ANTIMICROBIAL ACTIVITY OF CITRUS OIL AGAISNT *SALMONELLA* AND *ESCHERICHIA COLI* GROWTH

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ABSTRACT

Over the past decade, several outbreaks have been reported in many countries due to foodborne illness related to fresh produce. The increasing awareness about healthy eating and sustainable environment by population has encouraged many researchers to investigate natural antimicrobial agents for sanitizing ready-to-eat salads. Essential oils have shown antimicrobial activity against several pathogenic bacteria such as *Escherichia coli*, *Salmonella enterica*, *Listeria monocytogenes*. Lemon and lime oil have been used as food additive and exhibit antimicrobial properties. In this overview, the aim of this work was to evaluate the effect of citrus oil to inhibit the growth of *Escherichia coli* and *Salmonella*, "in vitro", to be used as sanitizer to wash fresh-cut produce. The experiments were carried out varying the concentrations of lemon oil and lime oil (% v/v, 0 to 1.0) into flasks containing nutrient broth. The interaction between lime and lemon oil was also studied. *Escherichia coli* and *Salmonella* were inoculated into the flasks (10^6 CFU/mL), which were incubated at 37°C during 24 h. Samples were withdrawn and the colonies were determined after a sequential of dilutions (1:10) in peptone water, 100 µL were spread onto the agar plates and incubated at 37 °C for 24 h. The results showed that after 1 h, lemon oil had inhibited completely the growth of *Salmonella*, while *E. coli* had been reduced from 8.30 to 5.70 (reduction of 2.6 log CFU/mL). There had been no antimicrobial synergistic action between lime and lemon oil ($p<0.05$).