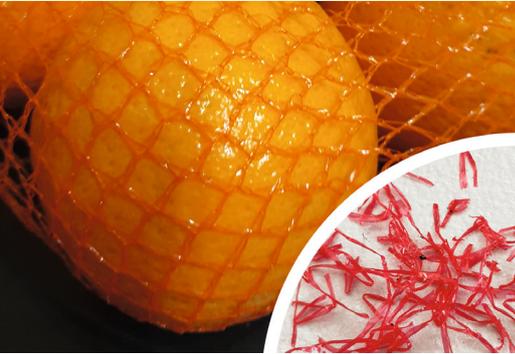


Single-use mesh nets for produce

Minimal benefits and negative environmental impacts



Produce is often packed in plastic mesh nets. Mesh elements can detach and enter the environment via wastewater.

Photo: © FIW 2021

„Single-use produce mesh nets don't actually provide any benefit in protecting or preserving food. But the detaching net particles do pollute the environment.“

Dr.-Ing. Marco Breitbarth, University of Kassel

Fresh produce in supermarkets often comes packaged in single-use mesh nets. During transport and opening, small parts of these nets detach unnoticed. These may enter water bodies and the environment via sewage treatment plants.

To date, produce plastic mesh nets are not part of the legislator's efforts to prevent plastic pollution, for instance by means of the Single-Use Plastics Directive.

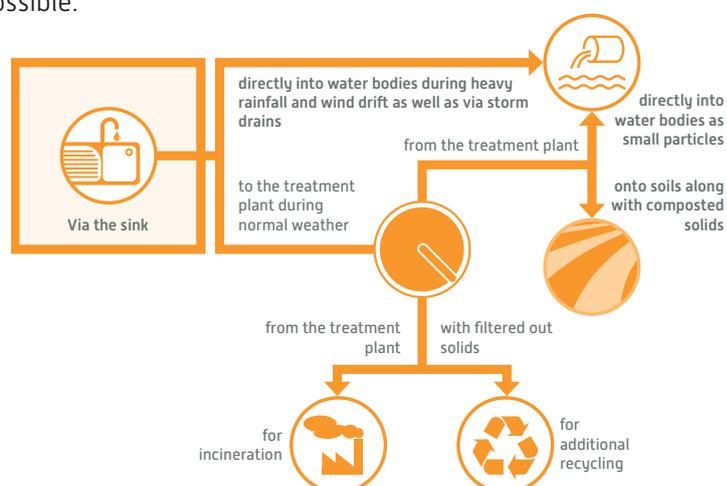
Produce mesh nets in wastewater and the environment

Single-use produce mesh nets are commonly opened on the worktop or above the sink in kitchens, cafeterias and restaurants. In the process, pieces of netting detach unnoticed and get into the wastewater directly or during the cleaning of the countertop via the sink and from there into the sewage treatment plants. In Aachen alone, **12 million units** of plastic mesh thread are counted per year!

The mesh particles account for up to 50% of the particles larger than 1 mm that enter water bodies via the effluent of wastewater treatment plants. The majority, however, ends up in sewage sludge and consequently on fields. Another problem is the direct entry from the sewage system into bodies of water during heavy rainfall.

Four aspects to consider when taking measures against pollution from single-use produce mesh nets

1. Plastic mesh particles enter the effluent of wastewater treatment plants particularly often.
2. A complete elimination of the particles from the environment is not possible.



Fragments of single-use produce mesh nets in wastewater can enter water bodies and soils through several pathways.

Graphic: © Maria Daskalakis/pixabay.com

Research on the prevention of plastics entering wastewater

The interdisciplinary project „Environmental Policy Instruments to Reduce Plastic Pollution of Inland Waters via Drainage Systems“ examines and classifies the occurrence of plastic pieces of at least 1 mm in size in wastewater treatment

plants and street drainage systems in the municipalities of Aachen, Roetgen, Simmerath and Stollberg. Surveys and a laboratory experiment support the analyses. Based on these findings, proposals for environmental policy instruments to prevent these plastic waste inputs are being developed.

- Since the mesh parts usually detach unnoticed, direct measures to stop the pollution are not feasible.
- Experience also shows that providing information to promote correct behavior (such as labels) and even financial incentives only have a limited effect.

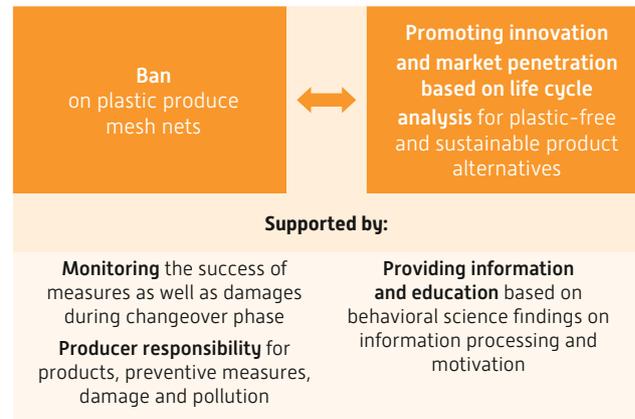
Effective measures against pollution caused by detached elements of produce plastic mesh nets are necessary

Single-use produce mesh bags should simply be eliminated from the market. For this to succeed, the Single-Use Plastics Directive ought to be extended to include a ban on this type of product packaging. However, the directive alone cannot stop the general environmental pollution caused by plastic products. What is needed is a comprehensive plastics strategy that addresses all the players involved.

 Legislators	<ul style="list-style-type: none"> including plastic produce mesh nets in the Single-Use Plastics Directive Developing a plastic program for the basic handling of plastic as a material
 Users	<ul style="list-style-type: none"> Purchasing unpackaged produce Purchasing products with plastic-free, sustainable packaging
 Retail	<ul style="list-style-type: none"> Offering unpackaged produce Offering sustainably packaged fruits and vegetables
 Manufacturers	<ul style="list-style-type: none"> producing plastic-free, sustainable mesh nets and packaging for produce Taking responsibility
 Public sector	<ul style="list-style-type: none"> Preventing input through wastewater into water bodies and soils

Preventing environmental pollution caused by single-use produce mesh nets: Many players are needed; the legislators are laying the groundwork.

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Recommendations for measures against plastic pollution caused by produce mesh nets

Graphic: © Maria Daskalakis

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