

Title Determination of antimicrobial effect of mint and basil essential oils on survival of *E. coli* O157:H7 and *S. typhimurium* in fresh-cut lettuce and purslane

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Abstract

In this research, mint and basil essential oils at concentrations of 0.01 ml/L, 0.032 ml/L or 0.08 ml/L were used for disinfection treatments of fresh-cut lettuce and purslane samples inoculated with *Salmonella typhimurium* or *Escherichia coli* O157:H7. Disinfection treatment time was applied as 10 min (short) or 15 min (long). Disinfected samples were packaged aerobically and stored at refrigerator +4 °C for 7 days. It was observed that mint and basil essential oils showed antimicrobial effect on the survival of *E. coli* O157:H7 and *S. typhimurium* inoculated into lettuce and purslane samples during refrigerated storage. Mint essential oil showed higher antimicrobial effect on pathogens when compared to basil essential oil. Mint and basil essential oils at concentration of 0.08 ml/L were the most effective antimicrobial treatment against pathogens in two different vegetable. *S. typhimurium* was more resistant against basil oil in lettuce samples when compared to its resistance against basil oil in purslane samples, whereas *E. coli* O157:H7 was more resistant to mint oil in purslane samples when compared to its resistance against mint oil in lettuce samples.