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Mini Review

Microplastics Pollution - Mini Review

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Microplastics are a polluting factor that has begun to attract attention in the marine environment in recent years, negatively affecting all living things and the ecosystem. It is defined as uniformly shaped or amorphous plastic parts in the dimensions of 5mm to 1µ [1]. Microplastics are divided into two classes according to their production methods. Primary; In other words, they are microplastics that are produced directly in micro size and are generally used in the cosmetics industry. For example; such as toothpaste and facial cleansing gels. Secondary; They are microplastics that are formed as a result of larger plastic parts breaking down in the ecosystem over time and reaching micro dimensions. For example; PET bottles, packaging, rubber parts and fiber parts separated from clothes can be given [1]. Tons of plastic are mixed into the aquatic ecosystem every year. More than 90% of these plastics are in the form of microplastics [1,2].

So how big is this microplastic pollution? A huge island of tons of plastic waste has formed over the ocean. Do you know that this island is called the 7th continent and its surface area is approximately 1.6 km^2, which corresponds to an area twice the size of Turkey? It seems that tons of microplastic residues left under and above water by this plastic pollution affect the entire aquatic ecosystem. It is very easy for living things to reach microplastic in the aquatic ecosystem. Because the vivid and bright colors, sizes, and densities of microplastics cause them to be mixed with food and consumed by living things, and therefore to death with the feeling of fullness in their stomachs. They also negatively affect water quality. Due to their density, they affect the physical quality parameters by reducing turbidity and therefore light transmittance in the aquatic ecosystem, while deteriorating the chemical parameters with their toxic effects [1,3]. This microplastic pollution, which not only results in death but also reaches the end consumer with its transport in the food chain, has negative effects in terms of toxicity. Although there are no proven health effects on humans, recent studies have proven that microplastic residues are encountered in the human body. It is reported that a person who consumes 6 oysters can take 50 microplastics into his body [1,4].

In a report published in 2019, the World Wildlife Fund (WWF) announced that there are 1.25 million microplastic pieces per km2 in the Mediterranean (WWF, 2019). Data from the ocean floor in 2020 showed that 14 million microplastics were on the ocean floor [1,5]. As of 2020, the Covid-19 pandemic has added a new plastic pollutant to our lives. Unfortunately, the number of fiber microplastic residues increases with the mixing of wastes such as masks and gloves into the sea. As a result of the data obtained through the studies, it is clearly seen that necessary precautions should be taken for this type of pollution, which has just begun to be recognized and has significant effects.

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