

ANTHELMINTIC ACTIVITY OF LEAVES OF *FERONIA LIMONIA*

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Summary

Methanol and Chloroform extracts of leaves of *feronia limonia* were evaluated for anthelmintic activity on adult Indian earthworms *Pheretima Posthuma*, using piperzaine citrate as reference standard. The results indicated that methnolic extract was more significant than the chloroform extracts

Introduction

Feronia limonia (Fam: Rutaceae) commonly known as wood apple or elephant apple , is a moderate size tree which is native of India and occurs up to an elevation of 1500 feet in western Himalayas. Ripe fruit of *F.limonia* contain tyramine derivative acicissimol, acidissiminin, sepxide, N.benzoyl tyramine and stigmasterol.[1] It is useful as tonic in diarrhea, dysentery, stomatitis, tumors, cough, asthma, leucorrhoea, wounds and ulcers. Fruits, leaves and stem bark of *F.limonia* have been studied for anti-tumor [2], larvicidal [3] and antimicrobial activity [4, 5.] However, so far no study has been reported to evaluation of anthelmintic activity

Material and Methods

The fresh leaves of *F limonia* were collected by a local supplier from around the Bangalore in the month of march-April and it is authenticated by our college botanist and voucher specimen is kept in college museum.

Preparation of Extract.

The collected leaves were shade dried, coarsely powered and the powder was extracted with chloroform and methanol using Soxhlet apparatus [6]. The solvent was then removed under reduced pressure using rotary flash evaporator. It is further concentrated and dried in the desiccator for further studies. The dried extracts were suspended in 1% Tween 80 in normal saline (vehicle) and used for anthelmintic activities

Anthelmintic Activity

The anthelmintic activity was evaluated on adult earthworms (*Pheretims Posthuma*) obtained from Horticulture Department, Bangalore). The method of *Mathew et al* and *Dash et al* [7,8,9] was followed for anthelmintic screening nine groups, each consisting of six earthworms of approximately equal size (7 ± 1) was released into 50ml of desired formulation at room temperature .

Each group was treated with one of the following: Vehicle (1% Tween 80 in normal saline), Piperazine citrate (15mg/ml) and extract (10, 20 and 50mg/ml) in normal saline containing 1% Tween 80. Observations were made for the time taken for paralysis and /or death of individual worms up to four hours of test period. The mean paralysis time and mean lethal time for each extract was recorded .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 with fading away of their body colour.

Statistical Analysis [10, 11]

The data presented as Mean \pm SEM. The activities of all the extracts were compared with the control. All the extracts showed significantly higher duration of paralysis and death. Values of $P < 0.001$ were considered statistically significant.

Results and Discussion

Indigenous drug system can be a source of variety of new drugs, can provide to eliminate worms, but their claimed reputation has to be verified on scientific basis. The present investigation reveals that the methnolic was more potent than the chloroform extract.

(Table 1) even though both the extract were endowed with anthelmintic property. The activity reveals concentration dependent nature of the different extracts.

TABLE-1.

ANTHELMINTIC ACTIVITY OF LEAVES OF FERONIA LIMONIA

Treatment (mg/ml)	Time taken for paralysis (minutes)	Time taken for death (minutes)
Vehicle	---	---
Piperizine citrate (15mg/ml)	15.5±0.7	---
Methanolic extract (5mg/ml)	-----	----
(10mg/ml)	123.3±9.3	132.7±5.4
(20mg/ml)	75.8±4.1	88.1±3.5
(50mg/ml)	36.0±1.6	43.7±1.3
Chloroform Extract (5mg/ml)	----	----
(10mg/ml)	155.8±6.2	188.7±4.4
(20mg/ml)	116±3.6	131.8±4.0
(50mg/ml)	56.8±2.1	68.5±2.9

Results expressed as Mean ± SEM (n=6). Significant at $P < 0.001$. P value was calculated by comparing with control by one-way ANVOA.

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