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FORMULATION AND EVALUATION OF ANTI-PSORIATIC HERBAL LEP BY LIQUORICE

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Abstract:

Objective: The aim of the present research work was to develop and evaluate the topical herbal lepa incorporated with licorice for the effective management of psoriasis.

Methods: The present study involves the preparation and optimization of liquorice herbal lepa by using natural excipients in powder and extraction for its and was in its leap form. The prepared lepa were evaluated for various parameters such as its color, odor, touch, state, consistency, texture, loss of drying, % drying, ash value, pH, skin irritability, spreadibiltiy, homogenity in the study.

Results: The optimized formulation was found to have a color olive green and aromatic odor. The touch was fine powder and greasy and soft consistency found to be as expected. The texture was smooth and spreadibility also seemed to be easy spreading**.** The loss of drying and %drying was measured. pH of the herbal leap was 6.40 with the result of No skin irritability after its study. And is homogenous in nature.

Conclusion: The study showed that the herbal lepa formulation has the potential to significantly enhance the efficacy of liquorice in the treatment of psoriasis. These findings provide exciting new possibilities for improving psoriasis treatment and explores importance of continued research in this area. After many formulations finally got a stable herbal lepa with perfect texture and consistency which is safe to be applied on skin

Key words: Liquorice, Psoriasis, Herbal lepa, Natural excipients

Introduction

Traditional medicinal systems like Ayurveda, Siddha, and Unani have long utilized herbal formulations. These combinations of herbs leverage synergistic effects to enhance therapeutic outcomes. Ayurvedic practices consider skin care a crucial component of overall health and well- being. Ancient texts such as the "Charaka Samhita" and "Sushruta Samhita" detail the use of various herbs for skin health, treatment of dermatological issues, and aesthetic enhancement. The primary goal in developing herbal formulations is to create safe, elegant products that appeal to a wide range of users. The skin is the body's largest organ.

Herbal cosmetics have growing demand and are an invaluable gift of nature. There is a comprehensive coverage of herbal cosmetic products to satisfy beauty governance. Adding

Gravis in cosmetics is truly safe for our skin. Herbal cosmetics are in high demand due to getting interest towards them because they are more effective with 0 or lower side goods. Herbal

Products are prepared using various cosmetic ingredients to form the base where one or more herbal ingredients are used to give defined cosmetic benefits only.

It focuses on pharmacological studies of plants, plant-derived products, and formulations with Antipsoriatic properties. It also includes information on the chemical constituents isolated from plants that contribute to antipsoriatic activity and their mechanisms of action. Thdraws from major databases, including Chemical Abstracts, Medicinal and Aromatic Plants Abstracts, PubMed, Scirus, Google Scholar, Open J Gate, Scopus, Science Direct, and Online Journals, encompassing 127 references. A comprehensive literature survey revealed that antipsoriatic activity has been studied primarily using crude plant extracts. This review aims to guide the selection of plants for further investigation, isolation of antipsoriatic chemical constituents, and elucidation of their modes of action. Additionally, it will be valuable for researchers in natural products chemistry studying the synthesis of more effective and safer chemical analogues.

Psoriasis manifests in five forms: plaque, guttate, inverse, pustular, and erythrodermic [1]

Lepas are medicinal pastes applied externally to the skin or mucosa. Despite being a secondary formulation, Lepa Kalpana (powder formulation) remains popular due to its convenience for topical use. Lepa kalpana serves both as a treatment for skin conditions and a beauty regimen. A Lepa is prepared by grinding one or more drugs into a fine powder and mixing it with a suitable liquid to achieve a paste-like consistency. Lepa preparations are renowned for their 'Vrna

Shodhana' (wound cleaning) and 'Vrna ropana' (wound healing) properties. Modern variations of lepa include ointments, creams, lepa guti, herbal masks, and gels.[2]

Acharya Sushruta classified lepas into three types based on application method: pralepa, pradeha, and alepa . Acharya Sharngadhara categorized lepas according to therapeutic use as Doshaghna, Vishaghna, and Varnya, each with different application thicknesses. Ashtanga samgraha mentions various lepa types, including Snaihika, Nirvapana, Prasadana, Stambhana, Vilayana, Pachana, Pidana, Shodhana, Shoshana, and Savarnikarana.

