*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.*

## Achievement

# Innovative High pressure process to increase the preservation of ready-to-eat Organic FOOD

HO FOOD

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Contact:
**Krystian Marszałek, D.Sc.**
phone: +48 22 606 36 00, mobile: +48 695 090 885
fax: +48 22 849 04 26
e-mail: krystian.marszalek@ibprs.pl

DEPARTMENT OF FRUIT AND VEGETABLE
PRODUCT TECHNOLOGY
INSTITUTE OF AGRICULTURAL
AND FOOD BIOTECHNOLOGY
36 Rakowiecka St., 02-532 Warsaw, Poland

superunit CO2 INNOVATION LAB

INSTITUTE OF AGRICULTURAL AND FOOD BIOTECHNOLOGY STATE RESEARCH INSTITUTE
WARSAW POLAND

crea Consiglio per la ricerca in agricoltura e l'analisi dell'economia agraria

**#Ho-Food project** **@HO_FOOD_Project** **#ho-food**

The project entitled "Innovative high pressure process to increase the preservation of "ready to eat" organic food, acronym HO-FOOD, selected under ERA-NET SUSFOOD2 and CORE Organic Cofunds Joint Call 2019: "Towards sustainable and organic food systems" financed by the National Center for Research and Development, contract no. SF-CO / HO-FOOD / 4/2021.

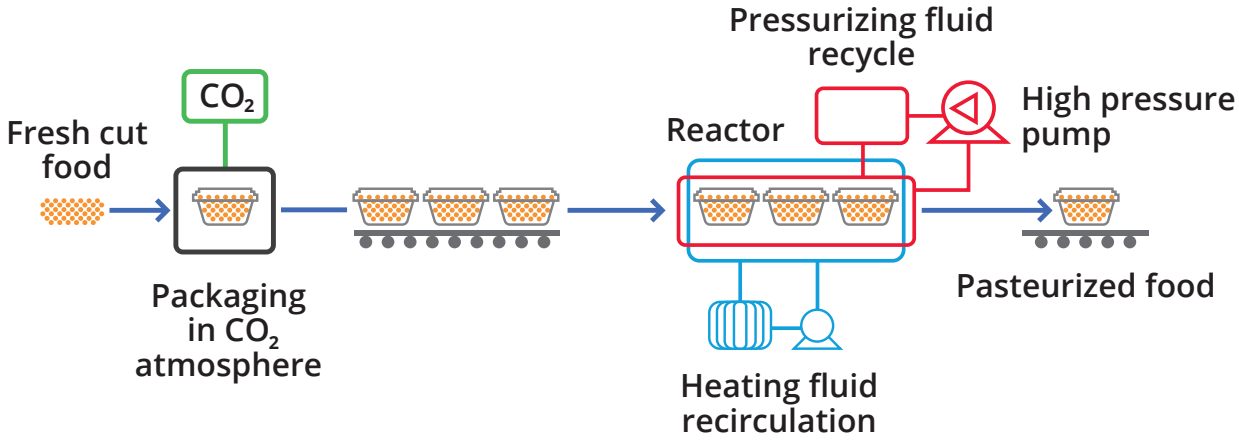
## The aim of the HO-FOOD project

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 $CO_2$ 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.

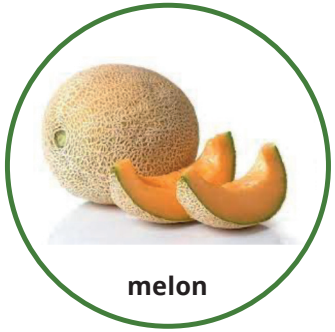
Small and medium types of equipment will be designed, set up and validated to be used by local organic farms, SMEs and retail to develop innovative wholesome products, reduce food waste, and energy costs and support the development of a sustainable supply chain.

## The schematic of the HO-FOOD project




## Food categories


squash


melon


almond

## Apparatus

**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

**The second small plant:**

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

**The medium plant:**

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