

AWARENESS AND KNOWLEDGE OF FARMERS, WINEGROWERS, AND STUDENTS ON MICROPLASTICS IN AGRICULTURAL SOIL

MISSION OF NETmicroplastic

Deepen our knowledge and foster science-based, multi-dimensional assessment of microplastics in soil

To address the many gaps in our understanding of the sources and pathways of microplastics in agricultural environments, the NETmicroplastic partnership, initiated by the Austrian Institute of Technology (AIT), connects actors and stakeholders from relevant sectors through workshops, webinars and science communication events. A strong knowledge base has been built through tailored surveys of farmers and winegrowers, students, compost facility owners and waste management companies. The data was supplemented by information gathered at agricultural fairs from plastic tool manufacturers and distributors, and from interviews with recycling facilities, to produce a comprehensive regional concept paper.



FARMERS' AND WINEGROWERS' VIEW

In cooperation with the Chamber of Agriculture of Lower Austria, an online survey was conducted on plastic materials and equipment used in agriculture. The majority (85-100%) of respondents (n=97) are aware that film, nets, irrigation pipes, clips and growing sheets contain or are made of plastic, while knowledge of plastic in fertilisers (14%), treated/coated seeds (9%) and plant protection products (36%) is limited.

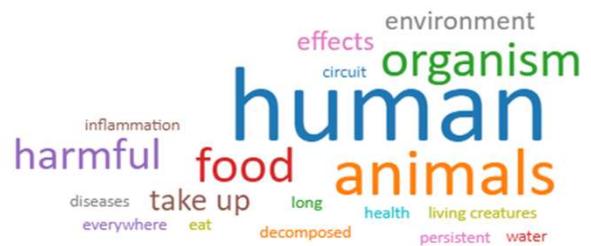
The majority of respondents (87%) would be willing to try alternative products, especially twine for tying vines and straw bales, irrigation products, fertilisers and plant production products, if they were in the same price range and of comparable quality in terms of handling and durability to conventional products. Awareness of certification labels for biodegradable plastic products was low, with only 21% of respondents recognising the TÜV Austria label and only 3.4% having ever heard of the DIN label.



STUDENTS' VIEW

The student survey was conducted 2023 online via the easyfeedback platform and distributed through the Austrian National Union of Students (ÖH), agricultural colleges, and university partners. This email survey among students (n=417) in Lower Austria reveals that students from all fields are well-informed about microplastics. While 98% of students have heard of microplastics, most associate them with water and marine pollution (88%) rather than agriculture (22%), with 16% unaware of their presence in soil. Students' knowledge is highest for microplastics in water bodies and lowest for those in agriculture.

The internet (82%) and television (68%) are the primary sources of information, while scientific journals (37%) and courses (36%) are less influential. The main sources of microplastics in soil, according to respondents, are littering, fertilizer use, and tire wear. A majority (53%) believe microplastics are very harmful. While 65% have heard of bioplastics, 49% think they are less harmful than conventional plastics, though the term "bio" leads to oversimplified positive associations. The survey suggests the need for clearer communication about the different types of plastic, especially bioplastics, and their environmental impact.



Conclusions

Awareness and concern about microplastic pollution are high, though discussion focuses on waterborne microplastics. Knowledge is mainly media-driven, with limited attention to soil contamination. Promoting sustainable plastic use in agriculture requires clear policy guidelines, farmer incentives, and more information on biodegradable products' technical performance in field conditions.

% Farmers using plastic products

