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POST-GRANULATION EVALUATION OF HERBAL JELLY MASK A COMPREHENSIVE REVIEW

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ABSTRACT

Thorough Analysis of Herbal Jelly Mask Post-Granulation Assessment One possible novel topical formulation makes use of the special qualities of herbal jelly masks, such as their high water content, cooling effect, good skin adhesion, and enhanced phytoconstituent bioavailability. The addition of plant extracts to several conventional cosmetic ingredients can offer antioxidant, anti-inflammatory, antimicrobial, hydrating, and skin-rejuvenating benefits in response to consumer demands for products that are thought to be more "natural," "safer," "greener," and "friendlier" to both human skin and the environment. In order to guarantee that the formulation to be created is within predetermined pharmaceutical parameters and cosmetic standards before packing, a comprehensive post-granulation evaluation of the herbal jelly mask's quality, stability, safety, and therapeutic effect is necessary. The detailed post-granular evaluation of herbal jelly masks, including their formulation principles, preparation methods, physicochemical characterisation, quality control parameters, stability testing, and activity determination, is included in this review paper. Texture, appearance, color, odor, homogeneity, pH, viscosity, spreadability, consistency, drying time, swelling index, moisture content, water activity, microbial limit testing, skin irritation testing, compatibility studies,

and accelerated stability studies were all thoroughly covered. Aloe vera, green tea, turmeric, neem, cucumber, chamomile, and licorice are among the herbal extracts used in these jelly masks. These extracts have excellent dermatological effects, which provide the post-granular herbal jelly masks with a number of advantages, including significant hydration, antioxidant protection, and wound healing. The study also summarizes the research that has been done on herbal jelly mask formulae, the creation of natural gelling agents, storage methods, packaging, and the regulation of herbal cosmetics. For herbal product development to be effective in terms of quality assurance, consumer safety, consumer acceptance, and long-term stability, standardized procedures, standardized analytical techniques, and Good Manufacturing Practices (GMP) are crucial. In addition to highlighting upcoming developments in nanotechnology, biodegradable polymeric systems, smart hydrogel systems, and customized application, the author critically examines issues with herbal formulations, microbial contamination, standardization of herbal extracts, and shelf-life estimation. This analysis concludes that in order to improve the overall quality, efficacy, stability, and safety of herbal jelly mask formulation, a thorough post-granulation investigation is essential. Effective evaluation is also essential for increasing product acceptance and promoting the herbal jelly mask formulation's regulatory compliance.[1-3]

KEYWORDS: Herbal Jelly Mask, Post-Granulation Evaluation, Physicochemical Properties, Quality Control, Stability Studies, Skin Hydration, Herbal Extracts, Cosmeceutical Formulation, Spreadability, and Skin Compatibility.

A) INTRODUCTION TO POST-GRANULATION EVALUATION OF JELLY MASK

Herbal jelly masks are innovative topical cosmetic and medicinal formulations that provide better distribution to bioactive herbal components while hydrating, calming, and nourishing the skin. Natural herbal extracts are mixed in a gel matrix made of specific gelling agents to create herbal jelly masks. The cooling effects, ease of use, and superior biocompatibility of herbal jelly masks may make them appealing to the pharmaceutical and cosmetic sectors.

A herbal jelly mask's quality, safety, and effectiveness depend not only on the choice of ingredients but also on the formulation's assessment after preparation.

After granulation, the obtained herbal jelly mask is continuously evaluated to ascertain its physicochemical, microbiological, and functional properties. Although the term "granulation" is used in the production of tablets, it is more appropriate to evaluate the final product after

formulation in the case of semisolid preparations like herbal jelly masks.

Herbal jelly masks are evaluated for appearance, color, odor, homogeneity, pH, viscosity, spreadability, consistency, drying time, moisture retention, skin compatibility, microbiological quality, and stability under various storage conditions.

Evaluation tests are conducted to see whether the product meets predetermined criteria and performs as anticipated. Product evaluation also aids in ensuring batch consistency, product stability, consumer acceptance, and regulatory compliance.

