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**Research Article** 

# INVITRO ANTHELMINTHIC ACTIVITY OF ECLIPTA ALBA LEAF EXTRACTS

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# ABSTRACT

In the present study we have examine the anthelmintic activity of *eclipta alba* leaf extract using adult earthworm, pheritima posthuma. The methanolic and aqueous extract for different concentration of 25 mg/ml, 50 mg/ml, 100 mg/ml were tested which involve determination of paralysis time and death time. Piperazine citrate was used as standard and it was found that the concentrated methanolic extract of the *eclipta alba* leaf which is used as food, showed a better anthelminthic activity in comparison with the standard.

Keywords: Anthelmintic activity, Eclipta alba, Piperazine citrate, Earthworm,

# INTRODUCTION

Many unknown and lesser known plants are used in folk and tribal medicinal practices in India. The medicinal values of these plants are not much known to the scientific world. E. alba (Family Compositae) is one such medicinal plant popularly used for the inflammation, anthelmintic, astringent, deobstruent<sup>1</sup> and hepatoprotective effect<sup>2</sup>. Approximately 80% of the world population depends exclusively on plants for their health and healing. Whereas in the developed world, reliance on surgery and pharmaceutical medicine is more usual but in the recent years, more and more people are complementing their treatment with natural supplements <sup>3</sup>. Helminthiasis is infestation, is one of the most prevalent disease and one of the most serious public health problems in the world. Hundreds of millions if not billions of human infections by helminthes exist worldwide and increased world travel and immigration from the developing countries<sup>4</sup>. Present work was undertaken to evaluate traditional anthelmintic property of *eclipta alba* leaf extracts.

### MATERIALS AND METHODS

#### Drug and chemicals

The drug Piperazine citrate purchased from commercial sources and all other chemicals were of analytical grade.

#### **Preparation of plant materials**

The fresh leaves of *Eclipta alba* were collected from Agricultural farmhouse. (Vaniyambadi, Vellore district). Then the leaves were thoroughly washed with water and the leaves were shade dried and coarsely powdered in a grinder.

#### **Preparation of Extract**

Shade dried powdered were immersed in methanol (1:3 w/v). Methanol extract was obtained by cold percolation and concentrated under reduced pressure using rotary evaporator at 40°C. Aqueous extract were obtained by maceration for 24 hours The crude extract was stored at 4°C until further use.

#### **Experimental Model**

Adult earthworm phertima prosthuma were collected from moist soil, obtained from agricultural fields nearby Vaniyambadi, Tamil Nadu.-India. All the worms were washed with normal saline to remove all fecal matters were used for the anthelmintic study.

#### Anthelmintic activity

Anthelmintic activity was carried as per the method reported by Ajaiyeoba et al., <sup>5</sup> with minor modifications. The assay was performed on adult Indian earth worm Pheritima posthuma due to its anatomical and physiological resemblance with the intestinal round worm parasite of human beings<sup>6,7,8</sup>. Because of easy availability earthworm have been widely used for the initial evaluation of anthelmintic compounds in vitro<sup>9,10,1112</sup>. Fifty milliliters of formulation containing three different concentrations, each of crude methanolic and aqueous extracts (25, 50, 100 mg/ ml in normal saline). This was done in duplicate for both the extracts. All the extracts and the standard drug solution were freshly prepared before starting the experiments. Mean time for paralysis (in min) was noted when no movement of any sort could be observed except when the worm was shaken vigorously; time for death of worms (in min) was recorded after ascertaining that worms neither moved when shaken vigorously nor when dipped in warm water (50°C).Piperazine citrate (15 mg/ml) was used as reference standard<sup>13</sup>.

#### **RESULTS AND DISCUSSION**

Anthelmintic activity of methanolic and aqueous extract of the *eclipta alba* leaf showed in Table 1. It shows significant anthelminthic activity at 100mg/ml in both aqueous and methanolic extract compared to the standard.

#### CONCLUSION

In our present study has shown that, the methanolic and aqueous extract of *eclipta alba* leaf have been confirmed to display anthelmintic activity. Further studies are needed to identify the possible chemical constituents responsible for anthelmintic potential.

#### Table 1: Anthelmintic effect of the leaf extract of eclipta alba

Group	Concentration of extract (mg/ml)	Time taken in minutes ±SEM	
		Paralysis	Death
Control			
Piperazine citrate	25	16.24±0.80	35.33±0.48
Methanolic	25	48.40±0.43	75.04±0.22
extract	50	34.70±0.57	46.24±0.41
	100	10.40±0.62	18.44±0.64
Aqueous	25	53.04±0.23	81.26±0.51
extract	50	39.22±0.81	52.19±0.19
	100	17.05±.08	24.07±0.54

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