PRELIMINARY PHYTOCHEMICAL STUDIES AND ANTIMICROBIAL ACTIVITY OF LEAF OF *AMMANNIA BACCIFERA* (Linn.)

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Summary

The objective of the study is to investigate the phytochemical constituents and anti microbial activity of hydroalcoholic (HALAB) extracts of leaf of *Ammannia baccifera* (Linn) by Disc diffusion technique. Preliminary phytochemical investigation was carried out to identify various phytochemical constituents present in these extracts. It was found that the HALAB contained alkaloids, carbohydrates, glycosides, saponins, proteins, steroids, flavonoids, tannins and phenolic compounds. The hydroalcoholic extract of *Ammannia baccifera* (Linn) leaf showed significant anti-microbial activity against the tested bacterial organisms. However the zone of inhibition exhibited by the test extracts was found to be less than that of the reference standard drug (Amphotericin B).

Introduction

Ammannia baccifera (Linn), family Lythraceae, an erect glabrous reddish herb up to 60 cm in height found throughout India, in marshy places. It was report that the leaves are exceedingly acrid, irritant, and vesicant, and are being used by the country people (in India) to raise blisters, being applied to the skin for half an hour or a little longer [1, 2]. Their ethereal tincture has been tried with success and found equal to liquor epispasticus. The leaves or the ashes of the plant, mixed with oil, are applied to cure herpetic eruptions [1, 2]. It was also reported that the fresh, bruised leaves have been used in skin diseases as a rubefacient and as an external remedy for ringworm and parasitic skin affection. Beside this the plant is used in ant-catarrhal, dyspepsia, flatulence, colic, strangury, seminal weakness, renal, rheumatism, fever, herpes (India) [1, 2, 3].

Materials and Methods

The leaf of the plant was collected in the month of December – January 2007 and authentified by Dr.P.Jayaraman, Director Plant Anatomy Research Centre, Tambaram, and Chennai. The shade dried plant material was powdered. Air-dried, powdered plant material was soxhlet extracted for 75 h in a mixture of ethanol and water (50:50). The hydroalcoholic extract was concentrated and dried using a rotary flash evaporator to give solid residue. The yield was 7.64 % w/w. The alcoholic *Ammannia baccifera* (Linn) leaf were subjected to preliminary qualitative investigations [(4)].

Evaluation of Antimicrobial activity:
The disc diffusion technique described by Farag et al., (1989) was adopted for anti-bacterial activity [(5)].

a) Preparation of test solution:
Test solutions of hydroalcoholic extracts were prepared by using dimethyl sulfoxide (DMSO) at concentrations 250 mg/ml and 500 mg/ml and 1000mg/ml and were used for antimicrobial activity.

b) Preparation of standard solutions:
Standard drug solutions were prepared in sterile water for injection. Amphotericin B (30µg/ml).

Results and Conclusions

Phytochemical Investigation
It was found that the HALAB contained alkaloids, carbohydrates, glycosides, saponins, proteins, steroids, flavonoids, tannins and phenolic compounds.

Antimicrobial activity:
The hydroalcoholic extract of *Ammannia baccifera* (Linn) leaf 1000mg/ml showed significant anti-microbial activity against the tested bacterial organisms compare to alcoholic extract of 250 and 500 mg/ml in the Table.1 and Plate No.1, 2, 3, 4. However the zone of inhibition exhibited by the test extracts was found to be less than that of the reference standard drug.

Table.1. Antimicrobial activity of leaf of *Ammannia baccifera* (Linn)

Test Organism	Mean Zone Of Inhibition (cm)				
	Alcoholic extract			Amphoterecin B Standard	Blank
	HALAB 250(mg/ml)	HALAB 500(mg/ml)	HALAB 1000(mg/ml)		
Staphylococcus aurius	1.5 cm	1.7 cm	1.8 cm	2.5 cm	0.0 cm
Pseudomonas auriginosa	1.7 cm	1.7cm	1.9 cm	2.1 cm	0.0 cm
Escherchia Colli	1.2 cm	1.5 cm	2.2 cm	2.9 cm	0.0 cm
Salmonella typhi	0.8 cm	1.1 cm	1.2 cm	1.9 cm	0.0 cm

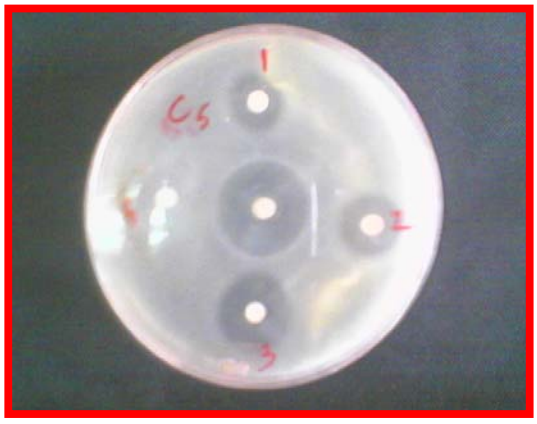

PLATE 1

Zones of inhibition of *Ammannia bacifera* (Linn) against *Staphylococcus aurius.*

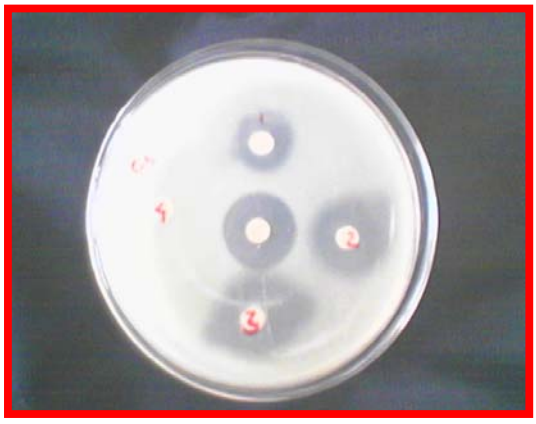

PLATE 2

Zones of inhibition of *Ammannia bacifera* (Linn) against *Pseudomonas auriginosa*.

PLATE 3

Zones of inhibition of *Ammannia bacifera* (Linn) **against *Escherchia Colli***

PLATE 4

Zones of inhibition of *Ammannia bacifera* (Linn) **against *Salmonella Typhi*.**

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