



IJPHT Journal

Papers Having Good Impact

International Journal of Pharmacy and Herbal Technology (Online)

Home Page: <https://www.ijprdjournals.com/>

Formulation And Evaluation of Herbal Lotion

Dipali A. Bandawade,* Shubhangi S. Pawar, Sanjay K . Bais

Fabtech College of Pharmacy, Sangola

Tal-Sangola, Dist.-Solapur

Maharashtra -413307

ABSTRACT

Numerous researchers are studying herbal preparations, and new herbal formulations are derived from new herbs. This article focuses on the need for standardization and the ingredients of herbal products in daily life. No negative effects were observed with the herbal lotion formulation. Creating and assessing topical herbal preparation and evaluation as a synthetic product substitute was the goal of this study. Herbal remedies are used to nourish, moisturize, and treat a variety of skin conditions in addition to improving human appearance. Herbal makeup is what's prepared employed to improve human appearance. The demand for natural products and natural extracts in cosmetic preparations was spurred by consumers desire for herbal products, which led to the use of natural herbs and their products for their aromatic value in cosmetic preparations. This is known as herbal cosmetics. Lotions are fluid formulations designed to be applied externally without causing friction. Herbal product composition will always have the greatest impact on our day-to-day lives compared to any single product's composition. The selection of the herbal product mixture was solely motivated by the desire to confirm the efficacy of these formulations without experiencing any adverse effects. The nutrient-dense qualities of coconut oil, honey, glycerine, aloe vera, and rich grapeseed oil prevent skin from drying out in the summer and winter and give the skin a subtle glow. Function as an antioxidant, antibacterial, anti-inflammatory lotion serves as a cooling, calming, or shielding agent. The physical attributes that comprise an object are its pH, homogeneity by touch and vision, appearance means organoleptic property, consistency, good spreadability, irritancy and microbial contamination. The blends of herbs enhanced the suppleness of the skin and provide considerable moisture.

Keywords: Aspirin, Microwave oven, Organic chemistry

*Corresponding Author Email: - dipalibandawade@gmail.com

Received on 02 July, 2024, Accepted 10 July, 2024

Please cite this article as: Bandawade Dipali et al Formulation And evaluation of Herbal Lotion International Journal of Pharmacy And Herbal Technology 2024.

INTRODUCTION

Standardization herbal formulations incorporate natural ingredients found in cosmetic products. The qualities of the herbs are well known¹. Aloe vera, grapeseed oil, etc., as example: The fact that Ayurveda was developed in India by Rishis is another indication of the best ayurvedic herbs. Ayurveda has demonstrated the herbal formula's effectiveness². A herbal lotion free of all toxins that can effectively protect skin. Considering that they are more natural and safer to use than formulations made of chemicals. Lotions that are semi-liquid are made of it^{3,4}. applied directly to the body. Rich in aloe vera, coconut oil, honey, and grapeseed oil, these ingredients are good for and avoiding dry skin⁵. Advanced research in science communication and technology related to herbal lotion involves several key areas example. Scientific research and development⁶. An herbal lotion free of all toxins that can effectively protect skin. Considering that they are more natural and safer to use than formulations made of chemicals. Lotions that are semi-liquid are made of it. applied directly to the body⁷. Rich in aloe vera, coconut oil, honey, and grapeseed oil, these ingredients are good for moisturizing and avoiding dry skin. Phytochemicals derived from different plants that have an impact on skin conditions are the substances known as herbal lotions. And supply the nutrients required for skin that looks good in order to improve appearance, formulation and evaluation a liquid body lotion containing herbs is applied to the skin^{8,9,10}. Wash your skin and remove oil with lotions. The effects of freshness, bleaching, and therapy are enhanced by this substance, along with astringency, skin moisturization, and blood circulation. Since linoleic acid is abundant in grapeseed oil, it helps to fortify the skin's protective layer, minimizing breakout-related redness and inflammation^{11,12}. The wonderful vitamin E found in grapeseed oil hydrates the skin to plump fine lines and wrinkles while also reducing inflammation. An area can be shielded, calmed, and cooled with lotions. Hemorrhoid treatment, anti-helminthic, and uterine.^{13,14,15}



Figure No.1: Herbal Lotion

Benefits of Herbal lotion

Because they are made with natural ingredients and take a holistic approach to skincare, herbal lotions have many advantages. Among the main advantages are antioxidant¹⁶.

