International Journal of Medical and Pharmaceutical Sciences
Open access peer-reviewed Journal
Volume 2, Issue 8, Page 359-364.
https://doi.org/10.5281/zenodo.21859948

Research Article

Formulation and Evaluation of a Vanishing Cream Containing Cashew Nut Oil and Aloe Vera Gel

Abhishek A. B.*[1], Sridhar S. M.[2], Mukthiyar Ahamed[1], Chandan T. N.[1], E. Gopinath[3]

[1]*Shantha College of Pharmacy, Peresandra, Chikkaballapur, Karnataka-562104 India*
[2]*Professor, Department of Pharmacology, Shantha College of Pharmacy, Peresandra, Chikkaballapur, Karnataka-562104 India*
[3]*Principal, Department of Pharmaceutics, Shantha College of Pharmacy, Peresandra, Chikkaballapur, Karnataka-562104 India*

Background: Herbal cosmetics have gained considerable attention due to their safety and therapeutic benefits compared to formulations containing synthetic ingredients. Vanishing creams are widely used topical preparations because of their rapid absorption, non-greasy nature, and moisturizing properties. Cashew nut oil and aloe vera possess antioxidant, emollient, moisturizing, and soothing activities, making them promising ingredients for herbal skincare formulations. Objective: To formulate and evaluate an herbal vanishing cream containing cashew nut oil and aloe vera gel for its physicochemical properties, stability, and skin compatibility. Materials and Methods: The vanishing cream was prepared using the conventional oil-in-water (O/W) emulsion method with stearic acid, potassium hydroxide, glycerin, aloe vera gel, cashew nut oil, preservatives, and purified water. The prepared formulation was evaluated for appearance, pH, homogeneity, spreadability, dye test, washability, smear type, emolliency, skin irritation, and stability. Results: The formulated cream exhibited a smooth texture, good homogeneity, a spreadability of 620 g·cm/s, good washability, and the pH was found to be within the range of 6.0–6.4, indicating suitability for topical application. The dye test confirmed an oil-in-water emulsion, while the formulation remained stable without phase separation or significant changes during the stability study. No signs of skin irritation were observed. Conclusion: The developed herbal vanishing cream demonstrated satisfactory physicochemical characteristics, good cosmetic acceptability, and skin compatibility. The combination of cashew nut oil and aloe vera gel demonstrated potential as a natural alternative for topical skincare formulations. Further long-term stability studies and clinical evaluation are recommended to confirm its therapeutic potential.

Keywords: Vanishing Cream, Cashew nut oil, Aloe vera, Herbal cosmetics, Moisturizer.

INTRODUCTION

The increasing demand for the herbal cosmetics has encouraged the development of skincare products containing natural ingredients with improved safety and therapeutic benefits.[1] Vanishing creams are widely used topical emulsions that absorb rapidly into the skin, leaving a smooth, non-greasy, matte finish, which have remained widely used in daily skincare because of their rapid absorption and non-greasy feel.[1,2] The typical formulation is built on stearic acid, neutralized with an alkali to form a soap-like base, then rounded out with synthetic emollients and preservatives. Some of these synthetic additives have raised safety concerns over repeated use, and this has driven a shift in formulation research toward plant-derived alternatives.[2] Cashew nut oil comes from *Anacardium occidentale* and is rich in oleic and linoleic acid, plus tocopherols that give it antioxidant activity. It has been used in traditional medicine for skin conditions and wound care in several regions. Despite its traditional use, cashew nut oil has received limited attention in modern cosmetic formulation, particularly when compared with almond and coconut

oils.[8] Aloe vera gel, obtained from the leaves of *Aloe barbadensis* Miller, contributes moisturizing, anti-inflammatory, and wound-healing properties to the formulation. These effects are primarily attributed to bioactive constituents such as acemannan, vitamins, enzymes, amino acids, and phenolic compounds present in the gel.[9] Aloe vera-based topical formulation has demonstrated good skin compatibility and are widely used in cosmetic and dermatological products for their soothing and hydrating effects.[10,11] This study combines cashew nut oil and aloe vera gel in a vanishing cream base. The present study aimed to formulate and evaluate a herbal vanishing cream containing cashew nut oil and Aloe vera gel for its physicochemical characteristics, stability, and skin compatibility, The study also sought to investigate its potential as a natural alternative for topical skincare applications.

