

Formulation and Evaluation of Antifungal Ointment by using Leaf Extract of Lantana Camara

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Abstract- Fungal infections it also called mycoses represent the invasion of tissues by one or more species of fungi which may cause superficial, localized, deeper tissue infections to serious lung, blood or systemic diseases. In this research has been undertaken with the aim to formulate and evaluate the ointment containing Lantana camara leaf extract. The ointment formulation contain Lantana camara leaf extract, Hard paraffin, Liquid paraffin, Cetestryl Alcohol, Propylene Glycol and Salicylic acid. Evaluation of formulations were determined such as pH, Viscosity, Antimicrobial test, Diffusion study, Stability test, etc. The results showed ointment formulation containing Lantana camara leaf extract Show better Results.

Keywords: Lantana camara, Beta Caryophyllene, Pulverized, Soxhlet method

I. INTRODUCTION

Lantana camara (lantana) having family Verbenaceae. Lantana leaves can display antimicrobial, fungicidal and insecticidal properties. It also use in cancer, skin itches, leprosy, chicken pox, measles, asthma and ulcers. Lantana Camara contain Beta Caryophyllene, limonene, spathulenol, Beta Gurjunene etc. Beta Caryophyllene is main chemical constituent which show antifungal activity.

Ointments are external use semisolid dosage forms that incorporate a lipid or hydrophobic excipient, intended for application to the skin. These have a thicker consistency, but may spread a little farther across your skin. They tend to have a greasy or even sticky feel. They remain on your skin's surface for a longer period of time, which helps ensure maximum product absorption. Extremely dry skin may also benefit from moisturizers in ointment. Ointments are typically used as emollients to make the skin more pliable, protective barriers to prevent harmful substances from coming in contact with the skin, and vehicles for hydrophobic drugs. Disadvantage are bulkier than solid dosage form, less stable than solid dosage form.

II. AIM AND OBJECTIVE

Aim-

Formulation and Evaluation of Antifungal Ointment by using lantana camara

Objective-

1. To protect from fungal infection
2. To provide skin with hydration or to produce an emollient effect
3. To convey a medication to the skin for a specific effect, either topically or systemically.

III. Material and Methods:-

Plant material: Lantana camera

Chemicals: Lantana camera extract, hard paraffin, cetostearyl alcohol, salisalic acid, white bees wax, propylene glycol.

Instruments: Weighing balance, Soxhlet apparatus, Hot air oven, pH meter

IV. Method Use For Formulation of Ointment –

Extraction method – Leaves of Lantana camera were are collected and washed thoroughly with water, chopped, air dried for a week at 35°-40°C and Pulverized in grinder. And Leaves extract is done by **Soxhlet Apparatus** using solvent as ethanol acetate.

Fusion method: - The ingredients are melted in descending order of their melting point, higher melting point substance should be melted first the substance with next melting point so on. The medicament is added slowly in the ingredient and stirred thoroughly until the mass cool down and homogeneous product is formed.

V.FORMULATION TABLE:

INGREDIENTS	F1	F2	F3	F4	USE
Hard paraffin	4gm	3gm	2gm	1.5gm	Lubricant
Liquid paraffin	15ml	13ml	11ml	14ml	Emollient
Cetestryl Alchole	5gm	4gm	3gm	3.5gm	Opacyfying agent

Propylene Glycol	11ml	13ml	14ml	15ml	Preservative and emulsifier
Lantana camera leaf extract	14ml	16ml	19.5ml	15ml	Antifungal
Salicylic acid	2gm	1gm	0.5gm	1gm	Shed dead cell from layer of skin



Figure 1. exteration of Lantana Camera by Soxhlet Appratus



Figure 2 F1 Ointment



Figure 3, F2



Figure 4 F3

Figure 5. F4

VI. Evaluation studies

1. Physical examination
2. Determination of pH
3. Viscosity determinations
4. Spread ability
5. In vitro antimicrobial studies
6. Wash ability
7. Non irritancy Test
8. Physical stability

1. **Physical examination-** Ointment were inspected visually which include color, order, homogeneity, consistency, spreadability and phase separation

- Determination of pH-** The pH was determined by using Digital pH meter at 37 °C
- Viscosity determinations-** The viscosity of formulated ointments was measured by Brook field Viscometer at room temperature.
- Spreadability:** ointment sample was placed between two glass slides and 100 g weight was placed on the glass slide for 5 min to compress the sample to a uniform thickness. Weight (250 g) was added to the pan. The time in seconds required to the two slides was taken as a measure of spread ability.
- Consistency:**
- In vitro antimicrobial studies-** Disk diffusion method was used to determine antifungal activity and the inhibition zone diameters were measured with the help of zone reader.
- Wash ability:** Ointment was applied on skin and then washing with water and observed it.
- Non irritancy Test:** Irritant test determined by application of ointment on human skin and observed the effect.
- Physical stability:** Physical stability test of ointment was carried out for four weeks at various temperature conditions like 2°C, 25°C and 37°C.

RESULT

Ointment was prepared and evaluated. Lantana camera extract was obtained by **Soxhlet Apparatus** method and Ointment was prepared by fusion method.

Following results are:

Parameters	F1	F2	F3	F4
Physical examination	-Yellowish green colour	Yellowish green colour	Yellowish green colour	Yellowish green colour
Determination of pH	7.2	7.5	7.8	7.2
Viscosity determinations	1075	1077	1080	1072
Spread ability	good	excellent	poor	good
Consistency	Smooth	Smooth	Hard	Smooth
In vitro antimicrobial studies	26mm	32mm	20mm	23mm
Phase separation	no	no	yes	no
Wash ability	yes	yes	yes	yes
Non irritancy Test	No	no	no	no
Physical stability	yes	not	not	yes

Conclusion:

From the ancient time lantana camara is used for their various Medicinal properties like antibacterial, antifungal, anti-inflammatory etc. Thus, this ointment could be use to cure Inflammation and Analgesic Effect.

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