Thematic area

Agro-food Value Chain

Section II

Topic 3.1 - Valorising food products from traditional Mediterranean diet

Budget

1.292.780,00 €

Duration

36 months

Coordinating country

Spain

Participating countries/ 6

Partners/ 9

Project

35/SAFFROMFOOD

Valorisation of saffron and its floral by-products as sustainable innovative sources for the development of high added-value food products

Context

The bioactive compounds of saffron (crocus sativus, L) spice and its floral by-products (mainly crocin, safranal and flavonoids) have potential health benefits particularly regarding cognitive function and mental health. There is a lack of knowledge on their use as a source of bioactive extracts for the development of functional food ingredients. The main objective of the project is to develop new innovative and added-value products from saffron and its floral by-products, improving the saffron quality in the Mediterranean area and turning it into a highly profitable botanical source.

Objectives

Specific project objectives and the approach to achieve them are:

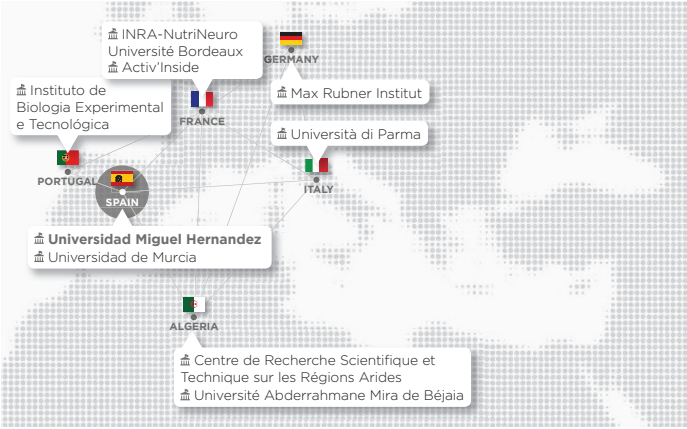
1. to produce high quality saffron and floral by-products optimizing the cultivation and processing conditions, and their characterization, with contribution of saffron producers and SMEs in Algeria and Spain.

2. to develop and characterize bioactive extracts and ingredients from saffron and its floral by-products improving functionality and stability, using up-to-date and innovative technologies with involvement of the industry.

3. to develop innovative healthier food products from the saffron ingredients through traditional recipes, preserving the nutritional and organoleptic quality.

4. to investigate the antimicrobial and prebiotic potential of the extracts, and their cardiometabolic prospects “in vitro” and “in vivo”.

5. to test the effect of the bioactive extracts on mood and cognition in humans.



Coordinating institution

Universidad Miguel Hernández de Elche – UMH

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Expected impacts

The multidisciplinary science-based outputs, technological improvements, and applications of saffron bioactive extracts and ingredients with defined authenticity and functional composition, will lead to new functional foods from the traditional Mediterranean diet, contributing to improve the health of the population. At the same time, saffron production will become more sustainable and profitable taking advantage of a high-value biomass. This will also foster the employment and international market in this industrial sector.

230.000 flowers

350kg
of wasted petals
contain up to 3% of bioactive compounds such as carotenoids, flavonoids and terpenes

Enhancement of the entire chain of saffron and its by-products

- Improvement of the sustainability of the saffron production and development of a recovery chain for waste by-products
- Study of the bioavailability and metabolism of saffron-derived bioactive compounds
- Development of new functional products such as extracts, ingredients and rich bioactive compounds products from saffron with particular attention to nutritional and organoleptic quality and shelf-life.

WORK PACKAGES
Bioactive saffron extracts and processing by-products
Food supplements based on saffron and on its processing by-products
Functional foods rich in bioactive and nourishing compounds coming from saffron and its processing by-products