Guidelines for lepa preparation and application include:

- Using powdered ingredients.
- Applying against hair follicle direction for better absorption.
- Removing the lepa immediately after drying.
- Avoiding application at night.
- Preventing leap overlapping.[3]

ADVANTAGES OF LEPA:

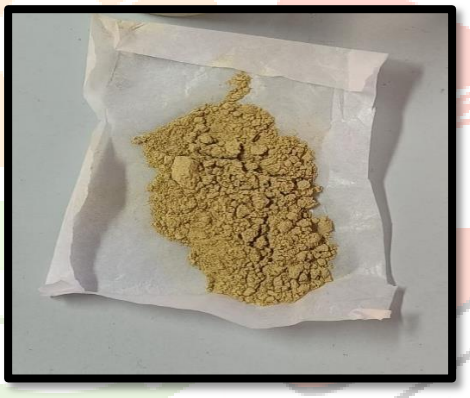
- It promotes relaxation
- Relives pain
- It helps in a wound healing
- It nurtures skin condition
- It helps to lock in moisture

Shelf life of Herbal lepa

Lepa should be used within the duration, if it contains crude medications; otherwise, the Chemicals may degrade and the application could cause skin damage. A Lepa has no expiration date if it is composed of metallic and mineral medications. Therefore, the creation of a Lepa is entirely dependent on the base that the medications are combined with. With the help of some preservatives and storage conditions to be followed it can be used till 6 months to 12 months or longer. To extend the shelf life of the herbal lepa, it should be placed in an airtight container
/dark container. And must be kept in a cool, dry place and refrigerate.

Botanical Study of Ingredient's:

1.LIQUORICE



Biological Name	Glycyrrhiza glabra
Biological source	It consists of dried, unpeeled roots and stolons
Family	Leguminosae
Chemical constituents	Glycyrrhentic acid, carbenoxolone, Glycyrrhizin, Glabridin
Uses	Antioxidant, Antibacterial Anti-inflammatory, Antitussive, Antiviral,Antimicrobial,Antifungal,skin effects

Table no 1: Botanical Study of Liquorice [4,5,17]

2.GUDACHI

Biological Name	Tiniospora cardiofolia

Biological source	These are dried stem and leaves of woody climber of Tiniospora cardiofolia
Family	Menispermeacae
Chemical constituents	cordifoliosideA,Tinosporaside,Tinosporoside
Uses	Antioxidant, Antimicrobial,Anti-inflammatory,Antiallergic,Antibacterial,

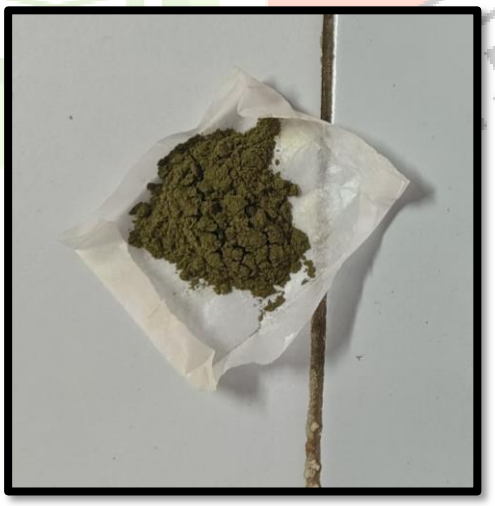
Table no 2: Botanical Study of Gudachi [6,7]

3.NEEM

Biological Name	Azadhiracta indica
Biological source	These are the dried stem and leaves of Azadhiracta.indica
Family	Meliaceae
Chemical constituents	quercetin (flavonoid) and nimbosterol (β- sitosterol), genin azadirachtin, nimibidiol, nimbindin
Uses	Antibacterial, Antiviral, Antifungal, Antioxidant, Antiulcer, Analgesic, Antipyretic, Antihemorrhagic

Table no 3: Botanical Study of Neem Leaves [8,16]

