Evaluation of Synergistic Anthelmintic Activity of Polyherbal Formulation on *Pheritima Posthuma*

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Abstract: **- The prevalence of worm infestation is high in underdeveloped and developing countries because of poor sanitation and lack of health education. Our study was aimed to search out the individual and synergestic result of *Ocimum sanctum* (Family: Lamiaceae), *Coriandrum sativum* (Family: Apiaceae), rosid dicot *genus pinnata* (Family: Fabaceae), *Epipremnumn aureum* (Family: Araceae) and *curcuma longa* (Family: Lamiaceae) extract as a result of they need been used historically for the treatment of worm infestation. additional exploring the phytoconstituents gift within the herbs of the polyherbal formulation can aid us within the bioactivity gift.**

Various concentration of ethanolic extracts of varied herbs and therefore the polyherbal formulation were subjected for assessment of anthelmintic activity in Pheritima posthuma. Time of dysfunction associated time of death was used as an analysis parameter. helminthic change state (10 mg/ml) was used as a customary drug. Phytochemical take a look at discovered the presence of alkaloids, flavanoids, glycosides, carbohydrates, phenoplast compounds and tannins. Concentration dependent anthelmintic result was discovered with the extract. once one hundred mg/ml concentration of ethanolic extracts of the polyherbal formulation was more it showed dysfunction of take a look at worm (earthworm) at eighteen minutes and death at thirty-nine minutes. The polyherbal formulation has shown substantial anthelmintic activity exploitation in vitro model on earthworms which can be attributed to the polyphenols gift within the extract.

I. INTRODUCTION

India is one of the world's leading biodiversity with the presence of over 45000 different plant species. India is perhaps the largest producer of medicinal herbs& is rightly called the botanical garden of the world. Medicinal herbs have been for thousands of years is one form or another under the indigenous systems of medicine like Ayurveda, siddha, unani since independence in 1947. India had made tremendous progress in agro technology standardization, quality control& research development etc.

The world have received greater attention in recent time because of its diversity of curing diseases, safety& well tolerated remedies compared to the conventional medicines. The herbs natural combination of constituents as a whole or naturally occurring remedies which has proved to be more effective & safe than conventional medicines.

The ability of herbal medicine to affect the body systems depends on the chemical constituents that it contains. Research on isolated plant constituents are of greater importance.

The study of diseases & their treatment must also have been contemporaneous with the dawn of the human intellect.

It is well known plant generally own their virtues as medical agents to certain characteristic alkaloid & principles present in them because a complete & full chemical analysis of the medicinal plants of India have not yet been performed.

II. MATERIALS AND STRATEGIES

Extraction Method:

The leaves powdery material was extracted by continuous hot extraction methodology exploitation soxhlet equipment. Powdery leaves were taken in a very white textile and through the flask containing 500ml of boiling volatile solvent fermentation alcohol and maintain temperature at 70℃. The vapour arising within the flask passes by the aspect tube into the condenser. The soluble matter dissolved from the drug within the extractor remaining within the flask. Finally the soluble matter was distillates then evaporate to xerotes in china dish exploitation heating mantle at temperature 70˚c.

The preliminary photochemical analysis of leaves of *Ocimum sanctum*, *Coriandrum sativum*, *rosid dicot genus pinnata*, *epipremnumn aureum* and *curcuma longa* showed the presence of alkaloids, flavanoids, glycosides, carbohydrates, phenoplast compounds and tannins.