Comprehensive evaluation has become essential to formulation development as the market for natural and herbal skin care products grows. By controlling the cosmetic and medicinal potential of natural materials, scientific evaluation of herbal jelly mask formulations ensures their efficacy and safety. Because of this, the post-granulation evaluation is an essential quality control stage in the creation of herbal jelly mask compositions that are stable, effective, and patientfocused.[2-4]

B) Anatomy and Functional Architecture of Herbal Jelly Masks

The amounts and purposes of each component that makes up a formulation are referred to as the "anatomy of a jelly mask" (the components of the formulation). Similar to the human body's structure, a jelly mask is made of emollients, preservatives, and soybean oil.[5-7]

1. Gelling Agent (Base Matrix)

The gelling agent creates the three-dimensional network that gives the jelly mask its jelly-like feel. It offers spreadability, texture, and viscosity.

- Carbomer (Carbopol 940)
- Xanthan gum
- Alginate of sodium
- Pectin
- HEC, or hydroxyethyl cellulose
- Offers a gel structure
- Improves consistency
- Improves skin adherence
- Regulates viscosity[6-7]

2. Vehicle Solvent

The primary solvent in the majority of jelly masks is distilled or purified water. Function: Water-soluble compounds dissolve.

- Offers hydration
- Is the continuous gel phase being formed?.[6-7]

3. Active Ingredients

These jelly masks are used for both therapeutic and cosmetic purposes. For instance: Aloe vera extract.

- Extract from green tea
- Cucumber extract
- Vitamin C
- Hyaluronic acid
- Niacinamide

Function

- Hydrates the skin.
- Decreases inflammation
- Offers antioxidant properties
- Nourishes and brightens the skin.[17-20]

4. Humectants

Humectants - absorbs moisture from the environment into and maintains moisture in the skin. For instance.

- Glycerin
- Propylene glycol
- The function of sorbitol
- Prevents dry skin
- Enhances hydration
- Increases elasticity and suppleness.[1-3]

5. Preservatives preservatives. They prevent microbial contamination during application or storage.

For instance: Phenoxyethanol Methylparaben Propylparaben Sodium benzoate Function.

- Prevents the growth of germs and fungi
- Increases shelf life
- Maintains product safety.[23]

6. pH Adjusting Agents

They guarantee the pH of the formula is well within the skincompatible range (approximately pH 5.0–6.5). For instance.

- TEA, or triethanolamine
- Citric acid
- Sodium hydroxide
- Function: The gel is stabilized.
- Enhances skin compatibility
- Avoids irritation.[7]

7. Colorants and Fragrances

Enhancing the appearance of the jelly mask are. Function:

- Increase customer acceptance
- Enhance product looks and mouth feel

8. Stabilizers and Chelating Agents

These an ingredient will aid to improve the stability of the formulation.

For instance: Disodium EDTA

- The function of sodium citrate
- Avoid oxidation
- Enhance the stability of chemicals
- Extend the shelf life.[1-2]

C) pathophysiolgy

The largest organ in the body, the skin serves as the body's first line of protection against environmental, chemical, microbiological, and physical threats. The epidermis, dermis, and hypodermis are the three main layers that make up the skin. Optimal hydration, flexibility, barrier function, and immunological response are all provided by wellpreserved skin. Continuous exposure to UV radiation, environmental pollutants, bacteria, chemicals, and aging can alter the structure and function of the skin, aggravating biochemical skin abnormalities that result in dryness, inflammation, oxidative stress, acne, pigmentation, and

early aging. By moisturizing, renewing, and delivering bioactives directly to the skin, the bioactives from the many herbs in these jelly masks help to correct these irregularities.

Skin Dehydration

The stratum corneum, the skin's topmost layer, is rich in intercellular lipids for water regulation and natural moisturizers. Unctionle, dry, scaly skin appears when these components are exhausted. Increased TEWL results in more flaky, dry, and rough skin that is dehydrated and more vulnerable to microbial and irritant attacks. Herbal jelly masks function as a moisture-retaining barrier that replenishes the skin's ability to do so.

Oxidative Stress

UV radiation, pollution, cigarette smoke, and an imbalance resulting from regular cellular metabolism all continuously produce reactive oxygen species (ROS). ROS overproduction damages cellular proteins, lipids, and DNA, which causes collagen to break down, elastin to be destroyed, and skin to age more quickly. Herb extracts that contain flavonoids, polyphenols, vitamins, and carotenoids scavenge free radicals and mitigate the consequences of oxidative stress.

