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EVALUATION OF SOME HERBAL DRUGS FOR THEIR ANTHELMINTIC AND ANTIBACTERIAL ACTIVITY

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Abstract: In the research work the anthelmintic activity of some important Indian medicinal plants i.e. Ashwagandha, Shatavari and Pimpili were evaluated. The formulation and individual powders were tested for the activity. The aqueous extracts of the powders and formulation in the concentration of 2,4,6,8 mg/ml were used for anthelmintic activity. The Indian earthworm *Pheretima posthuma* showing anatomical resemblance with human intestinal parasite, was taken as animal model. The time of paralysis and time of death of the worms at various doses were observed. Albendazole (10 mg/ml) and Vavding (*Embelica ribes*) are included as reference standards and distilled water as control. The formulation and powdered drug of all three plants showed significant anthelmintic activity as the time required to cause paralysis and death is significant as compared to standards.

Keywords: Anthelmintic, Antibacterial, Albendazole, Ashwagandha, *Pheretima Posthuma*.

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INTRODUCTION

Medicinal plants are of great value in the field of treatment and cure of disease. Over the years, scientific research has expanded our knowledge of the chemical effects and composition of the active constituents, which determine the medicinal properties of plants. It has now universally accepted that the plant drugs and remedies are far safer than that of synthetic medicines for curing the complex diseases.^[6]

Herb is an immeasurable wealth of nature not only from the global environmental perspective but also from the medicinal point of view. It plays a significant role ameliorating the disease resistant ability and combating against various unfavorable metabolic activities within the living system. Numerous infectious diseases have been known to be controlled by herbal remedies that have been proved variously since primitive to present history of the mankind. Since time immemorial, man has used various parts of plants in treatment and prevention of various ailments.^[7] Antibiotic resistance has become a global concern. The clinical efficacy of many existing antibiotics is being threatened by the emergence of multidrug-resistant pathogens.

There is a continuous and urgent need to discover new antimicrobial compounds with diverse chemical structures and novel mechanisms of action for new and re-emerging infectious diseases. Therefore, researchers are increasingly turning their attention to folk medicine, looking for new leads to develop better drugs against microbial infections. The increasing failure of chemotherapeutics and antibiotic resistance exhibited by pathogenic microbial infectious agents has led to the screening of several medicinal plants for their potential antimicrobial activity. Recent, studies have suggested that several plants species exhibit promising antimicrobial effects. Plant-based antimicrobials have enormous therapeutic potential as they can serve the purpose with lesser side effects that are often associated with synthetic antimicrobials.^[8]

Helminthic infections are now been recognized as cause of chronic ill health and sluggishness amongst the tropical people. The Ayurvedic formulation Vatica and powdered form of *Withania somanifera*, *Asparagus racemosus*, *Piper longum* were investigated for their anthelmintic activity against *Pheretima posthuma*. This study reports to evaluate Anthelmintic prospective of vatica and powdered drug. Four concentrations (100,200,300,and 400 mg/ml) of each drug were tested for invitro Anthelmintic activity by using Indian adult earthworm *Pheretima posthuma*, which involve the determination of paralysis and death time of worms. Albendazol was used as reference standard and distilled water as control.Dose dependent activity was observed in all drugs but of *Withania somnifera* shown significant activity as compared to *Asparagus racemosus* and *Piper longum*.

MATERIALS AND METHODS:

Helmintic infections are now been recognized as cause of chronic illhealth and sluggishness amongst the tropical people. The vatica and powdered form of *Withania somnifera*, *Asparagus racemosus*, *Piper longum* were investigated for their anthelmintic activity against *Pheretima posthuma*. This study reports to evaluate Anthelmintic prospective of vatica and powdered drug of some saponins and alkaloid containing some medicinal plants. Four concentrations (100,200,300, and 400 mg/ml) of each drug were tested for invitro Anthelmintic activity by using Indian adult earthworm *Phertima posthuma*, which involve the determination of paralysis and death time of worms. Albendazol was used as reference standard and distilled water as control. Dose dependent activity was observed in all drugs but of *Withania somnifera* shown significant activity as compared to *Asparagus racemosus* and *Piper longum*. Powdered form of a drug dissolved in distilled water to make desired concentration Formulation was taken in a petri plate. Experimental Earthworms (*Pheretima posthuma*) were placed in plate Plates were incubated and observed for anthelmintic activity. Similar protocol followed for distilled water as control and albendazol and Vavding (*Embelia ribes*). Earthworms are observed for paralysis and death events and time required noted.

Anthelmintic Activity:

The anthelmintic activity was performed on adult Indian earthworm *Pheritima posthuma* as it has anatomical and physiological resemblance with the intestinal roundworm parasites of human beings. Three groups were prepared as control i.e distilled water, reference albendazole (10mg/ml) and third of extracts (2,4,6,8 mg/ml). Observations were made for the time taken to paralyse or death of individual worms. Paralysis was said to occur when the worms do not receive even in normal saline. Death was concluded when the worms lose their motility followed with fading away of their body colour. Results are shown in table-1

Plant /control	Concentration(mg/ml)	Paralysis time(min)	Death time(min)
Control		-	-
Standard	10	30	50
Ashwagandha	2	180	330
	4	170	250
	6	150	200
	8	40	80
Shatavari	2	150	210
	4	120	180
	6	80	120
	8	40	70
Pimpli	2	100	165
	4	50	90
	6	40	70
	8	15	30

CONCLUSION:

From the results obtained it was concluded that the formulation and powdered drug of all three plants Ashwagandha,Pimpli,Shatavari shows significant anthelmintic activity as the time required for to cause paralysis and death of earthworms is significant as compared to that of Standards.As the Indian earthworm(*Pheretima posthuma*) used for experiment showing anatomical and physiological resemblance with intestinal round worm parasite of human being, the formulations would show significant activity against intestinal parasite.

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