

Date of poster presentation: 12 April 2022

The SOTERIA pilot tool as a safety utensil to identify potential hazards from food waste being used as animal feed

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SOTERIA (Safety-Optimizing Tool for Expelled food being Recycled as Ingredients of Animal feed) was a project funded by the WUR Knowledge Base Investment Theme "Connected Circularity". Its aim was to lay the groundwork for the development of a prototype decision-support tool that could help stakeholders identify hazards in food waste that might be diverted into animal feed. These hazards might develop into health risks for both the livestock itself and for the consumer of derived foods. Whereas such recycling and valorisation of waste streams might help fulfil the European Union's goal of reducing food waste. To use of food waste as animal feed, potential hazards of specific food waste items should be reliably identified and avoided. Within the EU, legislation prohibits various unsafe feeds and feeding practices in general. Moreover, other regulations and prohibitions may cover more specific hazards within food from animal origin fed as recycled food, such as against the use of possible sources of spongiform encephalopathy (BSE) and transmissible spongiform encephalopathy (TSE).

For this pilot, data were collected on the different kinds of hazards that might show up in food waste streams. This also included safety requirements for certain specific feed ingredients and hazards such as contaminants, natural toxins, and disease-causing microorganisms, as laid down in regulations. Flow schemes were drafted for the decision procedures on 1) establishing if a prospective ingredient had already been regulated and registered in the EU (ref ?), 2) determining which hazards are considered relevant for a prospective feed ingredient, whether these are affected by processing, and their permissible levels under EU regulations, if applicable.

The outputs of this predictive decision-support tool will highlight potential hazards in food waste and by-products destined for animal feed. This way, users will know whether a food waste or by-product entered by them as a query could pose a risk to a particular production animal species. This will expand the data and risk assessments already in place for several ingredients under the GMP+ initiative. A demonstration will be given of the pilot decision support tool using screenshots.

This complements work done by other WUR departments, such as the Food Waste Monitor (functional) developed by WFBR, measuring actual flows and volumes. The envisaged tool will consider multiple factors, including type of food product, ingredients, contaminants, processing for conversion, hazards for this combination of factors and regulatory limits.

Keywords: Food waste, animal feed, hazard identification, decision support, good practices