Herbal Body Lotions: A Review of Aloe Vera, Honey, Saffron and Supporting Cosmetic Ingredients

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DOI: https://doi.org/10.51244/IJRSI.2026.1310000072

Received: 18 October 2026; Accepted: 23 October 2026; Published: 01 November 2026

ABSTRACT

Herbal cosmetics are increasingly explored for skin conditioning and personal care. Body lotions are complex topical preparations in which sensory characteristics, hydration, stability, preservation and safety depend on ingredient interactions and manufacturing conditions. This narrative review discusses a proposed herbal body lotion based on Aloe vera, honey and saffron, with almond oil, glycerine, rose water and vitamin E as supporting ingredients. Aloe vera contains polysaccharides and other constituents, but composition varies with plant part, processing and storage. Honey is rich in sugars and minor bioactive compounds and has been investigated as a humectant and in wound-related applications; evidence from medical-grade wound products cannot automatically be transferred to ordinary cosmetics. Saffron contains crocin-related carotenoids and volatile compounds, but specific cosmetic claims require direct evidence. Almond oil may contribute emolliency, glycerine is a well-established humectant, rose water may contribute fragrance, and vitamin E is used in some formulations for antioxidant-related purposes. The review considers formulation compatibility, emulsification, pH, spreadability, stability, microbiological quality, preservation, packaging and skin compatibility. The supplied thesis is a useful starting point, but its method contains discrepancies and preliminary observations do not establish clinical efficacy, long-term stability or universal safety. Product development should document ingredient identity and concentration, use reproducible methods, and verify microbiological and stability performance. Herbal origin alone is not proof of efficacy or safety.

Keywords: Herbal cosmetics; body lotion; Aloe vera; honey; saffron; humectant; emollient; formulation; stability; cosmetic safety.

1. INTRODUCTION

Cosmetic lotions are topical products intended to improve the condition or appearance of skin, support a pleasant sensory experience and, depending on composition, reduce the feeling of dryness. Body lotions generally have lower viscosity than creams and are designed to spread over relatively large skin areas. Their performance depends on the balance between aqueous and oily phases, emulsifiers or structuring agents, humectants, emollients, preservatives, fragrance materials, processing conditions and packaging. A formulation that appears uniform immediately after preparation may still be physically unstable or microbiologically unsuitable during storage.

Interest in botanical cosmetics has grown with consumer demand for plant-derived ingredients. Plants contain diverse compounds that may influence hydration, oxidation, texture and sensory properties. However, the terms

"herbal," "natural" and "plant-based" do not establish that a product is effective, hypoallergenic, environmentally preferable or safe. Botanical materials vary by species, growing conditions, harvest time, plant part, extraction method and storage. Finished products therefore require appropriate quality control.

The supplied thesis concerns a body lotion incorporating Aloe vera gel, honey and saffron, alongside almond oil, rose water, vitamin E and glycerine. These materials have different potential functions: a water-rich botanical gel, a sugar-rich ingredient, a coloured botanical material, an emollient oil, an aromatic aqueous ingredient, an antioxidant-associated cosmetic ingredient and a humectant. Combining them requires more than simple mixing; the finished product must remain uniform, pleasant to use, adequately preserved and compatible with the intended package. This review summarises ingredient rationale and formulation science, distinguishes traditional or laboratory evidence from demonstrated benefits in a finished lotion, and identifies evidence gaps.

2. Review Approach and Scope

This manuscript is a narrative review, not a registered systematic review. Its topic and ingredient scope were guided by the supplied thesis, with supporting literature identified through published reviews, journal records and authoritative cosmetic-quality guidance. The discussion prioritises topical use, cosmetic formulation, ingredient functionality, safety and quality assurance. It does not claim that every relevant publication was retrieved or that formal duplicate screening, risk-of-bias assessment or meta-analysis was conducted.

Literature categories include reviews of Aloe vera processing and topical use; honey in dermatology and skin care; saffron constituents; cosmetic science relating to humectants and emollients; and guidance on manufacturing practices and microbiological controls. Evidence concerning wound dressings, isolated extracts, animal studies or in-vitro experiments is treated as indirect evidence rather than proof of a cosmetic benefit from the proposed lotion.

