

Formulation And Evaluation Of Herbal Cream For Eczema

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Abstract :

Millions of people throughout the world have eczema, a persistent inflammatory illness of the skin that needs careful and effective therapy options. Herbal remedies have drawn in a result of their perceived safety and efficacy.attention for their ability to manage eczema. The goal of this research was to develop and evaluate an herbal. The lotion makes use of organic ingredients that are known for their moisturizing, anti-inflammatory, and skin-soothing properties.to cure eczema.The carefully selected herbs used in the included turmeric extract, aloe vera, and Meliadubia extract (neem).the herbal cream's recipe. Turmeric extract makes a good foundation. The procedure involves using the appropriate solvents to dissolve.The bioactive components of the herbs are extracted and incorporated into a formula during the formulation process. cream base using standard operating procedures. The herbal cream was subjected to physicochemical analysis.to determine its pH, spreadability, and stability.Additionally, the lotion demonstrated significant anti-inflammatory and antioxidant capabilities, indicating that it may be used forpromise in lowering the oxidative stress and inflammation linked to eczema. The cream went through stability testing and physicochemical assessments after being made with a natural foundation

Keywords - Eczema, Herbal cream, Formulation, Evaluation, Anti-inflammatory, Anti-eczematous , Antioxidant, Antimicrobial

1. Introduction:-

Redness, itching, and the formation of lesions are the hallmarks of eczema, a severe inflammatory skin condition that affects individuals world wide.Due to the possible disadvantages and unfavorable effects of conventional treatment, there has been a surge in interest in researching complementary and alternative medicines, with a focus on medicinal plants.This research aims to shed light on the potential therapeutic advantages and scientific validation of the numerous medicinal herbs that have been used for centuries to treat eczema. Traditional medicinal systems including Ayurveda, Traditional Chinese

Medicine (TCM), and indigenous healing techniques have long employed plant-based remedies for a variety of skin disorders, including eczema.[1]

Eczema is a skin condition characterized by inflammation, often accompanied by infiltration, thickening, and intense itching. Research has indicated that various factors contribute to the development of eczema, encompassing immune, environmental, and genetic influences, along with infections. Eczema tends to have a prolonged duration and is prone to recurrence, significantly impacting the quality of life. Currently, antihistamines, allergy medications, and glucocorticoids are frequently utilized in clinical settings. Nevertheless, these medications provide only temporary relief from symptoms and can lead to negative side effects with prolonged use. Therefore, it is crucial to formulate natural medications that have minimal side effects for the successful treatment of eczema.[2]

Atopic eczema (AE) or atopic dermatitis (AD) is a skin condition characterized by inflammation, influenced by genetic, immunological, and environmental factors that are closely linked.[3], [4]

The heterogeneous disease can be divided into various phenotypes and clinical manifestations characterized by ethnicity, onset of the disease, severity of the disease, chronic versus acute, intrinsic versus extrinsic (IgE level), pediatric versus adult, and inflammatory signature.[5][6]

A shared characteristic of all subtypes is a significant psychosocial burden for each patient with AE. The prevalence differs by region and is noted to be 15–20% among children in Europe, continuing in as many as 5–10% of adults. [7]-[8] Consequently, AE continues to pose a significant and even growing socio-economic challenge in the United States and in Europe,[9] [10] while Japan has reported slightly declining numbers over the past few years. Eczema, also referred to as atopic dermatitis, is the most prevalent type of dermatitis.[11]

Various elements, such as genetic and environmental influences, are believed to contribute to the development of eczema. It is primarily observed in children, though it can also occur in adults. Individuals with eczema often experience dry, itchy skin that is susceptible to infection. The condition is frequently labeled as the "itch that rashes" because the dry, itchy skin results in a rash from scratching or rubbing the affected area. There are several types of eczema. Each type has unique triggers that can affect your skin's barrier.

