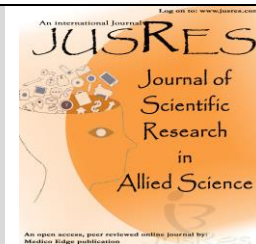




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Evaluation of Phytochemical Screening with Anthelmintic Activity of Medicinal Plant Extracts

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ABSTRACT

Natural products, those molecules derived from nature, have been used by humans for thousands of years to treat ailments and diseases. More recently, these compounds have inspired chemists to use natural products as structural templates in the development of new drug molecules. Plants are good sources for new, safe, biodegradable and renewable drugs. The medicinal plants are recognized for their ability to produce a wealth of secondary metabolites and mankind has used many species for centuries to treat a variety of diseases. Anthelmintic drugs are used to treat people who are infected by helminthes. Thus, the present study was planned to assess the anthelmintic activity of proposed plant with phytochemical studies.

ORIGINAL RESEARCH ARTICLE

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INTRODUCTION

Nature has provided a complete storehouse of remedies to cure all ailment of mankind. The knowledge of drugs has accumulated over thousands of years as a result of man's inquisitive nature so that today we possess many effective means of ensuring healthcare. The history of herbal medicines is as old as human civilization. In the past, almost all the medicines were used from the plants, the plants being man's only chemist for ages. Today, a vast store of knowledge concerning therapeutic properties of different plants has accumulated. [1] Most of the medicinally active substances identified in the nineteenth and the twentieth century were used in the form of crude extract. Plants are being used in medicine from time immemorial because they have fitted the immediate personal need, they are accessible and inexpensive, the practitioners speak to those who have used them in their own language and they are not provided from a remote professional or government apparatus. [2-3] For these and other reasons, the use of plants for

medicines around the world still vastly exceed the use of modern synthetic drugs. Such activity is not completely dismissed in scientific society and plants are also appreciated in pharmaceutical research as the major resource for new medicines and a growing body of medical literature supports the clinical efficacy of herbal treatment. The medicinal plants are recognized for their ability to produce a wealth of secondary metabolites and mankind has used many species for centuries to treat a variety of diseases. Plants are considered to be medicinal if they possess pharmacological activities of possible therapeutic use. These activities often known as a result of millennia of trial and error, but they have to be carefully investigated if we wish to develop new drugs that meet the criteria of modern treatment. [4] Thus it was planned to assess the anthelmintic activity of proposed plant with phytochemical studies.

EXPERIMENTAL WORK

Collection of plant material

The plant leaves of *Ziziphus Sativa* were collected from available graphical sources. The

plant drugs were identified, collected and stored for further use.

Preparation of plant extracts

The plant leaves were crushed into small pieces and air-dried thoroughly. Collected moderately coarse plant powder of *Ziziphus Sativa* was used for the preparation of various extracts. The plant leaves powder of the *Ziziphus Sativa* was extracted with petroleum ether, methanol and water using as solvent respectively by continuous hot extraction. The residue was evaporated by filtration through Whatmann No. 1 filter paper and the aqueous extract was concentrated used on a Rotary evaporator to get solid yield extract.

Evaluation of Anthelmintic activity of plant extracts

The plant extracts of *Ziziphus Sativa* were evaluated for anthelmintic activity in *Pheretima posthuma* (earth worm) of nearly equal size. The worms were acclimatized to the laboratory condition before experimentation. The earthworms were divided into five groups of six earth worms in each and placed in eight Petri dishes containing

the extract solutions or the reference drugs as mentioned below;

- Group -1: Received distilled water which served as the control
- Group-2: Received Albendazole suspension at a dose of 10mg/ml which served as the standard
- Group-3: Received Petroleum ether extract at a dose of 100mg/ml
- Group -5: Received Methanolic extract at a dose of 100mg/ml
- Group-5: Received Aqueous extract at a dose of 100mg/ml

All Petri dishes were kept under room temperature. The living or viable worms were kept under close observation. Observations were made for time taken to complete paralysis (PT) and death (DT) for individual worms. [5-7]

RESULTS AND DISCUSSION

Extraction of plant Drug

The plant leaves powder of the *Ziziphus Sativa* was extracted with Petroleum ether, methanol and water using as solvent respectively. The solvent was removed and practical yield was obtained. The findings were recorded in table 1

Table 1 Extractive values of *Ziziphus Sativa*

Solvent	Yield (g)
Petroleum ether	3.2g
Methanol	8.5g
Water	6.0g

Evaluation of Anthelmintic activity of plant extracts

Time taken for paralysis and death of the worms by EECA can correspond with

observations of the previous anthelmintic studies on the plant extracts. The findings were recorded in table 2

Table 2: In-vitro anthelmintic activity of different extracts of *Ziziphus Sativa*

S.N.	Groups	Concentration mg/ml	Time taken for Paralysis (in mins Mean)	Time taken for Death (in mins Mean)
1	Control (Distilled water)	-----	00	00
2	Standard (Albendazole)	100	24±0.25	48±0.10
3	Pet ether extract	100	37±0.20	70±0.30
4	Methanolic Extract	100	29±0.35	57±0.50
5	Aqueous Extract	100	32±0.15	61±0.20

CONCLUSION

To ensure reproducible quality of herbal products, proper control of starting material is utmost essential. Thus, in recent years there has been an emphasis on standardization of medicinal plants, and evaluation of plant drugs by pharmacognostical studies is still more reliable, accurate and inexpensive means. The findings showed that plant extracts (Methanolic and aqueous) possess comparable anthelmintic activity with standard drug. The results show that plant has the potential to be used as anthelmintic. Therefore, further study must be carried out so that the general people can get actual benefit from this important medicinal plant.

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