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ACCEPTED MANUSCRIPT

Detection of different microenvironments and *Lactobacillus sakei* biotypes in Ventricina, a traditional fermented sausage from central Italy

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Abstract

The present study evaluated the physico-chemical and microbiological features of Ventricina, considering for the first time the presence of different compartments deriving from the technology of production. In fact meat pieces (pork muscle and fat cut into cubes of about 10-20 cm³), mixed with other ingredients and then stuffed into pig bladder, are still distinguishable at the end of the ripening. They appear delimited on the outside by the casing and inside by thin layers consisting of spices (mainly red pepper powder), salt and meat juices. Our results showed that the exterior (portion of the product in contact with the casing), the interstice (area between the different cubes of meat or fat) and the heart (the inner portion of meat cubes) had distinctive values of pH and a_w, and a typical microbial progression, so that they can be considered as different ecological niches, here called microenvironments. The study of lactic acid bacteria population, performed with PCR-DGGE and sequence analysis targeting the V1-V3 region of the 16S rRNA gene (rDNA), highlighted the presence of a few species, including *Lactobacillus sakei*, *Lb. plantarum*, *Weissella*

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