4.BASIL LEAVES



Biological Name	Ocimum basilicum, Ocimum sanctum
Biological source	it consists of leaves of ociumum basilicum
Family	Lamiaceae
Chemical constituents	Eugenol, carvacrol, caryophyllene, methyl chavicol, cineole,linalol
Uses	Anti-bacterial**,** insecticidal, anti-protozoal, anti-inflammatory antiseptics

Table no 4: Botanical Study of Basil leaves[9,18]

5.ALOEVERA

Biological Name	Aloe barbadensis
Biological source	It is dried juice leaves of Aloe.barbadensis
Family	Liliaceae
Chemical constituents	Barbaloin, Aloesin, aloin, aloesone,aloetic acid
Uses	Skin irritation, sun burn, anti-spasmodic, carminative, purgative

Table no 5: Botanical Study of Aloevera [12,13]

6.TURMERIC

Biological Name	Curcuma longa Linn
Biological source	It consists of dried and fresh rhizomes curcuma longa. linn
Family	Zingiberaceae
Chemical constituents	Curcumin, zingiberene, α and β curcumene
Uses	Anti-inflammatory, anti diabetic , anti-microbial , anti-cancer ,anti- oxidant ,anti-fungal

Table no 6: Botanical Study of Turmeric [10,13]

7.CLOVE

Biological Name	Syzygium aromaticum, Eugenia caryophllus
Biological source	It consists of dried flower buds of eugenia caryophllus
Family	Myrtaceae
Chemical constituents	Eugenol, Quercetin, gallic acid, ursollic
Uses	Antiseptic, analgesic, carminative, anti-inflammatory, antifungal, anti-bacterial

Table no7: Botanical Study of Clove [11,16,17]

8. SHEA BUTTER

Biological Name	Vitellaria paradoxa
Biological source	It is extracted from its fruit kernel
Family	Sapotaceae
Chemical constituents	tocopherol, vitamin A, catechins, cinnamic acid, and phytosterols,campesterol, lupeol, gallic acid, catechin, gallocatechin,trans-cinnamic acid.
Uses	Moisturizer,radical scavenging, antimicrobial, anti-inflammatory, antifungal

Table no 8: Botanical Study of Shea Butter [14]

Ingredient's, Formulation and Procedure

- **Ingredients**

  Liquorice powder, gudachi extract, neem extract, basil leaves powder, turmeric powder, aloe vera gel, clove oil, glycerin, shea butter was collected together.

Fig no 1: Ingredients

Formulation

Sr.No	Ingridients	Batch1	Batch2	Batch 3	Batch 4	Part used	Uses
1.	Liqourice powder	2.5	3	2.5	3	Roots	Anti-psoriatic activity , anti-inflammatory activity
2.	Gudachi extract	2	2	3	3	Stem	anti-inflammatory, Anti 0xidant
3.	Neem extract	1.25	1.5	1	1	leaves	Anti-microbial (preservative)
4.	Basil leaves powder	0.6	0.6	0.4	0.5	Leaves	Antiseptic
5.	Aloevera	1.5	1	1.75	1.5	Leaves	Skin irritation
6.	Turmeric	1	1.5	2	1.5	Rhizomes	Inflammation reducing
7.	Clove oil	2	1.5	1	2	Flower Buds	Antiseptic
8.	Shea butter	12.15	11.15	12.15	11	-	Base
9.	Glycerin	2	3	2	2	-	Emulsifier

