



food safety and food biotechnology: diversity and global impact

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ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

SIMTREA 

3.1 Fermented foods: traceability, labels and role of native microbes (P)

Profiling of virulence traits in *Staphylococcus xylosus* isolated from naturally fermented sausages and their selection for starter cultures production.

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Coagulase-negative cocci (CNC) are important microorganisms in fermented sausages. They release lipases and proteases thereby influencing the aroma of fermented sausages. The purpose of this study was to characterize *Staphylococcus xylosus* strains isolated from three different plants producing naturally fermented sausages, in order to select a starter culture. One hundred and eighty-seven strains of *S. xylosus* previously identified by species-specific PCR were investigated. The ability of the isolates to grow at different temperature and to grow in presence of high concentration of NaCl, the proteolytic and lipolytic activity, the capability to produce biogenic amines "in vitro", the antibiotic resistance, the hemolytic activity, were checked. Fifteen strains potentially representing good candidates for the production of starter culture because of their ability to grow at 12°C and 7.5% (w/v) NaCl, with lipolytic and proteolytic activity, not able to produce biogenic amines "in vitro", non-hemolytic, resistant to less than five antibiotic were further investigated by GC-MS in order to profile the aromatic compounds produced by them. The cluster analysis obtained, based on volatile compounds, led to the identification of four groups of bacteria characterized by difference in the development of aroma. Moreover, a correlation between strain's origin and cluster results was highlighted.

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