



## QUALITATIVE PHYTOCHEMICAL INVESTIGATION AND EVALUATION OF ANTHELMINTIC ACTIVITIES OF *ACALYPHA INDICA* LEAF FRESH EXTRACT

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### Abstract:

Since many traditional reports shows that, the leaves of *Acalypha indica* contains anthelmintic activity, the fresh extract of *Acalypha indica* leaves was collected and it is subjected to show the anthelmintic activity and its activities are compared with the marketed standard one (Albendazole suspension). Anthelmintic activity is nothing but killing or expelling the infesting worms. For this, the entire plant of *Acalypha indica* was collected and extracted, and involved in the phytochemical investigation. Earth worms of *pheretima posthumawas* used to estimate the anthelmintic activity of the *Acalypha indica*, the time taken for paralysis (min) and the time taken for death of the worms are recorded and they are compared with the Standard albendazole suspension's action. The *acalypha indica* shows better anthelmintic activity as the standard one.

**Keywords:** *Acalypha indica*, phytochemical investigation, anthelmintic activities, *pheretima posthuma*.

### INTRODUCTION:

The anthelmintics or antihelminthics are group of anti-parasitic drugs the parasitic worms (helminths) and other internal parasites from the body by either stunning or killing them and without causing significant damage to the host. They may be called vermifuges or vermicides. Anthelmintic are used to treat people who are infected by helminths, a condition called helminthiasis. As per WHO estimates that a staggering 2 billion people harbor parasitic worm infection. The parasitic worm also infect livestock and crops, affecting food production with a result economic impact. As per world health organization few drugs only frequently used in the treatment of these parasite infection. The helminthiasis is among the most important animal disease inflicting heavy production losses. In ancient times various medicinal plants were used for anthelmintic as well as other diseases for man and animals. The *acalypha indica* leaves has traditionally used as anthelmintic activity. The plant is commonly called as Indian acalypha and its belongs to the family Euphorbiaceae. The common name is *acalypha indica*, tamil-kuppaimeni, sanskrit- aittamanjarie, English-Indian acalypha, hindi- kuppu, telugu-kuppichettu. It is traditional medicines of various countries and reportedly possesses anthelmintic, diuretic, purgative, and also used for bronchitis, asthma, pneumonia, scabies and other disease. The leaves of *acalypha indica* has been traditionally

used as anthelmintic activity<sup>15</sup>, but not have any scientific investigation has been carried out to the anthelmintic activities. So, the present investigation carried out to the anthelmintic activity of *acalypha indica* leaves fresh extract. The fresh leaves extract of *acalypha indica* was carried out phytochemical investigation. Then the fresh extract carried out effect of anthelmintic activities was compared with albendazol suspension as standard drug.

## MATERIALS AND METHODS:

### Plant material:

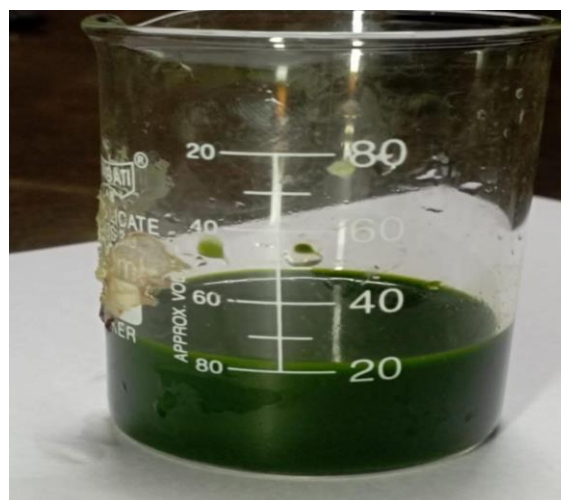
The entire herb leaves of *acalypha indica* was collected from Sangiyam, Pothuvoy village. That village 30km away from Thiruvannamalai.

### Chemicals and reagents:

All the chemicals and reagent used for our entire experiment work are procured from our college lab (Smt Gandhimathi College of Pharmacy, Thiruvannamalai.)

### Experimental activities:

The *acalypha indica* plant leaves was collected by hand picking methods and it is washed with tap water to remove soil and adhered matters. Then the fresh leaf extract was collected by using hydrolic pressure. Finally obtained extract was filtered through muslin cloth. Then the extract was subjected to the phytochemical investigation for the following standard procedure<sup>16,17</sup> and anthelmintic activity.



### Selection of worms:

The adult earth worms of *Pheretima posthuma* was used to carry out anthelmintic evaluation. The worms are collected from moist soil of our college medicinal garden. Then the worms are washed with saline water to remove the fecal matter. The worms about 8cm length and 0.5 to 0.7 cm width was selected for the experiment. Finally the worms used for evaluation of anthelmintic activity.

### Drugs:

The albedazole suspension was purchased from mankind pharma pvt. The brand name bandy suspension. The drug was used as standard reference for our current research work (Evaluation of anthelmintic activity).

### Eevaluation of anthelmintic activity:

Anthelmintic activity was carried on adult earthworm (*Pheretima posthuma*) of equal size. The fresh *acalypha indica* plant leaf extract was directly used to the evaluation of anthlmintic activity. The albendazole suspension is standard reference. The worms placed in two separate petridish, one petridish it containing 20ml of sample solution and another one petridish it containing 20ml of standard solution. The worms paralysis time was noted included when it was lost their motility and fading away of their body colours, finally the death time was noted.

### RESULT:

The phytochemical screening of fresh *acalypha indica* leaf extract was show the presence of various active constituents, it is showed in below table-1. The phytoconstituents present in the leaf extract include saponins, terpenoids, flavonoids, cardiac glycosides, tannins and steroids.

**Table-1 Qualitative phytochemical screening of acalypha indica leaf fresh extract**

S.No	Phytochemical constituent	Fresh leaf extract
01	Alkaloids	+
02	Tannins	+
03	Saponins	+
04	Flovanoids	+
05	Terpenoids	+
06	Cardioglycosides	+
07	Phlobatannins	-
08	Steroids	-

(+) present, (-) absent.

The Anthelmintic activity was carried out on adult worms of *pheretima posthuma*. The fresh *acalypha indica* plant leaf extract was directly used to the evaluation of anthlmintic activity. The fresh extract showed significant activity in compare to standard (albandazole). The anthelmintic activity is presence of more intense alkaloids, phenolic compounds. The tannins which have antimicrobial and antioxidant activity. So, this study was proved to be strong evidence for anthelmintic activity.



**Standard**



**Sample**

**Table-2 Anthelmintic activity of *acalypha indica* leaves extract**

S.No	Group	Concentration (mg/ml)	Time (minutes)	
			Paralysis	Death
01	Standard drugs (Albendazol)200mg	20ml	2.15±0.15	4.53±0.18
02	<i>Acalypha indica</i> fresh leaf extract	20ml	3.35±0.10	5.50±0.20

### CONCLUSION:

When we comparing the anthelmintic activity of *acalypha indica* to the albendazole suspension, it shows the better antelmintic activity as the standard market anthelmintic agent. The time taken for paralysis of *pheretima posthuma*, and the time taken for death of this worm in *acalypha indica* fresh leaf extract is slightly varies from the standard drug albendazole 200mg at equal concentration.

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