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Anti-listerial activity of fresh or lyophilized LAB bacteriocinogenic and microbiological characteristics of a Portuguese traditional meat sausage (Alheira) during storage at 4°C and 20°C

Ariana Macieira, Diana Barros, Manuela Vaz-Velho, Rita Pinheiro, Susana Fonseca, Helena Albano, Alcina M M B Morais and Paula Teixeira

Universidade Católica Portuguesa, Portugal

Iheira is a highly appreciated traditional Portuguese Affermented sausage. Modern consumers require products that not only have high appealing sensory attributes but are also safe. There is increasing interest in the use of natural preservatives, and metabolites produced by lactic acid bacteria (LAB) are good candidates. This work aimed to investigate the effect of using a fresh and dried starter culture of an autochthonous bacteriocinogenic LAB strain (Lactobacillus sakei ST153Ch), on the microbiological characteristics of Alheira when stored at 4°C and 20°C. The anti-listerial activity of this culture in this food matrix was also investigated. Alheira with the addition of fresh (ca. 108 cfu/g) and dried (ca. 108 cfu/g) culture and Alheira control (no starter culture added) were produced by an industrial meat company. On the day of production, these products were transferred to the laboratory and samples were inoculated with Listeria monocytogenes (ca. 107 cfu/g). All the samples were stored at 4°C and 20°C for 60 days and the following analysis, in triplicate, were performed at defined time periods: -Detection of Listeria monocytogenes, Salmonella spp., sulphite

reducing clostridia, Yersinia enterocolitica and enumeration of L. monocytogenes, Staphylococcus aureus, Bacillus cereus, Escherichia coli, Enterobacteriaceae, lactic acid bacteria (LAB), yeasts and moulds. The analyses were performed according to ISO methodologies. Pathogenic and indicator organisms were not detected or were below acceptable levels for all the samples. Immediately after production LAB counts were higher in Alheiras produced with the addition of the starter cultures than in control samples. For all the samples, counts increased during storage and reached similar values after 60 days (ca. 1011 cfu/g). Higher inhibition of L. monocytogenes was observed during storage at 20°C than at 4°C in Alheira inoculated with fresh or dried LAB.

Speaker Biography

Ariana Macieira is a researcher working in Paula Teixeira's group in Universidade Católica Portuguesa, in Porto, Portugal. She has been doing some work in the field of bacteriocins production by trying to find some techniques that will improve LAB bacteriocins with application in the food industry.

e: pcteixeira@porto.ucp.pt

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