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ABSTRACT BOOK







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GENOTYPING OF BACTERIAL ISOLATES FROM PIROTSKA "IRONED" SAUSAGE

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Backgrounds

The Pirotska "ironed" sausage is a traditional dry fermented product from south-eastern region of Serbia, made of different types of meat (e.g. horse, goat, sheep and beef) and spices, without additives or starter cultures. The flat sausage is a totally organic, unprocessed product without heat and smoke treatment applied.

Objectives

The aim of this study was to characterize 120 isolates of lactic acid bacteria (LAB) from Pirotska sausage produced by six different brands in two-year period using phenotypic and genotypic identification.

Methods

The phenotypic characterization and preliminary identification of LAB was based on general morphology and biochemical tests (gas production, growth at different temperatures, arginine hydrolysis etc.). The repetitive elements (REP, BOX, (GTG)₅-PCR) found in the genome of these bacteria and randomly amplified polymorphic DNA-polymerase chain reaction (RAPD-PCR) using M13 primer were used for determination of genetic polymorphism. Sequencing of 16S rRNA gene was used for species level identification.

Conclusions

The 16S rRNA sequencing showed presence of only two species. *Lactobacillus sakei* was the dominant species (76%), followed by *Leuconostoc mesenteroides* (24%). However, plenty of genetic polymorphism within these two species was detected using (GTG)₅-PCR fingerprinting. The results after comparing fingerprinting patterns of bacterial populations from different brands, due to the use of different meat types as well as different percentages of meat content, revealed some genetic similarity in few clusters and emphasized significant polymorphism within others.