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MICROBIOTA OF FRESH PORK SAUSAGE IN MODIFIED ATMOSPHERE

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A comprehensive analysis of microbial population was performed on 9 lots of fresh pork sausage, sampled in a lapse of time of 6 months from a sole production plant. Sausages packaged in MAP (Modified Atmosphere Packaging - 30% CO2 - 70% O2) were stored at 7°C in order to mimic temperature abuse in the supply chain. Microbiota was analyzed both at the beginning (T0) and after 12 days, at the end of shelf-life (Tf). Total cultivable bacteria, lactic acid bacteria (LABs), Enterobacteriaceae, coagulase-positive staphylococci, and *Pseudomonas* were enumerated. The mean charge (Logs of CFU/g) of cultivable aerobic and aerotolerant bacteria was 5.0 at T0 and reached 7.2 after 12 days at 7°C, with a concomitant drop of pH from 5.9 to 5.5. LABs showed the highest increase starting from 4.1 and reaching 8.6 Logs, followed by staphylococci (4.0 to 6.5 Logs), and by Enterobacteriaceae (3.2 to 6.2 Logs). Randomly selected colonies were subjected to RAPD-PCR clustering, and each biotype was taxonomically characterized through 16S rRNA gene partial sequencing. The dominant stains identified on PCA (Plate Count Agar) at the end of shelf life generally belonged to the genera *Brochothrix, Leuconostoc, Staphylococcus, Serratia, Carnobacterium, Lactobacillus*. Less frequent isolates were ascribed to *Kluyvera, Macrococcus, Bacillus, Weissella, and Lactococcus*. The metataxonomic data confirmed the dominance of these recurrent genera. *Brochothrix* and *Lactobacillus* were identified at Tf in all lots, representing up to 72% and 69% of the total reads, respectively. Furthermore, bacteria belonging to the genera *Bacillus, Shewanella, Helicobacter, Acinetobacter, Psychrobacter*, and Vibrio were detected as major colonizers at the end of the shelf-life, albeit not detected among the isolates.

Biography

Sirangelo T M has graduated in Biology at University of Calabria, Italy. She worked as a Tutor in different biology fields and carried out activities in several research projects. She is a third year PhD student in Sciences, Technology and Biotechnology at University of Modena and Reggio Emilia, Italy, and her research focus is on Food Microbiology. Her study concern particularly is on the characterisation of the microbiota of different kinds of meat through traditional and Meta taxonomic approaches and already has several paper publications on the topic.

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