➤ **Function, including:**

- Atopic dermatitis
- Contact dermatitis
- Dyshidrotic eczema
- Neuro dermatitis.
- Nummular eczema

➤ **Common Triggers That Cause Eczema Are:**

- Dry Weather
- Fabrics Or Clothing Material
- Makeup Or Skin Care Products
- Smoke Or Pollutants
- Stress On Your Emotional Well Being

➤ **Medical Treatment**

- Once your health care provider is confident that you have eczema, the primary elements of treatment are anti-inflammatory medication and relief from the itching.
- Steroid creams of prescription strength and antihistamine medications are the standard form of treatment.
- Diet limitations and agents that dry the skin through chemicals may also be provided, but their effectiveness is debated.
- In cases of severity that do not respond to potent steroid cream, alternative therapies can be considered. These consist of coal tar, PUVA (psoralen ultraviolet A light), and chemotherapy medications.

➤ **Cream:-**

Cream is defined as semisolid emulsions of either the water in oil (w/o) or the oil in water (o/w) type that are intended for external application. Cream is classified into two types: water in oil emulsion and oil in water. Its main purpose is to remain on the application site for an extended period when used on the outer or superficial layers of the skin. The goal of a skin cream is to shield the skin against different environmental elements and weather conditions while also delivering soothing effects.

➤ **Herbal cream.**

All that the herbal cream consists of is an oil and water emulsion. The herbal lotion was created using neem, papaya, aloe vera, turmeric, and Tulsi, along with other natural components. These elements were selected due to their unique properties.

Types of herbal cream:

➤ **Moisturizing Creams:**

These creams are designed to soften and moisturize the skin, providing it with a lasting moisture barrier. To lock in hydration and prevent dryness, they often contain ingredients such as shea butter, cocoa butter, or coconut oil, along with herbal extracts like aloe vera, chamomile, calendula, and lavender.

➤ **Antiaging creams :**

Herbal anti-aging creams aim to enhance skin elasticity and firmness while reducing the visibility of wrinkles, age spots, and fine lines. Typically, they include antioxidant-rich herbs such as pomegranate, rosehip, ginseng, and green tea to assist in combating free radical damage and promote skin rejuvenation.

➤ **Acne treatment cream :**

Individuals with oily or acne-prone skin are the intended audience for herbal acne creams. These creams often incorporate antibacterial and anti-inflammatory herbs like calendula, witch hazel, neem, and tea tree oil, which assist in healing blemishes, alleviating inflammation, and reducing acne breakouts without causing irritation to the skin.

➤ **Herbal sun burn creams :**

Are meant to soothe and rejuvenate skin affected by sun damage, thereby reducing the pain, inflammation, and flaking associated with sunburn. To hydrate and nourish the skin, they often contain moisturizing ingredients such as coconut oil or vitamin E along with cooling botanicals like aloe vera, lavender, chamomile, and cucumber.

Advantages

- **Natural Ingredients:** Numerous herbal creams are created using natural ingredients like herbs, botanical extracts, and essential oils, which can offer nourishment and hydration to the skin.
- **Decreased Chance of Side Effects:** As they usually include a smaller amount of synthetic components and additives, herbal creams might present a decreased likelihood of triggering negative reactions or allergic responses.
- **Healing Attributes:** Some herbs possess recognized healing attributes that can assist with particular skin concerns, such as alleviating inflammation, encouraging wound repair, or addressing acne.
- **Nutrient-Dense:** Herbal creams frequently include vitamins, antioxidants, and minerals sourced

from plants, which can assist the skin by delivering vital nutrients and enhancing overall skin wellness.

- **Environmentally Friendly:** Numerous herbal creams are created using sustainable and eco-friendly methods, making them a more environmentally aware option in comparison to products that include synthetic chemicals.

Disadvantages

- **Absence of Standardization:** Herbal products frequently have inconsistent levels of active components, resulting in varying effectiveness.
- **Allergic Reactions:** Natural substances may still provoke allergic responses, irritation, or contact dermatitis—particularly in delicate skin.
- **Delayed Results:** Herbal creams may act more slowly than conventional treatments like corticosteroids.

