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A brief review on Lantana plant (lantana camara linn.)

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ABSTRACT :-
Lantana camara is well known to cure several diseases and used in Various folk medicinal preparations.Lantana camara, commonly known as lantana, is a tropical flowering plant that has been used in traditional medicine for various purposes.Different parts of the plants are used in the Treatment of cold, headache, chicken pox, eye injuries, whooping Cough, asthma, bronchitis and arterial hypertension. Among the large Number of herbal drugs existing in India, very few have been studied Systematically so far. Lantana camara is an evergreen plant found Throughout India.The plant has been found to have Antibacterial activity, anticancer activity, anti-fungal activity, antihelmentic activity, anti hyperglycemic activity And antioxidant activity. The plant's leaves smoke has also been found to have mosquito repellent activity. Lantana camra L. In aromatic,evergreen aheub belonging to the family Verbenaceae.

Keywords :- lantana camra linn.,Ethnobotany,Material & method,

I. INTRODUCTION :-

Lantana camra linn.is a flowering ornamental plant belonging to family "Verbenaceae ".lantana camra is a species of flowering plant native to the America tropics.leaves of lantana camra was collected from local area of mangalpally(v),lbrahimpathnam((M),RR District,(A.P)Indi

Lantana camara is an important Medicinal plant andin recent history this plant Lantana camara is an important Medicinal plant andin recent history this plantis reported for various medicinal properties.Lantana's aromatic flower clusters (called umbels) are a mix of red, orange, yellow, or blue And white florets.The effects of plant extracts on bacteria have been studied by a very large Number of researchers in different parts of the world.L. camara leaves are aromatic and Their essential oil is reported to be inseticidal, acting as bees, mosquitoes and flies Repellent. Their common names are shrub verbenas or lantanas.

Lantana camara is a thorny shrub upright, half climbing or sometimes more or less hanging, reaching 2-3 m in height. The stems and branches are angular, bearing curved spines, arranged along

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the edges. The leaves are simple, opposite, decussate with rough lamina, oval, regularly dentate with acute apex.L. camara is an important Medicinal plant andin recent history this plant is reported for various medicinal properties.Lantana's aromatic flower clusters (called umbels) are a mix of red, orange, yellow, or blue And white florets. The effects of plant extracts on bacteria have been studied by a very large Number of researchers in different parts of the world.L. camara leaves are aromatic and Their essential oil is reported to be inseticidal, acting as bees, mosquitoes and flies Repellent. Their common names are shrub verbenas or lantanas.

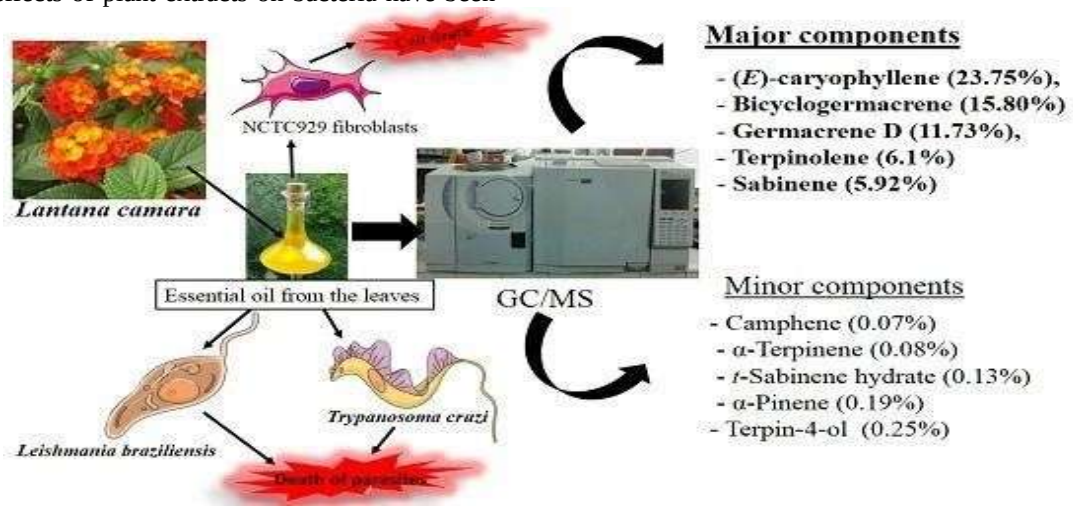

Fig.1. Component of lantana camara

DISTRIBUTION :

L. camara is local to Central and Northern South America and the Caribbean. L. camara is presently dispersed in about 60 nations in Tropical, subtropical, and mild parts of the world.