MATERIALS AND METHODS

MATERIALS

Fresh *Aloe barbadensis Miller* leaves were collected from a local herbal garden. Cold-pressed cashew nut oil (*Anacardium occidentale* L.) was procured from a local commercial supplier. Stearic acid, potassium hydroxide, glycerin, methyl paraben, propyl paraben, and rose water were obtained from the laboratory. All chemicals and reagents used were of analytical grade. Purified water was used throughout the study.

Preparation of Aloe Vera Gel

Fresh Aloe barbadensis leaves were washed thoroughly with distilled water. The outer rind was removed, and the transparent inner gel was collected aseptically. The gel was homogenized using a blender and filtered through muslin cloth to remove fibrous material. The fresh gel was stored at 4°C until incorporation into the formulation.[12]

Formulation of Vanishing Cream

Table 1. Composition of Vanishing Cream Formulation[2,4]

Ingredients	Quantity (% w/w)	Function
Stearic acid	15.0%	Emulsifying agent and cream base
Cashew nut oil	3.0%	Emollient and antioxidant
Aloe vera gel	10.0%	Moisturizer and soothing agent
Glycerin	5.0%	Humectant
Potassium hydroxide	0.8%	Neutralizing
Methyl paraben	0.02%	Preservative
Propyl paraben	0.05%	Preservative
Rose water	5.0%	Fragrance and skin refresher
Purified water	q.s. to 100%	Vehicle

Preparation of Vanishing Cream

Step 1: Preparation of Oil Phase

- Stearic acid and cashew nut oil were accurately weighed.
- The ingredients were heated to 70-75ºC with continuous stirring until the stearic acid was completely melted and a uniform oil phase was obtained.

Step 2: Preparation of Aqueous Phase

- Potassium hydroxide was dissolved in a small quantity of purified water.
- Glycerin, methyl paraben, and propyl paraben were added to the solution.
- The aqueous phase was heated to 70–75°C.

Step 3: Emulsification

- The aqueous phase was added slowly to the oil phase with continuous stirring.

- Stirring was continued until a uniform oil-in-water (O/W) emulsion was formed.

Step 4: Incorporation of Herbal Ingredients

- The emulsion was cooled to approximately 40°C.
- Fresh aloe vera gel was added gradually with continuous stirring to ensure uniform distribution.

Step 5: Final Adjustment

- Rose water was added, and the final weight was adjusted with purified water if required.
- The prepared vanishing cream was transferred into clean, airtight container and stored at room temperature for further evaluation.

Evaluation of the Formulation

Organoleptic Evaluation

The prepared vanishing cream was visually examined for colour, odour, texture, consistency, phase separation and overall appearance.

Figure 1. Photograph of the prepared vanishing cream

Table 2. Physicochemical Evaluation of the Formulated Vanishing Cream.

Parameter	Observation
Colour	White
Odour	Slightly aromatic
Texture	Smooth
Homogeneity	Homogeneous
pH	6.0-6.4
Spreadability	620 g·cm/s
Washability	Good
Smear type	Non-greasy
Emolliency	Good emollient property with no noticeable residue after application.
Dye test	Uniform distribution of scarlet red dye indicating an oil-in-water (O/W) emulsion
Irritancy	No redness or oedema
Stability	Stable

pH Determination

The pH of the formulation cream was estimated using universal pH indicator paper. A small quantity of the cream was dispersed in distilled water (approximately 1g in 10ml), and the pH paper was immersed in the dispersion. The colour change was compared with the standard colour chart supplied with the pH paper, and the corresponding pH value was recorded.[5]

Homogeneity

Homogeneity was evaluated by visual inspection and by gently rubbing a small quantity of cream between the fingertips to assess its uniformity and smoothness.[6]

