

Full Length Research Paper

## Antibacterial activities of essential oil and crude extracts from *Matricaria pubescens* (Desf.) growing wild in Bechar, South west of Algeria.

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Crude extracts (Aqueous, ethanolic) and hydrodistilled-essential oil from aerial parts of *Matricaria pubescens* (Desf.) were investigated for their antibacterial activities against seven strains of bacteria. We wanted to proof an antibacterial activity of *Matricaria pubescens* (Desf.) with two most commonly used methods: disc diffusion method and broth dilution method. With the disc diffusion method we have obtained the inhibition zone. Minimal inhibitory concentration (MIC) corresponding at the lowest concentrations, where no visible bacterial growth was recorded, were assumed as values (MIC). Overall, extracts from *M. pubescens* (Desf.) showed stronger antibacterial activities than their essential oil obtained from hydrodistillation. The diameters of growth inhibition zone ranged from 12 to 33 mm (including the diameter of the disc-6 mm) with the highest inhibition zone values observed against *Escherichia coli* (31 mm) and *Klebsiella pneumonia* (33 mm). We determined MIC values in the ranges from 0.5 to 2.33 mg/ml for extracts and essential oil in the medium. Aqueous extracts exhibited MIC values of 9 mg/ml against *Bacillus cereus*. The MIC values of the ethanolic extract against *Listeria monocytogenes* and *Staphylococcus aureus* were 0.5 and 0.833 mg/ml, respectively. In the other hand, the best inhibitory activity of *M. pubescens* (Desf) essential oil (EO) was observed on *E. coli* and *K. pneumonia* 1.66 mg/ml.

**Key words:** *Matricaria pubescens* (Desf.), essential oil, crude extracts, antibacterial activity.

### INTRODUCTION

Disease causing bacteria have always been considered a major cause of morbidity and mortality in humans. The appearance of resistant microorganisms paved the way to the occurrence of infections that are only treated by a limited number of antimicrobial agents. The emergence of resistant Gram negative bacteria presents a major challenge for the antimicrobial therapy of infectious diseases and increases the incidence of mortality and

prostrate stems, that become erect. The thin dark green stems are only very slightly ramified.

The deeply dissected leaves, with each lobe ending in a white tip, are slightly fleshy and are between 10 and 20 mm long. The tubular yellow flowers are grouped in hemispherical discoid heads. The flower heads are about 5 to 8 mm in diameter and are set at the ends of the stems. The fruits are achenes with a small membranous