

Sustainable&Healthy

Fruit and vegetable processing industry generates a number of by-products (eg. Press cake/skins/seeds) that contain bioactive compounds. Despite its valuable content, most of these by-products are discarded as waste. This project aims to develop innovative sustainable technologies throughout the food chain (extraction-extract stabilization-added value food products) for by-products from fruit and vegetable industry.

Supercritical fluids extraction (SFE) is a green technology as it does not require organic solvent. In this project, optimization and tailoring of SFE of by-products from fruit and vegetables will be done to extract phenols and bioactive oils. The extracts will be stabilized in a powder form using particles from gas saturated solutions and concentrated powder form technologies. This will improve the sustainability as extracts can be stored at ambient temperature and the bioactive functionality is preserved. It also facilitates introduction and use of bioactive extracts in added value products.

Stabilized bioactive extracts will be used to develop healthy food products as emulsions or dried fruits. To attain the sustainability approach low energy processing, osmotic drying and non-thermal emulsification, will be adapted. To reduce energy consumption during storage and avoid reduction in bioactive functionality, focus will lay on developing added value products that are stable at room temperature.

The main stakeholders for this project are: (i) food producers that use berries as raw material e.g. juice manufacturers, (ii) manufacturers of emulsion based products (low-fat spread, soups, smoothies) and (iii) food producers that use dried fruits in their products (breakfast cereals, yoghurt,ice cream). To establish that the results reach the identified target groups workshops and seminars will be held throughout the project. Close collaboration with food federations e.g. SPES comprising 12 European Food and Drink Federations will be done to disseminate the results to all parts of Europe.