

Article ID

sciforum-048534

Title

By-products to prolong the shelf life of ready-to-cook fish: the case-study of cod sticks breaded with dried olive paste or pomegranate peel powder.

Authors

Olimpia Panza (olimpia.panza@unifg.it)

Amalia Conte (amalia.conte@unifg.it) *

Matteo Alessandro Del Nobile (matteo.delnobile@unifg.it)

¹ University of Foggia, via Napoli 25- 71121 Foggia

Abstract

In recent years food sector is focused on the potential of recycling fruit and vegetable by-products to reduce food waste. The by-products contain valuable compounds, especially phenolic substances, and therefore can be used to fortify food or to prolong the shelf life. In this context, two case-studies are presented, one dealing with dried olive paste, as by-products of oil production process, and the other one dealing with pomegranate peel powder as by-products of fruit. Both by-products were adopted as breadings of ready-to-cook cod sticks. To the aim, shelf-life tests were carried out on all breaded cod sticks, during a proper refrigerated storage period at 4 °C. To verify the effectiveness of selected by-products on fish shelf life, microbiological quality and sensory properties were monitored. In addition, pH and chemical quality (total phenols, flavonoids and antioxidant activity) of both control and active samples were also assessed.

Results confirmed that all active samples, due to the by-products addition, showed higher content of phenols and flavonoids and greater antioxidant activity than the control fish. Furthermore, both types of active breadings led to delay microbial growth, without affecting the sensory properties; rather, the presence of by-products as fish breadings helped to slow down the sensory decline during the refrigerated storage. While samples with olive paste recorded 3 days of shelf life prolongation compared to the control fish, sticks breaded with pomegranate peel powder recorded more than 7 days of shelf life prolongation respect to the control sample.

Keywords

sustainable approach, by-products, fish shelf life, natural preservatives