3. Skin Barrier and Moisturising Lotions

The stratum corneum forms the outer barrier of skin and helps limit excessive water loss while protecting against external substances. Its function depends on corneocytes, an organised lipid matrix and natural moisturising factors. Dry-feeling skin can result from environmental exposure, frequent washing, low humidity, ageing, irritants or underlying conditions. Cosmetic moisturisers may improve comfort and surface feel but do not replace medical assessment for persistent inflammation or disease.

Moisturisers commonly combine three approaches. Humectants attract or retain water; emollients soften the surface and improve smoothness; occlusive materials reduce water loss by forming a partial barrier. Many ingredients have overlapping functions. Glycerine is a classic humectant, while vegetable oils such as almond oil can contribute emolliency. The effect depends on concentration, vehicle, application conditions and the complete formula. A lotion vehicle influences release, spreadability, evaporation and sensory perception. Easy spreading is not proof of superior moisturisation, and pleasant odour or natural colour is not a pharmacological endpoint. Evaluation should match the claim.

4. Aloe vera: composition and topical relevance

Aloe vera, often identified as Aloe barbadensis Miller, is a succulent plant used in traditional medicine, food and personal-care products. The leaf contains an outer rind and inner gel-like parenchyma. The inner gel is rich in water and includes polysaccharides and other minor constituents. Composition depends on plant identity, growing conditions, leaf maturity, harvesting, filleting, processing and storage. Reviews discuss Aloe vera processing, food applications, safety and investigated medicinal uses.

In cosmetics, Aloe vera gel is commonly positioned as a skin-conditioning, soothing or moisturising ingredient. Its water content contributes to the aqueous phase, while polysaccharides may influence texture and film formation. Its presence does not guarantee clinically meaningful hydration; such a claim depends on the final formulation and should be tested with suitable methods and comparators. Fresh gel can vary in composition and may be contaminated during harvesting or extraction if hygiene is inadequate. Heating, filtration, stabilisation and storage can alter the material.

The supplied thesis describes washing and trimming leaves, collecting mucilaginous material, heating, adding agar-agar and vitamin E, and homogenising. It does not specify enough detail about temperatures, times, quantities, sanitation or storage to allow replication. A journal-ready method should state botanical authentication, plant part, preparation conditions, yield, storage temperature and any stabiliser or preservative. Inner-leaf gel should be distinguished from latex or whole-leaf material, which can have different chemical profiles and safety considerations.

5. Honey in topical preparations

Honey is a bee-derived material composed mainly of sugars, particularly fructose and glucose, with water and

smaller quantities of organic acids, amino acids, enzymes, minerals and phenolic compounds. Composition varies with floral source, geography, processing and storage. Burlando and Cornara reviewed honey in dermatology and skin care, describing its potential as a humectant, emollient and skin-conditioning ingredient, as well as antimicrobial properties in selected contexts.

The high sugar concentration contributes to water-binding behaviour, making honey of interest in moisturising products. Certain honeys may show antimicrobial activity through low water activity, acidity, hydrogen peroxide generation or specific constituents. Activity varies between honey types and changes with dilution and the finished vehicle. Findings from medical-grade honey used in wound dressings should not be assumed to apply to food-grade honey or a lotion containing a small amount.

Honey should not automatically be treated as a preservative for a water-containing cosmetic. When incorporated into a diluted formulation, its antimicrobial characteristics may change, and the finished product may still support microbial growth. A validated preservation strategy and appropriate microbial testing are needed. A 2026 systematic review by Veloso and Royo identified a small number of clinical trials relevant to honey-based moisturising formulations and noted variation in outcomes. The thesis describes honey as having a preservative role; this should be revised unless preservation efficacy has been demonstrated in the actual finished product.

6. Saffron: constituents and cosmetic potential

Saffron is obtained from dried stigmas of Crocus sativus L. Notable constituents include crocin and related carotenoids, crocetin, picrocrocin and the volatile compound safranal. These contribute to its characteristic colour, flavour and aroma. Composition varies with cultivar, geography, harvesting, drying, storage and extraction. Saffron is discussed in relation to antioxidant activity because some constituents participate in reactions involving reactive species in laboratory systems. However, in-vitro antioxidant activity does not automatically predict behaviour in a lotion or establish a visible benefit on human skin. Concentration, stability, penetration, vehicle interactions and the chosen endpoint influence results.

