

Pharmaceutical Assessment of Body Lotion: A Herbal Formulation and its Potential Benefits

Submitted by

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ABSTRACT

Abstract

Background: Protective layers of skin cover the body. Plant-based herbal body lotion soothes and moisturises. Treatments commonly include succulent aloe vera, which heals, reduces pain, and moisturises. For hundreds of years, it has healed skin burns and injuries.

Aim: This study aims on the pharmaceutical assessment of Aloe-vera by formulating an herbal Body lotion.

Material and Method: Aloe-vera, Honey, Glycerin, Rose Water and Triethanolamine were taken for the formulation of herbal body lotion. Evaluation parameters were also performed to evaluate the formulation and to make sure that the subjected formulation is not harmful for the human mankind.

Result: The aloe vera body lotion was formulated by using various type of ingredients such as Aloe- vera, glycerin, rose water, honey and Triethanolamine. Aloe-vera contain antimicrobial and hydrating properties protect skin against microbial degradation and moisture to skin.

Conclusion: herbal body lotion is prepared for tropical administration. Aloe vera is used in lotion to provide synergistic effect as well as moisturizing effect on skin. Herbal remedies are experiencing a surge in popularity worldwide. The utilization of aloe vera, honey, Coconut oil, Lemon Oil and glycerin in the formulation of an herbal lotion is an exemplary notion.

Keywords: Herbal body lotion, aloe-vera, honey, skin, glycerin, pharmaceutical assessment etc.

1. INTRODUCTION

This study formulates the Herbal Body Lotion (referred to as "Products") in this publication. These Products are meticulously made using a basis of acceptable cosmetic ingredients and one or more herbal elements to deliver exclusive cosmetic benefits. This research calls these goods "Herbal Cosmetics". Herbal lotions use fragrant herbs and their derivatives in cosmetics. This method has been popular with herbal product buyers, increasing cosmetics demand for natural ingredients and extracts. Lotions are non-friction liquids for external use. The skin is directly applied to substances using absorbent materials like cotton wool or gauze saturated with them. Lotions can chill, calm, or protect locally. A herbal body lotion is a liquid composition applied to the skin to improve aesthetics. Lotions remove sebum and cleanse the skin. This chemical improves blood circulation, skin moisturization, astringency, freshness, bleaching, and therapeutic effects ^[2]. Most herbal body lotions are applied gently. Finely dividing insoluble materials into colloidal particles soothes inflammatory areas and improves interaction with ill surfaces. During manufacture, many ingredients can be added to improve lotion dispersion or cooling, soothing, drying, or protective properties. Cosmetics reduce wrinkles, acne, and sebum. Many formulations address skin issues, including skin protection, sunscreen, anti-acne, anti-wrinkle, and anti-aging. Different ingredients are used to make these mixtures. The current study collects data on herbal lotion manufacture using herbs. It discusses the benefits and uses of these lotions in cosmetics formulation. The ancient Indian medicine system Ayurveda uses herbs and plants to heal various diseases. A lotion's main goal is to protect the skin from weather and environmental conditions while relaxing it. Cosmetics are substances that are rubbed, poured, sprinkled, or sprayed on the body to wash, beautify, increase attractiveness, or change appearance, according to the Drugs and Cosmetics Act.

Herbal formulation uses natural ingredients to make cosmetics. The traits of herbs are well-known. Turmeric and Aloe vera are examples. The Rishis introduced Ayurveda to India, which uses the best botanicals. Ayurveda validated the herb formulation.

