

How microplastics in the soil contribute to environmental pollution

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Microplastics in agricultural soil not only degrade the soil quality but can be ingested by living organisms present in the soil. This, in turn, can affect plants and eventually humans. Credit: StockSnap from Pixabay

Plastic, with its unabated global production, is a major and persistent contributor to environmental pollution. In fact, the accumulation of

plastic debris in our environment is only expected to increase in the future. "Microplastics" (MP)—plastic debris GS-out), but surprisingly, they found the lowest MP content in MS rather than RS. Further, they found that among the different shapes of MPs, fragments dominated GS-in; fibers, GS-out and MS; and sheets, RS. Interestingly, all soils except GS-in had a major contribution from sheets, which hinted towards potential internal sources of fragment-type MPs within greenhouses.

Scientists also observed an interesting trend regarding MP size distribution in the [soil samples](#). They found that, unlike GS-out, MS, and RS (which showed MP abundance only for a range of sizes), GS-in showed an increasing abundance for progressively smaller sizes. They attributed this to the absence of "environmental fate effect," causing the removal of MPs by surface-runoff, infiltration, and wind in the GS-in samples. Prof. Kim explains, "Contrary to previous studies which stress on MPs originating mostly from external sources, our study reveals that MPs in [agricultural soil](#) can come from external as well as internal sources, and that their concentration and sizes can be strongly affected by environmental conditions,"

These findings can contribute to an enhanced understanding of the role of agricultural environment as an MP source. Hopefully, assessing potential risks of MPs in agricultural soils and establishing efficient management strategies can help us to reduce the threat from MPs.

More information: Seung-Kyu Kim et al, Abundance and characteristics of microplastics in soils with different agricultural practices: Importance of sources with internal origin and environmental fate, *Journal of Hazardous Materials* (2020). [DOI: 10.1016/j.jhazmat.2020.123997](https://doi.org/10.1016/j.jhazmat.2020.123997)

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