

عنوان مقاله:

Chemical Composition of Essential Oils and in vitro Antibacterial Activity of Methanolic Extracts of *Sonchus arvensis* and *Eremurus spectabilis* Against Four Food-borne Pathogenic Bacteria

محل انتشار:

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خلاصه مقاله:

In this experimental study, chemical composition of essential oils of aerial parts of *Sonchus arvensis* and roots of *Eremurus spectabilis* was determined and antibacterial effects of methanolic extracts of these plants were evaluated on some strains of Gram-positive and Gram-negative bacteria. The hydro-distilled essential oil from aerial parts of *S. arvensis* was analyzed by gas chromatography and mass spectrometry (GC-MS) technique. The antimicrobial activity of the aerial parts methanolic extracts of *S. arvensis* and roots of *E. spectabilis* was screened by disk diffusion and macrodilution method was used for determination of MIC and MBC. The bacterial strains were *Bacillus cereus* PTCC 1015, *Staphylococcus aureus* PTCC 1431, *Salmonella enterica* PTCC 1709 and *Escherichia coli* PTCC 1399. The serial dilutions of the oil from 3.125 to 400 mg/ml were prepared in 96 wells micro plates using Mueller-Hinton broth for macrodilution. Thirty-five compounds of the hydro-distilled essential oil from aerial parts of *S. arvensis* were identified, representing 99.82 % of the total oil. N-Octane (29.82%), n-Decane (11.09%) were the main components. The MIC and MBC varied from 12.5 to 100 and 100 to >400 mg/ml for all Gram-positive and Gram-negative bacteria, respectively. The best MIC and MBC observed against *S. aureus* (12.5 and 100 mg/ml, respectively). Result shows that the methanolic extracts of *S. arvensis* and *E. spectabilis* could inhibit the growth of Gram-positive and Gram-negative bacteria. However, the inhibitory effect of these plants on Gram-positive is more than Gram-negative.

کلمات کلیدی:

Sonchus arvensis, *Eremurus spectabilis*, antimicrobial effect, GC-MS

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