Table no 9: Formulation of Batches of Herbal Lepa

Procedure

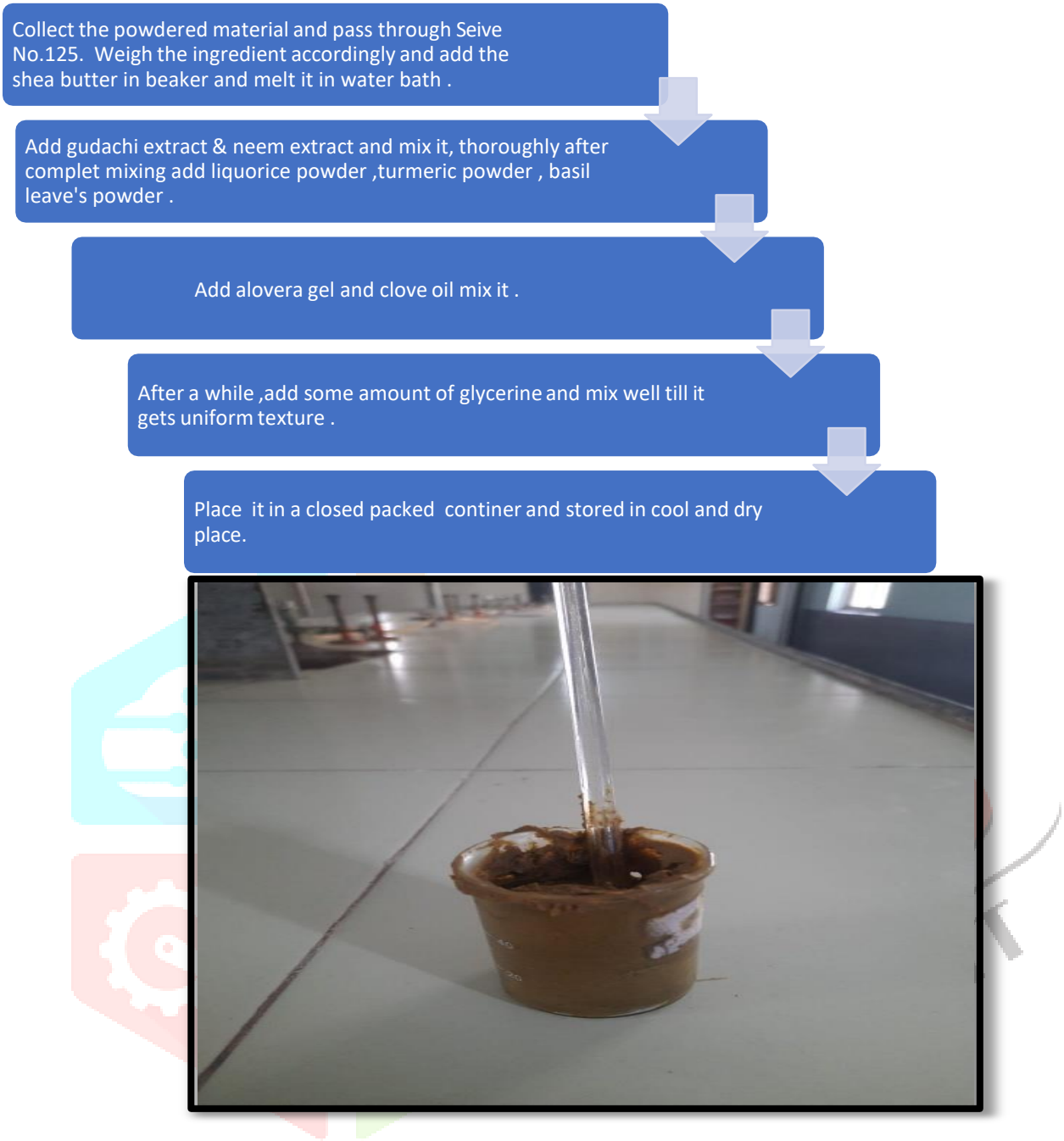


Fig no 2: Prepared formulation of Herbal lepa

Evaluation parameter

To evaluate the herbal lepa formulation the evaluations parameter are tested following: color, odor, touch, state, consistency, texture, spreadability , loss of drying, % of loss , ash value , ph. ,skin irritation test ,homogeneity

1. Physical evaluation or appearance

In this test, color, odor, touch, texture, state was observed

2. Spreadability:

For this evaluation test, two slides were taken small amount of formulation was placed on the first slide.The second slide was kept over the first slide and pressure was applied.Then the slides were kept one above the other and the other weight was put onto.The weight creates the pressure and the formulation was spread. After it the, the slide was separated from each other than the excess scrapped over left onto the slide was removed and then the time was noted over to remove it.

3. Consistency:

During the mixture and formulation, the ingredients were mixed as in a way to get a soft consistency.

