www.ijprems.com
editor@ijprems.com

INTERNATIONAL JOURNAL OF PROGRESSIVE RESEARCH IN ENGINEERING MANAGEMENT AND SCIENCE (IJPREMS)
(Int Peer Reviewed Journal)
Vol. 05, Issue 04, April 2025, pp : 2551-2559

e-ISSN : 2583-1062
Impact Factor : 7.001

CHEMICAL CONSTITUENT AND MEDICINAL USE OF LANATANA CAMARA

Sanika Dilip Gawari[1], Sneha K. Sonawane[2]

[1,2]SMBT College of Pharmacy Nashik, Maharashtra, India.

DOI: https://www.doi.org/10.58257/IJPREMS40393

ABSTRACT

Lantana camara, a flowering plant belonging to the family Verbenaceae, it is a widely distributed tropical and subtropical plant, has been traditionally used in various medicinal applications due to its rich phytochemical composition. The plant contains bioactive compounds such as flavonoids, terpenoids, alkaloids, and phenolic compounds, which exhibit diverse pharmacological properties. Studies have demonstrated its potential as an antimicrobial, anti-inflammatory, antioxidant, hepatoprotective, analgesic, and wound-healing agent. Additionally, Lantana camara has shown promise in diabetes management, cancer treatment, and as a natural insecticide. However, despite its therapeutic potential, concerns regarding its toxicity and proper dosage must be addressed through further research. This review highlights the medicinal benefits, phytochemistry, and pharmacological significance of Lantana camara, emphasizing the need for more clinical studies to validate its efficacy and safety in modern medicine

Keywords: Lantana camara, Positive and Negative impacts, antimicrobial activities, Essential oils, Nanoparticles, Anticancer.

1. INTRODUCTION

The word Lantana camara derives from Latin ‘lento’ which means to bend. The species was first described and given its binomial name by Linnaeus in 1753. It is mostly made up of seven species, six of which have been found in USA [1]. Although it is native to South America, some of the taxa are found in almost 50 places worldwide, and in some, it can even be grown [2]. It is often referred to as red sage and is a common garden decorative [3]. Up to 2000 meters above sea level, L. camara thrives in tropical, subtropical, and temperate climates. L. camara features a woody stalk with blooms that are red, white, and other hues. Although there are 650 cultivars in the genus, most of them are connected to the Lanatana camara compound. Worldwide, it regarded as a toxic unwanted plant as well [4]. Additionally, it is said that potassium and manganese, which are beneficial to coconut palms, are present in L.camara ash [2]. According to a few studies, this plant is harmful to both people and animals. L. camara has historically remained cast-off as a remedy to address a variety of illnesses, incorporate rheumatism, asthma, eczema, measles, chickenpox, cancer, tumors, wounds, and tetanus . Steroids and other bioactive components of L. camara make it potentially medicinal. naphthoquinones, iridoid glycosides, oligosaccharides, triterpenoids, and phenylpropanoid glycosides. Several significant phytochemicals, including as linaroside, lantanoside, ursolic acid, and oleanolic acid, have been identified from L.camara. Numerous significant phytochemicals, including as linaroside, lantanoside, verbascoside, camarinic acid, phytol, and umuhengerin, have been extracted from L.camara and their biochemical process have beeninvestigated[5]. The herb is well-known for being one of the best and most accessible sources for extracting essential oils, or EOs, often known as lantana plant oils . These important EOs isolated from L.camara in diverse places were recently described, along with their notable biological capabilities, which include anti-inflammatory, antioxidant , and antibacterial activities. Despite the fact that L.camara's genome has just recently been characterized, over 41 sequences, including rps3, atpB, ccsA, rpoC1, rpoC2, FT, GLO1, rpl32, and rbcL, have been submitted to the NCBI Genbank database. Observing Because of L. Camara's medicinal and commercial relevance, a thorough review is required to compile every available data on its medication, toxicity and the process of phytochemistry This overview serves as a foundation for future molecular studies by lanatana camara[6].

