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ACCEPTED ABSTRACTS

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## Effect of bacteriocins from *Pediococcus pentosaceus* 147 incorporated into chitosan edible coating on Campesino fresh cheese preservation

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Biopreservation is referred to as the extension of shelf life and enhanced the safety of food by using natural antimicrobial agents as bacteriocins. In this research, the antimicrobial effect of edible coating incorporated with bacteriocins produced by *Pediococcus pentosaceus* 147 was evaluated against *Listeria monocytogenes*.

Firstly, the antimicrobial activity in vitro (8533.3AU/mL) and the minimum inhibitory concentration-MIC (5.72µg/mL) of the cell-free supernatant (CFS) produced by *P. pentosaceus* 147 were found. Secondly, characterization of physicochemical properties of chitosan edible coatings CFS was carried out for posterior evaluation on Campesino cheese, a Colombian traditional fresh cheese. Five treatments were tested on the cheese samples: T1 control cheese without any additive, T2 growth control of inoculum with an inoculum concentration of approximately 4LogCFU/mL, T3 cheese with direct addition of CFS, T4 cheese with a chitosan-based edible

coating without bacteriocin, and T5 cheese chitosan-based edible coating with CFS incorporated. Treatments T3 to T5 were also inoculated with approx. 4LogCFU/mL of *Listeria monocytogenes*. Microbiological analyses showed that chitosan-based edible coating samples without and with CFS presented a decrease on *L. monocytogenes* counts of 5.49 and 6.66LogCFU/g respectively, compared to control (T2) after 21days of storage. These results show that the bacteriocins from *P. pentosaceus* 147 reduce the Listerial-growth post-contamination on cheese samples during storage and these may act with a synergistic effect with chitosan.

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