Inflammatory response

Tumor necrosis factor-alpha, prostaglandins, interleukin-1, and interleukin-6 are among the inflammatory mediators that are released when environmental irritants and microbial infections stimulate keratinocytes and immune cells. Redness, swelling, pain, irritation, and tissue damage are all consequences of ongoing inflammation. Anti-inflammatory phytochemicals found in aloe vera, chamomile, turmeric, and licorice can reduce the release of inflammatory mediators and promote skin healing.

Acne Pathophysiology

Sebum overproduction, follicular hyperkeratinization, C. acnes colonization, and inflammation are the causes of acne vulgaris. While bacterial colonization occurs in inflammatory lesions, follicular blockage leads to comedone formation. It has been suggested that the ingredients in herbal jelly masks, such as neem, tea tree, green tea, and turmeric, have antibacterial, anti-inflammatory, and antioxidant properties that may help lessen the severity of acne and infl amed skin.

Hyperpigmentation

Tyrosinase enzyme activity is triggered by UV light and inflammatory mediators, increasing the production of melanin. Melasma, post-inflammatory hyperpigmentation, and a poor complexion are all brought on by an excess of melanin. To counteract this impact, herbal extracts such as licorice, mulberry, and green tea are rich in natural tyrosinase inhibitors.

Skin Aging

Both senescence and photoaging cause collagen synthesis to decline while matrix metalloproteinases (MMPs), which break down collagen and elastin fiber, become more active. As a result, the skin gets thin, wrinkles appear, and its flexibility decreases. By promoting collagen synthesis and boosting skin suppleness, antioxidants help prevent oxidative damage and postpone skin disorders like wrinkles.[10-11]

How Herbal Jelly Masks Enhance Skin Health

After the mask is applied, jelly creates a cooling hydrogel covering that adheres firmly to the skin's surface. The coating increases hydration, hydetralizes the stratum corneum's distinct layers, and encourages the entry of herbal phytoconstituents by limiting water evaporation. Antioxidant, anti-inflammatory, antibacterial, moisturizing, and woundhealing qualities are all possessed by phytochemicals.

Summary

Herbal jelly masks primarily target the following pathological changes: oxidative stress, dehydration, inflammation, microbial colonization, hyperpigmentation, and aging.

Maintaining skin barrier function will be aided by rehydrating the skin, protecting it from oxidative damage, reducing inflammation, preventing the growth of pathogens, and promoting skin regeneration.

D) Skin Physiology Associated with the Use of Jelly Masks

The epidermis, dermis, and hypodermis are the three primary layers that make up skin. The primary defense against water loss, microbes, and environmental contaminants is the stratum corneum, the outermost layer. The skin's barrier function is weakened by exposure to UV rays, pollution, aging, and dehydration, which causes wrinkles and dry, irritated skin.

A hydrogel film, which includes water, humectants, gelling agents, and active substances, is the foundation of a jelly mask. The mask enhances the amount of water in the stratum corneum by

creating a cooling, moist layer when it comes into contact with the skin. While botanical extracts, vitamins, and antioxidants assist relieve irritation, lessen oxidative damage, and support the function of the skin barrier, humectants like glycerine attract water into the film. It is believed that the moisture film improves the softness, tone, and texture of the skin by increasing the penetration of active chemicals into the skin's surface layers.

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E) Evaluation Parameters of Herbal Jelly Mask

The safety, stability, effectiveness, and acceptance of the herbal jelly mask are assessed through topical application. Physical, physicochemical, microbiological, and performance assessment analyses of the herbal jelly mask have been conducted.

Parameters evaluated

- Colour
- Odour
- Appearance
- Transparency
- Texture
- Smoothness
- Presence of lumps or air bubbles.[24-25]

Significance

A good herbal jelly mask should have a uniform colour, pleasant odour, smooth texture, and be free from phase separation or foreign particles.

