

SUMMARY

The main objective of this study was the analysis, description, characterization and impact of red-orange colorations observed in salted bovine casings (intestines), ready for marketing. To achieve this, over the course of three years, an investigation was conducted in two slaughterhouses to assess the industrial process of obtaining cattle intestines (primary process); and three tripe shops to study the secondary process of obtaining salted bovine casings. A salt processing establishment was also visited. A sensory evaluation of the contaminated products was performed, and samples of salt, bovine casings, and water were collected and subjected to physico-chemical, microbiological, molecular, and histological analyses. Our study concludes that the microorganisms responsible for the color alterations are extremely halophilic archaea, *Haloarcula*, *Halogranum* or *Haloterrigena* and *Haloferax* being the identified Genus. Archaea enter the system by cross-contamination through food grade salt. Our studies show that an extremely low load of archaea is sufficient for its development. According to our observations, red-orange coloration can be found in the salt and brine from the surface of open-head drums with only 20 days of storage, and up to a year and a half. Furthermore, electron microscope scans reveal that these halophilic microorganisms can form biofilms, adhering to the casings' surface, altering its histological structure, and therefore their properties when making sausages. In the establishments surveyed it was found that, despite all the measures taken to ensure product quality and safety (GMP, SSOP and HACCP), quality changes in the product were present. We conclude that this is a problem underestimated at an industrial level, and where preventive measures play a major role.