2. Material :

Sr.no	Ingredients	Chemical constituents	Category
1	Lavender Essential oil	Linalool, linalyl acetate, 1,8-cineole, terpinen-4-ol, camphor	Pain Relief, Wound Healing, Skin Soothing, Anti-anxiety
2	Chamomile Flowers	Bisabolol, flavonoids, terpenoids, coumarins	Emollient, Anti-Aging,
3	Beeswax	esters, free fatty acids, alcohols, hydrocarbons	Thickening agent, Stabilizer,
4	Shea butter	Fatty acids, including stearic, oleic,	Skin Moisturizer
5	Lavender Flower	Linalool and linalyl acetate	Aromatherapy & Wellness
6	Coconut oil	Lauric acid	moisturize and soften the skin

❖ **LavenderEssentialoil****Fig.no.1**

CommonName–LavandulaAngustifolio **Family**-Lamiaceae

The oil is traditionally believed to have sedative, carminative, anti-depressive and anti- inflammatory properties, in addition to its recognised antimicrobial effect [12]Lavender essential oil is well-known as a complementary therapy on its own and is often added to various over-the counter complementary health and cosmetic products. For centuries, therapeutic products made from the widely-used garden herb Lavender (Lavandula spp.) have been utilized, with the more recent introduction of its essential oils being notably used as an antibacterial during World War traditionally the oil is thought to possess sedation,carminative,Anti-depressant,and anti -inflamentary Properties along with its established antimicrobial benefits .

❖ **ChamomileFlowers****Fig.no.2**

Commonname:-German chamomile,Roman chamomile,and Babuna.

Family:-Asteraceae

Chamomile's importance in traditional medicine stems from its wide range of health benefits. Its role as a sleep aid is extensively documented, with its gentle sedative qualities assisting individuals in attaining a more restorative sleep.[13] Moreover, chamomile is well-known for its effects in alleviating stress, frequently consumed as a soothing tea or incorporated in aromatherapy for relaxation.[14]. In addition, chamomile's therapeutic benefits encompass gastrointestinal problems. It is appreciated for its capacity to relieve stomach discomfort, including issues such as indigestion, bloating, and cramps. Many people turn to chamomile as a natural substitute for over-the-counter medications for these digestive issues[15] One of chamomile's unique characteristics is its fragile, daisy-like flowers, which are aesthetically pleasing and enhance its medicinal effectiveness. Chamomile preparations are commonly available in the form of teas, tinctures, oils, and creams, and they are generally recognized as safe for most users[16]

❖ **Beeswax**



Fig.no.3

CommonName-Cera Alba

Family-Apidae

Beeswax is frequently utilized in eczema creams because of its moisturizing, calming, and anti-inflammatory characteristics. It can assist in forming a protective layer on the skin, reducing moisture loss and retaining hydration, which can be advantageous for dry, itchy skin linked to eczema. Moreover, beeswax has demonstrated the ability to decrease the overgrowth of skin flora, which may lead to inflammation. Beeswax is a natural wax produced by honeybees, widely used in salve formulations for its unique chemical properties and skin benefits multifunctional benefits. It acts as a thickening agent, emollient, and moisture barrier, giving salves a smooth texture while protecting and softening the skin. Its composition includes esters of fatty acids and long-chain alcohols, along with hydrocarbons and minor components like propolis, which may contribute antimicrobial and anti-inflammatory properties [17],[18] Beeswax also enhances the stability and shelf life of oil-based preparations without clogging

pores, making it ideal for soothing dry or irritated skin [19]. The presence of trace amounts of propolis further supports its antibacterial and wound-healing potential [20]

❖ Sheabutter



Fig.no.4 Commonname:-Shea,Butyrospermumparkii,butter

Family:-Sapotaceae.

