



ISSN 2395-650X

International Journal of
Life Sciences Biotechnology Pharma Sciences

IJLBPS

www.ijlbps.org

E-mail: editorijlbps@gmail.com editor@ijlbps.org

Polyherbal formulation with anthelmintic action

Patel Shiv Narayan and Singhai A. K.

Abstract

The purpose of the current research was to examine the anthelmintic activity of polyherbal combinations of various plants. Paralysis and death times of worms were determined while testing aqueous and ethanolic extracts of varying concentrations. Using piperazine citrate as a reference, we observed that the activity of PHF ethanolic extract is greater than that of PHF aqueous extract.

Anthelmintic action, piperazine citrate, botanicals; key-words

Introduction

Parasitic worms may be eliminated from the body with the use of anthelmintics, which are medications that either stun or kill the parasitic worms. There is growing evidence that helminth infections contribute to both short-term and long-term health problems in humans and livestock. More than half of humans have been infected with one or the other, and most livestock have also been plagued by worms.² Worms whose genotype makes them vulnerable to an anthelmintic medicine are killed by treatment with that therapy. Those worms with a higher tolerance to the disease are more likely to live and reproduce. As time goes on, more and more worms develop resistance, and the therapy fails. In general, intestinal worm infections are easier to cure than those in other parts of the body.³ There is often more room for error when treating worm infections in the digestive tract than there is when treating infections at other locations, both because the worms do not need to be destroyed and because the treatment does not need to be absorbed when administered orally. Several natural plants are said to be effective in the traditional medical system in killing worms. We set out to determine how effective a mixture of the herbs *Thespesia populnea* (root bark), *Terminalia alata* (root bark), and *Clematis triloba* (roots) is as an anthelmintic in the current study.

Material and methods

The plants were obtained from Allahabad district village farmers between July 2010 and December 2010 and authenticated by the university's Department of Pharmacognosy. After being collected, the plant components were dried in the shade and then ground into a coarse powder (40 mesh size). One hundred grams of each herb's dried powder was combined in a one-liter beaker with an appropriate amount of distiller's water, and the mixture was left to macerate for three days. The resulting aqueous extract was concentrated with a filter press. Soxhlet extraction method was used to extract the ethanolic phase; the resulting extract was then concentrated and filtered. Due to their physiological and anatomical similarities to human intestinal roundworm parasites, adult *Phertima prosthuma* earthworms were collected from damp soil at Agriculture College Allahabad, U.P.-India. In this experiment, we employed groups of six earthworms that were all around the same size (8+1 cm). The concentrations of the reference medication, piperazine citrate, were produced in 1% normal saline to get values of 0.5, 0.75, and 1.0 gm%. Concentrations of 0.5, 0.75, and 1.0 gm%

V L.N.C.P., (Bhopal), M.P



were achieved by diluting 15 ml of PHF extract (both aqueous and ethanolic) with normal saline. The worms utilized in this research were divided into four groups of six, with each group consisting of worms of a roughly similar size.

The first group serves as the control and receives just saline while the second group is given PHFAE, the third group is given PHFEE, and the fourth group is given standard medication piperazine citrate at varying concentrations. The duration of paralysis and death of individual worms was

tracked. When the worms are unable to recover in regular salt water, this is thought to be a symptom

of paralysis. When the worms stopped moving, it

was the final sign of death, followed by a gradual bleaching of their bodies. One-way analysis of variance (ANOVA) and the Student t-test were used to determine statistical significance. 4-7

Conclusions and Analysis

Significant anthelmintic activity was observed in the polyherbal preparation of aqueous and ethanolic extracts. Table 1 displays the results of testing for anthelmintic activity on the earthworm, *phertima prosthuma*. According to the results of the current research, the ethanolic extract of PHF is more effective at killing worms than the aqueous extract is (though all these plants alone exhibit it anthelmintic activity, but when combined will give more potent activity).

Results expressed as Mean \pm SEM from 6 observations, $p < 0.001$ as compared to standard

S/n	Treatment	Conc. (gm %)	Paralysis time(min.)	Death time(min.)
1.	Normal Control	0.5	-	-
		0.75	-	-
		1.0	-	-
2.	Aqueous Extract	0.5	60 \pm 0.31	92 \pm 0.65
		0.75	25 \pm 0.78	70 \pm 0.07
		1.0	17 \pm 0.02	40 \pm 0.31
3.	Ethanolic Extract	0.5	70 \pm 0.47	90 \pm 0.76
		0.75	35 \pm 0.58	80 \pm 0.01
		1.0	21 \pm 0.62	65 \pm 0.81
4.	Standard Drug	0.5	33 \pm 0.15	80 \pm 0.98
		0.75	20 \pm 0.31	60 \pm 0.32
		1.0	13 \pm 0.67	40 \pm 0.99

References

- Encyclopædia Britannica. 2009. Encyclopædia Britannica.
- Dwivedi S. N. (2004). Herbal remedies among the tribals of Sidhi District of Madhya Pradesh. *Jour. of Econ. Tax. Bot.*, **20(3)**: 675-687.
- Dwivedi S., Dwivedi S. N., Shrivastava S., Dwivedi A., Dwivedi S. and Kaul S. (2007). Relevance of medicinal herbs used in traditional system of medicine, *Farmavita*.
- Blakemore R. (2004). Diversity of exotic earthworms in Australia- A status report. Transactions of the Royal Zoological Society of New South Wales.