DISCRIPTIONL :

L. camara may be a moo erect or subscandent overwhelming bush with triangular Stem. It develops up to 1–3 m and in width, it can spread to 2.5 m. Clears out Are applaud, intense or subacute, crenate serrate, rugose over, and scabrid On both sides.They are green in color, 3–8 cm long, and 3–6 cm wide. Leaves and stems are secured with harsh hair. Little bloom held in Clusters. Color ordinarily orange, white to ruddy in different shades and Usually alter colors as they ages. Blooms have a yellow throat, in Axillary head nearly all through the year.The calyx is little, corolla Tube slim, the appendage spreading 6–7 mm wide and partitioned into unequal Lobes. Inflorescences are in sets within the axils of inverse clears out. They Are compact, domeshaped 2–3 cm over and contained 20–40 sessile Flowers. The root framework is exceptionally solid and it gives out unused new shoots Even after rehashed cuttings .

TRADITIONAL USE :

Ordinarily, the plant is utilized as diaphoretic, carminative, Antispasmodic, tonic, antiemetic, to treat respiratory diseases, and Disorders (hack, cold, asthma, and bronchitis), within the treatment of Tetanus, epilepsy, diarrhea, and gastropathy. Powdered clears out are Used for cuts, wounds, ulcers, and swellings. An implantation of the clears out Is utilized for bilious fever, dermatitis, and emissions. The natural products are utilized in Fistula, pustules, tumors, and ailment. The root is utilized in malarial, Rheumatism, skin rashes, dermatitis, skin inflammation, mycotic contaminations, and Respiratory tract contaminations, counting flu and tuberculosis.A decoction of new roots is utilized as a wash for odontalgia .

PHYSIOCHEMICAL CHARACTRIS

Physicochemical characteristics of the clears out of L. camara were: Add up to Ash 8.06, water-soluble cinder 0.95, corrosive insoluble 1.96, water-soluble Extractive esteem 27.5, and liquor dissolvable extractive esteem 25.1% .Physiochemical characteristics of the natural products were: Add up to fiery remains 1.59, waterSoluble fiery debris 0.48, corrosive insoluble cinder 2.1, sulfated fiery remains 10.3, water-

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soluble Extractive esteem 6.0, liquor solvent extractive esteem 2.1, and misfortune on Drying 11.3% .

TAXONOMY :-
1).Kingdom: Planate
2).Division: Magnoliophyta
3).Class: Magnoliopsid
4).Order: Lamiales
5).Family: Verbenaceae
6). Genus: Lantana
7).Species: Lantana camara Linn.
8).Common name : Shrubvebena

METHODOLOGY OF LANTANA CAMARA LINN.

When discussing its methodology, it often pertains to aspects like cultivation, propagation, and care. Here's a basic methodology for growing and caring for Lantana camara: **Planting:-**

- Choose a well-draining location with full sun or partial shade.
- Plant lantana in spring after the danger of frost has passed. •Space the plants about 18-24 inches apart.

Soil:-

- Lantana prefers slightly acidic to neutral soil (pH : 6.0-7.0).
- Ensure good drainage to prevent root rot.

Watering:-

- Water newly planted lantana regularly until it's established.
- Once established, water sparingly as lantana is drought-tolerant.

Fertilization:-

- Use a balanced, slow-release fertilizer in spring.
- Avoid excessive nitrogen, which can lead to more foliage and fewer flowers.

Pruning:-

- Prune lantana to maintain its shape and encourage new growth. •Deadhead spent flowers to promote continuous blooming.

- **Pest and Disease Control:-** Lantana is generally resistant to pests and diseases, but watch for aphids or whiteflies.Use insecticidal soap or neem oil if necessary.

