

## **Poster 43 Analysis of sensory effects of chitosan-based coatings applied on frozen salmon over six-months' storage**

Silva, P<sup>1</sup>., Soares<sup>1</sup>, Bourbon, Ana I.<sup>1</sup> N., Barbosa<sup>2,3</sup>, C., Pinheiro, R<sup>1,2</sup>.  
Vicente, A. A<sup>1</sup>.

<sup>1</sup>*Centre for Biological Engineering, University of Minho, Campus de Gualtar, 4710-057, Braga, Portugal*

<sup>2</sup>*IPVC-ESTG (Polytechnic Institute of Viana do Castelo – Escola Superior de Tecnologia e Gestão), Viana do Castelo, Portugal*

<sup>3</sup>*LAQV-REQUIMTE, Faculty of Pharmacy, University of Porto, Porto, Portugal*

Due to an increase in fish consumption over the past years, in combination with the perishable nature of fish, the fish industry has given an added focus on the improvement of the currently used fish preservation techniques. Chitosan coatings may add improvements to the traditional water glazing, namely in physical and anti-microbial protection, allowing for shelf life extension.

This work was meant to determine the influence of chitosan coatings in the organoleptic characteristics of salmon.

The effects of chitosan coatings on microbiological (Total Viable Count – TVC) and chemical (Total Volatile Base Nitrogen – TVB-N) parameters were also assessed.

A 15 g/L solution of chitosan was used to coat frozen salmon samples, and its effect on the sensory properties of Atlantic salmon (*Salmo salar*) was compared with uncoated and water glazed samples, and was studied over six months of storage at -18 °C.

Samples were dipped in the chitosan solution at 8 °C during 10 s; water glazing was applied at 0.5 °C, with a dipping time of 40 s.

Textural properties were evaluated through Texture Profile Analysis (TPA), while sensory properties of frozen, frozen+thawed and frozen+thawed+cooked samples were assessed by a trained panel of judges.

Microbiological stability was assessed through TVC (ISO 4833-1:2013 standard), and chemical stability was determined as TVB-N (NP 2930:2009 standard).

TVC analysis showed an anti-microbial effect of chitosan in the coated samples (reduction of the number of microorganisms), while TVB-N results showed to remain stable during the experiment. Textural results from the TPA analysis showed no significant differences between different coatings.

Results of the trained panel indicated that for frozen samples chitosan was the preferred choice, while no significant differences existed between chitosan-coated and glazed samples in thawed and cooked samples. Flavor diffusion from the chitosan coating to the samples was assessed by Principal Component Analysis and no correlation between coating type and sample flavor could be established, meaning that no chitosan flavor was detected by the panellists.