

Anthelmintic activity of roots and rhizomes of *Corallocarpus Epigaeus*

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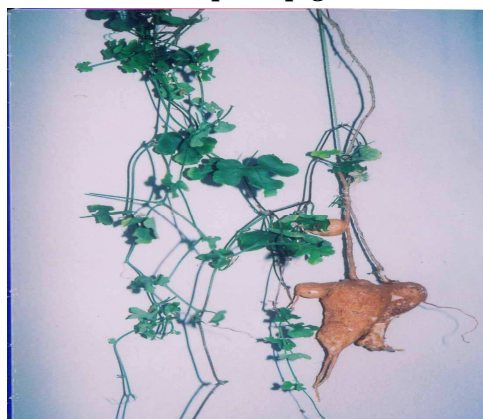
ABSTRACT

Corallocarpus epigaeus Rottl.ex.Wild (Cucurbitaceae) is a prostrate or climbing monoecious plant Decotion of powder root has benefit in cases of chronic mucous enteritis and also used as anthelmintic The anthelmintic activity of the alcoholic and aqueous extracts of roots and rhizomes of *Corallocarpus epigaeus* was evaluated on adult earthworms – *Lampito marutii*, *Eudrillus eugine*, *Eisenla foetida* using Piperazine citrate as the reference standard. The extracts caused paralysis followed by death of the worms at all tested dose levels.

INTRODUCTION

Corallocarpus epigaeus Rottl.ex.wild (Cucurbitaceae) is a prostrate or climbing monoecious plant found in tropical and temperate regions of India, Ceylon, Deccan and South Maratha country. The plant is Indigenously known as 'Akasgaddah' in Hindi and 'Akashagarudan' in Tamil¹. The plant is reported to contain a sesquiterpene lactone-corallocarpenoyl ester and an aliphatic C₃₂ keto diol².

Corallocarpus Epigaeus



The roots and rhizomes are especially useful in syphilitic cases, old venereal complaints, and chronic dysentery³. It is also an effective remedy for rheumatism and snake bite. Decoction of powder root has given benefit in cases of chronic mucous enteritis and also used as anthelmintic⁴. The present study deals with the anthelmintic effects of the roots and rhizomes of the above said plant using a standard laboratory model.

MATERIALS AND METHODS

The plant *Corallocarpus epigaeus* was collected from the hills of Vellore, Vellore district of Tamil Nadu during the month of January 2007. The plant material was identified and authenticated by Dr. Jayaraman, Botanist, Plant Anatomy Research Centre, Chennai. A Herbarium of plant is preserved in the Department of Pharmacognosy of the institute for future reference.

Preparation of extracts

The dried roots and rhizomes were powdered and extracted with the soxhlet apparatus using ethanol (yield 3.8%) and distilled water (yield-25.7%) separately. Both the extracts were evaporated to dryness. The dried extracts (residue) were suspended in normal saline containing Tween 80(1%) and used for the anthelmintic activity.

Different Types of Worms Causing Helminthiasis



fig.3.1 *Eisenla foetida*



fig.3.2 *Octolasion cyaneum*



fig.3.3 *Lumbricus rubellus*



fig.3.4 *Aporrectodea caliginosa*

Screening for anthelmintic activity

The anthelmintic activity was evaluated on adult Indian earthworms *Lampito marutii*, *Eudrillus eugine*, *Eisenla foetida* due to its anatomical and physiological resemblance with the intestinal roundworm parasites of human being^{5, 6, 7} and also in intestinal roundworms. The method of Mathew *et al*⁸ was followed for anthelmintic screening.

Suspensions of various fractions were prepared in Tween 80(1%) to obtain 2.5, 5, 7.5% concentrations. Solutions of similar concentration of the reference standard drug piperazine citrate were also prepared in distilled water. Two ml of each concentration of various fractions and standard drug piperazine citrate were diluted to 10ml separately with normal saline and poured into petridishes. Nine groups of approximately equal size of earthworms of each species consisting of six in each group were separately released into petridish.

Paralysis was said to occur when the worms did not revive even in normal saline. Death was concluded when the worms lost their motility followed by fading away of their body colour.

RESULTS AND DISCUSSION

The Results in the Table depict the time taken for paralysis and death of worms after treating with the test substances. It was observed that the ethanolic extract of *Corallocarpus epigaeus* bark is more potent than the aqueous extract and their activity was comparable with the standard drug piperazine citrate. It causes paralysis followed by death of the worms at all tested dose levels. Potency of the extracts was inversely proportional to the time taken for paralysis/ death of the worms.

Anthelmintic Activity of Roots and Rhizomes of *Corallocarpus Epigaeus*

Drug	Concentration of extract (%)	Time in minutes for paralysis / Death of worms					
		<i>EISENLA FOETIDA</i>		<i>EUDRILLUS EUGINE</i>		<i>LAMPITO MARUTII</i>	
		Paralysis	Death	Paralysis	Death	Paralysis	Death
Alcohol	2.5	10	14	9	10	9	10
	5	7	9	8	10	9	8
	7.5	7	5	5	5	5	3
Aqueous	2.5	30	34	29	41	13	21
	5	25	49	26	39	5	12
	7.5	12	22	15	32	3	7
Piperazine citrate	2.5	6	11	5	6	6	7
	5	5	6	4	6	6	5
	7.5	5	4	3	3	6	5

It is quite apparent from the studies that the ethanolic extract possesses significant anthelmintic activity. The above findings justify the use as an anthelmintic, suggested in the folklore medicines. The plant can be further explored for its phytochemical profile to identify the active constituents responsible for the anthelmintic activity.

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