Moisturizing and Hydration

Natural oils and extracts, such as aloe vera, shea butter, and coconut oil, are frequently found in herbal lotions. These ingredients deeply moisturize and hydrate the skin, preventing flakiness and dryness^{17,18}.

Anti-inflammatory Properties

Due to their anti-inflammatory qualities, ingredients like lavender, calendula, and chamomile can help soothe irritated skin, lessen redness, and relieve dermatitis and eczema¹⁹.

Antioxidant Protection

Rich in antioxidants, herbal ingredients such as turmeric, green tea, and rosemary shield the skin from the damaging effects of free radicals, which can hasten the aging process and cause damage to the skin²⁰.

Healing and Repair

Comfrey, aloe vera, and tea tree oil are common ingredients found in herbal lotions that help heal and repair damaged skin, lessening the visibility of scars and blemishes.

Natural and Gentle

Since herbal lotions usually don't contain harsh chemicals, artificial fragrances, or colors, they're safe for sensitive skin types and less likely to cause irritation or allergic reaction

Aging Advantages

Active ingredients like grapeseed, jojoba, and rosehip oils are well-known for their capacity to increase skin suppleness and lessen the visibility of fine.

Negative aspect of herbal body lotion

Herbal lotions have certain drawbacks despite their natural ingredients and possible advantages. The following are a few possible downsides:

Allergic Reactions

Some people may experience allergic reactions when using herbal ingredients. Tea tree oil, chamomile, and lavender are a few examples of ingredients that can cause allergic reactions, rashes.

Skin irritation

Inconsistent Quality: Herbal lotions can differ greatly in quality between brands. This discrepancy may lead to varying degrees of efficacy or even safety problems. **Lack of Standardization:** Herbal lotions frequently don't have standardized formulations, in contrast to pharmaceutical products. Variations in the concentration of the active ingredients can produce unexpected outcomes.

Possible Contaminants

Herbal lotions can be contaminated with pesticides, heavy metals, or other harmful substances during the cultivation and processing of plant materials. **Shorter**

Shelf Life

Without synthetic preservatives, herbal lotions may have a shorter shelf life and can spoil more quickly, leading to reduced effectiveness and potential

Microbial growth Cost

High-quality herbal lotions, especially those with organic or rare ingredients, can be more expensive compared to conventional products. **Regulatory Variations:** Herbal lotions are often subject to less stringent regulations than pharmaceutical products, which can lead to variability in product quality and safety^{21,22}

Application

Analyzing herbal lotion involves evaluating various aspect to determine their effectiveness, safety and potential²³. Scabicidal, local anesthetic, cleaning, protective, antipyretic, antiallergic, antiseptic, humectant, Advanced research in science communication and technology plays crucial role in development and promotion of herbal lotion²⁴. astringent, antiacne, and anti-inflammatory applications that cool, smooth, moisturize, and soften the skin Features: anti-aging, anti-wrinkle, antifungal, parasiticide, fairness, germicide²⁵.

The perfect qualities of herbal lotion

Qualitative characteristics

Feels Silky; Looks Elegant; Doesn't Dehydrate Non-Hygroscopic, Non-Gritty, Non-Greasy, and Non-Staining

Physiological Characteristics

Non-Stickering Keep the skin's membranes and skin functioning intact. Be soluble in skin secretions. Have minimal sensitization effects.

Properties of Applications

Simple to Use and Effective Drug Release Water-Easily Washable²⁶

Ingredient

The following enumerates materials and their purposes in the creation of body lotions infused with herbs.

Grape seed oil

It's preservative and active components. The grapeseed oil hydrates the skin to plump fine lines and wrinkles while also reducing antibacterial inflammation. All skin types, including oily skin that requires moisturizing, can benefit from grapeseed oil because it doesn't clog pores²⁷.

