

***Agrio et Emulsio* – New vinegar products development**

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The project ***Agrio et Emulsio*** (POCI-01-0145-FEDER-023583) presents a proposal in Food Design & Technology, in the areas of vinegar products (*Agrio*) and food emulsions (*Emulsio*). Combines its technical features and food pairing ability, with mediterranean traditions, *Nouvelle Cuisine*, concerns about food in health and unique location of ESAS in Ribatejo, where the Portuguese's main vinegar and food emulsions industries are located.

Portugal is a small producer with about 2% of the EU vinegar production and with no noble vinegar manufacturing traditions, but the upward trend in demand and the dietary value of this low-calorie and functional food creates opportunities for innovation and growth. On the *Agrio* line, which started in 2009, at ESAS, with the students' participation, vinegar technological ability (solvent, acidifying, extractive, preservative, fermentative, etc.) enables the development of multiple products, by fermentative and non-fermentative prototyping. Throughout this project, in ESAS, unusual non-fermentative techniques in vinegar industry were created or adapted, such as multiple flavoring (vinegars and vinaigrettes, marinades), acid preserving of sweet fruits in vinegar (fresh pack bittersweet pickles), development of fruity cream mustards with innovative colors and flavors, vinegar glaze jams, chutneys, etc, which profile into the gourmet, diet or vegan/veggie markets, through sustainable methodologies that value regional raw materials and generates nobility, value and technical-scientific knowledge. At present, a spirit vinegar and a distilled vinegar of vinous origin are also on experimental development.

Process assays articulate technical, analytical (physical-chemical, rheological, microbiological), sensory tests and stability tests. The project cycle ends with the production of prototypes in laboratory or small-scale pilot line, simultaneous with: demonstration of their quality, safety and shelf life; definition of strategies of marketing and also food pairing & food design, predicting a future scale-up to industrial production and product entry on the market.

Prototypes are designed to provide innovation and convenience - long shelf-life and multiple food applications in industry/restoration - aiming the preservation of expensive/seasonal/surplus raw materials and valorization of byproducts, ensuring, simultaneously, good practices and food safety.

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