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NOTE

Antimicrobial Activity of Leaf Extracts of *Achyranthes aspera* Linn.

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Solvent leaf extracts of *Achyranthes aspera* Linn. was tested for its antibacterial and antifungal activities against the organisms, *E. coli, Enterobacter* sp. *P. aeruginosa*, *P. vulgaris*, *S. aureus, Klebsiella* sp. *Salmonella* sp. *Shigella* sp. *Trichophyton mentagrophytes*, *T. rubrum*, *T. tonsurans, Aspergillus* sp. *E. floccosum. C. neoformans* and *Candida albicans*. In the present study, maximum inhibitory activity was observed in diethyl ether extract against all the bacterial and fungal species.

Key Words: *Achyranthes aspera*, Solvent extraction, Antibacterial and Antifungal activity.

Many antibiotics have more effect to destroy the bacteria as well as produce side effects. In order to reduce side effects of some drugs the need of traditional medicine is increase because naturally occuring medicine do not produce any hazards to health. To keep this problem in mind analysis of antibacterial and antifungal activities of *Achyranthes aspera* was studied[1].

The plant *Achyranthes aspera* Linn. (Amaranthaceae) is commonly known as Nayrivi in Tamil and Chirchita in Hindi. It is a common plant found in wastelands. The plant is highly esteemed by traditional healers and used for medicinal properties. It plays an important role in human life to cure many diseases like bronchitis, asthma, cold, cough, colic, debility, dropsy, dysentery, head ache, pneumonia, renal complication and skin diseases[2].

250 g of *A. aspera* were dried in shadow for 10 days then it was powdered well. 25 g of the powdered extract[3] were soaked in 200 mL of benzene, alcohol, acetone, diethyl ether, ethyl acetate and distilled water separately for 10 d. Then the extract was separated from the sample solution by a separating funnel and concentrated[4].

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The solvent extract thus obtained from the leaves of *A. aspera* was tested for its antibacterial and antifungal activities against the following organisms: *E. coli, Enterobacter* sp. *P. aeruginosa, P. vulgaris, S. aureus, Klebsiella* sp. *Salmonella* sp. *Shigella* sp. *Trichophyton mentagrophytes, T. rubrum, T. tonsurans, Aspergillus* sp. *E. floccosum. C. neoformans* and *Candida albicans*. Disc paper method was employed for determining the antimicrobial activity[5].

Antimicrobial activity was determined based on the inhibitory zones around the colonies. In the present study, maximum inhibitory activity was observed in diethyl ether extract against all the bacterial and fungal species (Tables 1 and 2).

TABLE-1
ANTIBACTERIAL ACTIVITY OF LEAF EXTRACT OF *A. aspera* Linn.
(The values are represent in mm)

Name of the bacteria	Solvents					
	Benzene	Alcohol	Acetone	Diethyl ether	Ethyl acetate	Distilled water
E. coli	20	7	–	26	8	12
Enterobacter sp.	8	10	8	29	12	15
P. aeruginosa	12	8	10	24	14	18
P. vulgaris	15	9	12	18	15	14
S. aureus	8	–	–	20	10	17
Klebsiella sp.	12	18	12	21	20	24
Salmonella sp.	20	18	12	21	20	24
Shigella sp.	18	10	8	19	17	18

TABLE-2
ANTIFUNGAL ACTIVITY OF LEAF EXTRACT OF *A. aspera* Linn.
(The values are represent in mm)

Name of the fungi	Solvents					
	Benzene	Alcohol	Acetone	Diethyl ether	Ethyl acetate	Distilled water
T. mentagrophytes	19	8	–	22	10	15
T. rubrum	18	–	10	26	–	–
T. tonsurans	10	8	–	22	–	12
Aspergillus sp.	8	10	8	19	–	10
E. floccosum	–	10	8	15	10	15
C. neoformans	–	8	–	18	10	15
C. albicans	–	13	9	18	–	20

The antibacterial activity the maximum zone of inhibition was observed in diethyl ether extract against *Enteriobacter* sp. with 29 mm and minimum of 7 mm in alcohol extract against *E. coli* (Table-1). In case of antifungal activity, the maximum zone of inhibition was observed in diethyl ether extract against *Trichophyton rubrum* with 26 mm and minimum of 7 in alcohol extract while against *Aspergillus* sp. the 8 mm (Table-2).

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