

Smart farmers

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Soil-biodegradable plastic increases tomato yield

Soil-biodegradable plastic for mulch films can lead to a 50 percent increased tomato yield.

With ecovio M 2351, BASF offers a certified soil-biodegradable plastic for mulch films used in tomato growing. Farmers have been using these certified soil-biodegradable mulch films made of ecovio for more than 6 years since its introduction to the market in 2012.

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With ecovio M 2351, BASF offers a certified soil-biodegradable plastic for mulch films consisting of the biodegradable co-polyester polybutylene adipate terephthalate (PBAT) ecoflex and other biodegradable polymers made from renewable raw materials. - Photo: BASF

Mulch films made of [ecovio M 2351](#) can be ploughed into the soil after mechanical harvest as naturally occurring micro-organisms in the soil recognise the structure of the film as food they can metabolise.

Increased tomato yield

“Moreover, mulch films made of ecovio can lead to an increased tomato yield from 15 to 50 percent, less water consumption and a better weed control with less herbicides compared to bare-soil farming,” says BASF.

Higher resistance to fungal diseases

According to the company, farmers also observed higher resistance of the crop to fungal diseases, an earlier harvest time as well as a better, more homogeneous quality of the crop and a higher Brix index, which refers to the sugar-water ratio in the tomatoes.

Plastic films as food

According to BASF, a study from ETH Zürich, Switzerland, has shown that soil microbes such as bacteria and fungi can use films made from the plastic PBAT as food. The microorganisms take the carbon from the polymer both to generate energy and to form biomass. The remaining end products after biodegradation are CO₂, water and biomass. “This means that PBAT biologically degrades in the soil and does not remain there as microplastic as PE does. Therefore, soil-biodegradable mulch films contribute to a better root development, better plant growth and improved soil quality,” says BASF.



[Hugo Claver](#)

Web editor for Future Farming

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