Research content for the short video Food without micro-plastic_ Utopia 2024

IMAGINE: Food without micro-plastic
... Enabled by new compost handling technologies for a healthy life"

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Biogenic waste without plastic as a contaminant

In the future, we will experience a revolution in composting - the era of "plastic-free compost". This ambitious project aims to improve the quality and quantity of compost through a cycle-oriented approach to the individual processes - from collection to pre-processing and to post-processing - to significantly improve the quality and quantity of compost. The central challenge is to to make the removal of the contaminant plastic more efficient in order to minimize the environmental impact and increase the quality of the compost.

Biogenic waste, the basis for high-quality compost, is an essential component of a functioning circular economy. However, the increasing problem of plastics, especially microplastics, poses a growing challenge for the organic cycle. Plastics in compost not only jeopardize soil quality, but also enter our food chain.

Innovative cycle-oriented processes

In this utopia, the amount of plastic in biogenic waste is reduced through innovative, cycle-oriented processes. This includes better pre-treatment for more effective separation of plastics and improved post-treatment methods to further optimize the separation. Traditional shredders and screens in pre-treatment are complemented by advanced technologies and advanced screening and air separation methods are used in post-treatment. A particular focus is on the research and development of sensor-based sorting techniques that enable more precise separation of plastics. This project goes beyond traditional composting and integrates scientific findings in order to optimize the understanding and improving the transformation of plastics during composting.

Research at the site

- ***Chair of Waste Processing Technology and Waste Management***
https://pure.unileoben.ac.at/en/organisations/chair-of-waste-processing-technology-and-waste-management-515