

ANTIMICROBIAL EFFECTS OF SOME PLANT EXTRACTS GROWING IN ÇANAKKALE

N. N. Demirel Zorba^{1*}, E. Arslan¹,
A. Kırca Toklucu¹, H. Turhan², A. Bilişli¹

- ¹⁾ Çanakkale Onsekiz Mart University, Faculty of Engineering,
Dept. of Food Engineering, Çanakkale, Turkey
²⁾ Çanakkale Onsekiz Mart University, Faculty of Agriculture,
Dept. of Agricultural Biotechnology, Çanakkale, Turkey

A total of 42 plants (70 samples, with different organs of the plants, including stem, leaf, flower and seed) from different regions of Çanakkale were investigated for antimicrobial activities, and total phenol contents. Total phenolics were determined according to the Folin-Ciocalteu method. Total phenol content of plant materials ranged between 117.20 and 1.27 mg Gallic acid/ g dry weight. Disc diffusion and dilution methods were used to determine the antimicrobial activities of plant extracts against to different microorganisms. Through the plant extracts used in this research, 25, 16, 12 and 11 extracts were found to be effective against *Staphylococcus aureus*, *E.coli* O157: H7, *Salmonella* Typhimurium CCM 583, and *Bacillus cereus*, respectively. In addition, the numbers of plant extracts having antimicrobial activity against *Salmonella* Typhimurium ATCC 14028 and NRRL 4463, *Listeria monocytogenes* and *Escherichia coli* were found as 6. Through this study, it was observed that *Hypericum perforatum* has got the highest antimicrobial activity. It was also observed that the plants having antimicrobial activity contain high amount of phenolics. However, antimicrobial activity was also determined in some plants having low amount of phenolics. This result indicates that the composition of the phenolics and other compounds are more important in the antimicrobial activity of plants than their total amount.

Keywords: Antimicrobial, plant extracts, phenolics

* Corresponding author: dnukhet@hotmail.com