Aloe vera gel

Without leaving a greasy aftertaste, the aloe vera body gel moisturizes combination to dry skin types. Because it is rich in nutrients and essential amino acids, aloe vera helps prevent and treat stretch marks and other skin imperfections.

Honey

The skin is hydrated and deeply moisturized by honey. Honey's natural humectant properties make it a good moisturizer. The number of enzymes in honey.

Glycerin

Glycerin is a skin care miracle worker. It is the original component of every skin care item. Here is a list of its most incredible advantages. For those who wish to cleanse and exfoliate their skin without endangering it, glycerin-based cleansers are perfect. When you apply glycerin to your skin, it retains moisture and provides a radiant, young appearance²⁸.

Steric Acid

One type of emollient that works wonders for hydrating and moisturizing skin is stearic acid. cut down on eczema symptoms, lessen inflammation and preserve skin hydration.

Triethanolamine

Triethanolamine functions as an emulsifier or stabilizer to extend the shelf life of emulsions, including lotions.

Perfume

To intensify your aroma and prolong its duration. Throughout the day, even the longest-lasting fragrances tend to lose their intensity.



Figure No. 2: Grapeseed oil

Material And Method:

Sr No.	Ingredients	Category
1	Aloe vera gel	Anti-inflammatory
2	Triethanolamine	Neutralizer, Hickner
3	Glycerin	Moisturizer
4	Honey	Cleanser
5	Rose water	Fragrance
6	Distilled water	Solvent
7	Steric Acid	Emulsifier
8	Grapeseed oil	Anti-ageing activity

Table No. 1: Ingredients with category

Method

Collection Method

Grape seed oil was gathered in market and other chemical and solvent such as triethanolamine, steric acid, glycerin, aloe vera gel, honey, distilled water obtained from our college laboratory i.e., Fabtech College of Pharmacy Sangola.

Procedure

The composition of Body Lotion consisted of two components or Two part

The water phase (B) and the oil phase (A).The process involves mixing the oil phase's ingredients and heating them to a certain temperature. This is similar to the type of oil in water, until completely smooth, using a hot plate to create preparation A.

To create preparation B, the aqueous phase is combined in various containers at the same temperature and stirred until it becomes uniform.

The two preparations are homogenized and then combined at room temperature to create preparation C. Extract is added at a temperature of between 30 and 35 °C, and it is stirred until it is homogenous. Fragrance is then added, and the mixture is stirred continuously for one minute to form Body Lotion²⁹.



Figure No.3: Preparation of Herbal Lotion

Formulation: A. Composition of Aqueous Phase

Ingredient	Quantity Taken		
	F1	F2	F3
Aloe - vera gel	15 ml	16 ml	17 ml
Triethanolamine	2ml	1 ml	1 ml
Glycerin	3ml	4 ml	5 ml
Distilled water	Q.S.	Q.S.	Q.S.
Rose water	Q.S.	Q.S.	Q.S.
Honey	Q.S.	Q.S.	Q.S.

Table No. 2: Formulation Batches of Herbal Lotion. (Aqueous Phase)

B. Composition of Oil Phase

Ingredient	Quantity Taken		
	F1	F2	F3
Steric Acid	7gm	6gm	5gm
Grapeseed oil	4ml	5ml	6ml

Table No.3: Formulation Batches of Herbal Lotion. (Oil Phase)

Evaluation Parameters

Organoleptic Properties

Utilizing visual inspection techniques, the organoleptic characteristics of the herbal lotion are assessed.

Looks: A visual inspection was used to assess the lotion's look.

Color: A visual inspection revealed the cream's color.

Odor: We sniffed the lotion to determine its scent.

Homogeneity Consistency

Oils' thin consistency keeps skin nourished without making it appear greasy

pH

pH of prepared herbal lotion was measured by using both PH paper & digital PH meter. Using pH paper, the 7 pH is observed its Neutral for skin.

Spreadability

The formulated lotion's spread ability was assessed by sandwiching a sample between two slides and compressing it to a consistent thickness for a predetermined amount of time using a specific weight.