Herbal remedies provide necessary nutrients and minerals to boost the body's nutrition. This study tests a natural body lotion for skin protection without harmful ingredients. Compared to chemical formulations, natural substances are safe. Semi-liquid lotions are applied directly to the body. Coconut oil, glycerine, and aloe vera gel nourish and prevent dryness, especially in summer and winter. These chemicals also boost skin brightness slightly. The lotion soothes and protects. Aloe vera has many medical uses due to its properties. Aloe vera in food or drink has been shown to lower blood glucose levels, suggesting it may help manage diabetes. Many diabetics use Aloe vera with yoghurt or as a tea. Additionally, it has been used to make anti-aging, anti-wrinkle, and moisturisers. The moisturiser or cream is preferred due to its non-oily, non-sticky texture, rapid drying, simple absorption into the skin, and lack of odour. This chemical reduces pain, inflammation, and burning when applied topically to sunburn and other burns. Additionally, it speeds wound healing. The leaf sap or pure Aloe vera extract can be applied on burns or wounds. The use of Aloe vera extract may cure stomach ulcers.

The extract, taken as juice or with meals, reduces inflammation and speeds ulcer-related stomach wound healing. Aloe vera juice, alone or in combination with other liquids, can relieve gastrointestinal conditions like irritable bowel syndrome, gastroesophageal reflux disease, Crohn's disease, dyspepsia, and reflux. Maintaining stomach acid equilibrium relaxes gastric tissues. Aloe vera treats mouth and gum problems and severe gum illnesses due to its antibacterial and anti-inflammatory qualities. The chemical can be used in toothpaste or gel to massage gingival tissues. It also treats dermatitis, burns, and laceration-induced wounds.

Liliaceae is the plant family. This plant is known as Aloe barbadensis, Aloe indicia, Aloe Barbados, and Aloe vera. According to Ayurvedic tradition, Aloe, referred to as Kumari or "Young Girl," is associated with the restoration of youthful vitality and femininity. Aloe vera is used as a female reproductive system tonic. Aloe is

alliterative, tonic, renewing, purgative, and vulnerary in Ayurveda. Ayurvedic

aloe is said to balance Vatta, Pitta, and Kapha. In the context of traditional Indian medicine, this substance finds application in the treatment of constipation, colic, skin ailments, worm infestations, and infections. As a laxative, Anti-helminthic, haemorrhoid therapy, and uterine stimulant, aloe vera is often taken internally. This chemical is applied topically to treat eczema and psoriasis with liquorice root.

A. Vera dish is served with Nan naan or rice in Tamil Nadu, India. Around 200 chemical components make up aloe vera. The gel in aloe vera leaves contains 98% water. The total solids content of aloe vera gel fluctuates around 0.66%. The gel also has 0.56% soluble solids. Dry matter aloe gel contains polysaccharides (55%), sugars (17%), minerals (16%), proteins (7%), lipids (4%), and phenolic compounds (1%). Aloe vera gel contains antioxidant vitamins A, C, and E. Thiamine, niacin, riboflavin, choline, and folic acid are also present. "Herbal Cosmetics" are made by blending permitted cosmetic components to produce a base and adding one or more herbal compounds for cosmetic use. Herbal cosmetics use herbs and their derivatives for scent. The cosmetics business needs more natural ingredients and extracts due to the popularity of herbal products. Lotions are non-Rubby topicals. The compounds are quickly applied to the skin using saturated cotton wool or gauze. Lotions can chill, calm, and protect locally.

Lotions should be sold in fluted bottles of different colors to distinguish them from internal drugs.

Lotions should be stored in a cool, closed, and full container. Lotions, emulsions, and suspensions are applied to undamaged, damaged, or inflamed skin with minimal friction. Lotions come in simple, therapeutic, emulsion, and suspension forms. Herbs are medicinal, culinary, or aromatic plants.

Herbs are found worldwide, unlike vegetables and other macronutrient-rich plants. These plants have savory or aromatic properties that improve food flavour, appearance, therapeutic uses, and smell. Spices and herbs have long been distinguished in cooking. Typically, "herbs" refer to fresh or dried plant leaves or blossoms. In contrast, "spices" are dried seeds, bark, roots, and fruit.

