

**A brief review on: Therapeutical values of *Lantana camara* plant**Mamta Saxena*, Jyoti Saxena¹ and Sarita Khare²¹, Department of chemistry and ², Department of zoology

Sarojini Naidu Government Girls Post Graduate (Autonomous) College, Bhopal, (M.P.) - India

Abstract

In view of the fact that ancient time, plants have been a tremendous source of medicine. Since very long time *Lantana camara* is reported to be used in traditional medicine system for the treatment of itches, cuts, ulcers, swellings, bilious fever, cataract, eczema and rheumatism. Different parts of the plants are used in the treatment of cold, headache, chicken pox, eye injuries, whooping cough, asthma, bronchitis and arterial hypertension. *Lantana camara* has scientifically studied for various therapeutical activities like antioxidant, antibacterial, antipyretic, larvicidal, insecticidal, antimicrobial, wound healing and anti-hyperglycemic. The present review is an effort to give a detailed survey of the literature on its, phytochemistry, traditional uses and therapeutical studies.

Key-Words: *Lantana camara*, Phytochemistry, Traditional uses, Therapeutics

Introduction

Lantana camara introduced in India as an ornamental plant but entirely naturalized and found throughout India. However, it is listed as one of the significant medicinal plants of the world (Ross, 1999). The plant *Lantana camara* (Verbanaceae), generally known as wild or red sage is the most widespread species of this genus and it is a woody straggling plant with various flower colors, red, pink, white, yellow and violet Fig. 1. It is an ever green strong smelling shrub, with stout recurved prickles, leaves opposite, ovate, acute or sub acute, crenate -serrate, scab rid on both side (Thamotharan G, 2010). There has been to a great extent work conducted, especially in India, on the chemical constituents of *lantana camara*. The leaf oil is used as an antiseptic for wounds and the roots are used for the treatment of tooth ache and the flowers for chest complaints in children (KR.Kirtika, BD.Basu, 1981), while extracts from the leaves exhibit anti proliferative, antimicrobial, fungicidal, insecticidal and nematocidal activity (Saxena, 1992, Begun S, 1995, Sharma S, 1999, Day, 2003). Pharmacological investigations indicated that extracts of shoots of *Lantana camara* exhibited strong antioxidant activities (Basu, 2006). According to an all India ethnobiological survey carried out by the Ministry of Environment & Forests, Government of India, there are over 8000 species of plants being used by the people of India, while the biological diversity potential of plant metabolites is evident from the fact that 47-marketed drugs have been derived from 39 tropical forest plants.

*** Corresponding Author**

E-Mail: mamtasaxena00@yahoo.co.in

Scientific classification

Kingdom	Plantae
Order	Lamiales
Family	Verbenaceae
Genus	<i>Lantana</i>
Species	<i>camara</i>

Traditional uses

Lantana camara has been used in many parts of the world to treat a wide variety of disorders (Ross, 1999). In Central and South America, the leaves were made into a poultice to treat sores, chicken pox and measles. Fevers, colds, rheumatism, asthma and high blood pressure were treated with preparations from the plant (Irvine, 1961). In Ghana, an infusion of the whole plant was used for bronchitis and the powdered root in milk was given to children for stomach-ache (Irvine, 1961). In Asian countries, leaves were used to treat cuts, rheumatism, ulcers and intestinal worms. It has been claimed that a steroid, lancamarone, from the leaves, exhibited cardio tonic properties (Sharma & Kaul, 1959) and that lantamine, an alkaloid from the stem, bark and roots showed antipyretic and antispasmodic properties comparable to those of quinine (Sastri, 1962). In India the leaves of the plant are boiled for tea and the decoction is a remedy against cough and it is used as a lotion for wounds and Pounded leaves are applied to cuts, ulcers and swellings (Verma RK, 2006).

Phytochemical constituents

Lantana camara have therapeutic potential due to the presence of natural agents, Majority of their activity is due to bioactive compounds viz. flavones, isoflavones, flavonoids, anthocyanins, coumarins, lignans, catechins, isocatechins, alkaloids, tannin, saponins and triterpenoids. Study of the leaves and flowers extract have give an idea about similar carbohydrates and lipid compositions. The carbohydrate levels were higher in the flowers than the leaves, and the lipids higher in the leaves extract (Deepak Ganjewala, 2009).

Antioxidant Activity

The antioxidant potential of leaves of *Lantana camara* extract measured in terms of reducing and scavenging activity. The methanolic extract prepared from leaves I and III position exhibited significantly higher antioxidant activity than leaves present from IV to V position (Dipita Bhaktal, 2009). The antioxidant activity of methanolic extract of *Lantana camara* has been reported and antioxidant activity was measured in terms of DPPH radical scavenging activity and nitric oxide free radical scavenging method (Mayee R, 2011).

