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NOTE

Antimicrobial Activity of Fruit of *Tribulus Terrestris* Linn.

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The *in-vitro* antimicrobial activity of the fruit of *Tribulus terrestris* has been studied using petroleum ether (60–80°C) and ethanolic (50%) extracts against *Staphylococcus aureus, Escherichia coli* and *Candida albicans*. Both the extracts showed significant activity against all test micro-organisms.

Key Words: ***Tribulus Terrestris*** **Linn., Antimicrobial.**

Tribulus terrestris (Zygophyllaceae), commonly known as 'Chota-gokhru', is an annual or perennial plant growing throughout India[1]. It is described as a highly valuable drug used to restore the depressed liver for the treatment of fullness in the chest and mastitis and also used to dispel the wind and clear the eyes for the treatment of acute conjuctivitis, headache and vertigo. *Tribulus terrestris* is also reported to have antimicrobial, antihypertension, diuretic, antiacetylcholine and haemolytic activity and to stimulate spermatogenesis and libido[2–7]. The current study was undertaken to evaluate the antimicrobial activity of *Tribulus terrestris* fruit extract.

The drug *T. terrestris* fruits were purchased from the local drug market of Modinagar. The drug was identified and authenticated by Dr. H.B. Naithani, Botanist and Scientist, Forest Tree Seed Laboratory, Silviculture Division, Forest Research Institute, Dehradun.

The air dried, pulverized fruits of *T. terrestris* were exhaustively extracted with ethanol (50%) and petroleum ether (60–80°C) using Soxhlet extractor and concentrated under reduced pressure. The concentrated ethanol extract and petroleum extract were dissolved in dimethyl sulfoxide (DMSO), an inert solvent which was also used as control and found inert against all the tested micro-organisms.

The growth medium used for the test micro-organisms, *viz.*, *Staphylococcus aureus* and *Escherichia coli,* was medium No. 1 (Hi-Media) and for *Candida albicans* Sabouraud dextrose agar (Hi-Media). The petri plates were pre-seeded with 10 mL of growth medium and 4 mL of inoculum in case of *E. coli* and *S. aureus* and 6.5 mL of inoculum in case of *C. albicans*. Paper discs of 6 mm diameter which absorb 0.1 mL of extract (ethanol/pet. ether) and known quantity of standard reference antibiotics were used for comparison of zone of inhibition.

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The inoculated bacterial cultures were incubated at 32–35°C for 21 h and fungus culture at 22–25°C for 48 h. The antimicrobial activity was assayed by disc diffusion method[8]. The zone of inhibition was measured and average of the independent determinations was recorded (Tables 1 and 2).

It is evident from the results that the ethanol extract and pet.-ether (60–80°C) extract of fruit of *Tribulus terrestris* showed positive response against organisms tested as compared to standard drug, chloramphenicol.

The chemical nature of the active principles responsible for the antimicrobial activity of the fruit extracts was not established.

TABLE-1
ANTIBACTERIAL ACTIVITY OF *TRIBULUS TERRESTRIS* FRUIT EXTRACT

Extract/Antibiotic	Concentration (μg per mL)	Diameter of the zone of inhibition (mm)	
		S. aureus	*E. coli*
Pet.-ether(60–80°C) extract	20	8.8	9.2
Ethanol (50%) extract	20	10.5	9.0
Chloramphenicol	30	17.0	15.0

TABLE-2
ANTIFUNGAL ACTIVITY OF *TRIBULUS TERRESTRIS* FRUIT EXTRACT

Extract/Antibiotic	Concentration (μg per mL)	Diameter of the zone of inhibition (mm)
		Candida albicans
Pet.-ether(60–80°C) extract	75	17.9
Ethanol (50%) extract	75	16.8
Chloramphenicol	100 units	21.0

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