2. Pharmacological properties of aloe vera

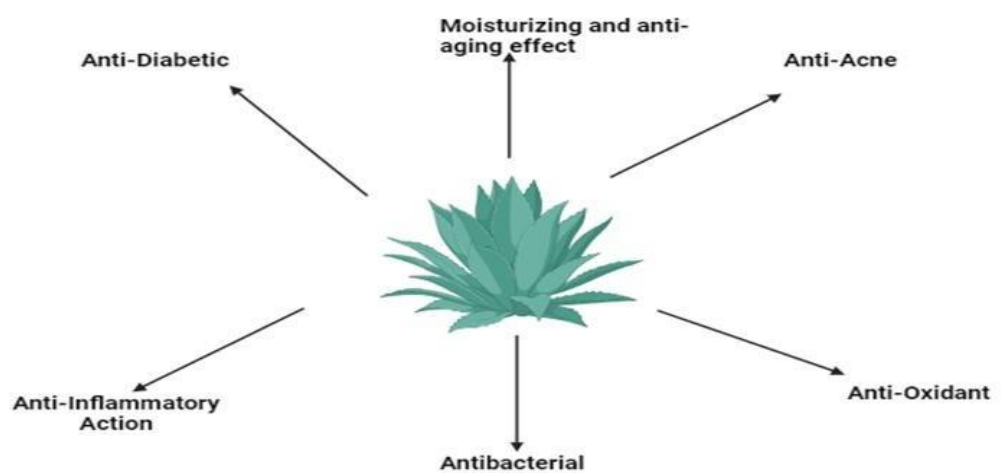


Fig 1 : Pharmacological properties of Aloe-Vera

Ideal properties of Herbal Body Lotion

- The product should offer a cooling effect upon application.
- The removal of the particles is recommended.
- Seek out a potential emollient effect.
- Eliminate oily secretions throughout the process of application.
- Distribute them uniformly across the surface of the skin.
- It is imperative that they do not possess any adverse effects on the skin.
- It is vital to guarantee compatibility with the pH level of the skin .

Herbal Body Lotion Benefits

- Replenish dry skin with water.
- Add some moisture back into your rough, dry skin.
- Reduce the discomfort caused by calluses.
- Fourth, make the tactile and olfactory senses happy.
- Take time for yourself and practice self-care to help you unwind.
- Reduce the roughness of your body in the places where it shows the most.
- Make your skin look more radiant.

Advantages of Herbal Body Lotion

- They do not provoke allergic reactions and do not have any negative side effects.
- They are easily incorporated with skin and hair.
- These are very effective than other cosmetics with small quantity
- Extract form of the plants decreases the bulk properties of the cosmetics and gives appropriate pharmacological effects.
- They have more stability, purity, efficacy, with their herbal constituents.
- The storage and handling of herbal cosmetics is easier and for prolong period .

Disadvantages of Lotion :-

- Poor permeability of drug to deeper skin layer
- Less stable than solid dosage form
- Need to shake container before use in case of emulsion / suspension type of lotion
- Babies can swallow if applied to hand

Applications

- Skin softening
- Smoothing
- Cooling
- Moisturizing
- Anti-allergic
- Antiseptic
- Humectant
- Astringent
- Antiacne
- Antiinflammatory
- Cleaning
- Protective
- Antipyretic
- Scabicial
- Local anaesthetic
- Paraciticide
- Germicide
- Antifungal
- Fairness
- Anti aging,
- Anti wrinkle

Nature

As a multifaceted organ, skin provides the body with protection from infection and the environment, as well as sensory capabilities. The skin is the body's largest organ and has several, diverse functions. As well as being a physical barrier, it has immune and sensory properties [8].

Remedies of skin

Coconut oil Aloe Vera, Moisturize, Sunscreen, Cleanse Avoid smoke Hydrate, Healthy diet. Eg, such as Dry skin-Dry skin can have causes that aren't due to underlying disease. Examples include dry environment, frequently washing hands, inadequate hydration, swimming in a chlorinated pool or jobs that are rough on the hands such as mechanics or farming.