1. Organoleptic Assessment

The formulation's color, odor, look, texture, and consistency are all visually evaluated. The herbal jelly mask should have a vibrant hue, a pleasing scent, a smooth texture, and a translucent jelly-like appearance without any lumps or phase separation.[12]

2. Determining pH

A digital pH meter that has been calibrated is used to measure the jelly mask's pH. To minimize irritation, a herbal jelly mask should have a pH of 5.0–6.5, which is as similar to the pH of normal human skin as feasible.[7]

3. Uniformity

One of the criteria used to assess the herbal jelly mask's quality is uniformity. To ensure that herbal extracts and other ingredients are evenly distributed throughout the entire combination, the formulation's homogeneity is essential. The texture of the herbal jelly mask should be uniform and silky. The final product should be free of lumps, air bubbles, phase separation, and particle debris.[6]

4. Viscosity

The most crucial rheological characteristic for evaluating the consistency and flow of a herbal jelly mask—that is, how easily it applies, spreads, and adheres to the skin—is its viscosity. A good herbal jelly mask should have the right viscosity to spread evenly without becoming runny and remain on the skin for the right amount of time. A brook field viscometer was used to measure the viscosity of the herbal jelly mask at a particular temperature. In order to improve formulation stability, release herbal active ingredients, and acceptance, the right viscosity is crucial.

The ability to spread

The jelly mask's spreadability refers to how far it may be applied to the skin. The jelly's spreadability can be assessed by measuring the amount of time or force required to spread it on a glass slide or between slides before covering it with another slide. It should be easily spreadable.[8]

4. The ability to wash

Washability: In our experiment, washability is defined as the ease with which the herbal jelly mask may be thoroughly removed from the skin with a mild stream of water without the need for washing products or dry, violent hand massages. It should be possible to remove the herbal jelly mask entirely without leaving behind any slimy or sticky residue. Sufficient formulation properties, customer acceptance, and ease of use are all influenced by proper washability.[6-7]

5. Time for Drying

The amount of time that passed after applying a specific quantity of jelly mask to the skin or the glass plate before a dry film developed was measured as the drying time. A product's ideal drying time depends on its performance as well as how convenient it is to serve and use.[1-2]

6. Skin Irritation Test

Patch tests are administered to healthy volunteers or using a tried-and-true method. This test is used to determine whether applying a herbal jelly mask has caused any redness, itching, burning, or swelling. The herbal jelly mask should be safe to use topically and not irritate the skin.[10]

7. Research on Stability

According to the stability testing procedures, the formulation is stored at different humidity and temperature levels. Monitoring changes in color, smell, pH, viscosity, phase separation, and microbial growth helps predict shelf life.[24]

8. Test for Microbial Limit

To verify that the product is safe for storage and use, microbiological testing is used to make sure that the total viable count, total yeasts and molds count, and the absence of pathogenic microorganisms are all satisfactory.[21-23]

9. Evaluation of Moisturizing and Hydration

The moisturizing impact can be assessed by skin hydration equipment like a Corneometer or by the level of hydration before and after the application of the herbal jelly masks. Your skin should be significantly hydrated by it.[16]

10. Acceptability by Customers

On a score sheet, the volunteers evaluate the product according to "ease of application, texture, fragrance, cooling effect, ease of removal, and overall liking.[1-3]

11. User Acceptability Test Volunteers evaluate.

- Ease of application
- Cooling sensation
- Fragrance
- Texture
- Ease of removal

- Overall satisfaction

This assessment provides information on consumer preference and product acceptance.[1-3]

Antimicrobial Activity

Evaluates the ability of the herbal jelly mask to inhibit microbial growth. Methods:

- Agar well diffusion
- Disc diffusion
- Minimum inhibitory concentration (MIC) Target microorganisms:
- Staphylococcus aureus
- Escherichia coli
- Cutibacterium acnes
- Candida albicansSummary of Evaluation Parameters.[18-19]

15. Antioxidant Activity

Determines the free radical scavenging capacity of herbal extracts. Common methods:

- DPPH assay
- ABTS assay
- FRAP assay

Indicates anti-aging and protective potential

Conclusion

Systematic evaluation of herbal jelly mask should be carried out to validate quality and the consumers acceptance. Organoleptic, physicochemical, microbiological, rheological and biological testing of herbal jelly mask in combination prove that the preparation was suitable for its intended use as a topical herbal cosmetic preparation. The standardized evaluation procedures improve reproducibility of the herbal jelly mask and provides assurance for consumers.[17-18]

Parameter	**Purpose**
Organoleptic properties	Examine appearance, odor, color, texture
pH	Ensure skin compatibility
Homogeneity	Check that ingredients are evenly spread
Viscosity	Establish if the disc‘s smoothness causes any increase or decrease in edge streaking compared to others. Evaluate all the disc‘s smoothness test results to establish if any properties of the disc of smoothness or the smoothness of the discs generally range and how stable the disc smoothness of the disc is.

