



International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

Formulation and Evaluation of Herbal Lotion

Parth Ghule¹, Dr. Gautam Palshikar²

¹Genba Sopanrao Moze College of pharmacy, Wagholi, Pune 412207, Maharashtra, India.

²Associate Professor, Department of Pharmacognosy, Genba Sopanrao Moze College of pharmacy, Wagholi, Pune 412207, Maharashtra, India.
drgautampalshikar@gmail.com

Abstract:

This research looks at how scientists and herbal medicine experts have found new ways to create herbal products, especially herbal plasters, that are safe and effective for the skin. These herbal plasters are made from plants and are good for keeping the skin hydrated, improving its texture, and helping it heal naturally. They are also soothing and moisturizing, which is why they are valued in skincare.

The lotion made from these herbal ingredients was created using a standard method to ensure it was smooth and stable. The lotion was carefully tested to check things like its pH, thickness, and how easily it spreads on the skin. It was also tested for safety by checking if it caused any irritation or problems on the skin. The tests showed that the lotion remained effective over time and didn't cause any harm or irritation.

This research shows that combining traditional herbal knowledge with modern science can lead to safe and effective skincare products. The findings suggest that herbal lotions could be a good, sustainable option for the personal care industry.

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

INTRODUCTION:

Herbal formulations are made using bioactive compounds from plants, which have been used for centuries in traditional medicine for their therapeutic and cosmetic benefits. These natural ingredients are sought after for their effectiveness in improving health and beauty without the risks associated with synthetic chemicals. Many plant-based compounds, such as those found in Aloe vera, have well-documented properties like anti-inflammatory, antimicrobial, and skin-rejuvenating effects, making them popular in skincare. The use of herbal remedies has deep roots in ancient systems of medicine like Ayurveda, which originated in India. Ayurveda, developed by sages (known as Rishis), emphasizes a holistic approach to health, viewing wellness as a balance of body, mind, and spirit. One of the core practices of Ayurveda is the use of medicinal plants to prevent disease and maintain overall health. Plants used in Ayurveda, such as Aloe vera, are considered powerful tools for promoting wellness and beauty. In Ayurveda, Aloe vera is not only known for its skin benefits but also for its support in women's health, particularly for hormonal balance and reproductive well-being. Aloe vera is called "Kumari" in Ayurveda, which signifies youth and vitality, especially in relation to female health. The plant's gel contains polysaccharides, vitamins, and antioxidants, which are essential for maintaining healthy skin, aiding in hydration, healing, and reducing signs of aging. There is a growing preference for herbal skincare products, such as lotions, over synthetic products. The key difference is that herbal lotions often provide benefits that come from the natural compounds in plants, while synthetic skincare products may have harsh chemicals that can lead to skin irritation, allergies, or long-term side effects. Herbal formulations are usually gentler on the skin and are often better tolerated, even by sensitive skin types. Herbal lotions, in particular, contain plant-based ingredients known for their various benefits, including anti-inflammatory, antimicrobial, antioxidant, and moisturizing properties. These bioactive compounds help to soothe the skin, protect it from harmful environmental factors, and provide long-term skin health. This study focuses on the development of an herbal skin lotion using three plant extracts: Aloe vera, Azadirachta indica (neem), and Curcuma longa (turmeric). These plants are well-known in traditional medicine for their healing properties and are becoming more recognized in modern dermatology for their ability to protect and improve skin health.

The process of making the lotion is aimed at creating a product that is soft and gentle on the skin. The lotion should also provide several benefits, such as keeping the skin hydrated, protecting it from things like pollution and sunlight, and helping with minor skin issues like dryness, acne, and irritation. After making the lotion, it will be tested to make sure it works well and is safe to use. These tests will check things like: Ph, Viscosity, Spread ability, Stability, Microbial safety.

MATERIAL AND METHOD:

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

Sr. No	INGRIDIENTS	USES
1	Aloe-vera gel	Moisturizer
2	Honey	Preservative
3	Coconut Oil	Improve skin texture
4	Rose Water	Perfume
5	Glycerine	Humectant
6	Lemon Oil	Perfume
7	Distilled Water	Diluent
8	Steric Acid	Emulsifier
9	Vitamin E	Antioxidant

INGREDIENTS IN LOTION:

1. Aloe Vera:

Aloe vera is a well-known plant that offers a wide range of therapeutic benefits, which is why it's frequently used in both medicine and skincare. The plant contains natural compounds that help protect and heal the body. Some of its most important effects include:

- **Antioxidant:** Aloe vera has compounds that help fight free radicals (harmful molecules that can damage cells), which can reduce oxidative stress and slow down the aging process. This makes Aloe vera valuable for keeping skin youthful and preventing wrinkles or fine lines.
- **Antibacterial:** It can kill or inhibit the growth of harmful bacteria, making it effective in treating wounds and preventing infections.
- **Anti-inflammatory:** Aloe vera helps reduce inflammation, making it useful for calming irritated skin or conditions like acne, eczema, and sunburn. Aloe vera gel, which is found inside the leaves, is especially rich in **vitamins C and E**, as well as **beta-carotene**, which are all powerful antioxidants. These nutrients contribute to:
- **Skin Healing:** Aloe vera helps with wound healing and regenerating skin cells, making it useful for cuts, burns, and other skin issues.
- **Skin Tone and Texture:** Its regular use can improve the appearance of skin by reducing blemishes, evening out skin tone, and improving texture. Aloe vera also enhances skin elasticity, meaning it can help your skin stay firm and smooth.
- **Blood Glucose Regulation:** Some studies suggest Aloe vera might help in controlling blood sugar levels, which could be beneficial for people with diabetes.

Because of these properties, Aloe vera is often included in many skincare products to keep the skin hydrated, reduce signs of aging, and enhance skin health.

2. Honey:

Honey is not only delicious, but it's also a natural powerhouse for skincare. It's been used for centuries because of its many healing properties, especially in treating skin issues. Here's why honey is so beneficial in skincare:

- **Natural Preservative:** Honey has a long shelf life and can preserve its effectiveness when mixed with other ingredients, such as Aloe vera. This makes it an excellent addition to skin products since it helps stabilize the formulation over time.
- **Rich in Nutrients:** While honey is primarily composed of sugars, it also contains important compounds like **amino acids**, **vitamins**, **minerals** (like iron and zinc), and **antioxidants**. These nutrients are beneficial for both overall health and skin health, contributing to honey's well-known **anti-inflammatory**, **antioxidant**, and **antibacterial** properties.
- **Moisture Retention:** One of honey's standout qualities in skincare is its ability to retain moisture in the skin. It acts like a humectant, meaning it draws moisture from the environment and helps the skin hold onto it. This is especially beneficial for keeping skin hydrated and preventing dryness.
- **Healing and Soothing:** The combination of its anti-inflammatory, moisturizing, and antibacterial properties makes honey a fantastic ingredient for soothing and healing the skin. It's often used in products designed to treat acne, eczema, or other skin irritations because it calms the skin while providing nourishment and moisture.

3. Coconut Oil:

Coconut oil is great for moisturizing and protecting the skin. It helps keep the skin hydrated by locking in moisture, making it perfect for dry skin. Here's how it helps:

- **Moisturizing:** Coconut oil is a strong moisturizer that helps hydrate dry skin by locking in moisture.
- **Healing:** It helps wounds heal by reducing inflammation and supporting new skin growth.
- **Fighting Infections:** The oil contains natural compounds that fight bacteria and fungi, helping to prevent infections on the skin.

4. Rose Water:

Rose water is known for being soothing and calming to the skin. It's especially helpful for treating skin irritation and redness. Here's what rose water does:

- **Reduces Inflammation:** It has anti-inflammatory properties that help reduce skin irritation and calm redness.
- **Cooling:** Rose water has a cooling effect, which can relieve itching and redness, especially for sensitive skin.
- **Soothing and Smoothing:** It helps calm the skin and makes it feel smoother, promoting an even skin tone.
- **Moisturizing:** Rose water hydrates the skin, keeping it refreshed and nourished.

5. Glycerine:

Glycerine is a highly valued ingredient in skincare because it helps keep the skin moisturized and hydrated. Here's how it works:

- **Moisturizing:** Glycerine acts like a magnet for moisture, drawing water into the skin and helping it stay hydrated.
- **Soothing:** It helps calm dry or irritated skin, bringing comfort and moisture.
- **Helps with Acne and Scars:** Glycerine helps keep the skin hydrated, which can aid in healing acne and reducing scars.
- **Reduces Fine Lines:** By keeping the skin moisturized and improving elasticity, glycerine helps reduce the appearance of fine lines and wrinkles.

6. Lemon Oil:

Lemon oil, extracted from the peel of lemons, has many benefits for the skin. Here's how it helps:

- **Antimicrobial:** It contains compounds like limonene and citral, which help fight bacteria and regulate the skin's oil production.
- **Helps with Acne:** These properties make lemon oil useful for controlling acne by reducing pore size and preventing acne-causing bacteria from growing.
- **Clears Skin:** It's particularly helpful for people with oily or acne-prone skin, helping to keep the skin clearer and healthier.