It was discovered that the high stearate fat obtained from the seeds of the Sheu tree (*Vitellariaparadoxa*C.F. Gaertn.), a member of the Sapotaceae family, was enhanced with a high concentration of vital minerals and proteins. It was also discovered that the oil content and sterol levels were higher, primarily consisting of triglycerides containing linoleic, oleic, stearic, and palmitic fatty acids . The substantial levels of unsaponifiable fats included phenols, triterpenes, tocopherols, and sterols, which are responsible for the fat's anti-inflammatory and antioxidant qualities and are used to treat a variety of skin conditions [21]Because of its anti-inflammatory and antioxidant properties, it is utilized in the production of topical ointments that are used to treat eczema. In a pilot study, Zoe Diana Draelos et al. assessed the effectiveness of a botanical moisturizer cream that contained dimethicone, shea butter, and other humectants. After two weeks of use, the patients' condition significantly improved as the cream significantly reduced itching, inflammation, irritation, roughness, dryness, and erythema while also restoring skin hydration[22] The *Vitellariaparadoxa* tree, which is indigenous to West Africa, yields shea butter, a fat derived from its nuts. It is renowned for its moisturizing, anti-inflammatory, and therapeutic effects, and it has been used in African societies for ages. Shea butter, which is high in vitamins A, E, and F as well as necessary fatty acids, helps boost skin elasticity and may be used to treat minor wounds, eczema, and dry skin[23]. Shea butter is a popular ingredient in cosmetic products like lotions, creams, and hair care items because of its softening properties. Additionally, it has cinnamic acid, which offers a certain amount of UV protection[24].

❖ **Lavender Flower**

Fig.no.5 Common Name – Lavandula Angustifolio

Family-Lamiaceae

Although lavender can be beneficial for skin issues, it's not advised for all individuals with eczema. Certain people might have a flare-up or adverse reaction to the scent of lavender. It is important to conduct a patchtest on a small section of skin prior to using lavender oil and to seek guidance from a dermatologist or allergist for tailored recommendations, particularly if you have eczema. A well-known medicinal plant prized for its therapeutic and aromatic benefits is lavender (*Lavandula angustifolia*), which belongs to the Lamiaceae family. The flowers contain essential oils that are high in linalool and linalyl acetate, which gives it its anti-inflammatory, antimicrobial, painkilling, and anti-anxiety properties [25]. Historically, lavender flowers have been employed in herbal medicine for the treatment of burns, wounds, and a variety of skin disorders, such as eczema and acne. Scientific studies have also demonstrated lavender's ability to reduce stress and improve skin healing by modulating inflammatory pathways [26]. Lavender's essential oil is typically extracted by steam distillation of the flowering tops and is commonly used in topical formulations, cosmetics, and herbal remedies. According to studies, lavender oil can help alleviate pain, speed up wound healing, and promote relaxation by modulating the central nervous system [27]. Its aromatic essence is believed to offer therapeutic benefits, from tackling anxiety and depression to aiding with insomnia and eczema. [25][28] One of lavender oil's primary applications is in skincare. Its natural anti-inflammatory properties reduce inflammation, alleviate pain, and cleanse the skin's surface. This makes it particularly useful for soothing minor irritations and mild burns, earning it a reputation for its calming and healing effects. [29]

