

Improving quality in Iberian “Chouriço Grosso”, a Portuguese traditional sausage, using autochthonous starter cultures

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Abstract

“Chouriço Grosso” is a traditional and high quality Portuguese sausage made of meat from a rustic and fatty Alentejano pig breed in the south east region of Portugal.

At a traditional factory, 4 batches, with 25 kg, each, were prepared to produce “Chouriço Grosso” using different starter inoculations: 1 - with 10^8 cells/g of *Lactobacillus sakei* and 10^8 cells/g of *Staphylococcus xylosus*, 2 - with 10^8 cells/g of *Lactobacillus sakei*, 3 - with 10^8 cells/g of *Staphylococcus xylosus*, 4 - control, not inoculated.

Using five samples from each batch of cured sausages (n=5), some chemical and physical analysis (pH, a_w , chromatic coordinates L^* , a^* and b^*), rheological tests (Texture Profile Analyse and cutting test), sensorial evaluation (colour intensity, off colours, aroma intensity, off aromas, taste intensity, off tastes, tenderness, juiciness and global evaluation) and microbiological analysis (mesophylic aerobic counts, psychrotrophics, yeasts, lactic acid bacteria, *Micrococcaceae*, *Enterobacteriaceae*, *Enterococcus faecalis*, coliforms and *E. coli*) were carried out.

The control batch, when compared to the remaining three batches, revealed higher pH, a_w , L^* and b^* values, and a lower a^* value. The control batch also exhibited significantly lower values ($p < 0,05$), when compared to the inoculated batches, as far as the texture parameters are concerned (hardness, cohesiveness, springiness, resilience, gumminess, chewiness and cutting force) and presented significantly higher values ($p < 0,05$) for pejorative sensorial attributes (off colour, off aroma, off taste and global evaluation). According to microbiological results, the psychrotrophics, *Enterobacteriaceae*, *Enterococcus faecalis*, coliforms and *E. coli* counts were significantly higher ($p < 0,05$) in the control batch. This experiment allowed to reveal the important role of the studied autochthonous cultures in order to promote microbiological and sensorial quality in this kind of food.