

HORTIVALOR - Valorisation of organic market garden products using emerging technologies for the treatment of vegetable juices and creams

Summary

The primary objective of this pilot project is to develop organic juices and creams based on fruit and garden produce which are innovative, safe and have high functional value.

High hydrostatic pressure (HHP) technology will be applied in the development of these innovative products, as an alternative method to thermal pasteurisation. This will enable the juices and creams to be sterilised and preserved, and facilitate maintenance of high levels of bioaccessible bioactive compounds.

The development of these products aims to support small and medium-sized enterprises in the Catalan agricultural sector, recovering and providing an outlet for the production of organic crops which cannot be marketed as a result of either surplus production or a failure to meet retail quality standards. This action will help reduce the ecological footprint of fruit and vegetables, thereby contributing to the sustainability of the organic production system.

The juices and creams developed will have a high functional value, thanks to their high levels of bioaccessible bioactive compounds. These high value-added products can help boost the competitiveness of companies in the sector, in a highly competitive and expanding market for organic products.

Objectives

The main objective of the project is to develop organic juices and creams based on fruit and garden produce, which are innovative, safe and have high functional value. To this end, raw material with the optimal properties for the case studies will be identified, measures for monitoring and improving production will be proposed, a high hydrostatic pressure treatment will be validated, and new fruit, vegetable and whey juices and creams will be developed, which will be classified to ensure their safety and high level of bioactive compounds. Finally, the results will be disseminated to small and medium-sized enterprises and the scientific community.

Description of the measures planned in the project

The project is divided into the following activities in order to achieve its objective:

Activity 1. Study of the product range and selection of case studies.

Activity 2. Identification of the critical points in the process and potential for improvement.

Activity 3. *Challenge test* to validate the HHP treatment.

Activity 4. Characterisation of innovative products.

- 4.1. Study of shelf life.

- 4.2. Sensory characterisation.
- 4.3. Characterisation of bioactive compound content.
- 4.4. Characterisation of the bioavailability of bioactive compounds.

Activity 5. Dissemination measures

Expected results and practical recommendations

Implementation of the pilot project will lead to the development of two juices, a cream and a juice or cream with whey as case studies that can be used as models in the development of similar products. Small and medium-sized companies in the sector will thereby be provided with the tools needed to develop innovative products. This will have an impact on productivity and sustainability at various levels in the fruit and vegetable sector, and among processing companies and cheese companies in Catalonia.

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Subject area(s) of application

- Agricultural production system
- Agricultural practice
- Agricultural equipment and machinery
- Livestock farming and animal welfare
- Vegetable production and horticulture
- Landscape / Territorial management
- Pest and disease control
- Fertilisation and nutrient management
- Soil management
- Genetic resources
- Forestry
- Water management

<input type="checkbox"/>	Climate and Climate Change
<input type="checkbox"/>	Energy management
<input checked="" type="checkbox"/>	Waste and by-product management
<input type="checkbox"/>	Biodiversity and environmental management
<input checked="" type="checkbox"/>	Food quality/processing and nutrition
<input type="checkbox"/>	Supply chain, marketing and consumption
<input type="checkbox"/>	Competitiveness and agricultural and forestry diversification
<input type="checkbox"/>	General

Geographical area(s) of application

PROVINCE(S)	REGION(S)
Girona, Barcelona, Tarragona and Lleida	

Dissemination of the project (publications, conferences, multimedia...)

The Communication Plan of this pilot project involves all the members of the Operational Group, and covers the following activities:

1. Presentation of the project, its objectives and monitoring of the expected results through the digital media of all members of the Operational Group.
2. Two PATT technical seminars.
3. Informative article in the newspaper *ARA*, with which Biodrissa has an agreement in place for the publication of news items about its projects.
4. Presentation of the project, follow-up and results at the general assemblies of the Èxit Girona, Gourmet and FoodService Clusters.
5. Dissemination seminars for the sector organised and promoted by Ecoregió.
6. Publication of the results in scientific journals in the field of Food Science and Technology.
7. Two dissemination seminars for trainees.
8. Production of a short information video about the project, explaining the main objectives and the results obtained.
9. Presentation of the project on the radio programme *Ens patina l'embrague*, broadcast live on 97.7 FM on Ràdio Salt and on other stations in the Girona region.

Project website

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More information on the project

PROJECT DATES	TOTAL BUDGET
Start date (month-year): July 2020	Total budget: €142,722.00
Completion date (month-year):	DARP funding: €58,327.59
Current status: Underway	EU funding: €44,001.51
	Own funding: €40,392.90

With funding from:

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Order ARP/133/2017 of 21 June, approving the regulatory bases for grants for cooperation for innovation by promoting the creation of European Association for Innovation operational groups in the areas of agricultural productivity and sustainability and the execution of innovative pilot projects by those groups, and Resolution ARP/1531/2019, of 28 May, announcing the call for the grant.



Generalitat de Catalunya
**Departament d'Agricultura,
Ramaderia, Pesca i Alimentació**



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de Desenvolupament Rural:**
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