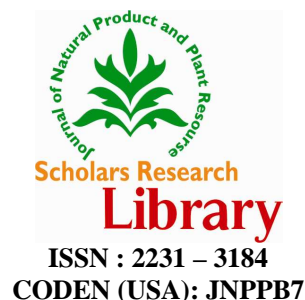




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J. Nat. Prod. Plant Resour., 2011, 1 (4):56-59
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Anthelmintic activity on the *Leptadenia pyrotechnica*(forsk.)Decne

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ABSTRACT

Methanolic extract from the whole plant of the *Leptadenia Pyrotechnica* were investigated for their anthelmintic activity against *Pheretima posthuma*. Two concentrations (50 and 100 mg/ml) of methanolic extract were studied in activity, which involved the determination of time of paralysis and time of death of the worm. Methanolic extract exhibited significant anthelmintic activity at highest concentration of 100 mg/ml. Albendazole in 20mg/ml concentration as that of extract was included as Standard reference and CMC (0.5% as control) The anthelmintic activity of alcohol and aqueous extracts of *Leptadenia Pyrotechnica* has therefore been demonstrated for the first time.

Key word: Anthelmintic Activity, *Leptadenia Pyrotechnica*, *Pheretima posthuma*.

INTRODUCTION

Helminthiasis is among the most important animal diseases inflicting heavy production losses. The disease is highly prevalent particularly in third world countries [1]. Due to poor management practices. Chemical control of helminthes coupled with improved management has been the important worm control strategy throughout the world. However, increasing problems of development of resistance in helminthes [2,3] against anthelmintics have led to the proposal of screening medicinal plants for their anthelmintic activity. The plants are known to provide a rich source of botanical anthelmintics [4,5]. A number of medicinal plants have been used to treat parasitic infections in man and animals [6-10].

Leptadenia Pyrotechnica (forsk) Decne, Asclepiadaceae., commonly known as Khimp in India and Pakistan; merekh in Arabic, is a perennial plant having 15-20 years life span and annually yield 6-12 kg of green stem from the mature plant [11]. That grows abundantly in the sandy places in the Punjab, Western Uttar Pradesh, Rajasthan and Bombay along sea coast, however *Leptadenia Pyrotechnica* is a herb, shrub, or rarely tree like, flowers are bisexual, 5-merous, actinomorphic, sepals joined as base only, corolla sympetalous. It is grown in the month of the September [12]. Traditionally used for analgesic, anti-inflammatory, anabolic, astringent and laxative [13]. It is also used in diabetes and eczema [14]. The drug has been scientifically validated for certain pharmacological effects namely antitumor [15]. antibacterial and antimicrobial [16]. anti-proliferative [17]. Hypolipidemic and Antiatherosclerotic. A number of phytoconstituents, alkaloids, β -sitosterol, glycosides, Flavonoids and polyhydroxy Pregnane glycosides [18] have been isolated from the plant.

MATERIALS AND METHODS

Plant: Whole plant of the *Leptadenia Pyrotechnica* were collected in October 2010 from Jaipur, India. The taxonomical identification of the plant was done by Dr. *D.C. Saini*, Scientist 'E', Birbal Sahni Institute of Palaeobotany, Lucknow, India. The voucher specimen (11721) was deposited in the herbarium of the department of Pharmacognosy, Teerthanker Mahaveer College of Pharmacy, Teerthanker Mahaveer University, Moradabad.

Experimental worms:

All the experiments were carried out in Indian adult earthworms (*Pheretima posthuma*) due to Its anatomical resemblance with the intestinal roundworm parasites of human beings. They were Collected from moist soil and washed with water to remove all fecal matter were used for anthelmintic activity.

Material:

Methanolic extract of the *Leptadenia Pyrotechnica*(forsk.)Decne. Whole plant, Albendazole.

Preparation of Extracts:

The Collected whole plant of *Leptadenia Pyrotechnica* were dried under shade and undergone crushing in electric blender to form coarse powdered and subjected to Soxhlet extraction(Continuous hot extraction) by using methanol as a solvent. The extract were concentrated by rotary evaporator and used for testing anthelmintic activity. The percent yield for methanolic extract were 12%.

Administration of extract:

The suspension of Methanolic extract of whole plant of *Leptadenia Pyrotechnica* of different concentration (50,100mg/ml) were prepared by using 0.5% w/v of CMC as a suspending agent and final volume was made to 10 ml for respective concentration. Albendazole was used as standard. Groups of approximately equal size worms consisting of two earthworms individually in each group were released into in each 10 ml of desired concentration of drug and extracts in the petri dish.