PRELIMINARY PHYTOCHEMICAL STUDIES

S.no	Extracts	Alkaloids	Carbohydrate	Tannins	Volatile oils	Glycoside	Phytosterols	Triterpene	Flavonoids	Phenolic Compounds
1.	MIXTURE (OCEPL)	+	+	+	+	+	+	+	+	+
2.	OS	-	+	+	+	-	-	-	+	+
3.	CS	-	+	+	+	-	+	-	+	+
4	CL	-	+	+	+	+	-	+	+	+
5.	PP	+	+	+	-	-	-	-	+	+
6.	EA	-	+	+	+	-	-	+	+	+

OS: *Ocimum sanctum*, CS: *Coriandrum Sativum*, PP: *rosid dicot genus pinnata*, EA: *epipremnum aureum*, CL: *Curcuma longa*

Anthelmintic activity

Worm: *Pheritima posthuma*
Control: solution

Cluster I: OCEPL extract Cluster II: OS extract
Cluster III: CS extract Cluster IV: CL extract
Cluster V: PP extract Cluster VI: EA extract

Procedure:

The methodology delineated by Dashetal was used for evaluating anthelmintic activity. Pheritima posthuma (obtained from gardening department, Madurai, Tamilnadu, India) of roughly equal size (15 cm) was divided into nineteen teams. Every cluster consists of six earth worms of same kind and treated with any of the subsequent.

Fifty mil of take a look at resolution containing twenty, fifty and one hundred mg /ml of take a look at extracts and helminthic change state (10mg/kg).

The mean solar time of dysfunction and death was recorded in minutes. The dysfunction time was recorded once no movement of any kind might be discovered except once the worms were agitated smartly. Time for death of worms was recorded, once worms were neither moved whereas agitated smartly, nor once lordotic in heat water (50ºC).

Anthelmintic activity of extracts

Category	**Dose**	**Time of dysfunction Mean ±S.E.M (min)**	**Time of death Mean ±S.E.M (min)**
Piperazinecitrate	10 mg/ml	26±0.04*	47±0.29*
MIXTURE (OCEPL)	20 mg/ml	22±0.91	44±0.37
	fifty mg/ml	20±0.93*	41±0.36*
	one hundred mg/ml	18±0.75*	39±0.90*
OS	20 mg/ml	64±1.79	72±1.75
	50 mg/ml	54±1.70*	63±1.63
	100 mg/ml	45±0.76*	56±0.52*
CS	20 mg/ml	54±1.71	62±0.65
	50 mg/ml	49±1.63	56±0.54*
	100 mg/ml	42±0.53*	49±0.32*
CL	20 mg/ml	54±1.36	69±0.75
	50 mg/ml	46±1.72	65±0.61*
	100 mg/ml	40±0.92*	59±0.72*
PP	20 mg/ml	48±1.31	72±0.55
	50 mg/ml	42±1.53	66±0.74*
	100 mg/ml	36±0.58*	59±0.42*
EA	20 mg/ml	48±1.75	67±0.35
	50 mg/ml	45±1.53	61±0.64*
	100 mg/ml	41±0.64*	55±0.72*

Student ‘’t” test take a look at, *P< 0.001 (Compared to standard) was thought of important.

III. RESULTS & DISCUSSION

Phytochemical take a look at discovered the presence of alkaloids, flavanoids, glycosides, carbohydrates, phenoplast compounds and tannins. Concentration dependent anthelmintic result was discovered with the extract.

The OCEPL extracts showed important anthelmintic activity. Once one hundred mg/ml concentration of ethanolic extracts of the polyherbal formulation was more it showed dysfunction of take a look at worm (earthworm) at eighteen minutes and death at thirty-nine minutes. The anthelmintic activity of extracts might be because of the presence of phenoplast compounds.

Although altogether experimental concentrations there's variation within the time to paralyze the worms, however once it gets paralytic, it took terribly short time for the parasites to die. this might be prompt that combination of plant extracts possesses vermifugal activity in nature and will exert a reversible action on the contractor system of the worms and therefore the inactiveness caused would lead the parasite to be swept back out of the host’s body

Dose-dependent effectiveness was additionally discovered with exposure to numerous concentrations of every combination, as a rise in concentration, shortens the dysfunction amount.

IV. CONCLUSION

Thus, these plants besides having vermifugal/vermicidal activity additionally showed a synergistic result once treated together.

The polyherbal formulation has shown substantial anthelmintic activity exploitation in vitro model on earthworms which can be attributed to the polyphenols gift within the extract.

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