Lantana camara:

Lantana is a genus of approximately 150 herbaceous plants (family Verbenaceae) that grows 0.5–2 m tall under shrubs and bushes. The genus Lantana, described by Linnaeus in Species Plantarum in 1753, has seven species, six from South America and one from Ethiopia (Munir, 1996). Lantana was grows mainly in southern and tropical America, with some taxa endemic to tropic Asia and Africa[7]. Today, it happens in about fifty distinct nations, where many different species are farmed for flowers less than hundreds of varietal names. The number of recorded species of Lantana varies from 50 to 270 specific and subspecific sets, but a better estimate seems to be 150 species . The genus is difficult to classify taxonomically because species are not persistent and hybridization is widespread, inflorescence shape changes with age, and flower color varies with age and maturity. Lantana Camara, generally referred to as green and reddish grass, is the most common species in it. family, grows luxuriantly at an altitude of up to 1,800 meters. in tropical, subtropical and

www.ijprems.com
editor@ijprems.com
INTERNATIONAL JOURNAL OF PROGRESSIVE RESEARCH IN ENGINEERING MANAGEMENT AND SCIENCE (IJPREMS)
(Int Peer Reviewed Journal)
Vol. 05, Issue 04, April 2025, pp : 2551-2559
e-ISSN : 2583-1062
Impact Factor : 7.001

temperate regions. The plant is native to tropical regions of America and Africa. Still, it is an imported subspecies., they are found in various places on earth, especially in Australia and the Pacific. Lantana was introduced to the Netherlands from Brazil in the late 17th century by Dutch explorers and was later studied in tropical, subtropical and temperate regions. Many colorful forms of Lantana were marketed and popularized by nurseries in the 18th and 19th centuries, and it is now grown as an ornamental throughout the world. Most of the 650 cultivars in the genus are related to L. camara complex. L. camara has been cultivated for its flowers for over 300 years and now has hundreds of cultivars and hybrids that are morphologically, physiologically and genetically distinct[8].

Figure 1: Lantana Camara plant

L. Camara (commonly referred to as uninhabited sage) is a deciduous, thorny, single-stemmed shrub that grows to an average size of 2 meters (6 feet). It is a member of Magnoliopsida (Magnolia) is a class, Lamiales is an order, Verbenaceae is a family, and Lamianus is a genus.Its stems are four-sided in shape, roofed in bristly the hair. that become green when green, and are often equipped or scattered with tiny prickles. It possesses strong root system , and can produce new shoots even after multiple cuttings . Its leaves have opposite, simple petioles and are rough, hairy, and toothed . Its flowers have a corolla with a skinny tube and four short, spreading lobes, and undergo color change after anthesis. The flowers occur in clusters of small, multicolored flowers in stalked clusters[4,7]

Plant Description

Lantana camara is a large, vertical, vital Tree which may develop equal to 4 meters in height. The leaves are oval, or oval-shaped, having dimensions of 2-10 cm in length and 2-6 cm in breadth. L. camara has small tubular-shaped flowers, which each have four petals and are arranged in clusters in terminal areas stems. Flowers come in many different colours, including red, yellow, white, pink and orange, which differ depending on location in inflorescences, age, and maturity. The flower has a tutti frutii smell with a peppery undertone. After pollination occurs, the colour of the flowers changes (typically from yellow to orangish, pinkish, or reddish); this is believed to be a signal to pollinators that the pre-change colour contains a reward as well as being sexually viable, thus increasing pollination efficiency. In frost-free climates the plant can bloom all year round, especially when the soil is moist.

The branches are green, stiff, with delicate hairs and a strong scent. It can ascend up to fifteen meters with help. Lantana camara grows easily in conditions that are suitable. Floral grow between March and August. The fruit is green and reddish brown, with two nutlets on either side. Fully grown plants generate 2,000 seeds every year. The root systems of L. camare are quite substantial, with a primary taproots and several minor lateral roots[9].

Taxonomical Classification

The botanical name of Raimuniya is Lantana camara. It belongs to plant family Verbanaceae. The taxonomical classification is mentioned below.

Kingdom: Plantae

Subkingdom: Tracheobionta

Superdivision: Spermatophyta

Division: Magnoliopsida

Subclass: Asteridae

Order: Lamiales

Family: Verbenaceae

Genus: Lantana

Species: Lantana camara

www.ijprems.com
editor@ijprems.com

INTERNATIONAL JOURNAL OF PROGRESSIVE RESEARCH IN ENGINEERING MANAGEMENT AND SCIENCE (IJPREMS)
(Int Peer Reviewed Journal)
Vol. 05, Issue 04, April 2025, pp : 2551-2559

e-ISSN : 2583-1062
Impact Factor : 7.001

Biology

spiny deciduous plant with several stems reaching an average height of 2m (6ft). The shrub is classed as magnoliopsida, order lamiales, verbenaceae, genus Lantana . The leaves are positioned squarely in shape, covered in bristly hairs when green, and frequently armed or with scattered little prickles . Lantana camara has a robust root structure . Even after several cuts, the roots continue to develop new shoots. The reverse straightforward leaves have extended petioles in, brutal and hairy oval blades, and rounded toothed borders[10]. These lush green foliage of Lantana camara provide a distinct smell. This plant's blooms are small, colorful, stalked, and grouped in flat-topped groups. They have thin tubes and four short lobes that extend out. Their flowers change color following anthesis.These blooms come in clusters of white, pink, and lavender, or yellow, orange, and red. The flower's yellow hue serves as a visual cue for pollinators, and the color change happens during pollination. Lantana camara berries are spherical, meaty, 2-seeded drupes that start green, then turn purple, and eventually blue-black . Despite their appeal to insects and birds, the berries are exceedingly poisonous in nature. Lantana camara seeds germinate easily and quickly[11].

