



CHANGES OF *ESCHERICHIA COLI* 0157:H7 ATCC 43890 IN A GEL MODEL OF SHARK (*RHIZOPRIONDON TERRAENOVAE*), AMARANTH AND ESSENTIAL OILS FROM HERBS, DURING THE STORAGE AT 5°C AND 20°C

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Introduction. Shark and the amaranth are foods with proteins of high biological quality. The objective was evaluated the effect of citral essential oil in a gel model of shark and amaranth during the storage at 5°C and 20°C.

Methods. A culture of *Escherichia coli* 0157: H7 in stationary phase was prepared. Gel model was obtained mixing shark (60%) amaranth flour (10%) and water (30%) until forming a paste; 100 g were inoculated with *Escherichia coli* (4×10^5 UFC/g). Concentrations of essential citral were 0 ppm, 500 ppm, 1,500 ppm, 3,000 ppm, 6,000 ppm, 9,000 ppm, 12,000 ppm. Paste was heating up to 40°C during 10 min to form the gels. At different times, samples were taken to make the accounts in plate (TSA media) and the measurement of pH.

Results. At 20°C was observed a constant diminution of pH during the 120 h. The final pH had values of 4.8-5.8 in the samples with citral essential oil. In the control, pH was 6.50. At temperature of 5°C there was no a significant difference ($P > 0.05$) in pH (6.3-6.7) between the treatments. There was a significant difference ($P < 0.05$) in the populations of *Escherichia coli* in treatments of 7,500 ppm, 10,000 ppm and 12,500 ppm citral concentrations in comparison with the control at 20°C and 120 h of storage. At 5°C was not observed a significant increase of *Escherichia coli* populations during the first 72 h in samples added with citral essential oil. *Escherichia coli* had an increase in the populations in the last storage times. This behavior was minor in samples with citral essential oil in a concentration of 3,000 ppm – 12,500 ppm.

Conclusions. *Escherichia coli* reduced its growth at 5°C and 20°C in treatments of citral essential oil.

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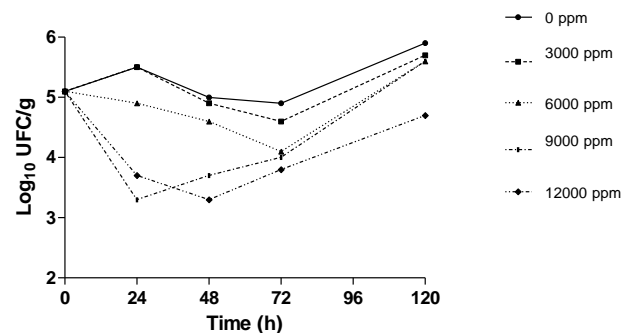


Fig.1 Growth/survival of *Escherichia coli* in a gel model of shark during the storage at 5°C

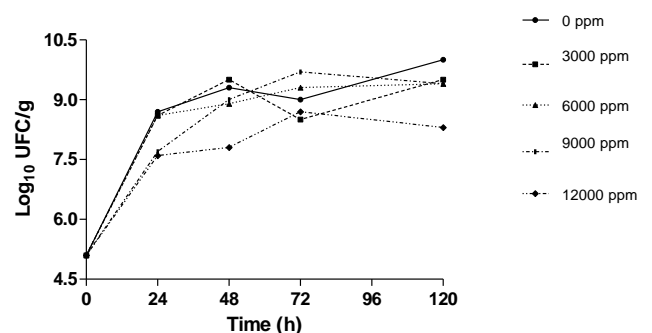


Fig 2. Growth/survival of *Escherichia coli* in a gel model of shark during the storage at 20°C

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