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Anthelmintic activity of *Cynodon dactylon*

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The plant named *Cynodon dactylon* belonging to family Poaceae and it is also known as Durva grass, Bermuda grass, Indian Doab, Dhub, and Durba was collected from Paonta Sahib Himachal Pradesh, India in month of May. The plant material was processed for extract. Air-dried and Coarsely powdered plant was extracted for 7 days with Pet. ether, methanol, and water by using maceration method. The phytochemical tests were done to find the presence of the active chemical constituents such as alkaloids, glycosides, terpenoides, Steroids, saponins, flavonoids, tannins, carbohydrates, proteins and fixed oils. Standardization of *Cynodon dactylon* was carried out to check the extractive value, loss on drying, ash value etc. Anthelmintic activity was evaluated on adult Indian earthworm Pheretima Posthuma by using albendazole as a standard drug. The aqueous extract of *Cynodon dactylon* shows anthelmintic activity as compared with the standard drug.

Keyword: Aqueous Extract, Phytochemicals, Pheretima Posthuma, Anthelmintic Activity.

1. Introduction

Cynodon dactylon (L.) Pers. is a perennial grass belonging to family Poaceae that has a variety of medicinal properties [1].It is cultivated throughout the tropics and subtropics. Whole herb and its root stalk are used for medicinal use [2]. It is native to north and east Africa, Asia and Australia and southern Europe. In Ayurveda *Cynodon dactylon* shows many pharmacological activities like antidiabetic[3], antioxidant[4], antidiarrheal[5], hepatoprotective[6], antiulcer[7], immunomodulator [8], CNS depressant[9], antimicrobial and germicidal[10].

An investigation showed that the aqueous extract of *Cynodon dactylon* has high antidiabetic potential along with significant hypoglycemic and hypolipidemic effects. [11]

The plant contains crude proteins, carbohydrates, and mineral constituents, oxides of magnesium, phosphorous, calcium, sodium and potassium. The whole plant affords β-sitosterol, flavonoids, alkaloids, glycosides and triterpenoids [12]. *Cynodon dactylon* contain many chemical constituents like Hexadecanoic acid, Linolenic acid, ethyl ester, Hydroquinone, d-mannose etc[13].

2. Material and Methods

2.1 Plant Material:

The plant *Cynodon dactylon* was collected from Paonta Sahib (H.P.) in the month of May. The plant was dried in air for seven days and powdered.

2.2 Preparation of Extract:

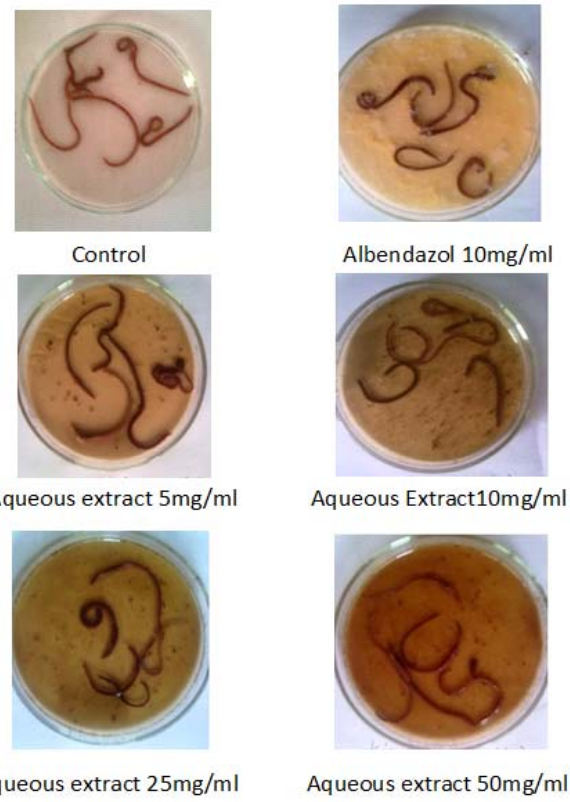
The powdered plant material was extracted with methanol, pet. Ether, and water, which gave greenish black colored residues. The extract was suspended in 1% gum Acacia in normal saline at 5, 10, 25, 50 mg/ml concentrations. Albendazole 5mg/kg body weight acts as standard [14].

2.3 Anthelmintic Activity:-

The anthelmintic activity was evaluated on adult Indian earthworm *Pheretima posthuma* due to its anatomical and physiological resemblance with the intestinal roundworm parasites of human beings [15, 16, 17]. The method of Mathew *et al* [18] and Dash *et al* [19, 20] was followed for anthelmintic screening. Thirteen groups, each consisting of six earthworms of approximately equal size were released in to 50 ml of the extract suspended in 1% Acacia gum.

Each group were treated with one of the following: vehicle 1% gum acacia in normal saline, albendazole 10 mg/ml and extract contains 5, 10, 25, 50 mg/ml in normal saline containing 1 % gum Acacia. Observations were made for the time taken to paralyse and / or death of individual worms up to four hours of test period. Paralysis was said to occur when the worms lost their motility followed with fading away of their body color and finally death. The results were recorded as shown in table 1.

Anthelmintics are drugs that are used to treat infections with parasitic worms. The aqueous extract of *Cynodon dactylon* Showed Anthelmintic activity as compared with the standard drug albendazole.



3. Result and Discussion:

The data reveals that the aqueous extract showed paralysis and death at different concentrations. The effects are comparable with that of the effects produced by the standard drug albendazole. The activity reveals concentration dependent nature of different extracts. The

Table 1: Anthelmintic activity of *Cynodon dactylon*.

Treatment	Time taken for Paralysis (min)	Time taken for death (min)
Control (1% gum acacia)		
Albendazole	37.52 ± 0.8	65.83 ± 0.85
Aqueous extract 5mg/ml 10mg/ml 25mg/ml 50mg/ml	 138.35 ± 0.65 48.25 ± 0.78 39.07 ± 0.55 25.20 ± 0.40	 195.42 ± 3.15 62.67 ± 1.32 52.65 ± 0.90 48.35 ± 0.64

The activity of the extracts was found to be inversely proportional to the time taken for paralysis / death of the worms and due to the presence of alkaloids and flavones glycosides present in the extracts.

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