Ecology

Lantana camara's extensive and diverse distribution reflects its wide ecological tolerances. The species can be found in a variety of environments, including wastelands, rainforest borders, beachfronts, and forests affected by activities such as fire or logging . The species also thrives in disturbed environments such as roadsides, railway tracks, and canals. Anthropogenic activity exacerbates and permits the invasion to expand. The two most important components for a successful establishment are its ability to develop in a variety of climates and the absence of any Temperature and rainfall limits. Table 1 summarizes the environmental requirements of l. camara.

Table 1: Habitat parameter and requirement

Habitat Parameters	Requirement
Light range	Sun to full sun
pH range	4.5 – 8.5
Temperature	Intolerant of frequent or prolonged freezing
Annul rain fall range	1000 – 4000 mm
Water range	Sami-arid to normal
Soil range	Mostly sandy to clay loam
Altitude	< 2000 m above sea level
Light condition	Prefers unshaded habitats, can tolerate some shade

Lantana camara usual life cycle begins with seed dissemination by numerous dispersal agents, including fruit-eating birds and a few animals. An solitary plant can produce up to 12,000 fruits each year. Various investigations show that the germination process begins after the seed passes into the intestines of a bird or mammal. Butterflies, moths, bees, and thrips are common pollinators. Aside from these, vegetative proliferation involves layering and reshooting. The tenacity of Lantana camara is confirmed by its recurrent growth at the base of the stems. Various studies assign seed viability ranging from two to five years. However, the exact timing of seed viability remains uncertain and is mostly determined by plant variety, soil type, and moisture conditions. Anthropogenic disturbances (burning, cutting, clearing, and building operations) promote its germination and spread. The plant grows all year but reaches its peak Following summer rains. The species germinates in only a few days. The lack of water and open forest promote rapid flowering. Once formed, mature thicketss can last for a long time.After one season of growth, the plant begins to produce seeds. It competes with natural vegetation in the region where it was established, smothering pasture as a result of its allelopathic nature[7,9].

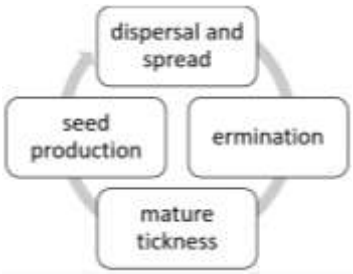

Figure 2: Life cycle of Lantana camara

www.ijprems.com
editor@ijprems.com

INTERNATIONAL JOURNAL OF PROGRESSIVE RESEARCH IN ENGINEERING MANAGEMENT AND SCIENCE (IJPREMS)
(Int Peer Reviewed Journal)
Vol. 05, Issue 04, April 2025, pp : 2551-2559

e-ISSN : 2583-1062
Impact Factor : 7.001

Uses

Lantana camara, although being a noxious plant, has a few modest benefits, mostly in herbal drug. There have been several trainings undertaken on the utilization of natural elements found in various regions of Plant species. Table 2 illustrates the use of L. camara. It was found that extracts from the leaves can cure antibacterial, fungicidal, insecticidal, and nematicidal disorders. Several investigations have shown its potential as a biocide. Table 2 describes the applications of Lantana camara[10].

Table 2: Part of plant and their use

Part used	Uses
plant	Act as hedge plant , provide perch sites and cover
leaves	Boild and applied for swellings and pain in the body alkaloidal fractions lower blood pressure, accelerate deep respiration and stimulate intestinal movement
bark	Astringent and used as a lotion in cutiginous eruption, leprous ulcers
Flower	Nectar source for butterflies and moths
Plant extracts	Drought -tolerant plant so good candidates for xeriscaping. used in folk medicine for the treatment of cancer, chicken pox, asthma, ulcers, swellings, eczema, tumors, high blood pressure, bilious fever, catarrhal infection, tetanus, rheumatism and malaria
Stalks	Raw material for paper pulp which is used for wrapping, writing and printing paper. making basket and temporary shelter. Used as biofuel

