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ANTIMICROBIAL ACTIVITY OF *PHOENIX LOUREIRII* LEAF EXTRACTS

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Abstract

Phoenix loureirii is commonly known as 'chittetha' and the plant leaves are used for household purpose. Preliminary chemical studies of the plant reveal the presence of glycosides, tannins & flavonoids. In the present study we have evaluated the antimicrobial activity of *Phoenix loureirii* leaf extract on *Salmonella typhi, Proteous vulgaris, E.colli, Staphyllococus, Bacillus & Streptococcus.* Both the aqueous and ethanolic extracts showed good activity against all the microorganisms used. The extracts at dose 500mg/ml showed potent activity against *Salmonella typhi, E.colli and Staphyllococus. Ethanolic* extract was found to be more potent when compared with aqueous extracts.

Keywords: - *Phoenix loureirii,* well diffusion method, *salmonella typhi,* ethanolic extract

Introduction

Plant-based drugs have been used against various diseases since a long time. India has a wide range of medicinal plants. But the essential values of some plants have long been published; even today there are many plants that need to be explored. It is essential to conduct pharmacognostic & pharmacological studies to ascertain their therapeutic properties. *Phoenix loureirii is one among them. Phoenix loureirii (Aracaceace)* is commonly known as Chittetha a wellknown wild plant of Andrapradesh. This is being used only for house-hold purposes. There are no reported antimicrobial activities on the plant till date.

Materials & Method

Plant material: The *Phoenix loureirii (Aracaceace)* dried leaves were collected from wild source Karimnagar, India in the month of may-2011. The plant was authenticated by Raju, Dept. of Botany, Kakathiya University, and Warangal.

Preparation of extracts: 30gm of powdered drug weighed & filled in soxhlet apparatus for extraction of the drug with 90% ethanol percentage yield was calculated for each extract after drying. The microorganism cultures were obtained from maintained cultures from Kakathiya University, Warangal, Andrapradesh.

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Chemicals: Tetracycline was procured from Taranath scientific & surgical stores, Karimnagar.

Method: Ethanolic extract of crude drug was tested on various microorganisms such as *Salmonella typhi, Proteous vulgaris, E.colli, Staphyllococus, Bacillus & Streptococcus.*

Well diffusion method: Test solution ethanol & aqueous extract was prepared at a conc. Of 500mg/ml. tetracycline was taken as standard for antimicrobial activity at a conc.100µg/ml. Nutrient agar medium was prepared & sterilized by an autoclaving. In an aseptic room, the medium was poured into sterile petridishes to uniform depth & then allowed to cool at room temperature. Before it could solidify the agar medium was mixed with the test organisms (1day old subcultures) and allowed to solidify. The microorganisms were inoculated onto the solid agar media with of an L-shaped rod by spreading on the solidified agar plates. Then the wells were made in the solidified agar plates with the help of sterile glass borer of size 4mm & capacity of 1ml in solidified agar in such a way that overlapping of zone of inhibition doesn't occur. The sample, control and standard were poured into respective bores. Plates were kept at room temperature for half an hour for diffusion of the sample into agar media. The organism inoculated petridishes were then incubated for 24hrs at 35^{o}C. After the completion of incubation produced by the

sample with different organisms in different organisms in different plates was measured & recorded immediately.

Statistutical analysis:

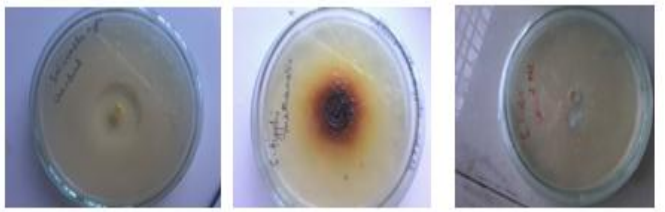
The values of all the above methods were expressed as mean±SEM. Total variation was estimated through Student paired t-test. Values of P<0.1 & P<0.05 wer considered statistically significant.

Results & discussion: Antimicrobial activity of various extracts of leaf of *Phoenix loureirii* was studied by measuring the zone of inhibition formed around the agar well & the results were given in the Table no.1. The extracts showed maximum activity against *Salmonella typhi, E.colli.* Thus the plant shows antimicrobial activity & can be a potent ingredient for herbal products.

Table no.1: Zone of inhibition in mm

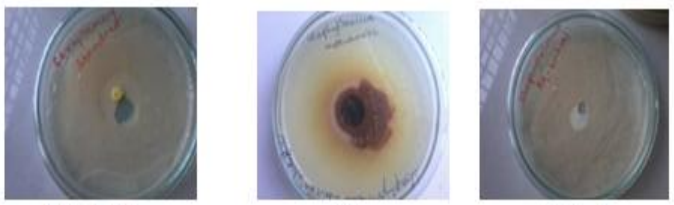
Name of the organism	Control	Tetracycline (std.)100µ/ml	Aqueous extract 500mg/ml	Ethanolic extract 500mg/ml
Salmonella typhi	-	28.00	25.00±0.015	28.00±0.015
E. colli	-	65.00	33.00±0.006	25.00±0.006
Staphyllococcus	-	33.00	29.00±0.057	25.00±0.057

Salmonella typhi



Standard *test* *control*

Staphylococcus aureus



Standard *test* *control*

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