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ABSTRACT

Correlation between microplastic disperse in sea and microplastic contained within fish's gut organ system of semi-arid coastal beach, Kupang city, 2022

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Background : The product of marine resources, such as fish, are one of the sources of nutrition for local communities on the coastline of kota Kupang. Microplastics pollute the surroundings and human food sources, especially the marine environment, therefore, it could risk aggravating the state and quality of human health in direct proximity to the contaminated.
Objective : To find the relation between microplastic content from saltwater and microplastic ingested within the digestive tract of saltwater fish alongside the coastal beach of Kota Kupang.
Method: This research was conducted as an analytic-observational research that applied to seawater and saltwater fish alongside the coastal beach of kota Kupang and was further facilitated by the Laboratory of Medicine and Veterinarian, Universitas Nusa Cendana. This research was carried out between August 2021 and January 2022. The sampling technique was executed by purposive sampling which designates 30 specimens of fish taken from fish markets and fishermen in direct proximity to 16 appointed seawater sampling stations located alongside the coastal beach, kota Kupang, that satisfy any inclusion criteria. The data collected undergo univariate analytics and bivariate analytics thus proving the correlation, by utilizing the linear regression test and Pearson correlation test.
Results: The microplastic was found within all of the samples of both seawater and fishes observed. In terms of the summed abundance of microplastic, 459 particles were found within the seawater observation, while 956 particles of microplastic were found in saltwater fish's guts observation. Filament-shaped microplastic was the most abundant within both sample groups (275 particles within seawater and 745 particles within fish's guts). Linear regression test brings forth p= 0,406 (p>0,05), and Pearson correlation also suggest p=0,304 (p>0,05), both p product as the results of bivariate test.

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Conclusion: Microplastic was present in the marine food supply and the water alongside the coastal beach of Kota Kupang. There is no significant correlation between microplastic in seawater and microplastic contained within the digestive tract of saltwater fish taken from coastal beaches and fisheries in Kota Kupang. There is no significant correlation between the abundance of microplastic within the digestive tract and the weight of the fish taken from coastal beaches in Kota Kupang.

Keywords: relation, mikroplastic, saltwater fish, seawater