Impacts

Lantana camara has several negative implications, including the ability to disrupt the succession cycle, displacing local biota and resulting in diminished biodiversity. Its infestations change the structure and floral content of native communities . Given the density of Lantana camara in the forest grows, so do allelopathic interactions, obstruct grazer movement, and cause poisoning. Lantana camara has several secondary effects because it contains dangerous pests including malarial mosquitoes and tsetse flies, which cause major health problems. These have a tremendous effect of fuel delivery on fire regimes. The species has been linked to devastating wildfires in many parts of India. The summary of consequences produced by Lantana Camara. [(11)]

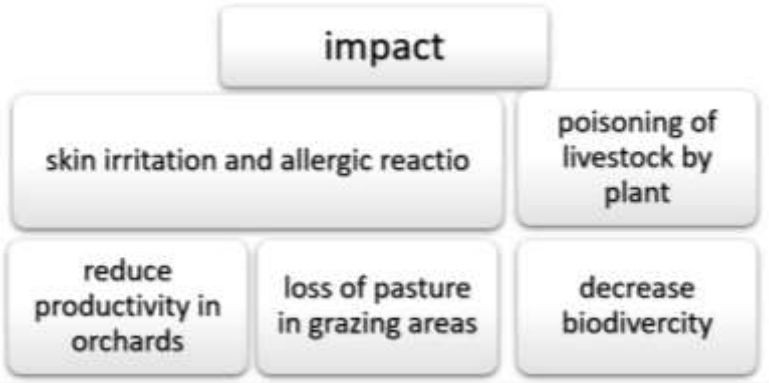

Figure 3: Impact of Lantana Camara

The Problem

Elsewhere, the native species of Lantana camara are classified as Calliorheas, therefore competition rather than hybridization poses the greatest concern. Regarding terms of light, water content in the soil, and nutrient levels in the soil, it outcompetes native colonists. One of the most noticeable changes caused by the substitution of woodland understory is a decrease in collective biomass.[(12)]Allergic reaction characteristics enable organisms to survive additional generations and form monospecific bushes. Allelopathic effects resulting in either no growth or reduced growth near Lantana camara have been demonstrated in Christella dentata (fern), Morrenia odorata L. (milkweed vine), Lolium multiflorum L. (rye), and various crops such as wheat (Triticum aestivum), corn (Zea mays), and soybean (Glycine max).

In numerous section of India, the species Lantana camara is considered a noxious weed and where it was developed. Because of its prolific blooming and proliferation, the plant changes the framework of the earth's surface by its social appearance.

www.ijprems.com
editor@ijprems.com
INTERNATIONAL JOURNAL OF PROGRESSIVE RESEARCH IN ENGINEERING MANAGEMENT AND SCIENCE (IJPREMS)
(Int Peer Reviewed Journal)
Vol. 05, Issue 04, April 2025, pp : 2551-2559
e-ISSN : 2583-1062
Impact Factor : 7.001

The plant forms dense thickets and tends to eliminate native species. The species Lantana camara takes over the understory in damaged native forests, controlling plant life, altering sequence, and diminishing biological diversity. Plants' allelopathic properties try to reduce the strength of different kinds nearby. In addition to its effects on feeding grounds, the cultivar Lantana camara frequently decreases yield or prevents gathering in plantings.

Additionally, types has the ability to contain plant species. Its presence on forest margin is viewed as a significant hazard to the community as a result of increasing fire infiltration into the forest. On the social front, Lantana camara has an effect on human health. Malaria-carrying mosquitoes in shrubs cause health difficulties. These pests were previously brought under fair control by eliminating plants that sheltered them. As a result, these species populate the cleared fields, reintroducing disease-carrying pests into cleared regions occupied by people and domestic cattle. Lantana Camara is a serious issue in most farming areas of India because it creates dense thickets, spreads rapidly, outcompetes pasture plants, and harms both flora and animals. The field cases are primarily found in young animals that have been recently put into an area where Lantana camara thrives or have no access to alternative feed. Children and adults in numerous nations regularly consume ripe Lantana camara fruits with no adverse consequences. However, green fruit eating has proven lethal in some places of India. Aside from killing animals, sublethal doses of the Lantana camara poison cause a decrease in projected output, miscarriage, reduced milk production in cows that produce milk, and prolonged waste in cattle raised for beef[9,12].

To summarize, Lantana camara invasion in natural ecosystems causes widespread loss of native species diversity and disrupts ecosystem structure and functioning. But there is minimal data to support these claims in Indian contexts[13]. There is also a shortage of information on the possible harm produced by manmade activities that facilitate invasion. This would assist to coordinate future research paths, allowing for more informed and target-specific management and planning.