Antimicrobial activity

Lantana Camara flower extract posses strong antibacterial activity All few types' yellow, lavender, red and white *Lantana camara*, flowers displayed almost similar antibacterial activities (Deepak Ganjewala, 2009). The chloroform extract of *Lantana camara* showed activity against all three strains of mycobacterium tuberculosis (Claude Kirimuhuzya, 2009). Recently Ashish Saraf (Ashish Saraf, 2011), have reported antimicrobial activity of *lantana camara* have reported that the leaves extracts of *Lantana camara* be active against various gram positive and gram negative bacteria. The extract of flower, leaf, stem and root of *Lantana camara* showed antibacterial activity against *E.coli*, *p.aeruginosa*, *s.aureus*, and *s.saprohiticus* (Mary, 2011).

Antifungal and antiviral activity

The polymethoxylated flavone, isolated from the methanol extract of dried leaves of *Lantana camara* exhibited the antibacterial and antifungal properties (Rwangabo PC, 1988). In Tanzania the root bark extract of *Lantana camara* showed an in vitro antimalaria test with *Plasmodium falciparum* (Weenen H, 1990). The essential oil containing β -caryophyllene, geranyl acetate, terpinyl acetate, bornylacetate and limonene remarkably inhibited the growth of many tested against fungi (Deena MJ, 2000).

Anti ulcerogenic Activity

Pre treatment with methanol extract of *Lantana camara* leaves produced significant anti ulcer effect

which can compared by aspirin induced ulcer (Thamotharan G, 2010). The methanolic extract of *Lantana camara* administered orally in pyrolic ligated rates, ethanol induced gastric ulcer and cysteamine induced duodenal ulcer. The *Lantana camara* shown healing of gastric ulcer and also prevent the development of duodenal ulcer in rate (R.Sathish, 2011).

Mosquito Larvicidal Activity

The methanol and ethanol flower extract of *Lantana camara* was found to have higher rate of larvicidal rate against *Aedes aegypti*, where as in the *Culex quinquefasciatus* variety, the concentration of extracts have to be increased for better larvicidal effect (M. Sathish, 2008). Essential oil obtained from the leaves of *Lantana camara* showed adulticidal activity against important vectors of malaria, dengue, dengue hemorrhagic fever, yellow fever and chikungunya (VK. Dua, 2010).

Wound Healing Activity

A Preclinical study showed *Lantana camara* is effective in healing excision wounds in the experimental animal and suggests further evaluation as a therapeutic agent in tissue repair processes associated with injuries (B.Shivanandal, 2008). In other study the ethanolic extract of *Lantana camara* leaf was evaluated for their wound healing Potential in rates. Animals were experimentally wound in posterior neck area and treated with thin layer of blank placebo and placebo containing 5 and 10% *Lantana camara* extract (Mahmood, 2009).

Anti helmentic Activity

Methanol extracts from the leaves, stems and roots of *Lantana camara* were investigated for their anthelmintic activity against *pheritima posthuma*. The methnolic extract of stems of *Lantana camara* were found to be most active (AS.Girme, 2006). Successive leaf extracts of *Lantana camara* showed significant anthelmintic activity on selected warms, ethanolic extract found to be more active compared to remaining extracts (Jitendra patel, 2011).

Antipyretic activity

Concerning on the Antipyretic activity, *Lantana camara* ethanolic and ethyl acetate extract start lowering the body temperature from 1.5th hour (Jain Shonu, 2011).

Anti-Hyperglycemic Activity

A recent literature survey showed that *Lantana camara* has clear the diabetes. Oral administration of a methanol extract of *Lantana camara* leaves in alloxan-induced diabetic rats showed significant dose-dependent reduction of blood glucose concentration (Ganesh T, 2010). In other study methanolic extracts of

Lantana camara administered orally in alloxan induced diabetic rats, the results showed significant reduction in the blood glucose concentration in dose dependent manner and also promising anti hyperglycemic activity against alloxan induced diabetic rats (Thamotharan G, 2011).

Conclusion

Herbal products are well thought-out to be symbols of safeguard in comparison to the synthetic product that are regarded as unsafe to human life and environment. While herbs had been priced for their medicinal significance. But now everyday phytochemical and pharmacological studies are conducted on different parts of these plants. The present literature supports the possible of *Lantana camara* as a medicinal plant. More research can be done to explore the unknown and unexplored potential of *Lantana camara* plants. Further analysis of *Lantana camara* plants (active compounds) can be carried out by way of making use of different investigative methods such as HPTLC, HPLC, FTIR, NMR and UV spectrophotometer study.

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Fig.1: *Lantana camara*