❖ **Coconutoil****Fig.no.6**

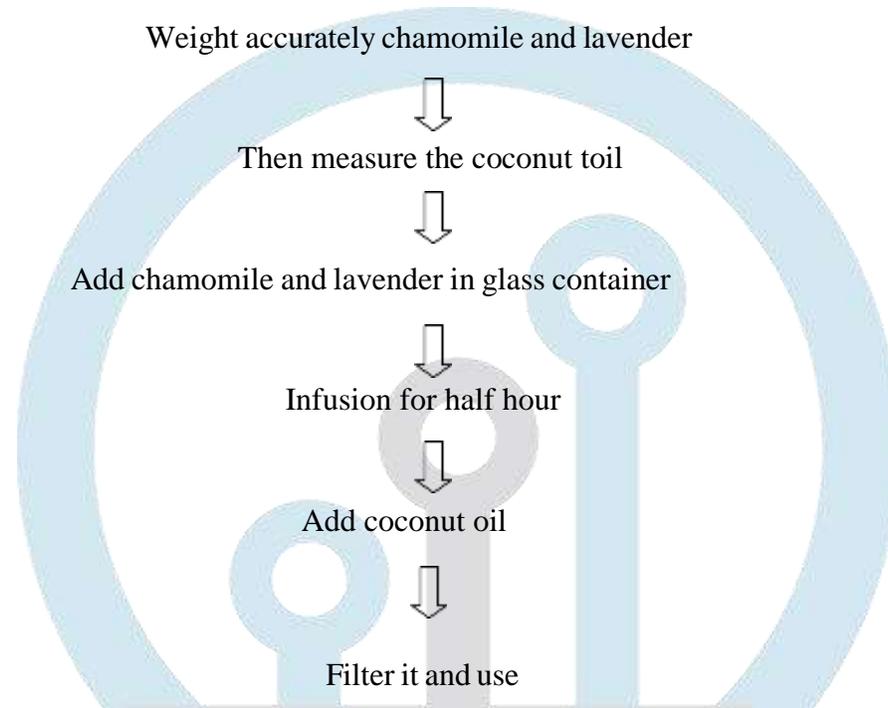
CommonName—Cocos nuciferaoil

Family:-Arecaceae

Topical use of virgin coconut oil in individuals with mild to moderate atopic dermatitis decreased the severity of the condition and improved barrier function by lowering trans-epidermal water loss and boosting skin capacitance [21].,trans-epidermal water loss and skin capacitance in mild to moderate eczema and the outcomes of trial showed significant reduction in SCORAD indices and TEWL (trans-epidermal water loss) from baseline in group treated with virgin coconut oil and notable increase in skin capacitance from baseline mean was observed accounting for excellent emollient properties of virgin coconut oil [30]In one of the trials conducted to asses the anti-inflammatory, analgesic and antipyretic effects of virgin coconut oil anti-inflammatory effects were observed on ethyl phenyl propionate-induced ear edema in rats and in carrageenan and arachidonic acid-induced paw edema [31]The post-treatment SCORAD index scores obtained were low in the groups with virgin coconut oil[32]. Furthermore, its antioxidant composition, which includes vitamin E and polyphenols, aids in skin healing and fights oxidative stress [33] Coconut oil has been used in traditional medicine to treat wounds, burns, and inflammatory skin illnesses[34] Coconut oil is also recognized for its ability to improve skin health, acting as a natural moisturizer and protective barrier against harmful microorganisms [35] Additionally, its high content of antioxidants, including vitamin E, aids in combating oxidative stress and promoting overall skin regeneration [36] Despite these potential benefits, health groups like the American Heart Association warn against overusing coconut oil because of its high saturated fat content, which, if consumed in large quantities,[37]

