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Valorization of low value fisheries species in Sicily (Italy), by realization of functional food: a case study of high technological readiness level

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Abstract

The growing demand for fish products of safe and local origin and the need to reduce fishing on target species, requires continuous diversification in the seafood industry, to meet the needs of consumers. One solution is represented by the use of surplus species of local fisheries, of little commercial value and often ignored by the consumer, which, if subjected to new preservation and processing methodologies, allow to create new product categories, which open up new market opportunities. In our study, we setup and applied, on some local surplus fisheries species from western Sicily, some processing technologies, aimed to valorize and extend the shelf life of fish products: the cold smoking with addition of natural antioxidants and the salting-drying, with low salt content. The cold smoking process was applied on fillets of the species *Coryphaena hippurus*, a surplus seasonal species. The process demonstrated to be effective in extend the shelf-life and ameliorate some sensorial aspects of quality. The salting-drying process was applied on the species *Spicara smaris*, after the setup of a protocol aimed to reduce the sodium content of the processed product. For this purpose, the sodium chloride was partially replaced with potassium chloride, during the salting phase. The partial replacement seems to be the best way to reduce the sodium content; both salts, in fact, have similar properties, the potassium, in addition, does not seem to be correlated with the onset of hypertension and cardiovascular diseases like the sodium. This allows to obtain a product which can be considered a functional food, intended also for consumers that suffer of hypertension. Both processes are in advanced phase of technological readiness level (TRL8) since have been tested also in a real environment through involvement of producers and consumers in the research project.

Projects: "Biotechnologie Marine vecteur d'innovation et qualité" BioVecQ - I EVP- 2007-2013 Cod PS1.3_08; Strategic Use of Competitiveness towards Consolidating the Economic- Sustainability of the european Seafood Sector SUCCESS- HORIZON 2020- Grant n° 635188

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