



Chemical Composition and Antimicrobial Activity of Essential Oil of *Callistemon Viminalis* from the South Syria

Mohamad Jawad Khubeiz¹ and Ghaytha Mansour²

¹PhD. in Department of Chemistry, faculty of science, Damascus University, Syria.

²PhD. in Department of Botany, faculty of science, Damascus University, Syria.

Abstract : Essential oil from fresh and dried leaves of *Callistemon viminalis* from Syria are obtained by hydro distillation using a Clevenger-type apparatus. The chemical composition of the E. oils was analyzed by GC–MS techniques in order to identify the chemical constituents. The major components obtained are: 1, 8 Cineol (61.25 %), (54.99%); α -pinene (10.94 %), (16.1%); α -terpineol (9.73 %), (8.02%), P-Cymene (5.88%), (5.25%). These E. oils were screened for antibacterial activity using agar disc diffusion technique to determine the diameter of growth inhibition zones. Subsequently, minimal percents concentration of E. oils was determined by micro dilution method. The antimicrobial activity was determined by the disc diffusion and broth micro dilution method against microorganisms obtained from Department of Medical Microbiology and Parasitology, Faculty of Medicine, Damascus University: *Bacillus subtilis*, *Staphylococcus aureus*, *Streptococcus pyogenes*, *Micrococcus luteus*, *Escherichia coli*, *Salmonella typhimurium*, *Pseudomonas aeruginosa*, *Klebsellia pneumonia*, *Proteus vulgaris*, and *Vibrio parahaemolyticus*. The E. oils were found active against both Gram-positive and Gram-negative bacteria, and have highest activity against the Gram-negative bacteria *Vibrio parahaemolyticus* and *Pseudomonas aeruginosa*. Minimum inhibitory concentration (MIC) ranged between 0.4 mg/ml and 1.6 mg/ml. The Minimum bactericidal concentration activity (MBC) was ranged from (0.8 mg/ml) to (3.2 mg/ml).

Keywords: *Callistemon viminalis*, GC–MS, Antimicrobial activity, essential oil.