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# ABSTRACT BOOK POSTERS

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## Evaluation of nitrite reduction on the microbial safety of cooked smoked pork chouriço

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### **Aim:**

Nitrite is a preservative used worldwide, particularly in the meat industry, to guarantee certain organoleptic and microbiological properties of delicatessen meat products, acting as a hurdle to pathogenic bacteria and protecting against bacterial spoilage. Cooked smoked pork *chouriço* contains nitrite in its formulation, which raises some concerns regarding the consumer's health, and therefore the European legislation on the use of nitrites has been modified, where the maximum limit of 150 mg/kg of meat has been reduced to 80 mg/kg of meat in the EU. The present study focuses on the assessment of the impact of nitrite reduction on the microbiological safety and organoleptic properties of pork *chouriço*.

### **Method:**

The determination of total viable counts, lactic acid bacteria, *Enterobacteriaceae*, *Escherichia coli* and pathogenic bacteria (*Listeria monocytogenes*, *Salmonella* and spores of sulfite-reducing *Clostridium*) was performed according to ISO standards in pork *chouriço* produced with different nitrite concentrations. Organoleptic characteristics, such as colour,  $a_w$ , pH and texture were evaluated at times 0 days, 30 days and 60 days of storage under vacuum at room temperature.

### **Results:**

Although the nitrite concentration has been reduced to almost half of the usual concentration, the microbiological results show that the product remains stable in 60 days of vacuum storage at room temperature and complies with the legal limits, below  $1.0E+05$  CFU/g for total viable counts and lactic acid bacteria. Regarding organoleptic properties, due to the heterogeneity of the product, the results show some high standard deviation, especially in colour and texture, but both  $a_w$  and pH are in line with the standard values obtained in the products.

### **Conclusion:**

In conclusion, although further tests are needed to establish safety, no significant differences were observed in microbial growth during the product's shelf-life, or in its organoleptic properties. Therefore, there is no evidence of safety problems associated with the consumption of smoked cooked pork *chouriço* with a decrease of more than 45% in the nitrite concentration. However, caution should be taken until further research confirms its safety.