

Comparison between Two Groups of Pathogenic Bacteria under Different Essential Oil Extract of *Ocimum basilicum* L.

Authors : A. M. Daneshian Moghaddam, J. Shayegh, J. Dolghari Sharaf

Abstract : This study was conducted to assessment the antibacterial activities of different part of basil essential oil on the standard gram-negative bacteria include *Escherichia coli*, *Pseudomonas aeruginosa*, *Salmonella typhi*, and gram-positive ones including *Bacillus cereus*, *Staphylococcus aureus*, and *Listeria monocytogen*. The basil essential oil was provided from two part of plant (leaf and herb) at the two different developmental stage. The antibacterial properties of basil essential oil was studied. Also agar disk diffusion, minimal inhibition concentration (MIC) and minimum bactericidal concentration (MBC) were detected. The results of agar disk diffusion tests showed the inhibition zones as follow: *Listeria monocytogen* 17.11-17.42 mm, *St. aureus* 29.20-30.56 mm, *B. cereus* 14.73-16.06 mm, *E. coli* 21.60-23.58 mm, *Salmonella typhi* 21.63-24.80 mm and for *P. aeruginosa* the maximum inhibition zones were seen on leaf essential oil. From the herb part of basil almost similar results were obtained: *Listeria monocytogen* 17.02-17.67 mm, *St. aureus* 29.60-30.41 mm, *B. cereus* 10.66-16.11 mm, *E. coli* 17.48-23.54 mm, *Salmonella typhi* 21.58-21.64 mm and for *P. aeruginosa* the maximum inhibition zones were seen. The MICs for gram-positive bacteria were as: *B. cereus* ranging 36-18 µg/mL, *S. aureus* 18 µg/mL, *Listeria monocytogen* 18-36 µg/mL and for gram-negative bacteria of *E. coli*, *Salmonella typhi* and *P. aeruginosa* were 18-9 µg/mL.

Keywords : basil (*Ocimum basilicum*) essential oil, gram-positive and gram negative bacteria, antibacterial activity, MIC, MBC

Conference Title : ICABES 2014 : International Conference on Agricultural, Biological and Ecosystems Sciences

Conference Location : Sydney, Australia

Conference Dates : December 15-16, 2014