

## PHYTOCHEMICAL AND MICROBIOLOGICAL STUDIES ON SOME COMMON WEEDS OF MEDICINAL IMPORTANCE

R. VENKATARAMAN and R. PALANIAPPAN\*

Department of Chemistry, Sri Paramakalyani, College,  
ALWARKURICHI-627412, (TN), INDIA.

\*Post-Graduate Department of Microbiology,

### ABSTRACT

Traditional medicine entirely depends on medicinal plants. Some common weeds growing during rainy season are found to possess the medicinal uses. In this present communication, the antibacterial activity of the soxhlet extract of two common weeds namely *Abitilon indicum* (Family: *Malvaceae*) commonly called 'Thuthi' in Tamil and 'Kankati' in Sanskrit and *Cleome felinia* (Family: *Caparidaceae*) commonly called 'Thaivalai' in Tamil and *Adityabhakta* in Sanskrit is reported for the first time.

**Key word :** Phytochemical, Microbiological, *Abitilon indicum*, *Cleome felinia*

### INTRODUCTION

Due to the rich biodiversity, unusual climatic conditions and tropical weather in India, certain weeds are growing very commonly during rainy season at the foothills of Western Ghats of South India. Some weeds are found to possess medicinal value even exceeding the potency of normal herbs. The leaves of *Abitilon indicum* (Family : *Malvaceae*) are reported to be useful in constipation, venereal heat and irritation in anus. The decoction of leaves is used as an eyewash and mouth wash in toothache and also in gonorrhea. Infusion of leaves alongwith milk and sugar checks diarrhoea and dysentery.

The leaves of another common weed *Cleome felinia* (Family : *Caparidaceae*) are found to be useful in curing headache. The leaves applied to boils, prevent the formation of pus and juice of leaves pressed out with hot water or mixed with warm ghee is used as ear drops<sup>1-3</sup>. In this present communication, the antibacterial activity of the soxhlet extract of two common weeds against common microbial pathogens is reported for the first time.

### EXPERIMENTAL

The leaves of common weeds of the present study were collected from Tenkasi area in the foothills of Western Ghats in the month of January 2003. They were identified by well-qualified taxonomist and dried under shade to a constant weight. The dried leaves were extracted in Soxhlet apparatus using medium polar solvent chloroform for 24 hrs. The extracts

were dried under vacuum. The extracts were tested for antibacterial activity using filter paper disc method<sup>4</sup> and the diameter of zone of inhibition (mm) was recorded.

## RESULTS AND DISCUSSION

The antibacterial activity of chloroform extract of the leaves of common weeds against *Escherichia coli*, *Staphylococcus aureus*, *Salmonella typhi*, *Proteus vulgaris*, *Bacillus subtilis*, *Shigella flexneri*, *Klebsilla pneumoniae*, *Proteus mirabilis* and *Vibrio cholerae* is presented in Table 1.

**Table 1. Antibacterial activity of chloroform extract of common weeds**

No.	Microorganisms	Zone of inhibition (mm) <i>Abitilon indicum</i>	Zone inhibition (mm) <i>Cleome felinia</i>
1.	<i>Escherichia coli</i>	11	15
2.	<i>Staphylococcus aureus</i>	20	16
3.	<i>Salmonella typhi</i>	18	20
4.	<i>Proteus vulgaris</i>	18	18
5.	<i>Bacillus subtilis</i>	7	18
6.	<i>Bacillus flexneri</i>	6	14
7.	<i>Klebsiella pneumoniae</i>	7	22
8.	<i>Proteus mirabilis</i>	14	16
9.	<i>Vibrio cholerae</i>	6	24

The results indicated that the Soxhlet extract of the leaves of *A. indicum* is more effective in inhibiting the growth of *Staphylococcus aureus* and the soxhlet extract of the leaves *C. felinia* was found to be more effective in inhibiting the growth of *Vibrio cholerae*.

When the antibacterial activities of both weeds were compared, *C. felinia* was more effective herbal drug in inhibiting the common microbial pathogens. Further phytochemical investigations are in progress.

## ACKNOWLEDGEMENT

The authors thank the Management, Sri Paramakalyani College, Alwarkurichi for the encouragement.

## REFERENCES

1. R. N. Chopra, S. L. Chopra and I. C. Chopra, "Glossary of Indian Medicinal Plants" CSIR, New Delhi (1966) p. 1, 70.
2. K. M. Nadkarni, "Indian Plants and Drugs", Asiatic Publishing House, New Delhi (1998) p. 109.
3. Anonymous, In : "The Wealth of India- Raw Materials", CSIR, New Delhi (1967) p. 12.
4. B. K. Sherris and Turck, *Am. J. Clin. Path.*, **45**, 493 (1966)

Accepted : 12.1.2004