Ecological Fitness

L. camara species and widespread geographical distribution demonstrate its high ecosystem adaptability. It can be discovered in a variety of temperatures, surroundings, and different kinds of soil. It thrives in open and unshaded environments such as forests, woodland boundaries This type of plant typically loves areas of disturbance that involve roadsides, train tracks, and waterways.The species of plant exists at elevations ranging from bottom of the sea to the year 1800 masl and can flourish in rainfall ranges of seven hundred to five thousand millimetres annually. It flourishes in both the wealthy and the soils, it sandstone and laterite, in low-lying regions, and slopes of up to 1800 m asl. It is tolerant of droughts enjoys light, and can tolerate some shade. It does not grow at temperatures below 5°C. Lantana does not enter undamaged woodlands, but rather encroaches where trees in nature have been damaged by logging, leaving gaps. It cannot thrive in the dense, continuous canopy of higher natural forest species. The plant is sensitive to frosts and cold temperatures, saline soils, swampy or hydromorphic soils, insufficient precipitation, and coralline soils with low ability to hold water[14].

It spreads quickly by root suckers and prolific planting each year and is harmful to ruminants (Sharma et al., 1988). Bhatt (1990) discovered soil water holding capacity (37.6-45.3%), soil moisture (14.4-19.6%), pH (6-6.5), total nitrogen (0.07% - 0.12%), and phosphorus (0.001-0.005%) throughout. locations occupied by L. camara are shown to be significantly rich in nutrients when compared to locations lacking L. camara, facilitating subsequent invasion of this species[15,16].

Table 3: A list of major constituents of l. camara reported from different countries

Sr no.	Countries	Compounds (%)
1	India	germacrene-D, β-elemene, β-elemene, β-caryophyllene, α-copaene, α-cadinene
2	iran	β-caryophyllene, sabinene, bicyclogermacrene, α-humulene, 1,8cineole
3	brazil	β-caryophyllene, germacrene-D, bicyclogermacrene, gemacrene-D-4-ol
4	south china	β-caryophyllene, α-humulene, gemacrene-α
5	egypt	α-caryophyllene, α-humulene, gemacrene-D

Chemical constituent of Lantana plant

Table 4: Chemical Constituent of Lantana plant

Sr. no.	constituent	Content %
1	α – caryophyllene	18.81

INTERNATIONAL JOURNAL OF PROGRESSIVE RESEARCH IN ENGINEERING MANAGEMENT AND SCIENCE (IJPREMS)
(Int Peer Reviewed Journal)
Vol. 05, Issue 04, April 2025, pp : 2551-2559
www.ijprems.com
editor@ijprems.com
e-ISSN : 2583-1062
Impact Factor : 7.001

2	α-humulene	15.65
3	1,8-cineole	8.85
4	Germacrenc D	6.61
5	α-copaene	4.63
6	δ-cadinene	4.16
7	Germacrene B	3.54
8	naphthalene	3.43
9	δ-3-carene	3.12
10	m-xylene	2.27
11	α-cubebene	2.66
12	β-humulene	1.95
13	α-pinene	1.80
14	α-elemene	1.80
15	δ-elemene	1.79
16	γ-terpinene	1.75
17	spathulenol	1.50
18	Caryophyllene oxide	1.49
19	α-muurolene	1.29
20	δ-limonene	0.94
21	linalool	0.70
22	borneol	0.62
23	α-terpineol	0.56

Medicinal use of L. Camara plant

Lanatana camara is an essential curative plant, and it has recently been discovered to have a variety of therapeutic characteristics.