Treatment of dry skin

Self-treatment Using a thick moisturiser and a humidifier may help to soothe dryness. Avoiding alcohol, caffeine and tobacco may also relieve dry mouth and dry skin. See a doctor if you don't improve despite your best efforts. Notice redness. Have dryness and itching that interfere with sleep

3. Materials

Various material and their role in herbal body lotion formulation are listed below in table

Table 1: List and uses of ingredients used in the formulation of herbal body lotion

Sr. No	Ingredient	Uses
1.	Aloe-vera gel	Moisturizer
2.	Triethanolamine	Emulsifier
3	Glycerin	Humectant
4.	Distilled water	Diluent
5.	Rose Water	Perfume
6..	Steric Acid	Emulsifier
7.	Coconut oil	Improve skin texture
8.	Honey	Preservative
9.	Vitamin E	Antioxidant
10.	Lemon oil	Perfume

3.1 Plant Material

Aloe-vera, Honey was taken as plant material in this formulation. Aloe-vera was collected from the Garden of my Society. Honey was purchased from the local market of Dhondipura, Beed.

3.1.2 Aloe-Vera

Aloe vera is a popular medicinal plant with antioxidant and antibacterial properties. It may reduce dental plaque, speed wound healing, prevent wrinkles, and manage blood sugar.

It is an antiseptic that allows protection against bacteria. Aloe Vera contains polysaccharides and gibberellins. These help in the growth of new cells and at the same time, reduce inflammation and redness. It also works as an astringent that reduces the size of pores, flushing out the excess sebum, microbes, and dirt.

Aloe vera is widely used for its medicinal properties and skin benefits. You can use aloe vera gel on your face every day to moisturize the skin and soothe minor irritation as long as you are not allergic. Learn about the benefits and uses of aloe vera, as well as potential side effects.

3.1.2.1 Benefits of Aloe-Vera

- Soothes Burns.
- Heals Wounds.
- Eases Intestinal Problems.

- Reduces Arthritic Swelling.
- Heals Psoriasis Lesions .
- Gum Infections.
- Eye irritations and injuries.
- Strains and sprains.



Fig 2: Aloe-Vera

3.1.3 Honey

Honey is an excellent preservative for aloe due to its long shelf life and compatibility with various substances. Honey is primarily composed of sugar, along with a combination of amino acids, vitamins, minerals, iron, zinc, and antioxidants. Honey is utilized for its various health benefits, including its anti-inflammatory, antioxidant, and antibacterial properties. Honey helps retain moisture in the skin's deeper layers, promoting a healthy and youthful appearance .

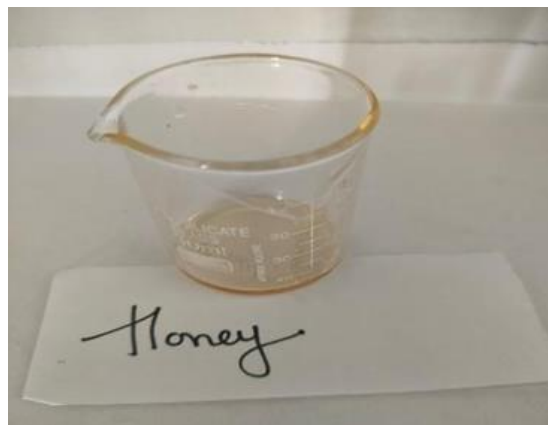


Fig 3: Honey

3.1.3.1 Benefits of Honey

- Honey has the unique ability to promote skin cell regeneration and healing,
- while also softening,
- brightening,
- and clarifying the skin.
- Incorporating honey into your daily routine promotes skin health naturally,
- making it an essential part of any skincare regimen.

3.1.4 Glycerin

Glycerine relieves scalp irritation quickly. Aloe vera soothes sun-damaged skin and hair. Organic Aloe vera fades skin blemishes and rashes. Aloe vera retains moisture, while glycerine brightens skin and hair.

