

Title Effects of storage in ozonised slurry ice on the sensory and microbial quality of sardine
(*Sardina pilchardus*)

Author Carmen A. Campos, Óscar Rodríguez, Vanesa Losada, Santiago P. Aubourg and
Jorge Barros-Velázquez

Citation International Journal of Food Microbiology, Volume 103, Issue 2, 25 August 2005, Pages 121-130

Keywords Slurry ice; Ozone; Sardine; Shelf life; Chilled storage; Microbial quality; Sensory quality

Abstract

The use of slurry ice, both alone and in combination with ozone, as compared with traditional flake ice was investigated as a new refrigeration system for the storage of sardine (*Sardina pilchardus*). Microbiological, chemical and sensory analyses were carried out throughout a storage period of 22 days. According to sensory analyses, sardine specimens stored in ozonised slurry ice had a shelf life of 19 days, while counterpart batches stored in slurry ice or flake ice had shelf lives of 15 and 8 days, respectively. Storage in ozonised slurry ice led to significantly lower counts of aerobic mesophiles, psychrotrophic bacteria, anaerobes, coliforms, and both lipolytic and proteolytic microorganisms in sardine muscle, and of surface counts of mesophiles and psychrotrophic bacteria in sardine skin as compared with the slurry ice and the flake ice batches. In all cases, the slurry ice batch also exhibited significantly lower microbial counts, both in muscle and skin, than the flake ice batch. Chemical parameters revealed that the use of slurry ice slowed down the formation of TVB-N and TMA-N to a significant extent in comparison with storage in flake ice. A combination of slurry ice with ozone also allowed a better control of pH and TMA-N formation as compared with slurry ice alone. This work demonstrates that the combined use of slurry ice and ozone for the storage of sardine can be recommended to improve the quality and extend the shelf life of this fish species.