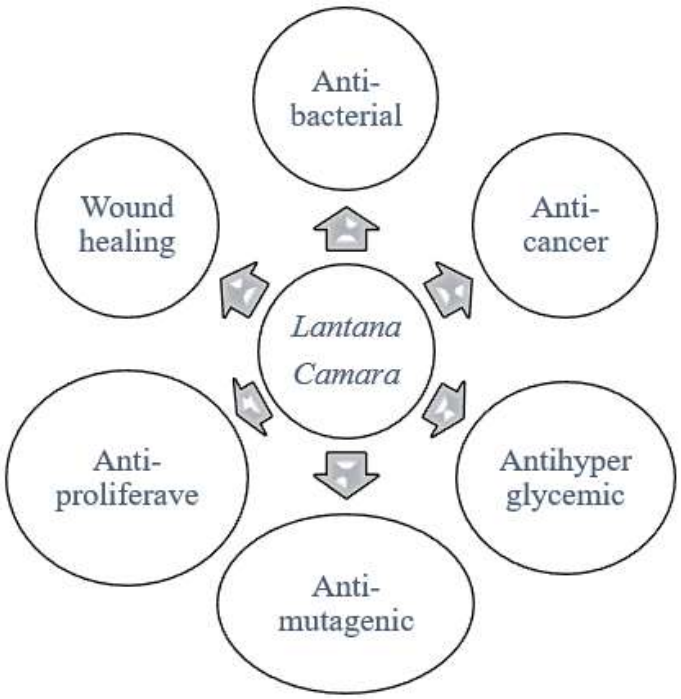

Figure 4: Medicinal uses of Lantana camara

www.ijprems.com
editor@ijprems.com

INTERNATIONAL JOURNAL OF PROGRESSIVE RESEARCH IN ENGINEERING MANAGEMENT AND SCIENCE (IJPREMS)
(Int Peer Reviewed Journal)
Vol. 05, Issue 04, April 2025, pp : 2551-2559

e-ISSN : 2583-1062
Impact Factor : 7.001

1. **Antibacterial activity**

Antibacterial activity was observed in Extracts of ethanol of the plant camara bases and stems. Microdilution was employed to evaluate antimicrobial activity in vitro.[18] The extracts shown antibacterial activity versus the bacteria Staphylococcus aureus, Proteus vulgaris, P. aeruginosa, Víbrio cholareae, the bacteria E. coli, and two multi resistant strains of E. coli and S. aureus Three independent extracts made with solvent of both the flowers and the leaves of four different kinds of L. camara shown strong antibacterial activity against Escherichia coli, microorganisms such as Bacillus subtilis, and P. aeruginosa, but very modest antibacterial activity against the bacteria Staphylococcus aureus.

2. **Anticancer and antiproliferative activity**

Different L. camara plant sections have been shown to have anticancer and antiproliferative activities. The stems and leaves of L. camara were found to inhibit the proliferation of HEp-2 (the larynx cancer) & NCIH292 (pulmonary disease) cells. The MTT assay was used to conduct an in vitro antiproliferative experiment. The extract of methanol of L. camara leaves shown apoptotic properties against NCI-H292 cells (% viable cells = 25.8±0.19). The leaves of L. camara have been demonstrated to be cytotoxic on the Vero cell line. The MTT assay was utilized to conduct an in vitro cytotoxicity study. The methanol extract (500 µg/ml) inhibited cell growth by twofold less than Triton 100 × 1% . Oleanonic oil is derived from Lantana camara[17,19].

3. **Anti-mutagenic action**

L. camara's 22β-acetoxylantic and 22β-dimethylacryloyloxylantanolic acids were shown to be antimutagenic. The micronucleus test was used to determine antimutagenicity in mice.[20] The two substances showed considerable antimutagenic activity against Mitomycin C-induced mutagenesis in mice[20]

4. **Antihyperglycemic action**

The diabetic response to methanol extracts from L. camara Linn fruits was investigated in diabetic mice treated with streptozotocin (Wistar and white rats). The extract attitudes at doses of 100 and 200 mg/kg body weight caused a dose-specific decrease in blood glucose levels in streptozotocin-induced diabetic mice. The extract also boosted body weight, lowered HbA1c levels, and promoted liver cell renewal. A methanol extract of L.camara leaves showed antihyperglycemic properties in alloxan-induced diabetic rats. In alloxan-induced diabetic rats, oral therapy with an extract made from methanol of L. camara leaves (approximately 400 mg/kg total body weight) showed a reduction in blood sugar levels to 121.94 mg per[20,21].

5. **Antihyperglycemic activity**

The diabetic impact of extracts made with alcohol from the camara plant Linn berries were investigated in mice with diabetes who were treated with streptozotocin (Wistar and white mice). Extract attitudes at doses of 100 and 200 mg/kg body weight caused a dose-specific decrease in blood glucose levels in streptozotocin-induced mice with diabetes[22]. The extract also boosted body weight, lowered HbA1c levels, and promoted liver cell regeneration. A methanol-based solution of L. camara leaf was discovered having antihyperglycemic effects in alloxan-induced diabetic rats. In alloxan-induced diabetic mice, oral therapy with the methanol-based extract of Lantana camara leaves (about 400 milligrams per kilogram total body weight) reduced blood sugar levels to 121.94 mg/dL[23].