7. Stearic Acid:

Stearic acid is a common ingredient in creams and lotions because it helps make products smooth and stable. Here's what it does:

- **Moisturizing:** Stearic acid helps moisturize the skin, making it feel softer and smoother.
- **Protects the Skin:** It forms a protective layer on the skin to prevent moisture from escaping, keeping the skin hydrated.
- **Helps with Skin Health:** Stearic acid helps balance the skin's natural pH, supporting its protective functions and overall health.

Formulation Table:

Table no: 2

Sr no.	Ingredients	Quantity taken
1.	Aloe Vera Gel	15ml
2.	Honey	2 ml
3.	Rose Water	Q. S
4.	Lemon oil	2ml
5.	Glycerine	1ml
6.	Vitamin E	1ml
7.	Triethanolamine	1ml
8.	Stearic acid	7gm
9.	Coconut oil	3ml
10.	Distilled Water	Q. S

Preparation of Aloe Vera Gel:

1. **Collect the Aloe Vera Leaves:** Start by picking fresh Aloe vera leaves.
2. **Clean the Leaves:** Wash the leaves thoroughly to remove dirt and debris. Cut off the base and tips of the leaves.
3. **Slice the Leaves:** Cut the leaves into smaller sections to make it easier to access the inner gel.
4. **Extract the Gel:** Carefully scoop out the gooey gel from inside the leaves and place it in a clean mixing jar.
5. **Heat the Gel:** Gently heat the gel and add agar-agar, which helps thicken the gel and give it a more solid texture.
6. **Mix the Gel:** Use a grinder or blender to make sure the Aloe vera gel is smooth and evenly mixed.
7. **Add Vitamin E:** Add Vitamin E to the gel. It acts as an antioxidant, helping preserve the gel and giving it extra benefits for your skin.
8. **Package and Store:** Once the gel is well-mixed, put it into clean containers and store it in a cool, dry place to keep it fresh and effective.

Method of Preparation for Herbal Lotion:

1. **Prepare the Water Phase:** Start by adding the Aloe vera gel into a mixing bowl. Then, add other water-based ingredients like triethanolamine, glycerin, distilled water, and rose water. Mix everything together to create the water phase.
2. **Prepare the Oil Phase:** Measure 7 grams of stearic acid and place it in a separate dish. Add 3 ml of coconut oil to the dish while stirring to form the oil phase.

3. **Combine the Phases:** Once both the water phase and oil phase are ready, carefully combine them by stirring them together. This will create the herbal lotion mixture.
4. **Final Product:** After mixing thoroughly, let the lotion cool and stabilize. Your herbal body lotion is now ready to use.



Figure 1: Before Adding Oil Phase



Figure 2: After Adding Oil Phase



Figure 3: Herbal Lotion

Evaluation Tests of the Herbal Lotion:

1. **Organoleptic Properties:** This test looks at the lotion's overall quality by examining its appearance, smell, texture, and thickness. The goal is to check how the lotion looks and feels to ensure it's of good quality.
2. **Absorption Test:** This test checks how well the lotion absorbs into the skin. The lotion is applied to the skin and gently rubbed in to see how quickly and well it gets absorbed.
3. **Skin Irritation Test:** To make sure the lotion is safe, it's applied to the back of the hand for 15 minutes. After that, the skin is checked for any irritation like redness, swelling, or itching.
4. **Uniformity Test:** This test checks that the lotion is consistent in texture and doesn't separate or have lumps. It is visually and physically checked to ensure it's smooth and even.
5. **pH Test:** The pH of the lotion is measured to ensure it is in a safe range for the skin (usually between 4.5 and 7). This helps prevent any skin irritation.
6. **Appearance:** The lotion is visually examined to make sure it looks clear, smooth, and free from any imperfections like lumps or clumps.
7. **Colour:** The colour of the lotion is checked to make sure it looks as intended and is consistent with the product's design.
8. **Odor:** The smell of the lotion is tested to ensure it has a pleasant scent and doesn't have any strong or unpleasant odours.
9. **Spread ability:** This test checks how easily the lotion spreads on the skin. A sample is placed between two glass slides, and weight is applied to see how well it moves and spreads.
10. **Removal Test:** This test checks how easy it is to wash the lotion off. After applying the lotion, it is washed with water, and the ease of removal is observed to ensure it doesn't leave a sticky or slippery residue.
11. **Stability Test:** This test checks if the lotion stays safe and free from harmful bacteria over time. The lotion is placed in a petri dish and kept at a warm temperature for 72 hours to see if any bacteria grow. This ensures the lotion remains safe for use.

RESULT AND DISCUSSION:

The herbal body lotion combines Aloe vera, glycerine, coconut oil, rose water, and honey to create a formula that effectively hydrates, protects, and nourishes the skin. Aloe vera provides protection and hydration, glycerine locks in moisture and reduces signs of aging, coconut oil offers deep nourishment and anti-inflammatory effects, rose water soothes and refreshes, and honey helps maintain moisture while supporting healing and antibacterial protection.