Test of irritability

A particular region of the dorsal surface of the left hand was treated with the lotion. Up to a day later, irritability, erythema, and oedema were assessed and reported.

Absorption test

Absorption test was done by applying the lotion onto the skin and rubbed until it gets completely absorbed³⁰.

Test of Washability

To remove the lotion that had been applied to the skin, the lotion was washed off with tap water while using as little force as possible

Viscosity measurement

A Brookfield Viscometer (DV II+ Pro model) with spindle number NDJ-8S was used to measure viscosity at a temperature of 25 °C and 20 rpm.

Evaluation of homogeneity

The formulations underwent touch and visual inspection to ensure homogeneity

Microbial test

Escherichia coli, a gram-negative pathogen, and total viable count were tested for in the lotion, and antimicrobial activity³⁰.

Method

Agar cup plate bioassay

Preparation of nutrient agar media.

Composition	Quantity
NaCl	0.5 gm
Pepton	5 gm
Beef extract	3 gm
Dist. Water	1 ltr

Table No.4: Preparation of nutrient agar media

1st sterilize all glassware for 30 min, at 121°C in autoclave. Put above listed chemicals in water, boil it for 30 min, cool the mixture. Give the culture media 48 hr incubation period at 37°C³⁰

Determination of Zone of inhibition

To prepare the agar plate medium, 15 g of nutrient agar powder were added to dist. water 100 liters. Then it is heated and all ingredients are dissolved. To allow the mixture dissolve to cool but not solidify, it is autoclaved for 15 minutes at 121° C. After that, the provided microorganism (fungi) was inoculated into the nutrient agar medium and the mixture was poured into plates to solidify³¹

29 Then, using a borer, make holes in the same medium that are roughly 9 mm in diameter using the agar well diffusion method. Herbal lotion sample solution poured straight into the holes. After incubation, the plates are reported^{32,33}.



Figure No. 4: Nutrient agar media



Figure No.5: Zone of Inhibition

RESULT

Physicochemical Properties

Sr No.	Parameter	Aqueous Grapeseed oil	Formulation
1	Colour	Slightly yellow with a greenish tinge.	Whitish brown
2	Odour	oily bland odour	Aromatic
3	Transparency	Pale transparent	Clear
4	Smoothness	Soft and smooth	Silky Smooth
5	Density	0.915 ~ 0.923g/ml (20°C)	1.12 g/ml

Table No.5: Physicochemical Properties

Determination of pH

Sr No.	Formulation	pH
1	F1	7
2	F2	7.2
3	F3	6.9

Table No 6: pH reading

The mean pH reading Herbal Lotion was found to be 7.1

Determination of Viscosity:

Sr No.	Formulation	Viscosity
1	F1	1100cp
2	F2	1000cp
3	F3	995cp

Table No 7: Viscosity reading

The viscosity of Herbal Lotion was found to be 995cp

Determination Of Spreadability:

Sr No	Formulation	Spreadability
1	F1	8.8 ± 0.13
2	F2	8.2±0.11
3	F3	7.7 ±0.06

Table No.8: Spreadability Reading

The herbal lotion spreadability was determined to be between 7.7±0.06 and 8.2± 0.11gm-cm/sec, indicating that they may spread smoothly and uniformly.

Determination of homogeneity:

Sr No.	Formulation	Homogeneity
1	F1	Very good
2	F2	Good
3	F3	Good

Table No.9: Homogeneity Prepared for herbal lotion

The herbal lotion formulation of homogeneity was found to be Very good.

Antimicrobial Activity

Zone of inhibition presence and diameter around the disks serve as indicators of antimicrobial action. Results of antimicrobial activity using candida albicans are displayed below. This aids in selecting a formulation that works better.



