

Resistance of Some Food Borne Bacterial and Fungal Pathogens to the Essential Oil of Afsantine (*Artemisia absinthium*) and Its Aqueous and Alcoholic Extracts

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Background & Objectives: Increasing human knowledge about adverse effects of chemical preservatives has increased public interest to consume products with natural preservatives such as plant extract and their essential oils.

Methods: In this study antibacterial and antifungal effect of essential oil of Afsantine and its aqueous, ethanolic and methanolic extracts against the most important food borne bacteria and fungi were evaluated. Disk diffusion Methods was done to screen microbial sensitivity. The Minimum Inhibitory Concentrations (MIC) of extracts were evaluated by broth micro-dilution Methods.

Results: In disk diffusion methods the most sensitive strain to the essential oil and the extracts was *S. typhimurium* and *E.coli* O157:H7. MICs of Afsantine essential oil against *S. aureus* and *L. monocytogenes* were estimated 3000 ppm. MIC of the essential oil against *Aspergillus niger* was estimated 1000 ppm and against other fungal species were estimated 2000 ppm. The methanolic extract showed antimicrobial activity against *L. monocytogenes*, *E.coli* O157:H7, *B. cereus* and *S. aureus* were estimated 10, 10, 8 and 4 mg ml⁻¹, respectively.

Conclusion: Antifungal activity of the aqueous and alcoholic extracts was evaluated more than 10 mg ml⁻¹ for all given fungal strains. The results of this study revealed that the essential oil and methanolic extract of Afsantine have greater antimicrobial effects on given strains and might be used as a natural preservative in food system.

Keywords: Afsantine (*Artemisia absinthium*); Microbial Resistance; Foodborne Pathogens