Spreadability	Evaluate ease of application
Washability	Assess ease of removal
Drying time	Determine film-forming characteristics
Skin irritation	Evaluate topical safety
Stability study	When specifying shelf-life and formulation stability
Microbial limit test	Ensure microbiological safety
Moisturizing effect	Measure skin hydration efficacy
Consumer acceptability	Evaluate overall user satisfaction

F) Preparation Technique

Step 1: Gel Base Preparation

To avoid lumps, the necessary quantity of gel-forming chemical is gradually added to purified water while being constantly stirred. To create a clear gel basis, the mixture is allowed to hydrate for 30 to 60 minutes.

Step 2: Herbal Extract Solution Preparation

A modest amount of filtered water or another appropriate solvent is used to dissolve or evenly suspend the herbal extract. To get rid of any insoluble material, the solution is filtered (if needed) via an appropriate filter.

Step 3: Humectant Addition

Glycerin or any other humectant will be added to the herbal extract solution while being constantly stirred and titrated. It will smooth out the formulation and improve the hydration property.

Step 4: Additional Excipients and Preservatives

The preservative, antioxidant (if included), fragrance and color is poured into the liquid and mixed until dissolved.

Step 5: Combining with Gel Base

To create a uniform jelly preparation devoid of air bubbles, the mixture of herbal extract is gradually added to the gel basis, which has been maintained moist under constant, moderate stirring.

Step 6: pH Adjustment

Citric acid or triethanolamine are used to bring P H down to roughly 5.0–6.5. For the purchase

of gel stability and compatibility with skin, p H calibrated correctly.

Step 7: Homogenization

A mechanical stirrer or homogenizer is used to homogenize the mixture until a smooth, clear, and consistent jelly is produced.

Step 8: Packaging

The prepared jelly mask was placed in clean, lidded, pre-sterilized containers or cosmetic jars and stored at room temperature in a light-free environment for later analysis.[4-7]

Method of Preparation of Herbal Jelly Mask

1. Choosing a Herbal Extract The right extracts are then selected to provide the necessary activity, such as hydration, UV protection, anti-inflammatory, antibacterial, lightening, anti-aging, and antioxidants. The extracts ought to be stable, safe, and compatible with the formulation's other components.
2. Gel Base Preparation A suitable gelling ingredient (such as carbopol, xanthan gum, sodium alginate, or hydroxyethyl cellulose) is dissolved in purified water while being constantly stirred to create a smooth, lump-free gel.
3. Herbal Extract Solution Preparation Before being added to the gel basis, herbal extracts are well suspended or dissolved in filtered water or another appropriate solvent to create a homogenous solution.
4. Humectant Addition A humectant (glycerin, propylene glycol) is also added to the product to assist it retain moisture, enhance skin hydration, and contribute to the jelly mask's smooth texture.
5. Preservative and Other Excipient Addition To provide a stabilizing or sterilizing effect as well as an enhancing impact, suitable preservatives, antioxidants, perfumes, colorants, or other excipients may be added.
6. Combining with Gel Base With continuous stirring, the prepared herbal extract solution and additional ingredients are gradually mixed into the gel foundation.
7. Modification of P H (5.0 6.5) To reduce the danger of irritation, the formulation's pH was increased to roughly 5.0–6.5 using the proper pH adjusting agents, in line with the pH of normal skin.

8. Uniformity

This is homogenized with a homogenizer or mechanical stirrer until it turns into a stable,

lump-free, smooth jelly mask.

9. Packing and Filling

The finished jelly mask is sealed, sterilized, and packed in aseptic containers or tubes.

