

Abundance and Characteristics of Microplastics Found in The Gastrointestinal Tract of Commercial Marine Fish from Bitung, North Sulawesi, Indonesia

Title	Abundance and Characteristics of Microplastics Found in The Gastrointestinal Tract of Commercial Marine Fish from Bitung, North Sulawesi, Indonesia
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Abstract	<p>Microplastic (MP) pollution is an emerging environmental problem that threatens food security, food safety, and human health since it has been reported to be found in commercial fish consumed by humans. Bitung, North Sulawesi, is one of the biggest contributors to capture fishery production in Indonesia. However, there is no data on microplastic pollution in commercial marine fish from Bitung. Therefore, this research aimed to investigate the presence and identify the visual characteristics (color, shape, size) and the polymer type of microplastics found in the gastrointestinal tract of commercial marine fish from Bitung, North Sulawesi. The gastrointestinal tract was extracted using KOH 10%, and the microplastic was observed under a stereo microscope. A total of 753 microplastic particles were found in the gastrointestinal tract of 74 individuals (prevalence 99%), and there was a statistically significant difference in the abundance of microplastics found in the gastrointestinal tract of pelagic and demersal fish. The average number of microplastic particles found in the gastrointestinal tract of pelagic fish (12,24 \bar{X}, \pm 2,43) is higher than in demersal fish (7,38 \bar{X}, \pm 3,48). The dominant color and shape of microplastic found in the gastrointestinal tract of the fish were black and fiber, respectively. At the same time, the dominant microplastic size found in the gastrointestinal tract of demersal fish was bigger (1,001-5,000 \bar{X}, μm, 39,4%) compared to pelagic fish (150-500 \bar{X}, μm, 47%). The Fourier Transform Spectroscopy (FTIR) analysis result shows that microplastics of the same polymer type can be found in the gastrointestinal tract of both pelagic and demersal fish.</p>
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