# **Titre d’article**: Preservative effect of Juniperus phoenicea essential oil and ethanolic extract against Escherichia coli and Staphylococcus aureus in soft fresh cheese during storage

**Abstract :**

This study investigated the antibacterial activity of the Juniperus phoenicea essential oil water emulsion and ethanolic extract solution against Escherichia coli and Staphylococcus aureus inoculated on soft fresh cheese stored under refrigeration and abused temperatures to simulate incidental post-processing contamination. The gas chromatography-mass spectrometry analysis of essential oil showed that α-pinene was the major component (57.8 %). Polyphenols were highly abundant in the ethanolic extract with an average of 131.8 g gallic acid equivalent per kilogram of dry weight. The results showed that the growth of inoculated E. coli and Staph. aureus significantly decreased in treated samples during 5-day storage time when compared to the controls (p < 0.05). However, treated samples with plant essential oil emulsion generally showed greater reductions in the growth of these food-borne pathogens (0.4 log CFU·g-1 to 2.6 log CFU·g-1) than the samples treated with ethanolic extract solution (0 log CFU·g-1 to 0.8 log CFU·g-1). Furthermore, the antibacterial effectiveness of these treatments was not influenced by the simulated temperature abuse conditions. These findings extend knowledge about the behaviour of natural antimicrobials under non-ideal storage situations, which very often occur in the cheese supply chain.