Inhibition of \textit{Listeria Monocytogenes} Growth by Lactic Acid Bacteria in Strile Cold Smoked Roach (\textit{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 \textit{Listeria monocytogenes} growth. Two strains \textit{Lactobacillus casei} AP 8 and \textit{Lactobacillus plantarum} A P 12 , were screened for their antilisterial activity against. \textit{L. monocytogenes}, using a disk diffusion agar test. However, \textit{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 \textit{Listeria monocytogenes} and then stored for 10 days at 4 \degree C followed by 30 days at 20 \degree C. \textit{L. casei} AP8 grew a little faster \textit{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. \textit{Lactobacillus casei} AP8 was the most efficient strain, maintaining the level of \textit{L. monocytogenes} at <50 CFU/ g during 40 days of storage at 4 and 20\degree C. In conclusion, biopreservation of cold smoked roach using bacterial cultures such as \textit{L. casei} AP8 is a promising way to inhibit the growth of pathogenic bacteria such as \textit{L. monocytogenes} with low effect on the product quality.

\textbf{Keywords}: Cold smoked roach; \textit{Listeria monocytogenes}; Biopreservation; \textit{Lactobacillus casei}, \textit{Lactobacillus plantarum}

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