

ANTIMICROBIAL ACTION OF THE LEAF EXTRACT OF JATROPHA TANJORENSIS (E&R)

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Received: 16 April, 1998

Accepted: 27 May, 1998

ABSTRACT: The ethalonic extract of the leaves of *jatropha tanjorensis* Ellis & Saroja was tested for antimicrobial activities against gram positive – *Bacillus cereus*, *Bacillus subtilis*, *staphylococcus aureus*, gram negative *E. coli* and *mycobacterium pheli*

INTRODUCTION

Jatropha tanjorensis (family- Euphorbiacea) is known for its various medicinal properties (1, 3). The present investigations were undertaken to test the antimicrobial activity of the leaf extracts of this plant on some gram positive, gram negative and acid fast bacteria(2).

MATERIALS AND METHODS

Fresh leaves of the plants were collected and identified at botanical survey of India Coimbatore and further confirmed by Siddha Dept. of ICINE FACULTY OF SCIENCE< TAMIL University Thanjavur. The leaves were shade dried, pulverized and passed thorough a 60 mesh sieve.

Method of extract preparation

The leaf powder (720 gms) was extracted in soxhlet extraction apparatus with ethanol and the solvent was removed under vacuum to yield a crude extract. The extract was tested for antimicrobial activity on various micro organisms. Like *B. cereus*, *B. Subtilis*, *E. coli* *staphylococcus aereus*, *S.lutea* and *M. Pheli*. The microorganisms were collected from microbiology divisions of Thanjavur Medical College

Determination of zone inhibition

A 5% w/v test solution of the extract was prepared b dissolving 250mg of the extract in 5ml of sterile dimethyl formamide. A 0.1% w/v solution of chloramphenical in was used as standard. Microbial activity was test by disc diffusion assay method employing 24 ours cultures of six test organisms. The test organisms were seeded into sterile nutrient agar medium by uniformly mixing one ml of the inoculum with 20 ml co-sterile melted nutrient agar cooled to 45-45oC in the sterile petridish. When the agar solidified eight filter paper discs (Whatman No.1) of 5mm diameter were soaked in the test solution. Chloromphenical solution and blank were placed on the agar surface separately under aseptic conditions and the plates wer5e then maintained at room temperature for 2-4 hours to allow the diffusion of the solution into the medium. The plates were incubated at 37oC for 48 hours and zones of inhibitin were measured

RESULTS AND DISCUSSION

Results of antimicrobial screening of the leaf extracts of *J. tanjorensis* were measured in terms of zone of inhibition (Table1). It is

evident that the ethalonic exacts shows antimicrobial properties on the above mentioned gram positive, gram negative and acid fast bacteria. The effect of this extract was found to decrease on the following order against different test organisms *E.coli*, *B. subtilis*, *M. pheli*, *B. cereus*, *S. leutea*, *S. aureus*.

The antimicrobial activity of the extract may due to some antimicrobial substances present in *Jatropha tanjorensis*. The active

principle responsible for that is being isolated in our laboratory.

ACKNOWLEDGEMENT

I pay my respects and sincere thanks to our chairman shri G. Swaminathan, B. Pharm Member of Parliament, Managing director Thiru.t. Ravichandiran, B. Tech and finance director. My thanks are also due to the head, department of microbiology, Thanjavur Medical College, Thanjavur.

Table 1

Antimicrobial screening of leaf extract of *Jatropha tanjorensis*

Name of the organism	Average zone of inhibition		
	Ethanollic extract	Standard	Blank
Bacillus cereus	15	27	00
Bacillus subtilis	18	28	00
Staphylococcus aureus	13	25	00
Sarcina lutea	14	27	00
Escherichia coli	19	29	00
Mycobacterium phlei	16	28	00

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