6. **Wound healing action**

Young male Wister rats have been treated using an alcohol-based extract of L. camara leaf, which was discovered to have healing wounds abilities. Applying topically of the extracted to the location resulted in considerably enhanced wound healing action.[24]Pathological examination of healed areas confirmed the substance's therapeutic effects. In a subsequent investigation, an aqueous extract of L. camara leaf was demonstrated to be active in rats[24]. Applying topically of the material (one hundred mg/kg/day) dramatically increased wound contraction (98%), collagen formation, and decreased healing wound frequency[24,26]

7. **Anti-Fungal Activity**

Antifungal activity of ethanol and hot water extract of L. camara was screened against wood destroying white and brown rot fungi. Both extracts exhibited efficient antifungal activity against white and brown rot fungi, however ethanol extract was highly potential at very low concentration (0.01%) and also L. camara was screened against Alternaria sp. which causes different plant diseases especially in vegetable plants. The antifungal activity was performed by food poison plate method at three different concentrations of extract viz, 10 mg/ml, 15 mg/ml and 20 mg/ml. At 20mg/ml dose L. camara exhibited significant antifungal activity against Alternaria sp[25,26].

8. Anti-Ulcer Activity

The Antiulcerogenic activity of the methanol extract of leaves of Lantana camara on asprin, ethanol and cold resistant stress induced gastric lesions in rats. Pre-treatment of the effected rats with the extract (200 and 400 mg/kg body weight) showed significant protective effect in aspirin induced, ethanol induced and cold restraint stress induced ulcers in rats. The extract resulted in dose dependent antiulcerogenic activity in all models[26].

2. CONCLUSION

Lantana camara has demonstrated significant medicinal potential due to its antibacterial, antifungal, anti-inflammatory, and antioxidant properties. Traditional medicine has used it for treating various ailments, including respiratory infections, skin diseases, wounds, and gastrointestinal issues. Scientific research supports some of these traditional uses, highlighting its potential as a natural source of bioactive compounds.However, despite its benefits, Lantana camara also contains toxic compounds that can be harmful, particularly to livestock and humans if consumed in large quantities. Therefore, further research, including clinical trials, is necessary to validate its safety and efficacy. Standardization of its extracts and dosage is essential before it can be widely used in modern medicine.In conclusion, while Lantana camara holds promise as a medicinal plant, cautious application and further scientific exploration are required to harness its benefits Safely.

3. REFERENCES

[1] Joy, J.M.; Vamsi, S.; Satish, C.; Nagaveni, K. Lantana camara Linn: a review. International Journal of Phytotherapy 2012, 2, 66–73.

[2] Ghisalberti, E.L. Lantana camara L.(verbenaceae). Fitoterapia 2000, 71, 467–486, https://doi.org/10.1016/S0367-326X(00)00202-1.

[3] Munir, A.A. A revision taxonomic of Lantana camara L. and L. montevidensis Briq.(Verbenaceae) in Australia. J Adelaide Bot Gard 1996, 17, 1–27.

[4] Ganjewala, D.; Sam, S.; Khan, K.H. Biochemical compositions and antibacterial activities of Lantana camara plants with yellow, lavender, red and white flowers. EurAsian Journal of BioSciences 2009, 3, 69– 77.

[5] Sharma, O.P.; Makkar, H.P.S.; Dawra, R.K. A review of the noxious plant Lantana camara. Toxicon 1988, 26, 975–987, https://doi.org/10.1016/0041-0101(88)90196-1.

[6] Morton, J.F. Pito (Erythrina berteroana) and chipilin (Crotalaria longirostrata),(Fabaceae) two soporific vegetables of Central America. Economic botany 1994, 48, 130–138, https://doi.org/10.1007/BF02908199.

[7] Ross, I.A. Medicinal plants of the world: chemical constituents, traditional and modern medicinal uses. Ross, I.A. 2000.

[8] Day, M.D.; Wiley, C.J.; Playford, J.; Zalucki, M.P. Lantana: current management status and future prospects; 2003

[9] Kumar MS, Maneemegalai S; Evaluation of Larvicidal Effect of Lantana Camara Linn. against mosquito species Aedesaegypti and Culexquinquefasciatus. Advances in Biology Research, 2008; 2(3-4) 39-43.

[10] Begum, S.; Ayub, A.; Qamar Zehra, S.; Shaheen Siddiqui, B.; Iqbal Choudhary, M. Leishmanicidal triterpenes from Lantana camara. Chemistry & biodiversity 2014, 11, 709–718, https://doi.org/10.1002/cbdv.201300151.

[11] Sousa, E.O.; Almeida, T.S.; Menezes, I.R.; Rodrigues, F.F.; Campos, A.R.; Lima, S.G.; da Costa, J.G. Chemical composition of essential oil of Lantana camara L.(Verbenaceae) and synergistic effect of the aminoglycosides gentamicin and amikacin. Records of Natural Products 2012, 6.

