

TITLE OF THE PROJECT: Quality and stability of products elaborated based on fruit minimally transformed with new processing methods.

The Mediterranean Diet, a valuable cultural inheritance that from the simplicity and the variety has given place to a balanced combination of the food in Spain, is in regression due to the major interest of the consumers for more comfortable / practical products, but that are in the habit of being less healthy. The fresh fruit is considered by some consumers as little comfortable, in addition, it is seasonal, and some years remain excessive that are not processed. Nowadays, some segments of population (for example, you present with problems of allergy, children, elders, etc.) they have food specific needs, as for the consumption of fruits and vegetables, which demand special attention. For all these reasons, one must increase the variety of the offer in order that the consumers bet of form decided on strategies as that of " 5 a day ".

Nowadays, the industry is interested for new products derived from the fruit to cover these new so demanding markets. This increasing, interest so much of the consumers, since of the industry, for having more comfortable and healthy food, it motivates the investigation and application of alternative and / or emergent technologies of conservation, which, in combination with suitable systems of packaging, constitute an improvement in the quality of the food with respect of those obtained by means of the thermal conventional treatments of conservation. As a general rule, the application of moderate conditions of processing is in the habit of inactivating completely, not neither to the microorganisms, nor to the enzymes, which it makes necessary to direct the investigation to the combination of technologies and / or to the formulation of the products before obtaining an extensive implementation of these technologies of conservation.

The aim of this project is to study the viability of the application in food of new technologies of conservation with a low level of implantation in the European industry. The technologies object of investigation are sustainable processes that might substitute, profitably, the thermal traditional technologies, or the chemical additives, and that, in the last years, have developed with industrial prototypes. The application of these technologies will allow to clean / stabilize two products elaborated based on fruit, to increase the offer of new products based on processed fruit and to help to improve the health and the well-being of the consumers.

For it,

1. There will be investigated the ideal conditions of application of both emergent technologies selected (high hydrostatic pressure (HHP) and quick-dry-system (QDS)) to obtain two products based on fruit processed with different useful life (fruit juice and desiccated fruit), so that their application allows to obtain products with sensory and nutritional properties, which approach those of the no processed fruit;

2. There will be investigated the varieties of apple, which allow to obtain ideal results with the selected technologies;
3. The formulations and processes will be optimized according to the results that are obtained along the project; and
4. There will be evaluated the principal parameters of sensory, nutritional quality and of food safety of the developed products. The results of the project will allow to lay the foundations scientific to put at the disposal of the consumers two products, minimally processed, based on fruit, which they answer to the exigency of having food of high quality, comfortable, innovative, sure and with flavor and flavor natives. It is tried to investigate and, therefore, to generate a scientific detailed knowledge of the effect of both technologies selected in the products developed based on fruit on the vitamins C, B3 and E, sugars (fructose), total polyphenols, antioxidant activity, scavenging activity of free radicals; and polisaccharide constituents of the fibber (pectins, hemicelluloses and cellulose). Also, on the activity of the enzymes polygalacturonase (PG) and pectinmethylesterase (PME), and of the enzymes polyphenol oxydase (PPO) and peroxydase (POD). At the same time, there will be generated knowledge of the effect of the treatments in the sensory properties and on the response of the microorganisms to these technologies in this concrete type of products. This food will be able to be considered to be excellent options to favour the consumption of fruit. To adjust to these demands without compromising the food safety, the application of emergent / soft technologies of conservation alternatives to the thermal conventional ones finds a suitable frame of application in the present offer of project.