The phrase “saffron liquid” is insufficiently precise for reproducibility. The method should state whether the material is an aqueous infusion, hydroalcoholic extract, oil-soluble preparation or another extract; identify the plant part; record extraction ratio and conditions; and document supplier or authentication. Colour change, light sensitivity and compatibility should be assessed during stability testing. Claims such as skin brightening, anti-ageing or treatment of pigmentation require suitable evidence from the final product.

7. Supporting ingredients

Almond oil is a fixed vegetable oil used as an emollient. It can soften the skin surface and improve sensory properties. Its quality varies with source, refining and storage, and oxidation may occur over time. Raw-material specifications, storage protection and compatibility are important. Products containing almond-derived ingredients should be assessed and labelled in line with applicable requirements.

Glycerine, also called glycerol, is a widely used humectant. It attracts water and can support stratum-corneum hydration at suitable concentrations in an appropriate vehicle. Its contribution depends on the complete formula and environmental conditions. Excessive or poorly balanced levels can affect tackiness and sensory feel, so the concentration should be selected based on performance and acceptability.

Vitamin E refers to a family of tocopherols and tocotrienols; alpha-tocopherol is commonly discussed in cosmetics. It is used for antioxidant-related functions and skin conditioning. Its presence does not guarantee that the whole lotion will resist oxidation or replace stability testing. The chemical form, concentration, carrier and compatibility should be recorded. The thesis mentions vitamin E at more than one preparation stage, so the actual quantity and stage of addition must be confirmed.

Rose water may contribute fragrance and an aqueous component. Composition depends on source and manufacturing process. Fragrance materials can improve acceptability but may also cause irritation or sensitisation in some individuals. The exact raw material should be identified. The thesis mentions agar-agar during preparation of Aloe vera gel, but does not specify quantity or whether it was present in every batch. Any gelling agent, thickener or emulsifier should be listed with concentration and purpose.

8. Formulation design and manufacturing

A robust formula begins with a complete quantitative composition, preferably expressed consistently as mass percentage or another clearly defined unit. Volume-based quantities require knowledge of final batch size and, where needed, ingredient density. A table should list every ingredient actually used, concentration, grade or specification, function and phase of addition. The source thesis contains a discrepancy: the method mentions lavender oil and coconut milk, while the ingredient table does not consistently list these materials. This must be resolved from laboratory records before publication.

Mixing order, temperature, shear, duration and cooling rate can affect texture and stability. Oil-soluble and water-soluble materials may need to be incorporated separately, while heat-sensitive ingredients may require addition during cooling. If the product is intended to be an emulsion, the emulsifier system and processing parameters should be described. A mixture of gel, oil and water may appear uniform immediately after stirring but separate during storage.

Manufacturing hygiene is essential. Equipment should be clean and suitable for the batch size, and water should meet appropriate quality specifications. Raw materials should be traceable to suppliers and batch numbers. Batch records should document quantities, order of addition, processing parameters, adjustments, yield, filling and packaging. Packaging can influence evaporation, oxidation, contamination during repeated use and ingredient compatibility, so the finished product should be assessed in its intended package.

9. Evaluation of a herbal body lotion

Organoleptic assessment records appearance, colour, odour and texture. These properties should be described using predefined categories and consistent lighting and sample conditions. They can reveal visible changes during storage but do not establish chemical or microbial quality.

The pH of a topical product may influence ingredient compatibility, preservative performance and skin feel. The method must specify direct measurement or dilution, instrument calibration, temperature and replicate procedure. The thesis reports different pH values in different sections, including 4.3, 5.3 and 5.5 in one results table. These discrepancies must be resolved from original records rather than selecting the most favourable values.

Spreadability indicates how readily a preparation distributes under defined conditions. A glass-slide method must state sample mass, slide dimensions, applied load, temperature, time measurement and calculation. Replicates and variability should be reported. A value without complete method details cannot be independently reproduced. Viscosity or rheology can complement spreadability. Washability and perceived greasiness are useful early sensory observations but should be assessed consistently. A formal acceptability study requires participant numbers, eligibility criteria, questionnaire, consent and analysis.