Administration of Albendazole:

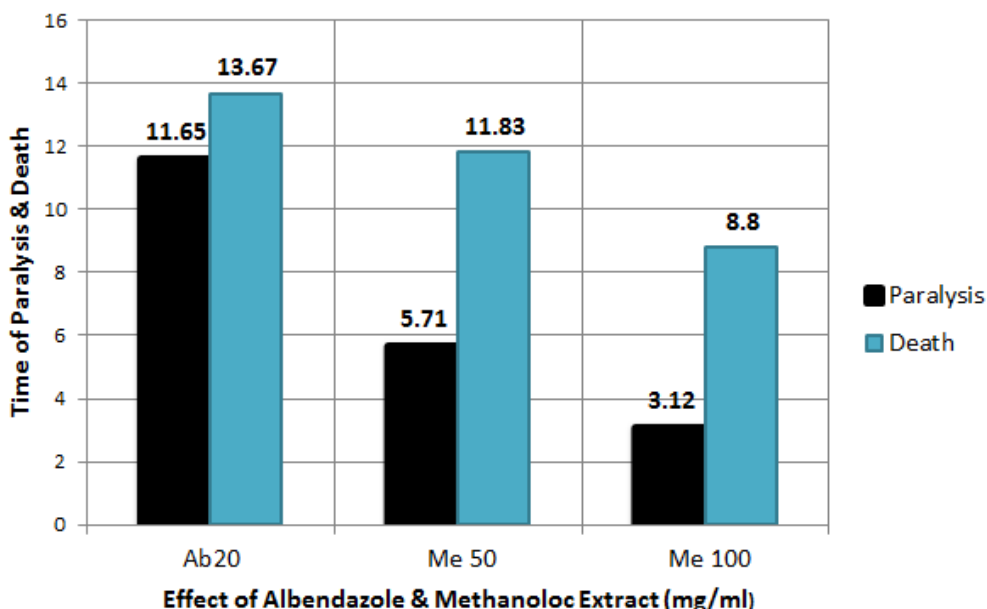
Albendazole (10 mg/ml) was prepared by using 0.5% w/v of CMC as a suspending agent as administered as per method of extract.

Experimental Design:

The anthelmintic activity was performed according to the method [19]. On adult Indian earth worm *Pheretima posthuma* as it has anatomical and physiological resemblance with the intestinal round worm parasites of human beings. *Pheretima posthuma* was placed in petridish containing two different concentrations (50,100mg/ml) of methanolic extract of whole plant of *Leptadenia Pyrotechnica*. Each petridish was placed with 2 worms and observed for paralysis (or) death. The mean time for paralysis was noted when no movement of any sort could be observed, except when the worm was shaken vigorously; the time death of worm (min) was recorded after ascertaining that worms neither moved when shaken nor when given external stimuli. In the same manner Albendazole was included as reference compound. The Test results were compared with Reference compound Albendazole (20mg/ml) treated samples.

Table no.1: Anthelmintic potency of methanolic extract of *Leptadenia Pyrotechnica*.

Extracts	Concentration (mg/ml)	<i>Pheretima posthuma</i>	
		Paralysis (P)	Death (D)
Methanolic Extract	50	5.71±1.13	11.83±1.06
	100	3.12±0.88	8.80±1.48
Standard(Albendazole)	20	11.65±0.51	13.67±0.36
Control(0.5% CMC)	-	-	-



RESULTS AND DISCUSSION

Helminthiasis or infections with parasitic worms are pathogenic for human beings. Immature forms of the parasites invade human beings via the skin or gastrointestinal tract (GIT) and evolve into well differentiated adult worms that have characteristic tissue distribution. Anthelmintics are drugs that may act locally to expel worms from the GIT or systemically to eradicate adult helminthes or development forms that invade organs and tissues.

CONCLUSION

From the results it Conclude that, methanolic extract of *Leptadenia Pyrotechnica* demonstrate to possess dose dependent anthelmintic activity. When compared to Standard drug Albendazole. Methanolic extract of whole plant of *Leptadenia Pyrotechnica* took the less time to cause paralysis and death as compare to the standard drug in the earthworm. From results the traditional claim of *Leptadenia Pyrotechnica* as an anthelmintic have been confirm as a it displayed activity against the worm used in present study.

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