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Research Article

**PRELIMINARY PHYTOCHEMICAL STUDIES OF PLANT
LANTANA CAMARA LINN. LEAF EXTRACTS****Venkateshwaran S¹, Senthil Kumar K L², Gokulan P D³, Vasanthan M³,
Siranjeevi S⁴, Siva Kumar P⁴, Snega M⁴.**¹Associate professor, Sri Vijay Vidyalaya College of Pharmacy, Dharmapuri, Tamilnadu.,²Principal, Sri Vijay Vidyalaya College of Pharmacy, Dharmapuri, Tamilnadu.,³Professor, Sri Vijay Vidyalaya College of Pharmacy, Dharmapuri, Tamilnadu.,⁴B. Pharm Students, Sri Vijay Vidyalaya College of Pharmacy, Dharmapuri, Tamilnadu.,**Article Received:** December 2022 **Accepted:** December 2022 **Published:** January 2023**Abstract:**

To evaluate the Phytoconstituent of various extract of Lantana camara leaf. It is a species of flowering plant in the family Verbenaceae, native to subtropical and tropical America, but a few taxa are indigenous to tropical Asia and Africa. The plant material may be subjected to preliminary phytochemical screening for the detection of various plants extracts.

Keywords: *Lantana camara L. Phytochemical screening of ethanol, ethyl acetate, aqueous extract.*

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INTRODUCTIONS:

Medicinal plants represent an important source of medically important compounds. Since ancient time, medicinal plants are used to cure several types of health problems. Recently, there is a growing interest in the pharmacological evolution of various plants used in different traditional known plants have been extensively studied by advanced scientific techniques and reported for various medicinal properties viz, anticancer activity, anti-inflammatory activity, antidiabetic activity, anthelmintic activity, antioxidant activity, larvicidal activity, antifungal activity, hepatoprotective activity etc. 1-10 Lantana camara Linn. is a flowering ornamental plant belonging to family Verbenaceae. L. Camara is also known as Lantana, Wild Sage, Surinam Tea Plant, Spanish flag and West Indian lantana. L.camara is a well-known medicinal plant in traditional medicinal system and recent scientific studies have emphasized the possible use of L. camara in modern medicine.

The present review aims to document the morphology, distribution, phytochemistry and medicinal properties of L.camara and its future prospects for the further scientific investigation for the development of effective therapeutic compounds.

Lantana camara Linn. is considered as a notorious weed and a popular ornamental plant. It is noted from ancient time that plants have been an excellent source of medicine long time Lantana camara has been reported as one of the most important medicinal plants in the world.

BOTANICAL INFORMATION:**Scientific classification of plants:**

- ✓ **Name** : Lantana camara
- ✓ **Kingdom** : Plantae
- ✓ **Phylum** : Magnoliophyta
- ✓ **Class** : Magnoliopsida
- ✓ **Order** : Lamiales
- ✓ **Family** : Verbenaceae
- ✓ **Genus** : Lantana
- ✓ **Plant form** : Shrub

Other common names:

- ✓ Indradhanu
- ✓ Lantana

Occurrence sectors:

- ✓ 1,2,4,10,13,15-18,22,26-30

Occurrence (Special Areas):

- ✓ Gujarat Forestry Research Foundation
- ✓ Indroda park
- ✓ Ayurvedic Udyan
- ✓ Punit Van
- ✓ Van Chetana Kendra

- ✓ Aranya Van

AIM AND OBJECTIVES:

The Aim of study is to analyze various phytochemical constituents of Lantana camara leaves using extraction methods. This leaf of the plant is used as an anti-hypertensive activity. In this plant have been proven to be a potential source of diverse class of anti-hypertension molecules and also used for treatment of various infections. These purified or crude anti-hypertensive constituents are obtained from leaves by extraction using a range of solvents.

Lantana camara leaves (it have anti-hypertensive active constituents).

MATERIALS AND METHODS:**Collection of plant material:**

The leaves of Lantana camara were collected from three different locations of Dharmapuri district. Collected leaves are shade dried for one to two weeks. Constant monitoring was carried out to avoid microbial contamination. The dried plant materials was taken and ground using motor and pestle to obtain a finer particles. The powdered samples were stored in a clean glassware container and stored in low temperature until needed for analysis.

Preparation of plant extracts:

The Powdered sample were extracted by three different solvent such as Distilled water, Ethyl acetate and Ethanol.

A sample should be extracted for each solvent by using Soxhlet apparatus.