4. Texture:

The texture is smooth and soothing during application

5. Loss of Drying:

For the loss of drying, a petri plate or a porcelain plate was used. The little amount of sample was added into it which was weighed after and labellled(W1). It was kept in a hot air oven at 100^0c. Then after the drying it was removed and the weight was again measured and labelled (W2). On this basis, the loss of drying was carried out such as:

Loss of drying=W2-W1

%Loss on drying =Loss on drying /wt. before heating

6. Ash value:

The small amount of sample was taken in a crucible of silica which was previously weighed. The crucible was placed for incineration on hot plate and the temperature was increased accordingly for the removal of carbon to make it carbon free. Then it was stored in a cooled desiccator and weighed afterwards and the percentage of ash value was calculated. In condition the difference between the empty weight of crucible and crucible total ash was taken.

7. pH Determination:

To calculate the pH the calibrated pH meter was utilized. The sample solution was prepared and the ph was noted.

Fig no 3: p^H determination

8. Skin irritation test:

The small amount of sample was applied on the selected area over the hand and the patch was applied over it. The process was repeated for a week. The irritation was not been adhered after the application which results in with the no irritancy in the formulation and proved to be safe.

Fig no 4: Skin irritation test

9. Homogenity:

The prepared formulation seems to be homogenous in nature. And was tested by its visually and touch.

Sr.no	Parameter	Result
1.	Color	Olive green
2.	Odor	Aromatic odor
3.	Texture	Soft texture
4.	State	Semi-solid

Table no: for physical evaluation for the formulation

Evaluation of Herbal lepa

Sr.no	Parameter	Batch 1	Batch 2	Batch 3	Batch 4
1.	Consistency	Soft	soft	soft	soft
2.	Spreadability	Easily spreadable	Easily spreadable	Easily spreadable	Easily spreadable
3.	Loss of drying	62.5g	60g	60.5g	61g
4.	% of loss	62.5%	60%	60.5%	61%
5.	Ash value	15%	13.5%	14%	14.5%

6.	pH	6.40	6.20	6.35	6.45
7.	Skin irritation	No irritation	No irritation	No irritation	No irritation
8.	Homogeneity	Homogenous	Homogenous	Homogenous	Homogenous

Procedure for Gudachi Extract:

Fig no 5:Extraction of Gudachi Powder

Extraction Procedure

1. Weighing: Weigh 100g of Gudachi powder.
2. Solvent preparation: Prepare 500ml of hydro-alcoholic solvent (70:30 ethanol: water).
3. Mixing: Mix the Gudachi powder with the hydro-alcoholic solvent in a glass container.
4. Stirring: Stir the mixture for 30 minutes to ensure uniform mixing.
5. Maceration: Allow the mixture to macerate for 2-3 hours or overnight.
6. Filtration: Filter the mixture using filter paper to separate the liquid extract from the solids.
7. Concentration: Concentrate the liquid extract using a rotary evaporator or by reducing the volume through evaporation.

Procedure of Neem Extract:

Fig no 5: Extraction of neem leaves

Extraction of Azadhiracta indica Linn. (Neem)

Fresh leaves of neem plant are collected and shed for 10- 15 days for drying

After that the dried leaves are triturated in Morter and pestle to make a fine powder.

Take 25 gm of neem leaves powder in a beaker and add 100 – 150 ml of water in it and mix well.

The beaker is kept on hot plate for 1 hour at 900^0C, after 1 hour the beaker is kept at room temperature for cooling and filtered with the help of muslin cloth and stored at 40^0 C.

Conclusion:

The herbal formulation is been used for enhancing the beauty is form of herbal Cosmetic product. The dosage form is being prepared from the herbal crude drug to reduce the side effects and toxicity of the medicament to be used. For curing the disease/ disorder. The aim for herbal lepa formulation was to reduce the irritation and itchyness of the chemical ointments & creams to be used. The Topical application There is a drastic demand in the Indian market for herbal formulation and are used widely as Ayurveda had reached the peak for its good results & benefits. The herbal Lepa is used for its anti-inflammatory, antibacterial, antimicrobial and antipsoriatic activity all the satisfying results and evaluation test. It is approved to be safe & effective.

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