

Research Article

## Antibacterial activity of some selected medicinal plants

■ P. PREMAMALINI

P.G. and Research Department of Botany, Vellalar College for Women, ERODE (T.N.) INDIA

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### ABSTRACT

The present study was carried out to evaluate the antibacterial nature of leaf and root extracts of *Abutilon indium*, *Datura metal*, *Solanum nigrum* and *Trigonella foenum-graecum* against gram positive bacteria such as *Streptococcus pyogenes*, *Staphylococcus aureus*, *Enterococcus* sp. and *Bacillus cereus*. The antibacterial activity was carried out in aqueous and methanolic extracts of all the tested plants. Among the extracts tested, methanolic extracts of all the tested plants were comparably more effective to inhibit the growth of bacteria than the aqueous extracts.

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## INTRODUCTION

The history of herbal medicines is as old as human civilization. For the sustenance and survival, man has to depend on nature. Demand for medicinal plants is increasing in all countries due to growing recognition of natural products, being non-narcotic, having no side effects, easily available at affordable prices and sometimes the only source of health care available to the poor. India has a treasure of medicinal plants and a number of herbs are traditionally used for the treatment of many diseases. In recent years, there has been a phenomenal rise in the interest of scientific community to explore the pharmacological activities of medicinal plants (Chah *et al.*, 2006). Angiosperms are reported to have a reservoir of effective therapeutants and constitute an inexhaustible source of harmless protectants (Grainge and Alvarez, 1987). Even parasitic plants and orchids also are of great medicinal value, which are found to be antimicrobial (Kaushik and Dhiman, 1995). The use of plant extracts and phytochemicals both with known antimicrobial properties, can be of great significance in therapeutic treatments (Gehlot and Bohra, 1998). According to World Health Organization (WHO) medicinal plants would be the best source to obtain a variety of drugs. Many plants have been used because of their antimicrobial traits, which are due to compounds synthesized in the secondary metabolism of the plants (Kaushik, 2003).

Considering the rich diversity of medicinal plants, it is expected that screening and scientific evaluation of plant

extracts for their antimicrobial substance may prove beneficial interaction among crude extracts or phytoconstituents *in vitro* may be useful in the preparation of improved polyherbal or drugs formulations. In the present investigation, an attempt has been made to test *in vitro* antibacterial activity of leaf and root extracts of *Abutilon indium*, *Datura metal*, *Solanum nigrum* and *Trigonella foenum-graecum* against the growth of human and plant pathogenic bacteria *Streptococcus pyogenes*, *Staphylococcus aureus*, *Enterococcus* sp. and *Bacillus cereus*.

## MATERIALS AND METHODS

### Collection and identification of plants:

The plants were collected and identified by using monograph on floras and authenticated by Botanical Survey of India, Southern Circle, Coimbatore, Tamil Nadu, India and confirmed through literature available in the Department of Botany, Vellalar College for Women, Erode, Tamil Nadu.

### Preparation of plant extracts:

Twenty g of fresh plants were washed and shade dried, pulverized and sieved. The dried powder of leaves and roots were then subjected to extraction with water and methanol separately in Soxhlet apparatus. The collected extracts obtained were condensed by evaporation under room temperature and the extracts were used for further investigation.