem perairan, terlebih plastik dapat terdegradasi menjadi mikroplastik. Udang vaname (*Penaeus vannamei*) dan ikan bandeng (*Chanos chanos*) yang umum dibudidayakan di Marunda kemungkinan besar telah terkontaminasi mikroplastik. Selain itu, umur organisme dapat memengaruhi akumulasi mikroplastik pada organisme. Penelitian ini bertujuan untuk mempelajari konsentrasi dan karakter mikroplastik pada air, sedimen, udang vaname dan ikan bandeng dari tambak di Marunda serta mempelajari pengaruh umur organisme terhadap akumulasi mikroplastik. Sampel udang vaname, ikan bandeng, air, dan sedimen dikoleksi dari tambak di Marunda, Jakarta Utara. Mikroplastik pada sampel air diekstraksi melalui filtrasi, sedangkan mikroplastik pada sampel sedimen diekstraksi melalui pelarutan dalam 1 L NaCl pekat, pemisahan densitas partikel, dan filtrasi. Ekstraksi mikroplastik pada otot udang vaname serta tiga organ ikan bandeng dilakukan melalui pelarutan materi organik dengan 10% KOH, pengeringan, dan filtrasi. Mikroplastik dikarakterisasi berdasarkan ukuran, bentuk, dan warna dengan mikroskop serta jenis polimer dengan spektroskopi FT-IR. Hasil penelitian menunjukkan bahwa semua sampel, baik air, sedimen, *C. chanos*, maupun *P. vannamei* terkontaminasi mikroplastik dengan konsentrasi yang cukup tinggi. Komposisi mikroplastik didominasi oleh ukuran *small microplastic particles*, warna hitam, bentuk fiber, serta jenis polimer *cellophane* dan *low density polyethylene*. Umur memiliki pengaruh yang signifikan terhadap akumulasi mikroplastik pada *C. chanos*, namun tidak signifikan pada *P. vannamei*.

Kata kunci: *Chanos chanos*, *Penaeus vannamei*, mikroplastik, tambak

**MICROPLASTIC CONTAMINATION IN WHITELEG SHRIMP
(*Penaeus vannamei* Boone, 1931) AND MILKFISH
(*Chanos chanos* Forsskål, 1775) FROM AN AQUACULTURE POND IN
MARUNDA, NORTH JAKARTA**

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ABSTRACT

The disposal of plastic resulting from anthropogenic activities has led to plastic waste becoming a major problem in aquatic ecosystems, as it can degrade into microplastics. Whiteleg shrimp (*Penaeus vannamei*) and milkfish (*Chanos chanos*), which are commonly cultivated in aquaculture ponds in Marunda, North Jakarta, are highly likely to be contaminated with microplastics. Furthermore, the age of the organisms can affect the accumulation of microplastics in organisms. This research aims to evaluate the concentration and characteristics of microplastics in water, sediment, whiteleg shrimp, and milkfish from an aquaculture pond in Marunda, North Jakarta. It also examines the potential effect of the age of the organisms on microplastic accumulation. Samples of whiteleg shrimp, milkfish, water, and sediment were collected from an aquaculture pond in Marunda, North Jakarta. Microplastics in water samples were extracted through filtration, while microplastics in sediment samples were extracted through dissolution in 1 L of saturated NaCl, followed by density separation and filtration. Microplastics in whiteleg shrimp muscle and three organs of milkfish were extracted through organic matter digestion with 10% KOH, followed by drying and filtration. Microplastics were characterized based on size, shape, and color using a microscope and polymer type using FT-IR spectroscopy. The results revealed that all samples, including water, sediment, *C. chanos*, and *P. vannamei*, were contaminated at a fairly high level. Microplastics in these samples were primarily composed of small particles with black color, fiber shape, and consisted of cellophane and low-density polyethylene polymers. Notably, the age of organisms has a significant effect on the accumulation of microplastics in *C. chanos*, but insignificant in *P. vannamei*.

Keywords: *Chanos chanos*, *Penaeus vannamei*, microplastic, aquaculture pond