Glycerine is one of the most valuable substances in the world and is found in a wide variety of everyday products. Due to its outstanding moisturizing properties, glycerine is commonly used in skin care products. Whether you only use natural skin care products or household brands, it's highly likely you'll find glycerine on labels throughout your home

3.1.5 Benefits of Glycerin

- Glycerin uses as moisturizer.
- It soothes dry and irritated skin.
- It treated acne and scars.
- It helps to reduce wrinkles.
- It has Anti - aging property.
- It is used as cleanser.
- It improves skin permeability

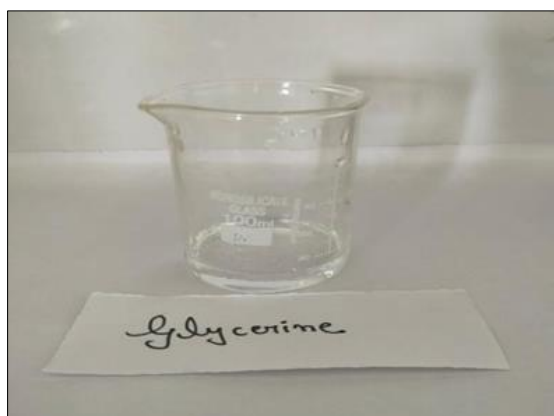


Fig 4: Glycerine

3.1.4 Rose Water

Rose water is perfect for cleansing your skin and removing any impurities that could cause unwanted spots. Because of its gentle nature, it is suitable for people with any skin type - even sensitive skin. Using rose water for face and body cleansing will ensure your skin doesn't become dry and irritated.

3.1.5 Benefits of Rose Water

- Rose water is a rich source of anti-inflammatory property.
- It helps to provide a cooling effect and help in reducing itchiness and redness.
- It helps to smoothen skin irritation.
- It hydrates and moisturize the skin.
- It helps maintain the skin's ph balance.
- It improves skin texture and softness.
- It has anti- inflammatory property



Fig 5: Rose Water

3.1.6 Coconut oil

coconut oil may be linked to some potential benefits for skin, including reducing inflammation, keeping skin moisturized and helping heal wounds. The medium-chain fatty acids found in coconut oil also possess antimicrobial properties that can help treat acne and protect the skin from harmful bacteria.

Coconut oil for skin has been known to help reduce dark spots, soothe facial redness and help to fix an uneven skin tone. As one of the benefits of coconut oil for skin is that it helps to increase the natural production of collagen, this helps to improve skin elasticity for firmer skin.

3.1.7 Benefits of Coconut oil

- Coconut oil is moisturizing agent and provide dry skin.
- It promotes wound healing and reduce inflammation.
- It contains antibacterial and antifungal properties.
- It has anti- oxidant property`

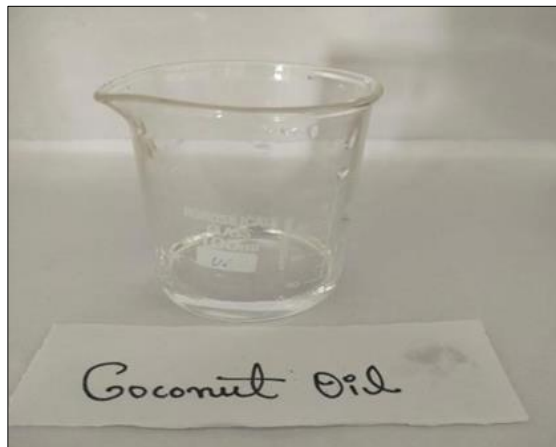


Fig 6: Coconut oil

3.1.8 Vitamin E :

Vitamin E is a fat-soluble, essential nutrient with anti-inflammatory properties. Vitamin E helps support the immune system, cell function, and skin health. It's an antioxidant, making it effective at combating the effects of free radicals produced by the metabolism of food and toxins in the environment.

Lemon oil is used for a variety of skin conditions , including acne. When diluted and applied topically, lemon essential oil can kill bacteria that may get trapped in pores and cause breakouts. It can also clarify your skin, gently exfoliating dead skin cells that so often become trapped in hair follicle and pores.