EVALUATION TABLE:

Sr no.	Test	Observation
1.	Absorption Test	Very well Absorbed
2.	Irritancy Test	Non-irritable & non allergic on the skin
3.	Homogeneity	Good
4.	pH	7
5.	Appearance	White
6.	Colour	Slightly White
7.	Odour	Earthy and garlicky
8.	Texture	Smooth
9.	Spreadability	Easily spreadable.
10.	Removal Test	Easily removed from the skin by using water
11.	Stability Test	No microbial growth is observed 4 months
12.	Smoothness	Good
13.	Washability	Good (Easily Washable)

CONCLUSION:

This study focused on making and testing a natural body lotion. It looked at how the lotion looks, smells, and feels, as well as important factors like its pH, how easily it spreads on the skin, how easily it can be washed off, and if it causes any irritation. The main goal was to create a lotion that helps keep skin healthy by providing important nutrients. Different plant ingredients were used in the lotion because they each have specific benefits, especially their ability to fight skin damage from free radicals (antioxidants).

The results show that the herbal lotion is safe to use and doesn't cause any harm. It helps prevent common skin problems. As more people prefer natural products, using plant-based ingredients can improve the skin's health by providing nourishment and protection. This study highlights that herbal lotions are a great way to keep skin healthy and avoid skin issues.

ACKNOWLEDGEMENT:

The author acknowledges the guidance and support of all the instructors and associates who have contributed to the development of this work. The information collected in this study has been gathered over time, and certain sections may have been directly substantiated from former workshop. The author extends justifications to any experimenters whose benefactions were unintentionally neglected from the references, and appreciates their understanding.

REFERENCE:

- [1]. Songkro, S., Sirikatitham, A., Sungkarak, S., Buaking, K., Wungsintaweekul, J., Maneenuan, D., & Oungbho, K. (2010). Characterization of Aromatherapy massage oils prepared from virgin coconut oil and some essential oils. *Journal of the American Oil Chemists' Society*, 87(1), 93-107.
- [2]. Chemise Akubude-, Egwuonwu C, Azalea O, Akubude, Olaniyan A, Ajala E, et al. Almond oil: powerhouse of nutrients Soil use patterns in Nigeria View project Biodiesel Project View project Almond oil: powerhouse of nutrients. *CIGR*. 2020; 22(3):190–201.
- [3]. Ahmad Z. The uses and properties of almond oil. *Complement Ther Clin Pract*. 2010; 16(1):10–2.
- [4]. Snowdon JA, Cliver DO. Microorganisms in honey. *Int J Food Microbiol*. 1996;31:1–26
- [5]. Songkro, S., Sirikatitham, A., Sungkarak, S., Buaking, K., Wungsintaweekul, J., Maneenuan, D., & Oungbho, K. (2010). Characterization of aromatherapy massage oils prepared from virgin coconut oil and some essential oils. *Journal of the American Oil Chemists' Society*, 87(1), 93-107.

-
- [6]. Dharmanand S. "SAFFRON, an Antidepressant Herb". <http://www.itmonline.org/arts/saffron.htm>. Zargari, A. Medicinal Plants, 1st ed.; Tehran University Publication: Tehran, Iran, 1997.
- [7]. Mir, H. Herbal Knowledge: Usage of Herbs in Prevention and Treatment of Diseases, with Latest Research around the World, 2nd ed.; Daftare Nashre Farhange Eslami: Tehran, Iran, 2004
- [8]. Sajjad A, Sajjad SS. Aloe Vera: An Ancient Herb for Modern dentistry-A Literature Review. 2014:01-06
- [9]. Vishakha Shinde; Kundan Tiwari; Formulation and Evaluation of Lemongrass Lotion International Journal of PharmaO2Vol.2/Issue6/Nov.Dec. 2020
- [10]. Saudagar RB, Sisodiya MH. Review on Herbal Cosmetics.
- [11]. Pharmaceutical Research, 7(7): 573-591.
- [12]. R. M. Mehta, Pharmaceutics-II, Vallabh Prakashan, 2015; 119-120.
- [13]. Leyden JJ. Rawlings Skin Moisturization. Boca Raton, FL: CRC Press, 2002.
- [14]. Kalyani G. Dubhashe, Bhavana D. Tambe. Formulation and Evaluation of Herbal Lotion.
- [15]. International Journal of Research Publication and Rewives, 2023.
- [16]. Salunke Pandit, Hingane LD. Preparation and Evaluation of Herbal Lotion. International Journal of Advances in Engineering and Management(IJAEM), 2022.