Spreadability

Spreadability was determined using the glass slide method. A known quantity of cream was placed between two glass slides, and a standard weight was applied[2]. The time required for the upper slide to move a specified distance was recorded, and spreadability was calculated using the appropriate formula.[14]

$$S = \frac{(M \times L)}{T}$$

M=500g

L=6.2cm

T=5s

Where:

S = Spreadability (g·cm/s)

M = Weight tied to the upper slide (g)

L = Length moved by the slide (cm)

T = Time taken (s)

Figure 2. Spreadability test

Dye Test

The dye test was carried out using scarlet red dye to determine the emulsion type. A small quantity of cream was mixed with the dye and observed under a microscope. Uniform distribution of the dye confirmed that the formulation was an oil-in-water (O/W) emulsion.[3,4]

Figure 3. Dye test showing the O/W emulsion

Washability

Washability was assessed by applying a small quantity of cream to the skin and washing it with tap water. The ease of removal was recorded.[6]

Smear Test

The cream was applied to the skin, and the nature of the film left after application was observed to determine whether it was greasy or non-greasy.[6]

Emolliency

The emollient property of the cream was evaluated by applying a fixed amount to the skin and observing its softness, smoothness, and moisturization after application.[6]

Skin Irritation Test

The formulation was applied to a small area of intact skin and observed for 24 h for signs of erythema, oedema, itching or irritation.[1]

Stability Study

The formulated cream was stored under room temperature and accelerated storage conditions. The formulation was evaluated over 30 days for changes in colour, odour, pH, consistency, phase separation, and overall stability.[15]

RESULTS AND DISCUSSION

Physical Appearance

The formulated vanishing cream exhibited a smooth, homogeneous texture with a white appearance and a slightly aromatic odour. No phase separation or grittiness was observed, indicating that the formulation possessed good physical stability. The cream spread uniformly over the skin and produced a pleasant, non-greasy feel, which is desirable for topical cosmetic applications.

pH

The pH of the formulated vanishing cream was found to be range of 6.0-6.4, which is within the acceptable range for topical formulations. A pH close to that of

the skin minimizes the risk of irritation and helps maintain the skin's natural protective barrier. Therefore, the prepared formulation is considered suitable for topical application.

Homogeneity

The cream showed excellent homogeneity when evaluated by visual inspection and touch. The formulation was smooth, free from lumps, and exhibited uniform distribution of all ingredients, indicating proper emulsification and mixing during preparation.

Spreadability

The spreadability of the formulated cream was 620 g·cm/s, indicating that it could be easily applied over the skin with minimal effort. Good spreadability enhances patient compliance by ensuring uniform application and better coverage of the skin surface.

Dye Test

The dye test confirmed that the prepared formulation was an oil-in-water (O/W) emulsion. This type of emulsion is preferred for vanishing creams because it spreads easily, is non-greasy, and can be washed off readily with water.

Washability and Smear Test

The cream exhibited good washability and was easily removed with water. The smear formed after application was non-greasy, providing a smooth matte finish without leaving an oily residue on the skin.

Emolliency

The formulated cream showed satisfactory emollient properties by softening the skin and leaving the skin soft and smooth without noticeable residue after application. The presence of cashew nut oil and aloe vera gel likely contributed to the moisturizing effect of the formulation.

Skin Irritation Test

No signs of redness, oedema, itching, or irritation were observed during the patch test. These findings suggest that the formulated vanishing cream is safe for topical application under the test conditions.

Stability Study

The formulation remained physically stable throughout the study period. No significant changes in colour, odour, pH, consistency, or phase separation were observed, indicating good stability under the storage conditions employed.

