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ANTIMICROBIAL ACTIVITY OF GALINSOGA PARVIFLORA

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ABSTRACT

In the current study the acetone extract of Leaves of *Galinsoga parviflora* were screened for antimicrobial activity using cup-plate method. Streptomycin was used as standard. The test microorganism used in the present study was *Escherichia coli* and *Streptococcus aureus*. Acetone extracts showing significant effect in higher concentrations (500µg/ml).

KEYWORDS: *Galinsoga parviflora*, Leaves, Anti-microbial activity.

INTRODUCTION

Galinsoga parviflora was brought from Peru to Kew gardens in 1796 and later escaped to the wild in Great Britain and Ireland being temporarily known as the "Kew Weed".[1] The plant named after the Spanish botanist "Ignacio Mariano Martinez de Galinsoga". The species name "parviflora" translates to have small flowers. In Britain, its name Galinsoga is popularly rendered as "gallent soldiers". It is a cosmopolitan falls growing annual herb.[2] It is also known as tridax parviflora (gallent soldiers) originates from Central America. Medicinal values of this leaves extract and salt is given in fever, diarrhea and vomiting. We can use the leaves especially in plant seen above, stems and even the flowers in smoothie‟s salads, stews, steamed or juiced and mixed with other juices.[3-4] It is high in calcium, vitamins (beta –carotene, thiamin, riboflavin, niacin, and ascorbic acid), potassium, zinc and magnesium. Hepatoprotective effect, hypoglycemic effect, cytotoxic activity, antioxidant activity and antimicrobial activity.[5-6] The aim of the present study designed to evaluate antimicrobial activity of fresh Leaves extract of *Galinsoga parviflora*.

MATERIAL AND METHODS

Collection of the plant material

The Leaves of Plant *Galinsoga parviflora* were authentified by Dr. P. Satya Narayana Raju, Department of Botany and Microbiology, Acharya Nagarjuna University, Guntur. They were collected from different places of Narasaraopet, Palnadu dist., Andhra Pradesh, India.

Solvent Extraction

The Leaves of *Galinsoga parviflora* were collected washed, dried and powdered. 50g of dried powder of the Leaves was weighed and transferred into a conical flask and it was macerated with sufficient amount of acetone for 72 hours. It was filtered with appropriate filtration method and the solvent was evaporated and extract was collected.[7]

Microorganism: The test organisms used were *Escherichia coli* a Gram -ve strain and *Streptococcus aureus* a Gram +ve strain. The bacterial culture was grown and maintained on nutrient medium at 37^0C for 24h.

ANTIMICROBIAL ACTIVITY

Antimicrobial activity by cup-plate method

Each Petri plate with the medium was inoculated with test organism (20ml of subculture medium per 100ml of the assay medium). 20ml each of inoculated media was distributed into Petri plates and maintained at room temperature. When it was solidified, 4 cups (8 mm diameter) were made using sterile cork borer. Into these cups two different concentrations of the test and standard solutions were placed under aseptic conditions. Dimethyl sulfoxide (DMSO) was used as control. The Petri plates were kept in the refrigerator for 2 hours to allow the uniform diffusion of drug into the agar medium. All the Petri plates were then incubated at 37^o C for 24 hours and zone of inhibition were measured in mm.[8]

RESULTS AND DISCUSSION

From the results we observed the different concentration of test and standard solution have shown anti-microbial activity, based on their zone of inhibition. Here, T2 (*G.parviflora*-500µg/ml) was shown zone of inhibition when compared to T1 and Streptomycin which has been taken as standard (S) shown good zone of inhibition. Finally based on the results it was confirmed that the T2 extract of *Galinsoga parviflora* was having anti-microbial activity and it has been showing significant

effect in higher concentrations (500µg/ml).

Table: Antimicrobial activity of acetone extract of *G.Parviflora.*

S.NO	Micro Organisms	Zone of Inhibition		
		Galinsoga parviflora		Streptomycin
		250µg/mlT1	500µg/mlT2	S
1.	*E.coli*	4 mm	8 mm	10 mm
2.	*S.aureus*	6 mm	10 mm	12 mm

Fig.1: Zone of Inhibition on S.aureus

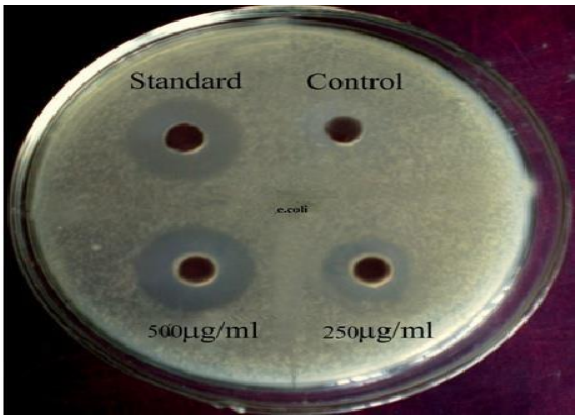

Fig.2: Zone of Inhibition on E.coli

CONCLUSION

The acetone extract of Leaves of "***Galinsoga parviflora***" has shown anti-microbial activity in both gram-positive and gram-negative bacteria at a concentration of 500µg/ml. Where, the chemical constituent which was the exact reason for anti- microbial activity need to be finding in further investigation.

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