The increasing demand for a healthy diet calls for an evolution of the food processing chain, with special attention to fresh and organic products. In particular, quality and safety are key characteristics of sustainable development.





FOOD

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#ho-food





Innovative

ready-to-eat

Organic FOOD

FOOD

High pressure process

to increase

the preservation of

INSTITUTE OF AGRICULTURAL AND FOOD BIOTECHNOLOGY STATE RESEARCH INSTITUTE WARSAW POLAND







#Ho-Food project @HO_FOOD_Project

The aim of the HO-FOOD project

The overall goal of the project is to foster the whole fresh vegetable food chain via the development of a new food pasteurization technique, based on the use of high pressure CO₂ at low temperatures, efficient to inactivate microorganisms and enzymes present on the surface and responsible for food spoilage.

The product will be pre-packed before undergoing the pasteurization process, thus avoiding the risk of post-process contamination. By using low temperatures (< 45°C), sensorial and chemical properties will be preserved, resulting in healthy and palatable food while preserving the phytochemical components of organic foods. The beneficial impacts of the new technique in terms of safety, shelf-life duration, nutritional value, sensorial profile and the potential to improve business and environmental sustainability.

Small and medium types of equipment will be designed, set up and validated to be used by local organic farms, SMEs and retail to develop innovative wholesome products, reduce food waste, and energy costs and support the development of a sustainable supply chain.

The schematic of the HO-FOOD project



The first small plant:

- a 4L vessel;
- a 10L pre-heating tank;
- a pressure ratio of 40:1;
- a maximum flow rate of about 5 L/min

Apparatus

The second small plant:

- a 6L vessel;
- a 40L pre-heating tank;
- a pressure ratio of 40:1;
- two different pneumatic pumps;
 a maximum flow rate of 25L/min
 a maximum flow rate of 5L/min



The medium plant:

- a 90L vessel;
- a 160L pre-heating tank;
- a high pressure pump