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ANTIMICROBIAL ACTIVITY OF *CLEOME VISCOSA(SEED)*

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ABSTRACT

The present study was aimed at detecting and evaluating antimicrobial activities of *Cleome viscosa* known for their medicinal properties in folk medicine. Methanol and acetone extracts of seeds shows good activity against some bacterial strains such as Proteus vulgaris, bacillus cereus, pseudomonas aeruginosa, klebsella pneumonia. Methanol extracts showed maximum antibacterial activity in comparison to other extracts. Methanol extract also shows good antifungal activity against Aspergillus niger Methanol extracts showed maximum antifungal activity in comparison to other extracts.

KEYWORDS: Cleome viscosa, Antimicrobial activity, Studies.

INTRODUCTION

Cleome viscosa is a plant belonging to family Capparaceae. It is a weed distributed throughout the tropics of the world and the plains of india. The plant is an annual; sticky herb with a strong penetrating odour, seed. It is known as Hurhur (Hindi), hurhuria (Bengali), Nayikkadugu (Tamil) in indian traditional medicin.[1-2] Leaves are digitately compound, with 3-5 leaflets. Fruit 30-75 mm long, 3-5 mm broad, linear-oblong, erect, obliquely striated, tapering at both ends, glandular-pubescent, slender; style 2-5 mm long; seeds many, 1-1.4 mm in diam., glabrous with longitudinal striations and transverse ridges, dark brown.Cleome viscosa is highly effective in widely spectrum of disease and reported to posses

antidiarrhoeal, analgesic, pharmacological, antimicrobial properties including in vitro Helicobacter pylori and wound healing activity.[3]

MATERIALS AND METHODS

Collection of seed of *Cleome viscosa*

Leaves of Cleome viscosa were collected from area around Tilak nagar, Delhi during the month of Oct to Dec.The collected plant material was washed with water to remove mud and other undesirable material and dried under shade.

Extraction of seed of *Cleome viscosa*

The collected plant Material was washed with water to removed other undesirable material and dried under shade. The air-dried seed (300 gm) of Cleome viscosa were crushed. The crushed seed extracted with methanol at room temperature. The extract was evaporated till dryness to obtain residue. These extracts were concentrated under reduced pressure. The extract was used for used for antimicrobial activity.

Anti-microbial activity

The anti-microbial activity of seed of *Cleome viscose* was carried out. The seed extract were screened for anti bacterial and anti fungal activities.

Anti bacterial activity of seed extract

In this study, the anti bacterial activity was studied against the micro organism and the bacterial cultures used in the study were

1 Pseudomonas

2 Klebsiella species

3 B.cereus

4 Protius

These bacterial cultures were maintained on nutrient agar slants at first being incubated at 37^0c for about 18-24 hours and then stored at 4^0 c as stock for anti bacterial activity. Fresh cultures were obtained by transferring a loop full of cultures into nutrient broth and then incubated at 37^0c overnight. To test anti bacterial activity, the well diffusion method used.

Culture media preparation

The microbiological media prepared as standard instruction provided by the HI-Media Laboratories, Mumbai. The media used for anti-bacterial activity Muller- Hinton Agar

(MHA) and Nutrient broth (NB). They were prepared and sterilized at 121^0C at 15 psi for 15-30 minutes autoclave.

Plate preparations

25 ml of pre autoclaved Muller-Hinton agar (MHA) was poured into 90 mm diameter pre sterilized petri-plates. These petri-plates were allowed to solidify at room temperature.

Well diffusion method

After the plated solidified the freshly prepared microbial growth culture suspension (about 20µl) was spread over the Muller – Hinton agar (MHA) media using L shaped sterilized glass spreader separately under the aseptic condition using laminar air flow. Then well were made in each plate with the help of borer of 8 mm diameter .In these well, about 100µl of each seed extracts individually was loaded. This method depend upon the diffusion of seed extracts from hole through the solidified agar layer of petri-dish to such an extent that the growth of added micro organism is prevented entirely in a circular area or Zone around the hole containing seed extract.

Incubation: Petri plates were incubated for overnight at 37^0C ± 0.5^0C in the incubator.

Inhibition Measurement of zone of inhibition

After incubation, the diameter of clear zone of incubation produced around the well or holes were measured in mm by ESR Tube and compared with standard drug.

RESULTS

Table-1: Antibacterial activity of the extract of *Cleome viscose* seed

Test organism	Inhibition zone (mm)				
	Pt.ether	Chloroform	Acetone	Methanol	Standard drug (chloramphenicol)
Pseudomonas	-	8	9	15	22
Klebsiella species	-	4	12	14	20
B.cereus	-	6	10	17	22
Protius	-	5	13	16	19

Table- 2: Antifungal activity of the extract of *Cleome viscose seed*

Test organism	Inhibition zone (mm)				
	Pt.ether	Chloroform	Acetone	Methanol	Standard drug (chloramphenicol)
Aspergillus niger	9	11	8	13	18

DISCUSSION

Antimicrobial studies reveal that methanol and acetone extracts of seeds shows good activity against some bacterial strains such as Proteus vulgaris, bacillus cereus, pseudomonas aeruginosa, klebsella pneumonia. Methanol extracts showed maximum antibacterial activity in comparison to other extracts.All extracts showed antifungal activity against all bacterial culture at a concentration of 200 mg/ml. Methanol extract showed maximum antifungal activity in comparison to other extracts.

REFERENCES

1. Sulekha M., Yadav S.,Yadav S., Kumar N.R, J. Chem. Pharma. Res., 2009; 1(1): 102-104.
2. Joseph S, Peter KV. Econ Botany, 1985; 39 (1): 68-73.
3. Bajpai A, Ojha J.K, Sant H.R. Medico botany of the Varanasi district.Int J Pharm,1983; 33(2): 172-176.
4. Kokate C.K., Plant constituents: Practical Pharmacognosy, Delhi; Vallabh Prakashan, 2005, 107-111.