

## Inhibition of *Listeria Monocytogenes* Growth by Lactic Acid Bacteria in Strile Cold Smoked Roach (*Rurtillus frisii kutum* )

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The aim of this study was to demonstrate the inhibitory capacity of two strains of gram positive bacilli, isolated from intestinal content of Persian sturgeon, against *Listeria monocytogenes* growth. Two strains *Lactobacillus casei* AP 8 and *Lactobacillus plantarum* A P 12 , were screened for their antilisterial activity against *L. monocytogenes*, using a disk diffusion agar test. However, *L. casei* AP 8 always had the highest inhibitory effect. The spoiling potential and antilisterial capacity of bacterial strains was tested in sterile cold smoked roach (CSR) blocks inoculated with  $10^4$  CFU  $g^{-1}$  of lactic bacteria and  $10^2$  CFU  $g^{-1}$  of *Listeria monocytogenes* and then stored for 10 days at 4 °C followed by 30 days at 20 °C. *L. casei* AP8 grew a little faster *L. plantarum* A P 12 and none of them showed any adverse effect on quality of the product ( i.e. no total volatile basic nitrogen (TVBN) production and no acidification. *Lactobacillus casei* AP8 was the most efficient strain, maintaining the level of *L. monocytogenes* at <50 CFU/ g during 40 days of storage at 4 and 20°C. In conclusion, biopreservation of cold smoked roach using bacterial cultures such as *L. casei* AP8 is a promising way to inhibit the growth of pathogenic bacteria such as *L. monocytogenes* with low effect on the product quality.

**Keywords:** Cold smoked roach; *Listeria monocytogenes*; Biopreservation; *Lactobacillus casei*, *Lactobacillus plantarum*

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