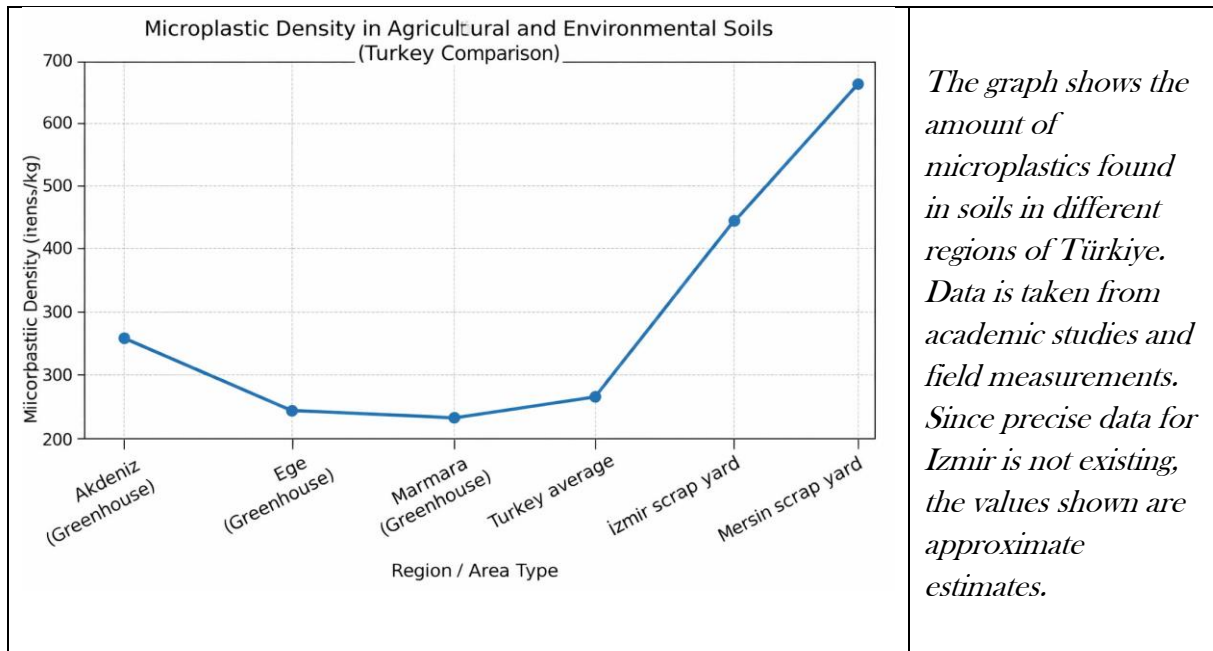


MICROPLASTIC THREATEN İZMİR: HIDDEN DANGER İS RİSİNG

According to researchers, microplastic pollution is spreading from beaches and oceans to agricultural areas, raising concerns about human health and food safety. A study conducted by the Faculty of Agriculture at Ankara University found high levels of microplastics in soil samples taken from nine provinces in Türkiye. According to the findings, researchers detected approximately 300 plastic particles per kilogram in the Mediterranean region, 180 in the Aegean region, and 160 in the Marmara region.



Microplastics remain in the soil, where they break down into smaller particles, and water then begins to carry them away. In this way, they can penetrate the roots of plants they encounter. They can move beyond the roots and reach the grains and fruits of cultivated crops. As a result, one of today's major concerns is the accumulation of plastics in food products. (DHA2023)

As part of my study, I interviewed Agricultural Engineer İlhan Çiğerci to better understand the potential effects of microplastic pollution on agricultural lands around İzmir. Çiğerci stated, "The Aegean Region is one of Türkiye's most important agricultural areas. However, microplastics accumulating in the soil may negatively affect crop yield and quality over time. The misuse of plastic covers, irrigation equipment, and agricultural waste increases this pollution."

I felt worried and responsible when my dearest geography teacher, Hayat İdil Doğru, told me in class that an average adult eats microplastics approximately the size of a credit card. "Microplastics are tiny plastic particles up to 5 mm in diameter." (UNEP, 2021) I wondered how we can truly detect the problem and solve it efficiently. I thought that people are not sufficiently aware of the problem. That is why it was an appropriate point to dive right into it. I talked with my teachers and got permission to prepare a slide presentation, and then I gave a conference to all the students at my school. At first, I was very excited, but after seeing people's curiosity about my speech, I became more confident. I presented the facts about how fatal this issue can become for living species and hoped to make a change.

I continued by explaining how microplastics enter human bodies through everyday items everyone uses. “The world is drowning under the weight of plastic pollution, with more than 430 million tonnes of plastic produced annually.” (UNEP, 2023) According to scientists, microplastics can be found in bottled and tap water worldwide. “Particles can move through the food web, as well as through soil, water, ice — even the air.” (UNEP, 2023) Scientists also state that the amount of microplastics can vary depending on the water source and the treatment process.

You may ask: what about salt? Sea salt is produced by evaporating seawater. Some studies have found microplastic particles in sea salt because microplastics are also present in the marine environment. In other words, the level of microplastics can vary depending on where the salt is produced. When it comes to sugar, luckily sugar itself does not contain plastic; however, microplastic particles have been detected in commercial sugar in some analyses due to airborne contamination during production and processing, contact with plastic packaging, and exposure during transportation and storage.

Similarly, when food is stored in plastic containers or wrapped in plastic packaging, microplastics can leach into the food, especially in hot or greasy foods. Experts also warn that this affects babies more, mostly when plastic baby bottles are washed with hot water or heated. “Microplastics have been found in various human organs, and even in the placenta of newborn babies.” (UNEP, 2022) Packaged baby food can also contain very small amounts of microplastics due to contact with plastic packaging.

After the conference, students at our school also showed interest and created a poster. “Public awareness of microplastic pollution is still low, despite growing scientific evidence of its impacts on health and ecosystems.” (WWF, 2022) When I saw that, I felt really proud and finally believed that we can truly make a change.

The average weight of a plastic bottle is considered to be 20 grams. If 100 people stop using one plastic bottle every day, we will prevent the use of a total of 2 kilograms of plastic — 20 kilograms in 10 days and 60 kilograms in 30 days. There are many microplastics associated with regular plastic bottles, so we should use glass bottles instead to reduce plastic use and prevent possible microplastics from entering the human body. Straws also play a crucial role in microplastics entering the human body; therefore, we can replace them with reusable metal ones. We must all work together to minimize the use of microplastics. “Governments worldwide are recognizing the need for policy action, with plans for a legally binding international agreement on plastic pollution by 2024.” (UNEA, 2022) Through collective action, even small individual efforts can produce a significant impact, as we see from the numbers.

When it comes to innovation, young people have a huge role to play. Since social media is a big part of almost everyone’s life, we can make announcements through social media and call for the cleaning of İzmir’s beaches with community events and school support. We can also create informative posts on social media. As I mentioned before, even just 100 people can make a big difference, so the power of social media should be used actively and effectively. Young people should also set an example for their communities by using cloth bags and glass bottles.

With the efforts of all young people, we can protect İzmir’s beaches, parks, and cities, reduce microplastic use, and raise environmental awareness. Together, we can make İzmir healthier every day. As Great Leader Mustafa Kemal Atatürk said, “All my hope is in the youth!”

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