3.1.9 Benefits of Vitamin E

- Strengthens your skin barrier. A strong skin barrier allows your skin to retain water and stay hydrated.
- Super moisturising.
- Powerful antioxidant properties.
- Treats hyperpigmentation.
- Protects from UV exposure.
- Fades acne scarring.



Fig 7: Vitamin E

3.2 Lemon Oil

Lemon oil is used for a variety of skin conditions, including acne. When diluted and applied topically, lemon essential oil can kill bacteria that may get trapped in pores and cause breakouts. It can also clarify your skin, gently exfoliating dead skin cells that so often become trapped in hair follicle and pores.

3.3 Benefits of Lemon Oil

- It has an antifungal property.
- It helps in skin lightening.
- It is used as a preservative.
- It helps fight wrinkles and other signs of ageing.
- It is used to treat acne and blackheads.

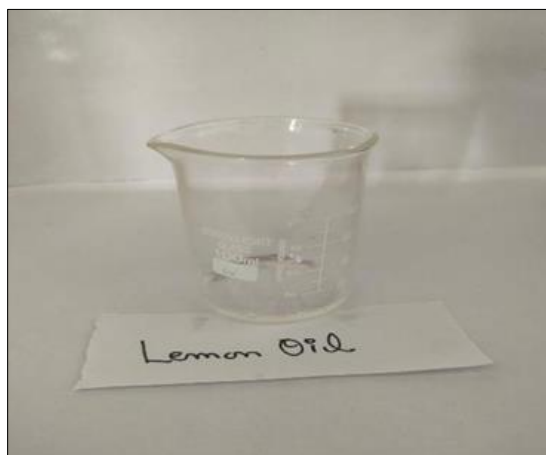


Fig 8: Lemon Oil

1. Chemicals

Stearic acid and Glycerine were collected from the Practical lab of Aditya institute of pharmaceuticals, Beed..

1.1.1 Stearic Acid

Stearic acid is a form of emollient that is quite effective in moisturizing and hydrating the skin. It protects the skin by forming a moisture barrier from moisture loss and keeps it hydrated for longer. It is especially beneficial for people with dry skin, as it effectively retains the skin's natural moisture.

1.1.2 Glycerin

Glycerine relieves scalp irritation quickly. Aloe vera soothes sun-damaged skin and hair. Organic Aloe vera fades skin blemishes and rashes. Aloe vera retains moisture, while glycerine brightens skin and hair.

2. Properties of Stearic Acid :

- Stearic acid used as emulsifier to thicken and stabilized the lotion.
- It has emollient property which helps to moisturize the skin to keep it softer and smoother.
- It has occlusive property, protecting the skin surface from Trans- Epidermal Water Loss (TEWL).
- It helps the skin's pH level



Fig 8: Stearic Acid

4. Methods

4.1 Formulation and preparation of Herbal skin body lotion

- Add measured amount of aloe-vera gel into mixing bowel.
- Then add other ingredients such as Triethanolamine, glycerin, lemon oil ,distilled water and rose water. Aqueous phase was prepared.
- Weigh 7gm Stearic acid, transferred into a beaker, put on the hot plate at 25 °C.
- Measured 3ml coconut oil, poured into beaker with continuous stirring to prepare the oil phase.
- Mix all the phases vigorously and Herbal body lotion was prepared.

4.2 Composition of Aqueous Phase

Sr. no.	Ingredient	Quantity
1	Aloe-vera gel	15ml
2	Triethanolamine	1ml
3	Glycerin	1ml
4	Distilled Water	Q. S.
5	Rose Water	Q. S.
6	Honey	Q. S.

Table 2: Composition of Aqueous Phase

4.3 Composition of Oil Phase

Sr. no.	Ingredient	Quantity
1	Steric Acid	7gm
2	Coconut oil	3ml

Table 3: Composition of Oil Phase

5. Evaluation of herbal body lotion

Evaluation research is defined as a form of disciplined and systematic inquiry that is carried out to arrive at an assessment or appraisal of an object, program, practice, activity, or system with the purpose of providing information that will be of use in decision making.