[12] de Sena Filho, J.G.; Rabbani, A.R.C.; dos Santos Silva, T.R.; da Silva, A.V.C.; Souza, I.A.; Santos, M.J.B.A.; de Jesus, J.R.; de Lima Nogueira, P.C.; Duringer, J.M. Chemical and molecular characterization of fifteen species from the Lantana (Verbenaceae) genus. Biochemical systematics and ecology 2012, 45, 130–137, https://doi.org/10.1016/j.bse.2012.07.024.

[13] Sathish, R.; Vyawahare, B.; Natarajan, K. Antiulcerogenic activity of Lantana camara leaves on gastric and duodenal ulcers in experimental rats. Journal of ethnopharmacology 2011, 134, 195–197, https://doi.org/10.1016/j.jep.2010.11.049.

[14] Randrianalijaona, J.A.; Ramanoelina, P.A.; Rasoarahona, J.R.; Gaydou, E.M. Seasonal and chemotype influences on the chemical composition of Lantana camara L.: Essential oils from Madagascar. Analytica Chimica Acta 2005, 545, 46–52, https://doi.org/10.1016/j.aca.2005.04.028.

[15] Khan, M.; Mahmood, A.; Alkhathlan, H.Z. Characterization of leaves and flowers volatile constituents of Lantana camara growing in central region of Saudi Arabia. Arabian Journal of Chemistry 2016, 9, 764–774, https://doi.org/10.1016/j.arabjc.2015.11.005.

[16] Benites, J.; Moiteiro, C.; Miguel, G.; Rojo, L.; Lopez, J.; Venancio, F.; Ramalho, L.; Feio, S.; Dandlen, S.; Casanova, H. Composition and biological activity of the essential oil of Peruvian Lantana camara. Journal of the Chilean Chemical Society 2009, 54, 379–384, http://dx.doi.org/10.4067/S0717- 97072009000400012.

[17] Misra N, Sharma M, Raj K, Dangi A, Srivastava S, Bhattacharya SM; Chemical constituents and antifilarial activity of Lantana camara against human lymphatic filariid Brugia malayi and rodent filariid Acanthocheilone maviteae maintained in rodent hosts. Parasitology Research, 2006; 100 (3): 439-44.

[18] Tesch, N.R.; Mora, F.; Rojas, L.; Díaz, T.; Velasco, J.; Yánez, C.; Rios, N.; Carmona, J.; Pasquale, S. Chemical composition and antibacterial activity of the essential oil of Lantana camara var. moritziana. Natural product communications 2011, 6, 1031-4.

[19] Goswami-Giri, A.S.; Oza, R. Bioinformatics Overview of lantana camara, an Environmental Weed. Research Jornal of Pharmaceutical Biology and Chemical Sciences 2014, 5, 1712. https://doi.org/10.33263/LIANBS93.11991207 https://nanobioletters.com/ 1206

[20] Yaradua, S.S.; Shah, M. The complete chloroplast genome of Lantana camara L.(Verbenaceae). Mitochondrial DNA Part B 2020, 5, 918–919, https://doi.org/10.1080/23802359.2020.1719920.

[21] Ganesh T, SaikatSen, Thilagam E, Thamotharan G, Loganathan T, Chakraborty R; Pharmacognostic and anti-hyperglycemic evaluation of Lantana camara (L.) var. aculeate leaves in alloxan-induced hyperglycemic rats. International Journal of Research in Pharmceutical Sciences, 2010; 1(3):247-252.

[22] Sanders RW. 1998. Preliminary key to species of Lantana Sect. camara. Ecological Restoration, 1: 45–59.

[23] P.Selvakumar, Dipaben Jayantibhai Kapupara, C. L. Monica & Dildar Husain, AntiInflammatory Activity Comparative of Cocos Nucifera Male and Female Flowers Alcoholic Extracts, YMER, 2022, Volume 21 (10), pp- 600-607.

[24] Mayee R, Thosar A; Evaluation of Lantana camara Linn. (Verbenaceae) for antiurolithiatic and antioxidant activities in rats. International Journal of Pharmaceutical and Clinical Research, 2011.

[25] CSIR. Wealth of India, vol. VI. Council of Scientific and Industrial Directorate, New Delhi, 1962, 31.

[26] Kalita S, Kumar G, Karthik L, BhaskaraRao KV; Phytochemical composition and in vitro hemolytic activity of Lantana camara L. (Verbenaceae) leaves. Pharmacologyonline, 2011; 1: 59-67.