Propagation:

- Lantana can be propagated from seeds, cuttings, or division.
- Seeds can be collected from ripe fruit and sown in a seed tray.
- Cuttings are best taken in late spring or early summe

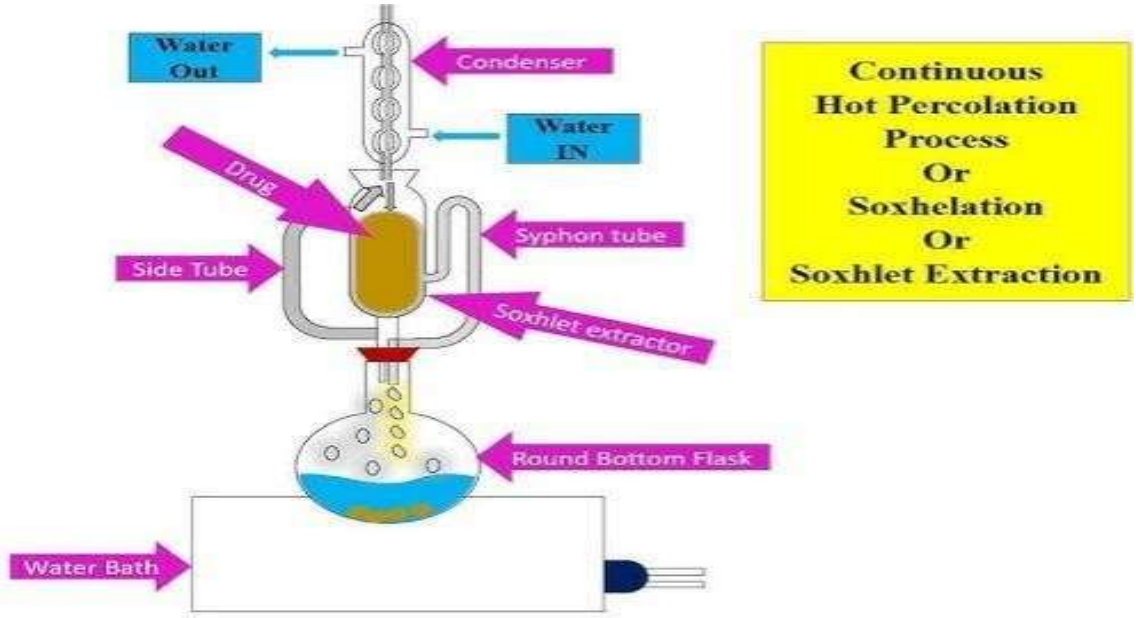

Fig.2.Soxhalet apparatus

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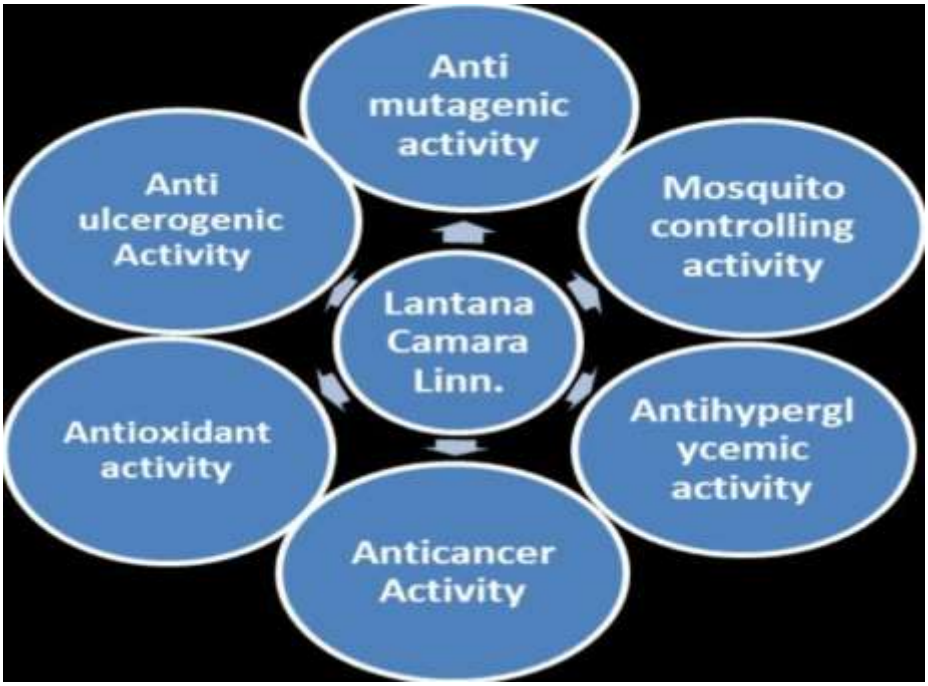

Fif.2.Therapeutic activity of lantana camara linn.