5.1 Organoleptic Properties

Visual inspection methods are used to evaluate the organoleptic properties of the herbal lotion. Color, Odor,

5.2 Absorption test\

Absorption test was done by applying the lotion onto the skin and rubbed until it gets completely absorbed

5.2 Skin Irritancy test

The irritation test was done by applying a formulation on hand's back skin and leave it for 15 minutes to check irritation reaction such as swelling, itching and redness effect on the skin.

5.3 Homogeneity test

Homogeneity test was assessed by visual inspection and touch.

5.4 pH Test

The pH value of this purely herbal Lotion was determined by using digital pH meter.

Texture and state were examined during this assessment

5.5 Spread-ability test

Between two slides, a lotion that weighed 500 mg was put. On the top slide, a 200g weight was put. The weight was taken off, and the extra mixture was thrown away. The bottom slide was attached to the machine, and the upper slide was attached to a string that didn't bend and had a 100g load put on it. The time it took for the top slide to come off was written down.

5.6 Smoothness

The smoothness of the lotion formulation was assessed through touch examination, wherein we rubbed the lotion between their fingers and made observations regarding its texture. We recorded whether the lotion felt smooth, clumped, homogeneous, or harsh .

5.7 Washability Test

Washability test was carried out by applying a small amount of cream on the hand and then washing it with tap water.

6. Results

The herbal body lotion was formulated by using various various type of ingredients such as aloe-vera gel, glycerin, coconut oil, rose water and honey. Aloe-vera contain antimicrobial and hydrating properties protect skin against microbial degradation and moisture to skin. Glycerin has anti-aging property.

The herbal body lotion was evaluated to various parameter such as physiochemical parameter, pH, wash ability, irritancy, homogeneity, viscosity, smoothness, etc., used to check the quality and performance of formulation. The effect of different ingredients in the formulation was.



Fig 9: Prepared Formulation

The physiochemical property of formulation such as color is white, odor is pleasant, and state is semi-solid. The pH of formulation is neutral and wash ability is also good

Table 1: Result of evaluation parameter of Herbal Aloe-Vera Body Lotion

S. No.	Test	Result
1	Color	Slightly yellow
2	Odor	sweet, slightly nutty aroma
3	Texture	Smooth
4	State	Semi -solid
5	Absorption test	Very well Absorbed
6	Skin Irritancy test	No Irritancy effect
7	Homogeneity	Good
8	Ph	7

9	Spread-ability Test	Smooth and light to Spread
10	Smoothness	Good
11	Washability	Good (Easily Washable)



- For external use only
- Add a dollop (around a 10p coin size) to your hand (more if your skin is particularly dry or on rougher areas such as elbows and knees)
- Rub your palms together to warm up the lotion.
- Use your hands to massage the lotion into your body in small circular motions.

1. Conclusion

Herbal substances alleviate skin dryness better than synthetic bases and may partially replace them. The cosmetologist must promote natural cosmetics. This chemical is easily applied to the body's surface for effective absorption. The skin's nature reduces unfavorable impacts on body surface area. Herbal formulations are needed to meet global market demands. Notably, herbal compounds have distinct and significant activities.

An herbal lotion composition was developed and tested in this investigation. Organoleptic aspects including look, color, and odor were assessed, as well as physiological measurements like pH, spread-ability, ease of removal, and irritancy.

Formulation of an Herbal body lotion is the primary focus of this study. Provide important nutrients for skin health. Many natural herbs are available, each with unique qualities that make them useful in skincare formulas, especially as antioxidants. The study shows that herbal cosmetics are safe and do not cause any harm. Herbal lotion prevents skin problems.

The personal care business uses more cosmetics. Use of bioactive substances in cosmetics affects the biological activity of the skin and provides important nutrients for skin health.

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