ABSTRACT

The Antibacterial activity of leaves extract of plant *Parthenium hysterophorus* (L.) against one bacterial strain. The solvent extract (Methanol, Chloroform, Acetone, and Ethanol) and aqueous extract of *Parthenium hysterophorus* effective against one bacterial strain is *Bacillus megaterium*. Phytochemical analysis revealed the presence of alkaloids, tannins, saponins, steroids and terpenoids. The antibacterial activity of this plant was determined by using Agar well diffusion method and Paper disc diffusion method. Antibacterial activities have tested against Gram positive bacterial strain *Bacillus megaterium*.

The antibacterial activities of the methanol, acetone, chloroform, ethanol and aqueous extracts compared favorably with these of one standard antibiotic (Grisovin) and have appeared to be broad spectrum as its activities were independent on gram reaction. The aqueous, acetone, chloroform and ethanol more effective than the methanol extracts against the test organism.

High activity against the Gram -positive organism *Bacillus megaterium* was found in aqueous all tested solvent extracts of *Parthenium hysterophorus* In case of human pathogenic *Bacillus megaterium* maximum inhibition of 2.52 mm was obtained in aqueous extracts of *Parthenium hysterophorus*.

The present study showed that there is good antibacterial activity in the leaf of *Parthenium hysterophorus*. So in present study supports the use of target plant as antibacterial agents in new drugs for the therapy of infectious diseases caused by pathogen. The results of phytochemical analysis of test plant (*Parthenium hysterophorus*) indicate the secondary metabolites commonly present including alkaloids, tannins, saponins, steroids and terpenoids. Ethanol extracts contain steroids and terpenoids, acetone extracts contain tannins, steroids and terpenoids, chloroform extracts contain alkaloids, tannins, saponins and steroids and methanol extracts contains steroids and terpenoids. The presence one or more of these secondary metabolites indicated that the antibacterial activity due to these active compound present in leaf part of the test plant.