2.1 Methods :

2.1.1 Extraction Process :

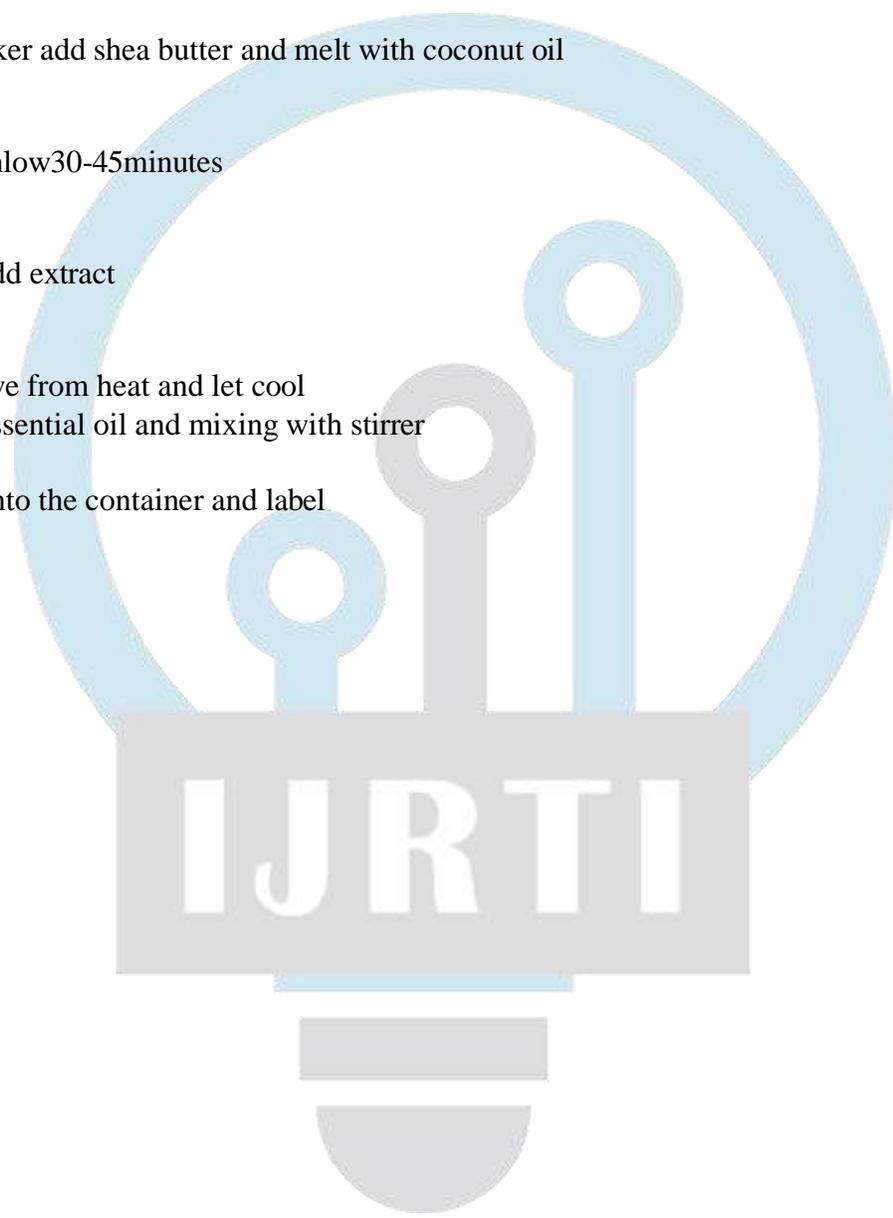


2.1.2 Formulation table :

Sr.no	Ingredients	Quantity taken
1.	Shea butter	3 g
2.	Lavender essential oil	5 drop
3.	Bees wax	4 g
4.	Coconut oil	5 drop
5.	Chamomile flower	1 g
6.	Lavender flower	1 g

2.1.3 Process:

- Collect all ingredient and glass ware and clean
- Using a double boiler and set heat to medium
- In beaker add shea butter and melt with coconut oil
- Heat on low 30-45 minutes
- And add extract
- Remove from heat and let cool
- Add essential oil and mixing with stirrer
- Pour into the container and label



3. Identification test :

Sr. No.	Test	Procedure	Observation	Image
1.	Ferric Chloride Test	<ul style="list-style-type: none"> Take 2mL of Butterfly Pea extract. Add 2–3 drops of 5% Ferric Chloride (FeCl_3) solution. 	<ul style="list-style-type: none"> A blue-green, blackish-green, or dark color indicates the presence of phenolics 	
2.	Shinoda Test	<ul style="list-style-type: none"> Take 2mL of the extract. Add a few small magnesium (Mg) turnings. Add a few drops of concentrated hydrochloric acid (HCl). 	<ul style="list-style-type: none"> A pink, red, or orange coloration appears, confirming flavonoids. 	
3.	Alkaline Reagent Test	<ul style="list-style-type: none"> Add a few drops of sodium hydroxide (NaOH) solution to 2 mL of extract. 	<ul style="list-style-type: none"> A deepening of blue or violet color indicates anthocyanins. Upon acidification (adding dilute HCl), the color shifts to pink. 	