Visible phase separation is a warning sign, but absence of separation at one time point does not prove stability. A stability protocol should define storage temperatures, light exposure, duration, sampling points and acceptance criteria. Appearance, odour, pH, viscosity, packaging changes and separation can be monitored. Stress testing may supplement but does not justify unsupported shelf-life predictions.

10. Microbiological quality, preservation and safety

Water-containing cosmetics can support microbial growth if raw materials, manufacturing, packaging or preservation are inadequate. This is particularly relevant to products containing fresh plant material, diluted honey or other nutrient-containing ingredients. Microbial quality testing and assessment of the preservation system should be considered before making shelf-life or consumer-safety claims. FDA cosmetic good manuf-

acturing practice guidance highlights controls for raw materials, finished products, water quality, batch records and adequacy of preservation. Applicable tests and acceptance criteria should follow the target market's rules and validated laboratory methods. Honey should not be presumed to preserve the finished product, and vitamin E is not a broad-spectrum preservative.

A preliminary observation of no visible redness after applying a small quantity does not establish universal safety or absence of allergy. Safety evaluation requires ingredient review, exposure assessment, adverse-event documentation and tests appropriate to intended use. Human testing must follow applicable ethical requirements, including review and informed consent where required. A manuscript must not imply ethical approval unless documentation exists.

11. Evidence interpretation

A common problem in herbal cosmetic research is transferring evidence between levels. A constituent may show antioxidant activity in a chemical assay, an extract may affect cells in vitro, or medical-grade honey may be used in wound care. None independently proves that a specific cosmetic lotion improves hydration, reduces wrinkles, treats infection or prevents pigmentation. Concentration, vehicle, route, exposure duration and outcome measures may differ substantially.

The same principle applies to the combination of Aloe vera, honey and saffron. Ingredients may have plausible functions, but the combination can alter availability, stability and sensory properties. Interactions may be beneficial, neutral or unfavourable. A well-designed study should compare the finished product with a suitable vehicle or control and use outcomes matched to the claim. Hydration claims may require instrumental measures of skin hydration or transepidermal water loss. Laboratory antioxidant assays can characterise a property but should not be interpreted as clinical benefit.

The thesis reports qualitative observations of appearance, washability, greasiness and no visible phase separation, together with pH and spreadability values. These data can support a preliminary formulation report after verification, but they do not provide a clinical evidence base for a review article. A review should synthesise published evidence and identify gaps rather than present preliminary observations as proof of established efficacy.

12. RESEARCH GAPS AND RECOMMENDATIONS

Future work should define every raw material precisely, including botanical identity, plant part, extract type, supplier, grade, batch and storage conditions. The formula and method should be reconciled, especially references to lavender oil, coconut milk and vitamin E. The full quantitative composition and final batch size should be reported consistently. Processing parameters such as mixing order, temperature, time, equipment, speed and sanitation should be specified.

Original pH values should be checked against laboratory records. Spreadability and rheology tests should be repeated using fully described protocols, with mean values, variability and replicate numbers. Physical stability should be assessed over a defined period in the intended package. Microbial quality and the preservation system should be evaluated, and no assumption should be made that honey alone preserves the product. Any human skin-compatibility or efficacy study should be ethically appropriate and documented. Future efficacy studies should test specific, measurable claims against suitable controls rather than making broad claims about herbal benefits.

13. CONCLUSION

Aloe vera, honey, saffron, almond oil, glycerine, rose water and vitamin E have distinct histories and potential functions in cosmetic formulation. Aloe vera may contribute a water-rich gel and skin-conditioning properties; honey is of interest as a humectant and emollient; saffron provides characteristic constituents and colour; almond oil can contribute emolliency; glycerine is a recognised humectant; and vitamin E is used in some products for antioxidant-related purposes. These functions provide a rationale for investigating a combined herbal body lotion, but do not establish the efficacy or safety of a particular finished product.

The supplied thesis is a useful starting point, yet discrepancies in the ingredient list and method, inconsistent pH values, limited spreadability details and absent documented microbial and long-term stability data must be resolved. Future work should prioritise reproducible methods, traceable materials, appropriate preservation, stability testing and claim-specific efficacy assessment. A transparent, evidence-based approach is essential for credible journal publication.

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