THERAPEUTIC PROPERTY :-

1).ANTI-MUTAGENIC ACTIVITY :-

The anti-mutagenic effect of the extract was evaluated by The Ames method using the mutant strain of Salmonella Typhimurium (TA100) in the presence of NaN3 And Counting grown colonies indicating the incidence of a Reverse mutation. The mutant Salmonella typhimurium Strain (TA100) that requires histidine for growing In minimal media is suitable for measuring the anti-Mutagenic activity of mutagenic substances.20-22In this phase, the anti-mutagenic effect of the extract was Evaluated by adding S9 (The sterile extract of the mouse Liver containing microsomal enzymes). The cytochrome Oxidase enzyme (P450), which inactivates oxidant and Toxic compounds, can be found in the membrane of liver Cells, especially the endoplasmic reticulum membrane). Thus, the metabolic and antimutagenic activities of Compounds are strengthened in the presence of the Microsomal extract of the liver (S9).Research in this area is ongoing, and the effectiveness of Lantana camara as an antimutagenic agent may vary depending on the specific compounds and extracts used, as well as the experimental conditions.Antimutagenic activity refers to the ability of a substance to reduce or prevent mutations in genetic material, typically DNA. Lantana camara has been investigated for its potential to inhibit mutagenic agents or processes.

2). ANTI-HYOERGLYCEMIC ACTIVITY :-

Hypoglycemic activity of methanol extract of L. Camara Linn fruits was screened in streptozotocin Induced diabeticrats (Wistar albino rats). Extract Treatment at doses of 100and 200 mg/kg body weight Resulted in dose dependentdecrease in serum glucose Level in streptozotocin induced diabetic rats. Extract Treatment also showed improvement inbody weight, HbA1c profile as well as regeneration of liver cells.The efficacy of Lantana camara Leaves in experiment showed the significant decrease in the blood glucose level, increase the antioxidant efficacy in streptozotocin induced diabetes.Some studies have investigated its potential antihyperglycemic (blood sugar-lowering) activity. The plant contains various bioactive compounds, and it's suggested that these compounds may have a role in managing blood sugar levels.

3). MOSQUITO CONTROLLING ACTIVITY :-

One application of Lantana flower can provide more than 50% protection up to 4 h against the possible bites of Aedes mosquitoes.No adverse effects of the human volunteers were observed through 3 months The leaves of the lantana plant contain compounds that can act as natural mosquito repellents.lantana plant to release their natural oils,

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which contain mosquito-repelling compounds.The use of repellents decreases contacts between mosquitoes and their hosts, and may even lower the rate of disease transmission in many instances .The most commonly used mosquito repellent,DEET (N,N-diethyl-3-methylbenzamide), was discovered over60 years ago and has been in use since the 1950's

4).ANTI-CANCER ACTIVITY :-

Medicinal Plants serve as an abundant reservoir for bioactive Agents that improve human health by treating various Diseases. It has been used to treat cancer and continued To be used as a home remedy by some traditional Healers in developing countries. Several natural com-Pounds obtained from medicinal plants, including al-Kaloids, triterpenoids, and flavonoids, proved to have Anticancer properties.The extract obtained from the L. camara exhibited cell death properties in the human breast cancer cell line, MCF-7. We found that the apoptosis induced by treatment with the L.The flavonoid compound Kaempferol-6-methoxy7-O-glucoside was isolated from Lantana camara flower has proved its efficacy against the growth of cancer cells.

5). ANTIOXIDANT ACTIVITY :-

Antioxidant activity was evaluated by DPPH method and the leaves of L. camara showed 78.21 mg/100 of Ascorbic acid Equivalent Antioxidant Capacity (AEAC).Antioxidant compounds from plants can be obtained by extraction using a solvent. The difference in polarity of The solvent results in different amounts and types of metabolites obtained. The use of antioxidant compounds

Is growing both for food and medicine along with increasing knowledge about free radical activity.Antioxidant compounds are inhibitors used to inhibit autoxidation. The antioxidant effect of phenolic Compounds is due to their oxidizing properties which play a role in neutralizing free radicals. Natural Antioxidants that can be obtained from medicinal plants play an important role in preventing the treatment of Chronic diseases caused by oxidative stress. Exogenous intake of antioxidants has been shown to prevent Inflammation.

