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## Microencapsulated fish oil as strategy for $\omega$ -3 enrichment pan-fried meat products: Oxidative status and organoleptic quality

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**E** nrichment of convenience pan-fried meat products with fish oil is a promising strategy to increase the intake of  $\omega$ -3 fatty acids. Susceptibility to oxidation of  $\omega$ -3 could influence quality of enriched food. So, the main challenge of enrichment of food in  $\omega$ -3 is the control of the oxidation from manufacture to domestic cooking. Microencapsulation has been proved to protect  $\omega$ -3 from oxidation. This work compares the effect of microencapsulated fish oil as method of  $\omega$ -3 enrichment with the usual technique (direct addition of bulk fish oil) on some oxidative and sensory quality properties in convenience pan-fried meat products. Three batches of chicken nuggets were prepared: control (C), enriched with bulk fish oil (BFO) and enriched with multilayered fish oil microcapsules prepared with lecithin-chitosan emulsions (MFO). Lipid secondary oxidation products (TBARs) were higher in BFO (1.83 mg MDA/kg) than in MFO (0.53 mg MDA/kg) and C (0.28 mg MDA/kg). As for aldehyde volatile compounds selected as oxidation markers, 2, 4-decadienal was only detected in enriched products, with higher amounts in BFO (0.21 x10<sup>7</sup> AU) than in MFO (0.11 x10<sup>7</sup> AU). In addition, butanal was also detected in BFO but not in MFO. Panelists perceived higher juiciness and saltiness and lower meat flavor in BFO than in the other batches. No organoleptic differences were detected between MFO and C. Thus, enrichment of chicken nuggets in  $\omega$ -3 with fish oil multilayered microcapsules can be successfully achieved maintaining quality characteristics.

## **Biography**

Estefania Jimenez-Martin is a PhD student working at the University of Extremadura, Department of Food Science and Technology. She obtained her Veterinary degree from the University of Extremadura in 2017. Prior to beginning the PhD program, she received her Master's degree in Meat Science and Technology. Her master thesis versed on analyzing the effect of the supplementation of pig diets with conjugated linoleic acid on quality of pork meat. Her current work focuses on the use of microencapsulation by spray-drying as a strategy to protect  $\omega$ -3 fatty acids in enriched products, preserving nutritional, technological, and organoleptic quality.

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