



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

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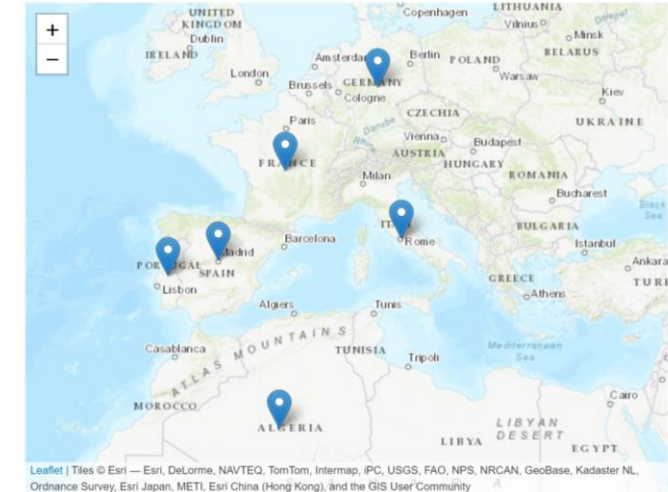
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(2021- 2024)

Partners

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Introduction

(2021- 2024)

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**.



The valorization of saffron and its floral by-products by developing functional ingredients and food products backed by robust scientific evidence



*“Let thy food be thy medicine
and medicine be thy food”*

Objectives and working plan

(2021- 2024)

1. To **produce high quality saffron** and floral by-products optimizing **the cultivation and processing** conditions, with contribution of saffron producers and SMEs in Algeria and Spain.
 - Morphological and physiological study different pedo-**climatic** conditions
 - **Irrigation** management's control of saffron cultivation
 - **Modelling** linking saffron production with different environmental parameters
 - **Storage** of saffron and floral by-products
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.
 - Full **characterization** (nutritional components and phytochemicals)
 - To develop effective **green strategies** to isolate bioactive extracts and fractions
 - To develop adequate **delivery systems** for solubility and stability improvement



Objectives and working plan

(2021- 2024)

3. To develop innovative healthier **food products** from the saffron ingredients through **traditional recipes**, preserving the **nutritional and organoleptic quality**.
- To design and elaborate **vegetal and dairy drinks** formulated with the incorporation of saffron derived ingredients
 - To design and elaborate **bakery products** formulated with the incorporation with the saffron derived ingredients
 - To characterize the **nutritional and organoleptic properties** of the developed vegetal, dairy and bakery food products
 - To develop **dietary supplements** with saffron derived ingredients and their applications
 - To develop the best **packaging** for the different type-foods
 - To study of **shelf life** characteristics of the developed products enriched in saffron bioactives



Objectives and working plan

4. To investigate the **antimicrobial and prebiotic potential** of the extracts, and their cardiometabolic prospects.
 - Characterization of the **antioxidant capacity** of extracts and ingredients rich in bioactive compounds
 - To assess of the in vitro **bioactivity and bioavailability** of saffron bioactives

5. To test the effect of the bioactive extracts on **mood and cognition** in humans.
 - Evaluation of the **bioavailability** of saffom derived **metabolites**
 - Assessment of the beneficial effects on **cognitive performance** and **perceived stress** during a stressful cognitive demanding task in **healthy subjects**



THANK YOU



<https://mel.cgiar.org/projects/saffromfood>



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