



LIFECITRUS - Recycling of citrus industry scrap into natural additives for food industries

LIFE14 ENV/ES/000326

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Project description:

Background

European citrus fruits production is concentrated in the Mediterranean region. Spain represents nearly 60% of the EU's total production and Italy around 30%; the remaining 10% comes from mainly Cyprus, Greece and Portugal. Spanish production is concentrated in the regions of Murcia and Valencia. The process of obtaining the desired fruit generates a significant amount of waste, mainly low-quality fruits and those parts with little commercial value. At best this waste matter is used as animal feed, but adequate ways to manage the huge volume of citrus waste are required.

Objectives

The LIFECITRUS project aims to demonstrate on a semi-industrial scale an innovative industrial process for obtaining natural food ingredients from discarded parts of citrus fruits (lemon, orange, grapefruit and tangerine). The final product will be a natural gelling ingredient to be used in the food industry. The gelling agents obtained in the proposed process react in the absence of sugar unlike usual additives.

The process is based on physical operations only, with no need for dissolvent or chemical agent. It allows for the effective recovery of hesperidin, essential oils, sugars etc. with minimum water consumption. It is expected to reduce waste by 80% in terms of mass and volume. This new process will be installed in Molina De Segura (Murcia) in a processing plant owned by the project beneficiary that will be enlarged and up-graded to semi-industrial scale.

The project will also organise training courses on the operation of the semi-industrial plant, mainly focused on agro-food industries technicians.

Finally, the project will assess the suitability of this process for the residues of other fruits and those from vegetable processing industries.

Expected results:

- Enlarged CTC pilot plant optimally performing innovative process on a semi-industrial scale;
- Quantified and qualified demonstration of the proposed process and the obtained ingredients – more than 10 000 kg of residue processed with a waste reduction capacity of 80% in volume. A minimum of 12 different foodstuffs will be tested, and some samples of each product, ingredient and proportion will be characterised;
- Quantified demonstration of the economical balance of the process and its feasibility;
- At least 50 regional companies belonging to the target sectors directly contacted and informed. At least 20 of these companies will participate in workshops and at least 12 of these companies will perform test or demonstration sessions at the pilot plant; and
- At least 30 technicians, students, graduates and scientific and technical environment professionals participated in the three calls of the scheduled training course.

Results

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Environmental issues addressed:

Themes

Waste - Waste use

Waste - Agricultural waste

Keywords

waste use, organic waste

Target EU Legislation

- Waste
- Directive 75/442/EEC -"Waste framework directive" (15.07.1975)

Natura 2000 sites

Not applicable

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Beneficiaries:

Coordinator	Centro Tecnológico Nacional de la Conserva y la Alimentación
Type of organisation	NGO-Foundation
Description	The National Technological Center of Canning and Food (CTC), a non-profit organisation, is recognised by the Spanish government as an innovation and technological centre. Currently, it provides basic infrastructure assistance and technological development services for enterprises in the agro-food sector.
Partners	AGROFOOD(Fundación Clúster Agroalimentario de la Región de Murcia), Spain AMC(AMC Innova Juice and Drinks, S.L.), Spain AITA(Associazione Italiana di Tecnologia Alimentare), Italy

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Administrative data:

Project reference	LIFE14 ENV/ES/000326
Duration	16-SEP-2015 to 31-AUG -2018
Total budget	886,397.00 €
EU contribution	531,836.00 €
Project location	Murcia(España) Piemonte(Italia) Valle d'Aosta(Italia) Liguria(Italia) Lombardia(Italia) Trentino-Alto Adige(Italia) Veneto(Italia) Friuli-Venezia Giulia(Italia) Emilia-Romagna(Italia) Toscana(Italia) Umbria(Italia) Marche(Italia) Lazio(Italia) Campania(Italia) Abruzzo(Italia) Molise(Italia) Puglia(Italia) Basilicata(Italia) Calabria(Italia) Sicilia(Italia) Sardegna(Italia)

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Leaflet	Title: "Reciclado de los subproductos de la industria de cítricos en aditivos naturales para la industria alimentaria" (204 KB) Editor: LIFE Citrus No of pages: 1
Newsletter	Title: "Newsletter 2 -1° Semestre 2016: Reciclado de los subproductos de la industria de cítricos en aditivos naturales para la industria alimentaria" (228 KB) Year: 2016 Editor: CTC No of pages: 1
Project web site	Project's website
Slides Presentation	Title: "Valorization of citrus industry by products. Natural gelling agent. Application in vegetable based filling for bakery industry" (2.5 MB) Author: Ana Belén Morales Moreno Year: 2016 Editor: CTC No of pages: 41

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