100 gram of dried and powdered sample was taken. It was put separately in 300 ml of distilled water and extracted for 18 hours, running in Soxhlet extraction. After Extraction, the precipitation should be collected from natural crude drug.

70 gram of dried and powdered sample was taken. It was put separately in 250 ml of ethanol and extracted for 18 hours, running in Soxhlet extraction. After Extraction, the precipitation should be collected from natural crude drug.

90 gram of dried and powdered sample was taken. It was put separately in 350 ml of ethyl acetate and extracted for 18 hours, running in Soxhlet extraction. After Extraction, the precipitation should be collected from natural crude drug.

A precipitation should be collected separately and dried by Rotary evaporator then it could be, stored in room temperature for further phytochemical investigations.

Preliminary screening:

Analysis on the presence of both primary metabolites and secondary metabolites such as proteins, amino acids, carbohydrates, saponins, phenols, tannins, flavonoids, steroids, vitamin C, coumarin and terpenoids were assessed according to the standard procedure, as described below, were used Harborne 1998.

Test for Proteins (Biuret Test):

Test solution was treated with equal volume of 10% sodium hydroxide solution and two drops of 1% copper sulphate solution, mixed well and observed for the formation of violet/pink colour. If it is so, presence of proteins was detected.

Test for Amino Acids (Ninhydrin Test):

Test solution when boiled with 0.2% solution of Ninhydrin. Formation of purple colour suggests the presence of free amino acids.

Test for Carbohydrates (Molisch's Test):

Filtrates were treated with 2 drops of alcoholic α -naphthol solution in a test tube. Formation of the violet ring at the junction indicates the presence of carbohydrates.

Test for Alkaloids (Mayer Test):

Filtrates were treated with Mayer's reagent (Potassium Mercuric Iodide). Formation of a yellow coloured precipitate indicates the presence of alkaloids.

Test for Phenols (Ferric Chloride Test):

Extracts were treated with 3-4 drops of ferric chloride solution. Formation of bluish black colour indicates the presence of phenols.

Test for Tannins (Gelatin Test):

To the extract, 1% gelatin solution containing sodium chloride was added. Formation of white precipitate indicates the presence of tannins.

Test for Flavonoids (Alkaline reagent test):

Crude extract was mixed with 2ml of 2% solution of NaOH. An intense yellow colour was formed which turned colourless on addition of few drops of diluted acid which indicated the presence of flavonoids.

RESULT AND CONCLUSION:

The results of phytochemical studies are as follows,

Preliminary phytochemical screening:

Tested for its content of different classes of compounds. Various qualitative chemical tests for preliminary phytochemical screening of the extract for different types of chemical constituents were applied. The results showed the protein, carbohydrates, amino acids, phenol, tannin, flavonoid and alkaloids are presence of Lantana camara leaves in various solvent extraction.

Test observations, as tabulated in table 1, shows the presence of various secondary metabolites dissolved in various leaf extracts of L. camara. Steroids are presence of ethanol and ethyl acetate. Flavonoids are presence of ethyl acetate. Carbohydrates are presence of ethyl acetate. Protein, Amino acids, Alkaloids, Phenols, Tannins classes compounds are absent in all extracts.

S.NO	Phytochemicals	Distilled water	Ethanol	Ethyl acetate
1.	Protein	+	-	-
2.	Amino acids	+	-	-
3.	Carbohydrates	+	-	+
4.	Alkaloids	-	-	-
5.	Saponin	+	+	+
6.	Phytosterols	-	-	-
7.	Glycosides	-	-	-
8.	Phenols	+	-	-
9.	Tannins	+	-	-
10.	Flavonoids	+	-	+
11.	Steroids	-	+	+
12.	Vitamin C	+	-	-
13.	Coumarins	-	-	+
14.	Terpenoids	-	+	+
15.	Phlobatannins	-	-	-

PHYTOCHEMICAL CONSTITUENTS:

PRESENCE (+) ABSENCE (-)

CONCLUSION:

The results obtained have shown the presence of terpenes and saponins classes of compounds. Along with them flavonoids, steroids, carbohydrates and coumarins are also reported. This study indicates that *L. camara* leaves has medicinally useful phytochemicals. The presence of terpenes in all extract indicates its confirm presence. In presence world, its necessary to introduce new and biologically safe and active drugs for an eco-friendly life style.

Phytochemicals found present in the *Lantana camara*, *L.* indicates their potential as a source of principles that may supply novel medicines. Furthermore, isolation, purification and characterization of the phytochemical found in this species may introduce useto a future medicine that will change the life of makind.

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