CONCLUSION

The present study successfully formulated and evaluated a herbal vanishing cream containing cashew nut oil and aloe vera gel. The formulated cream exhibited satisfactory physicochemical characteristics, including good homogeneity, appropriate spreadability, good washability, and a skin-compatible pH range. The dye test confirmed the formation of an oil-in-water (O/W) emulsion, while the stability study demonstrated that the formulation remained physically stable without noticeable changes in appearance, consistency, or phase separation during the study period. Furthermore, the cream showed no signs of skin irritation, indicating its suitability for topical application. The incorporation of cashew nut oil and aloe vera gel provided emollient, moisturizing, and soothing properties, highlighting their potential as natural alternatives to synthetic ingredients in cosmetic formulations. Overall, the developed vanishing cream demonstrated satisfactory physicochemical characteristics, cosmetic acceptability, and stability, indicating its potential as a natural topical skincare formulation

REFERENCES

1. Allen LV Jr, Popovich NG, Ansel HC. Ansel's Pharmaceutical Dosage Forms and Drug Delivery Systems. 11th ed. Philadelphia: Wolters Kluwer; 2021.
2. Aulton ME, Taylor KMG. Aulton's Pharmaceutics: The Design and Manufacture of Medicines. 6th ed. London: Elsevier; 2022.
3. Remington. Remington: The Science and Practice of Pharmacy. 23rd ed. London: Pharmaceutical Press; 2020.
4. Lachman L, Lieberman HA, Kanig JL. The Theory and Practice of Industrial Pharmacy. 4th

ed. New Delhi: CBS Publishers & Distributors; 2013.
5. Indian Pharmacopoeia Commission. Indian Pharmacopoeia. Ghaziabad: IPC; 2022.
6. Barel AO, Paye M, Maibach HI. Handbook of Cosmetic Science and Technology. 4th ed. Boca Raton: CRC Press; 2014.
7. Trease GE, Evans WC. Trease and Evans Pharmacognosy. 16th ed. London: Elsevier; 2009.
8. Kokate CK, Purohit AP, Gokhale SB. Pharmacognosy. 56th ed. Pune: Nirali Prakashan; 2022.
9. Hamman JH. Composition and applications of Aloe vera leaf gel. Molecules. 2008;13(8):1599-1616. doi:10.3390/molecules13081599.
10. Surjushe A, Vasani R, Saple DG. Aloe vera: A short review. Indian J Dermatol. 2008;53(4):163-166.
11. Eshun K, He Q. Aloe vera: A valuable ingredient for the food, pharmaceutical and cosmetic industries. Crit Rev Food Sci Nutr. 2004;44(2):91-96.
12. Maan AA, Nazir A, Khan MKI, Ahmad T, Zia R, Murid M, et al. The therapeutic properties and applications of Aloe vera: A review. J Herb Med. 2018; 12:1-10.
13. Rowe RC, Sheskey PJ, Quinn ME. Handbook of Pharmaceutical Excipients. 8th ed. London: Pharmaceutical Press; 2017.
14. Sinko PJ. Martin's Physical Pharmacy and Pharmaceutical Sciences. 7th ed. Philadelphia: Wolters Kluwer; 2017.
15. International Council for Harmonisation (ICH). ICH Harmonised Guideline Q1A(R2): Stability Testing of New Drug Substances and Products.
16. United States Pharmacopeial Convention. United States Pharmacopeia–National Formulary (USP–NF). Rockville, MD: USP.
17. British Pharmacopoeia Commission. British Pharmacopoeia. London: The Stationery Office.
18. CSIR. The Wealth of India: A Dictionary of Indian Raw Materials and Industrial Products. New Delhi: Council of Scientific and Industrial Research.
19. Khatal S, et al. Formulation and evaluation of antibacterial herbal vanishing cream. International Journal of Pharmaceutical Sciences Review and Research. 2022;77(1):75-79.
20. Rai SK, Maury S. A review on preparation and characterization of vanishing cream for anti-aging. World J Pharm Res. 2022;11(7):135-142.

Cite: Abhishek A. B.*, Sridhar S. M., Mukthiyar Ahamed, Chandan T. N., E. Gopinath, Formulation and Evaluation of a Vanishing Cream Containing Cashew Nut Oil and Aloe Vera Gel, Int. J. Med. Pharm. Sci., 2026, 2 (8), 359-364. https://doi.org/10.5281/zenodo.21859948