6). ANTI- ALCEROGENETIC ACTIVITY :-

The antiulcer activity of Lantana camara leaves extract is further supported by histopathological study which showed protection of mucosal layer from ulceration and inflammation. The present study demonstrated the potential of Lantana camara leaves to exert anti-ulcer activity especially the ethanolic extract.The methanolic extract of Lantana camara leaves shown healing of gastric ulcers and also prevents development of duodenal ulcers in rats.

II. MATERIALS AND METHODS :-

•Sample Collection and Preparation: -

The herb was randomly collected in the natural forest Around University of Eastern Africa,

Baraton. The Plant samples were collected and identified by a Taxonomist in the Biology Department, Baraton University. The samples were allowed to dry at room Temperature under a shade. The dry samples were Then crushed in fine powder and stored in tightly Sealed polyethylene bags.

EXTRACTION :-

The leaves were air-dried at room temperature for 7 days, and then reduced to powder using mortar and pestle. About 110 g of powdered leaves of L. camara was extracted in ethanol for 72 h by maceration method and further concentrated to dryness using a water bath (50°C) as described by Alexander et al.

•Qualitative Phytoconstituents Analysis:

The extracts' phyto-constituents analysis for Identification of bioactive chemical constituents was Done using standard procedures with slight Modifications .

1).Tannins:

About 0.5 g of the sample was put in a test tube and 20 ml of distilled water was added and heated to Boiling. The mixture was then filtered and 1 % of FeCl3 Was added to the filtrate and observations made. A Brownish green color or a blue, black coloration Indicated the presence of tannins.

2).Saponins:

The crude extract was mixed with 5 ml of water and Vigorously shaken. The formation of stable form Indicated the presence of saponins.

3).Flavonoids:

A portion of the aqueous extract was added in a test Tube. To this, 5 ml of dilute ammonia and 2 ml of Concentrated sulfuric acid was added. The Appearance of a yellow color indicated the presence Of flavonoids.

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4).Terpenoids:

The extracts of the plant material were taken in a Clean test tube, 2 ml of chloroform was added and Vigorously shaken and then evaporated to dryness. To This, 2 ml of concentrated sulfuric acid was added And heated for about 2 minutes. A grayish color Indicated the presence of terpenoids.

Glycosides:- **Salkowsks' test:**

The solvent extract of the plant Material was mixed with 2 ml of chloroform and then 2 ml of concentrated sulfuric acid was carefully added And shaken gently, then the observations were made. A red brown color indicated the presence of the Steroid ring (glycone portion of glycoside)

Alkaloids:

The crude extract was mixed with 1% of HCl in a test Tube. The test tube was then heated gently and Filtered. To the filtrate, a few drops of Mayer's and Wagner's reagents were added into the test tube. A Resulting precipitate confirmed the presence of

Steroids:

Liebermann Burchard reaction: About 2 g of the Extract was put in a test tube and 10 ml of chloroform Was added and filtered, then 2 ml of the filtrate was Mixed with 2 ml of a mixture of acetic acid and then Concentrated sulfuric acid is added along the side of The test tube. Blue green ring indicated the presence Of steroids.

Phenols:

The plant's solvent extract was put in a test tube and Treated with a few drops of 2% of FeCl3. Formation of Bluish green coloration indicated the presence of Phenols.

III. CONCLUSION :-

According to ethnomedical and scientific studies on L. camara's medicinal properties, the plantis a valuable Resource and a potential source of a new drug development. The methanolic extract of Lantana camara leaves Shown healing of gastric ulcers and also prevents development of duodenal ulcers in rats. In conclusion, Lantana trifolia and Sida cuneifolia were culturally important ethnomedicines. Scientific validation of Traditional claims as well as conservation of these plants should be encouraged in order to preserve and Promote their use. Methanolic extract of L. camara is relatively safe on short-term exposure. In the light of the Alarming toxicity of the plant, the useof this plant in whole or any part there of need to be carefully regulated Until the toxic principles of the plant are identified and removed, to ensure a safe and effective treatment for Diabetes. Antihyperglycaemic activity of the aqueous extract of the leaves was evaluated by using both Normoglycaemic and alloxan induced hyperglycaemic rats. The wound healing activity was assessed for both Leaf juice and hydroalcoholic (ethanol 50% v/v) extract of the leaves on excised rats.From the results obtained in this research it can be Affirmed that the presence of these important Phytochemicals makes the smoke of Lantana camara Very useful as a medicinal remedy.

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