

# To Formulate and Evaluate Herbal Gel of Lantata Camara Linn

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**Abstract:** *The present research was aim to formulate and evaluate the herbal gel containing Lantana Camara leaf extract. Extracts of plant were incorporated into a gel base and Evaluated for its physicochemical properties such as pH, viscosity, spreadability etc. The physicochemical evaluation of the developed formulation showed no lumps, had Uniform colour dispersion and from any fibre and particle. It was also observed to have Easy washablity and good spreadability. The antimicrobial activity for Lantana Camara using disc diffusion method was carried out. The antibacterial study of the developed Formulation showed dose/concentration proposed inhibitory activity against staphylococcus aureus and Staphylococcus epidermis*

**Keywords:** Lantana Camara, Herbal gel, Acne vulgaris Evaluation test, Antimicrobial activity

## I. INTRODUCTION

80% of the world population relies on medicinal plants for their primary health care. Such herbal medicines that are easily Available, cheaper, time tested and considered safer than most of modern synthetic drugs. Over 50% of the best selling Pharmaceuticals in use today were derived from natural products. Plants provide a bank of rich, complex and highly varied structures, Which are unlikely to be synthesized in laboratories. Lantana camara (Family- Verbanaceae) is a low, erect shrub which can grow to 2 -4 meters in height. The leaf is ovate or oblong, 2 – 10 cm long and 2 – 6 cm wide, arranged in opposite pairs. Leaves are bright green, Rough, finely hairy with serrate margins and emit a pungent odor when crushed. Since very long time Lantana camara.L reported to be used in traditional medicine system for itches ,cuts , ulcers, swelling,bronchitis and arterial hypertension.Most of the topical preparations are used for the localized effects by virtue of drug penetration into the underlying layers of Skin or mucous membranes. Gels are a relatively newer class of dosage form created by entrapment of large amounts of aqueous or Hydro alcoholic liquid in a network of colloidal solid particles, which may consist of inorganic substances, such as aluminum salts or organic polymers of natural or synthetic origin.

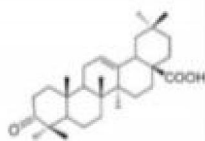


They have a higher aqueous component that permits greater dissolution of drugs, and also permit easy migration of the drug through a vehicle that is essentially a liquid, compared with the ointment or cream base. These are superior in terms of use and patient acceptability. In spite of many advantages of gels a major limitation is the delivery of Hydrophobic drugs. So to overcome this limitation, emulgels are prepared and used so that even a hydrophobic therapeutic moiety can enjoy the unique properties of gels. When gels and emulsions are used in combined form the dosage forms are referred as EMULGELS. Emulgels for dermatological use have several favorable properties such as thixotropic, greaseless, easily spreadable, easily removable, emollient, no staining, long shelf life, bio-friendly, transparent and pleasing appearance. The present study was conducted to formulate herbal emulgel of Lantana camara using gelling agents like Carbopol 934, Na,CMC, HPMC, HPMC K15M, and HEC. The prepared emulgels were evaluated for physicochemical as well as for pharmacological activity.

## Chemical constituents

*Lantana camara* :

*Copaene, bicyclogermacrene, Elemene, p-cymene, monoterpene, spathulenol, cubebol, 1-octen-3-ol*



Lantana Camara comprises about 150 varieties across 50 countries. • It is evergreen shrub commonly called as wild sage and lantana weed. • Different species of lantana have been used for treatment and medical problems for many years, such as ulcers, wounds, tumours, eczema. • Various plant components have been documented for their pharmacological properties, such as anti-lymphocytic and immunosuppressive, hepatoprotective, antimotility, cytotoxic in-vivo and anti-filarial activity. • On Earth, there are 2,00,000 to 5,00,000 species of plants. India is the source of numerous medicinal plants. Sometimes referred to as wild/red sage, Lantana Camara linn (verbenaceae).

	<i>Lantana camara</i>
Common Name	Caryopteris hispida , Lantana aculeate
Botanical name	<i>Lantana camara</i> L
Kingdom	Plantae
Division	Magnoliophyta
Class	Magnoliopsida
Genus	<i>Lantana camara</i> L.
Species	<i>Lantana camara</i> L.
Family	Verbenaceae

**Aim :** Formulation and Evaluation Of Herbal Gel Containing Lantana Camara

**Objective :**

- To investigate the screening of phytochemicals constituents
- To evaluate safety, efficacy and quality of Herbal gel
- To explore the many aspects of the rich traditional Indian herbal medicine.
- To apply knowledge gained during the course in evaluating the usefulness of herbal Formulas.
- To find the useful benefits of herbal gel on human use as cosmetic productmical

**Methods**

**Plant Materials :**

**Leaves of Lantana Camara were collected from the residential areas of Islampur, Sangli, Maharashtra, India.**

Preparation of Plant extract : Shade drying was done for almost a month as to avoid chemical degradation due to sunlight. Grinding of the dried material was done, with the aid of a grinder and converted into coarse powder. Extraction of Lantana Camara was done by microwave extraction further filtered and excess solvent present was evaporated and dried extract were collected and subjected for further studies.