Figure No.6: Zone of Inhibition

Sample	Zone of Inhibition (mm) after 24 hrs
Standard 1	11mm
Standard 2	11mm
F1	13mm
F2	10 mm

Table No 10: Zone of Inhibition (mm)

DISCUSSION

Grapeseed oil, Aloe vera, Honey, Glycerin, Rose water, Steric Acid, Triethanolamine, were used in the formulation of this herbal skin care lotion. To assess organoleptic attributes, Physicochemical factors were also examined. There is an acceptable range for each of the parameters displayed. In order to improve efficacy, this formulation can be further compared to one that is marketed.

CONCLUSION

Unquestionably, this study work revealed the many drawbacks of allopathic lotion, including sensitivity, high cost, and side effects. Simple W/O methods and minimal equipment are needed to prepare the herbal lotion of crude drugs with unique properties. During this investigation, a herbal lotion formulation was created and assessed for its organoleptic qualities (color, odor, and appearance) as well as its physiological parameters (pH, spreadability, ease of removal, and irritancy test).which led to the research study's conclusion that poly formulations with observational elements outperform other herbal formulations in terms of results and indicate the potential of herbal formulation going forward. The current study focuses from herbs. Give your skin the nourishment it needs to stay healthy. Many naturally occurring herbs have a variety of applications in skincare cosmetic preparations as antioxidants. In comparison to commercially available cosmetics, the results of this study show that herbal cosmetics are extremely safe and do not cause any harmful or unfavorable reactions. With herbal lotion, skin issues will be avoided. wherein the herbal lotion was effectively made, described, and assessed in a number of ways.

REFERENCE

- 1 Nikita M. Rathi, Shital V. Sirsat, Surekha S. Tayade, Abhijit S. Khot; Akshay C. Deshmukh Formulation and Standardization of Herbal Lotion 2022,7(4);200-210.
2. Kalpesh Chhotalal Ashara. Importance of Herbal Lotion on preparation and evaluation of Herbal lotion. *Inventi Rapid Pharm Tech* 2013,2(1);350-356.
3. Sk Uddandu Saheb, Aduri Prakash Reddy, K Rajitha, B Sravani, B Vanitha. Formulation and evaluation of Herbal lotion from naturally containing plant extracts. *World J Pharm Pharm Science* 2017,7(2);851-862.
4. Kasture PV, Gokhle SB, Parakh SR, Paradkar AR, "A book of Pharmacists II", Nirali Prakashan, 2001,5(2); 96– 100.
5. Songkro, S., Sirikatitham, A., Sungkarak, S., Buaking, K., Wungsintaweekul, J., Maneenuan, D., Oungbho, K. Characterization of aromatherapy massage oils prepared from virgin coconut oil and some essential oils. *Journal of the American Oil Chemists' Society* 2017,7(1);93-107
- 6.Praveen V Patil, Sanjay K Bais, Ganesh V Gudge., Review on Novel Herbal Drug Delivery System *International Journal of Advanced Research in Science Communication and Technology* 2023,3.
- 7.Vishakha Shinde; Kundan Tiwari; Formulation and Evaluation of Lemongrass Lotion *International Journal of Pharm.*2020,2(6);25-32.
- 8.N. M. Saptarini¹, and G. Hadisoebroto, Formulation and Evaluation of Lotion of Nanosized Chitosan-Mangosteen (*Garcinia mangostana* L.) Pericarp's extract *Rasayan J. Chem.*, 2020,13(2);789-795.
9. Namita and Nimisha Development and Evaluation of Herbal Cosmeceutical for Skin Care *Int J Pharm Bio Science*, 2013,4(2);86-92.
10. Atlas T K. Preparation and Utilization of Natural Aloe Vera to Enhance Quality of Mango Fruit. 2018, 6(3); 76-81.
11. Sahu AN, Jha SB, Dubey S D. Formulation & Evaluation of Curcuminoid Based Herbal body lotion. *Indo-Global Journal of Pharmaceutical Sciences*, 2011, 1(1); 77-84.
12. More BH, Sakharwade SN, Tembhurne SV, Sakarkar DM, Evaluation of Sunscreen activity of lotion containing Leaves Extract of *Butea monosperma* for Topical application. *International Journal of Research in Cosmetic Science*.2013, 3(1); 16-18.
- 13.Vijayalakshmi, A. Tripura, V. Ravichandiran. Development and Evaluation of Anti- Acne Products from *Terminalia arjuna* Bark, *IJCRGG*. 2017, 3(1); 320-327.
- 14.Navindgikar, N. N., K. A. Kamalapurkar, P. S. Chavan, Formulation and Evaluation of Multipurpose Herbal lotion. *International Journal Of Current Pharmaceutical Research*. May 2020, 12 (3); 25-30.

