

## Thinking outside the box on sustainability

ABOVE—Prototype of a mobile juice pressing unit

The FOX (food processing in a box) project aims to make supply chains more sustainable by creating local processing hubs in containers.

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armers will soon be able to process and pack their fruits and vegetables in specially designed mobile container units under a scheme to create new, sustainable business solutions for Europe's small-scale agricultural producers.

The FOX (food processing in a box) project brings together innovative soft processing technologies so that growers can use their fruit and vegetable surpluses to develop products with greater added value.

Its goal is to create shorter, more sustainable supply chains by adapting large-scale processing technologies to small, flexible mobile container units, thereby helping to cut food waste and reduce the need to transport produce to centralised processing facilities.

It focuses on mild processing technologies, such as low temperature drying and mild preservation techniques, with the aim of optimising product quality and minimising the use of resources and packaging materials.

Launched in June 2019, the four and a half-year FOX project is part of the European Commission's Horizon 2020 programme bringing together 25 partners including universities, research centres, SMEs and .....

## The containers help cut food waste and reduce the need to transport produce to centralised processing facilities

associations from nine European countries.

"While other food processing containers already exist, the ones that are being developed by the FOX project are unique in that they focus on mild and innovative food processing technologies like vacuum spiral filters, pulsed electric field (PEF), ultrasound and others. Thus, the processed fruits and vegetables are of better quality as the processes are more

gentle compared to standard processes," says Dr Kerstin Pasch of the German Institute of Food Technologies (DIL), the project's lead coordinator.

Four types of unit are now being developed based on different technologies and oriented to different types of products and regions. Three of these have already been designed and the prototypes are currently being built, the fourth prototype will not be mobile and focus on modular technologies that can be combined on purpose. The focus in that case is on upcycling of plant-based food side streams by using mild processing. All the prototypes will be available by 2023, when demonstrations will take place in different regions across Europe, denoted Food Circles.

The Food Circles link a specific FOX processing technology with a regional (short) food supply chain. Six European regions have been chosen with important fruit and vegetable production in order to demonstrate the technical, economic and social viability of the FOX approach. These are located in Spain, Czech Republic, Poland, France, Germany and the Netherlands.

Pasch says one of the factors that makes FOX unique is that the project follows a general approach called the "multi-actor approach" set up by the European Commission some years ago, in which end users, such as farmers and consumers, are fully involved during the whole project.

"With FOX we would like to contribute to new business opportunities for small-scale fruit and vegetable producers in Europe," says Pasch. "There is a clear consumer trend toward high-quality food products, locally produced and processed, and this increased during the pandemic. FOX will be a piece in the puzzle on our way to a more resilient and sustainable food system as agreed in the European Green Deal."

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