Sr. No.	Ingredients	Quantity
1.	Lantana Camara extract	1 mg
2.	Carbapol 934	1mg
3.	Methyl paraben	3.2gm
4.	Propyl paraben	10ml
5.	Propylene glycol	0.2gm
6.	Triethanolamine	0.02gm
7.	Distilled water	Q.s
8.	Distilled water	Q.s

**Formulation**

**Methods of preparation**

**Procedure for formulation of Gel**

Preparation of Herbal gel In 50 ml of distilled water 1 g of carbapol 934 was dispersed and keeps the beaker aside to swell the carbapol 934 for half an hour and stirring vigorously to mix the carbapol 934 to form a gel

↓

Take a required quantity of methyl parben (0.1 ml) and propyl paraben (0.2 ml) in a 5 ml of distilled water which is where dissolved by heating on water bath

↓

Solution was cooled and propylene glycol (5 ml) was added.

↓

Further 1 g extract of lantana camara leaves was mixed to the above mixture and volume made up to 100 ml by adding remaining distilled water

↓

Finally all mixed ingredients were mixed properly to the carbapol 934 gel with continuous stirring

↓

drop wise triethanolamine was added to the formulation for adjustment of skin pH (6.8-7) and then to obtain the gel to required consistency.

**Evaluation of topical gel formulation A. Physical Evaluation:**

**Viscosity**

Viscosity of gel was measured by using Brookfield viscometer with spindle. D.

**Spreadibility:**

Spreadibility was determined by the apparatus which consists of a wooden black, which was provided by a pulley at an end. By this method spreadibility was nearest on the basis of slip and drag characteristics of gel. An excess of gel (about 2g) under study was placed on the ground slide. The gel was then sandwiched between this slide and another glass side having the dimension of fixed ground slide and provided with the hook. A one kg weighted was placed on the top of the two sides for 5 minutes to expel air and to provide a uniform film of the gel between the slides. Excess of the gel was scrapped off from the edges. The top plate was then subjected to pull of 80 gm. With the help of string attached to the hook and the time (in seconds) required by the top slide to cover a distance of 7.5cm be noted. A shorter interval indicate better spreadibility. Spreadability was calculated using the following formula:

$S=M/L/T$  Where, S=Spreadibility, M-Weight in the pan (tied in the upper slide) L-Length moved by the glass side  
T=Time (in sec.) takes to separate the slide completely each other.

**Stability Study :**

The stability study was performed as per ICH guidelines & The Formulated gel were filled in the collapsible tubes and stored at different temperatures and humidity conditions, viz 25°C/20% RH, 30°C/65% RH, 40°C/75% RH for a period of three months and studied for appearance, pH, and spreadability.

**Therapeutic Uses:**

A number of therapeutic uses of various parts of Lantana camara have been documented which indicate that Lantana camara leaf is being used for treatment of various ailments in many regions of the world since ancient time. It has been documented that leaf and root decoction of Lantana camara was used to treat stomach ache and vomiting in infants in West Africa. Beside these the same parts of the Lantana camara have been used against quinine resistant malaria. At the same time the leaves are also have been used medicinally for treatment of sore throat, cough, conjunctivitis, toothache,

skin rates and itching and the vapor of boiling leaves are used for headache and cold. In West Africa the leaves have also been used as diaphoretic simulant, and treatment of jaundice and rheumatism.

#### **In Nigeria and Senegal**

Lantana camara leaf infusions have been used in management of cough, colds, asthma and pyrexia. . In Central and South America and Ghana Lantana camara leaves and flowers have been used against lever, influenza and stomach ache sores chicken pox and measles high blood pressure. Beside these the plant parts have been employed for the treatment of cancers and tumors. Along with these the therapeutic use of the Lantana camara have been documented in treatment of cuts, rheumatism, ulcers, vermifuge, leprosy and scabies in. Additionally, the Lantana camara have also been used in relieving gastrointestinal diseases .plant is also ben used for treating ENT disorders like cold, cough, tonsillitis, otitis-media. leaf extract of Lantana camara plant has been found to cure several skin diseases like leprosy, fungal problems etc. , In Southern Western Ghats ofIndia) aerial parts are been used to treat rheumatism and pulmonary diseases. InAddition to that Lantana camara have also been reported to be used in management of bilious fevers, catarrhal infections, tetanus, atoxy of abdominal viscera.

## **II. CONCLUSION**

It is concluded, on the basis of the results obtained in the present analysis, that the herbal formulation of Lantana Camara extracts gel shows satisfactory physicochemical parameters. Herbal cosmetic products are assumed to be safe for longer periods of time. However, quality control for efficacy and safety of herbal cosmetic products is of paramount importance; and quality control tests must therefore be carried out for these preparations. Topical application of gels at pathological sites offer great advantages in a faster release of a drug directly to site of action as compared to cream and ointment. Nowadays, gels have been widely used as a vehicle for topical delivery of drugs. Extracts of plants and herbs with specific medicinal properties can be incorporated in this dosage form as active ingredients in order to additional benefits Antimicrobial activity against Staphylococcus aureus and Staphylococcus epidermis was demonstrated by the antibacterial study results of the formulated topical gel. A study on the effects of formulated gels on bacterial strains has shown that further studies are needed to confirm the role of each of these phytoconstituents on antimicrobial activity. Thus, our research shows that herbal gel have good antimicrobial activity.

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