

ValNuts - Valuation of hard shell nuts (FSCR)

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The hard-shell nuts sector (FSCR) plays a fundamental role in the sustainability of the economies of the rural regions in Portugal. The characterization of varieties, as well as the identification of factors and possible preventive activities could avoid the appearance of defects in these fruits (e.g. bitterness), and also value these fruits for different purposes, such as cooking, cosmetics and pharmaceutical industry. The lack of knowledge by producers as to the best processes for the conservation of nuts can lead to considerable economic losses, leading to significant defects (e.g. rancid). Also, industrial producers face serious problems when they export FSCRs to tropical countries (which are important customers) as they have to deal with environments with high humidity, high temperatures, and long transport times. Hence, this project aims to enhance the production of hard-shell nuts in Portugal, with a view to boosting its production, increasing its economic value and promoting the export capacity of FSCR producers.

The project was designed to study almonds, hazelnuts and walnuts, and it is divided in three stages: promotion and characterization of nuts varieties existent in Portugal, post-harvest technologies - process and product innovation, and transfer of knowledge and dissemination of results. The first stage intends to determine the most important varieties commercialize in Portugal using a survey applied to producers. After the identification, these varieties are characterized considering the physicochemical, biological and sensorial properties. Establishment of good practices to be followed by FSCR producers and their effect on fruit quality are also other tasks, following some producers through the creation of working groups. The second stage is constituted by five activities: (1) Characterization of the storage and distribution conditions that FSCRs in shell (walnut), kernel (hazelnut and almond) and laminates (almond) are subject during national and European commercialization and determination of the main problems; (2) Characterization of fluvial transport conditions to which kernel and almond laminates are subjected when exported to tropical countries; (3) Characterization of the main physical, chemical, biological and sensorial agents responsible for the losses of quality of the almond exported to tropical countries; (4) Evaluation of the behavior and adaptability to the environmental conditions of transport to tropical countries of several varieties of almond; (5) Implementation of effective post-harvest technologies to promote the export of FSCRs to Europe and tropical countries. The last stage wants to create some focal groups, a webpage of the project, as well as to develop of informative brochures, seminars and publications.

The obtained results will be most valuable to produce relevant technical and scientific outputs as well as directives that could be used by the producers and industrials to improve the hard-shell nuts' sector.