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European research network investigates microplastic pollution in arable soils

Under the direction of the Augsburg geographer Prof. Dr. Peter Fiener, a Europe-wide "EU Innovative Training Network" has been launched to investigate the pollution of agricultural soils with macro- and microplastics. A total of 14 doctoral students at eleven European research institutions are working on the topic.

With the “Innovative Training Networks” programme, the EU would like to support a new generation of innovative young scientists who are grappling with the existing and growing challenges of our time. Their expertise gained from research should bring influence to bear with innovative products, services and ideas for the economy and society.

The aim of the SOPLAS Research Network (Macro and Micro Plastic in Agricultural Soil Systems) is to close existing gaps in knowledge in the context of “plasticulture” and soil systems. In addition, the exchange between research, industry and agriculture is to be improved and ultimately contribute to a more sustainable use of plastics in agriculture in Europe.

The scientists from the fields of geography, agronomy, soil science, biology, microbiology, hydrology, chemistry, economics and life sciences are working with other partners from industry and environmental administration on the following research aspects:

- Adaptation and optimisation of existing methods for quantifying macro- and microplastics in soil,
- improving understanding of the fragmentation and degradation processes of plastic in soil ecosystems,
- investigating the effects of microplastics on soil organisms,
- analysing the discharge pathways of microplastics from agricultural land,
- and investigating the willingness of farmers and consumers to reduce the use of plastic materials in the context of agricultural production.

“Initial estimates suggest that more microplastics can be found in soils around the world than in the oceans. However, the extent of the actual pollution and the ecological and ecotoxicological effects of this are largely unknown. The European doctoral network SOPLAS offers young scientists a fantastic opportunity to discover new things in a still young and highly relevant field of environmental research," says Prof. Dr. Peter Fiener.

The core of the network are the doctoral projects, which are thematically interlinked in order to approach the issues of the topic complex from different perspectives. An exchange programme allows each doctoral student to spend four to six months at one of the partner institutions for a mutual transfer of knowledge. In addition, the doctoral researchers acquire scientific and methodological skills in six one-week training modules. The training programmes are taught and organised by the institutions of the network, which in turn ensures the transfer of knowledge within the network.

The EU Innovative Training Network SOPLAS is being funded by the EU with approximately 3.7 million euros from January 2021 to December 2024.

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