4.	Lead Acetate Test	<ul style="list-style-type: none"> Add a few drops of 5% Lead Acetate solution to the extract. 	<ul style="list-style-type: none"> A yellow precipitate indicates the presence of flavonoids. 	
5.	Salkowaski test	<ul style="list-style-type: none"> Add a few drops of the Sample to chloroform, then fully add sulfuric acid. 	<ul style="list-style-type: none"> A reddish-brown or violet ring indicates the presence of terpenoids, including linalyl acetate. 	

4. Evaluation test :



fig no :7

4.1 Organoleptic Evaluation :

- 1. Colour :** Bright Cream Colour
- 2. Odour :** Characteristic
- 3. Texture :** Smooth Consistency

4.2 Physical evaluation :

In this test, the cream was observed for colour, odour, texture, state.

4.3 Phase separation : An appropriate wide-mouth container was used to transport the produced cream.

After being set aside for storage, the separation of the oil and aqueous phases became visible after 24 hour

4.4 Non irritancy test : The herbal cream was placed on human skin, and its impacts were monitored. This included effects such as irritation and a burning sensation.

4.5 Stability studies : Stability test of a herbal cream that has been prepared The formulation was investigated at room temperature.

4.6 Washability : The formulation was applied to the skin and then relaxed. The extent of washing with water was examined.

4.Result and Discussion :

Sr.no	Physio chemical Characteristics	Observation
1.	Colour	Bright cream colour
2.	Odour	Characteristics
3.	Phase Separation	No phase separation
4.	Non irritancy test	No irritant
5.	Stability Study	Stable at 25°C and 35°C
6.	Washability	Good
7.	Appearance	Good

5.Conclusion :

Levender oil Chamomile Flower Beex wax Shea butter Lavender flower Coconut oil were used in the development of a herbal cream that showed promise as a topical therapy for eczema. It had favourable stability and physicochemical characteristics. In vitro, it showed strong anti-inflammatory and anti-eczematous actions. These results imply that the herbal cream may be used as a safe and efficient complement to traditional eczema therapies. The herbal cream made using natural plant-based components, as shown by the research, is a

viable option for treating eczema. Due to its anti-inflammatory, moisturizing, and antibacterial characteristics, it greatly alleviates symptoms including itching, redness, and dry skin. The herbal cream has fewer adverse effects than traditional treatments and may be more well tolerated for extended usage.

6.Future Prospective :

Due to expanding consumer interest in natural and holistic skincare solutions, the future potential of herbal creams for eczema is becoming more and more bright. Due to growing worries about the prolonged use of synthetic corticosteroids and their possible adverse effects, more people are switching to herbal alternatives that have calming, anti-inflammatory, and skin-repairing effects. Through scientific progress, potent bioactive chemicals have been discovered in plants like Lavender flower, chamomile flower, Shea Butter, Coconut oil, lavender essential oil and licorice root, all of which have shown promise in treating the symptoms of eczema. Herbal lotions are becoming more accepted in the pharmaceutical and dermatological communities as evidence for the efficacy of these natural compounds increases. Additionally, the demand for plant-based and clean-label skincare products is rising globally, which is spurring innovation and investment in the industry. But there are still issues like quality control, standardization, and the requirement for more thorough clinical trials. Notwithstanding these challenges, the incorporation of herbal medicine into contemporary dermatological procedures points to a promising and long-lasting future for herbal creams as an adjunctive or alternative treatment for the treatment of eczema.

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