15. Akash S. Mali, Karekar P, Dr. Yadav A., Formulation and Evaluation of Multipurpose Herbal lotion. *International Journal Of Science And Research*. 2015, 4 (11); 1495.
16. Rajendra Gyawali, Nira Paudel, Sahana Shrestha, Ashok Silwal, Formulation and Evaluation of Antibacterial and Antioxidant Polyherbal Lotion. *Journal Of Institute of Science and Technology*. 2016, 21 (1); 148-156.
17. Shweta Kapoor, Swarnlata Saraf, Formulation And Evaluation Of Moisturizer Containing Herbal lotion. *Extracts For The Management Of Dry Skin*. 2010, 2 (11); 409-417.
18. Bhakti Mali, Sumedh N Moharil, Vaibhav Mhasal, Mahesh B Narkhede. Drug-excipient interaction study of Tramadol HCL with polymers. *World J Pharm Research* 2017;6 (2);848-861.
19. Sahu AN, Jha SB, Dubey SD. Formulation & Evaluation of Curcuminoid Based Herbal Lotion. *Indo-Global Journal of Pharmaceutical Sciences*, 2011,1(1); 77-84.
20. 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.
21. Ahmad Z. The uses and properties of coconut oil. *Complement Ther Clin Pract*. 2010, 16(1);10–22.
22. Snowdon JA, Cliver DO. Microorganisms in honey. *Int J Food Microbiol*. 1996, 31(1);26.
23. Amol Pore, Sanjay Bais, Roshan Navanath Galave, Novel Herbal Drug Delivery System Its Analytical Aspects and Applications *International Journal of Creative Research Thoughts* 2023, 1(11); 76.
24. SD Sonawane S K Bais SA More Novel Drug Design *International Journal of Advanced Research in Science Communication and Technology* 2023,1(3);528-538.
25. Yohannes Gebremedhin, “Research on Medicinal Value of aloe vera in Veterinary practice”, *Journal of scientific and Technical Research*, 2018, 2(5); 4970-4972.
26. Kumar Sandeep, Yadav J.P., “Ethnobotanical and pharmacological properties of Aloe Vera A Review”, *Journal of medicinal plant research*. 2014, 2(8); 1387-1388.
27. Gyawali Rajendra, Paudel Nira, Shrestha Sahanda, Silwal Ashok, “Formulation and Evaluation of Antibacterial and Antioxidant Polyherbal lotion”, *Journal of Institute of Science And technology*, 2016, 4(2); 148-153.
28. Pradnya Gadhire SK Bais Simran Kolekar Novel Herbal Drug Delivery in Cosmetics *International Journal of Advanced Research in Science Communication and Technology* Volume 2023 ;(3)287-307.
29. PH Gadhire S K Bais Jagdish S Gejage Advanced Herbal Technology *International Journal of Advanced Research in Science Communication and Technology* 2023, 2(3); 832-842

- 30.SK Bias, P V Ghatage, Herbal Excipient and Novel Drug Delivery System Used in Liposome and Ethiosome International Journal of Creative Research Thoughts 2023, 2(11); 724-735.
- 31.J P Lavande, S K Bais, Balika Ashok Nagane, Novel Drug Delivery System International Journal of Advanced Research in Science Communication and Technology 2023, 2(3); 208.
- 32.R.M., Mehta, "A book of pharmaceuticals – II, Published by Vallabh Prakashan 2023,2(4);119.
- 33.Dr. Sweta Shrivastav Koka; Ms Supriya Shidhaye Handbook of Experimental – Herbal Drug Technology, S. Vikas and Company Medical Publisher 2020, 2(1); 16-18.