
End of life of biodegradable mulches in soils (BIOMALEG project).

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Abstract

Soils, especially agricultural soils, are thought to be the main reservoir of microplastics in Europe (Lofty et al., 2022). One significant source of MP entering in soils are the plastic mulching on agricultural land. Traditionally, mulches are made of PE, whose particles can contaminate the soil for a long time if the film is not completely removed. Moreover, PE mulches are difficult to recycle because of soil and plant contamination. One alternative is the development and the use of biodegradable mulches. These are designed to be buried with plant residues at the end of the crop. According to the current standard (EN 17033), after two years in the soil, the films should be 90% biodegraded. However, questions remain about their accumulation and their potential impacts on soil life or food. The *BIOMALEG* project aims to assess the microplastic contamination of agricultural soils that have been cultivated under mulch for one or twenty years. As some mulches are biodegradables, the extraction methods of microplastics must be adapted to this polymer type. In addition, squash crops will be used to assess the potential entry of plastic particles into the food. Particles from mulches are found on the pumpkin peel.

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