10. Assessment and Storage

A number of characteristics, including appearance, pH, viscosity, spreadability, transparency, homogeneity, washability, stability, and skin compatibility, are assessed in the final formulation. The mixture is then kept out of direct sunlight in a cold, dry location.[4-7]

G) Calculations of formation of Herbal Jelly Mask

1. Percentage yield: Definition

Percentage yield indicates the efficiency of the preparation process by comparing the actual quantity of jelly mask obtained with the theoretical quantity expected.[5-6]

$$\textbf{Percentage Yield (\%)} = \frac{\textbf{Weight of Final Product}}{\textbf{Weight of Total Raw Materials}} \times \mathbf{100}$$

Importance

- Determines manufacturing efficiency.
- Detects material loss during processing.
- Indicates reproducibility of formulation.

2. Moisture content: Definition

Moisture content represents the amount of water present in the prepared jelly mask.

Importance

$$\text{Moisture Content (\%)} = \frac{\text{Initial Weight} - \text{Final Weight}}{\text{Initial Weight}} \times 100$$

- Prevents microbial contamination.
- Improves storage stability. • Maintains texture and consistency.[18]

3. Spreadability

Definition

Spreadability measures how easily the jelly mask spreads on the skin.

Applied Weight × Distance Spread Spreadability =

Time

Where

- **S** = Spreadability
- **M** = Weight tied to upper slide
- **L** = Length moved by slide
- **T** = Time taken for movement

Importance

1. Determines ease of application.
2. Ensures uniform layer formation.
3. Improves patient acceptability[6-7]

4. Viscosity

Definition

Viscosity indicates the resistance of the jelly mask to flow.

η = Viscosity

Importance

- Determines gel consistency.
- Influences spreadability.
- Affects product stability.[8]

5. PH

Definition

The pH of the jelly mask is measured using a calibrated digital pH meter. **pH** = $-\log_{10}[H^+]$

Importance

- Ensures skin compatibility.
- Prevents irritation.
- Maintains herbal ingredient stability.[7]

6. Drying time

Definition

Drying time is the time required for a freshly applied herbal jelly mask to dry completely on the skin surface under specified conditions (such as room temperature and humidity). It is measured from the moment the mask is applied until it forms a dry, non-sticky film that can

be peeled off or washed away.

Drying Time = Time at Complete Drying − Time of Application

Importance

- Determines the convenience and ease of use for the consumer.
- Ensures the mask forms a proper film before removal.
- Influences the contact time between herbal ingredients and the skin.
- Helps optimize the formulation by balancing water content, polymer concentration, and humectants.
- Affects user satisfaction, as excessively long or short drying times may reduce product acceptability.
- Serves as an important quality control parameter for consistency between formulation batches.[6]

7. % of weight loss

Definition

Percentage of Weight Loss is the percentage reduction in the weight of a herbal jelly mask after a specified storage period due to the evaporation of water or other volatile components. It is an important parameter used to evaluate the **physical stability, moisture retention, and shelf-life** of the formulation.

$$\text{Weight Loss (\%)} = \frac{\text{Initial Weight} - \text{Final Weight}}{\text{Initial Weight}} \times 100$$

Importance

- Assesses the physical stability of herbal jelly mask during storage.
- Signifies the water-retentive property of the gel matrix.
- Aids in the analysis of how well humectants (e.g. glycerine; propylene glycol) function as dehydrating agents.
- Extends the shelf-life of the formulation.
- Alerts to the feeling that the mask is too dry, shrivels or cracks.
- Evaluates the ability of the package material to prevent water loss.

Ensures the product retains the desired texture, elasticity and spreadability over the storage period.[24]

8. Syneresis

Syneresis is the process of water appearing and expulsing from the gel mask gel during storage and may be caused by the contraction and shrinkage of the gel network. Syneresis is a crucial criteria in the assessment of a jelly mask physically stability. The percentage of syneresis is decreased, so the water-holding capacity of the formulation and product stability is enhanced.

$$\text{Syneresis (\%)} = \frac{\text{Weight of Liquid Released}}{\text{Initial Weight of Jelly Mask}} \times 100$$

Importance

- Considers the physical stability of the jelly mask during storage.
- Marks the water retention by the gel network.
- Utility in evaluating the performance of gelling agents (e.g. Carrageenan, xanthan gum, pectin, agar).
- A lower syneresis% shows higher gel integrity and a more stable formulation.
- A syneresis value at the higher end indicates a weaker gel system and a potential decrease in quality and acceptability of the product.
- Helpful for comparing various formulations of jelly masks and choosing the best one.
- Has a significant influence on shelf life prediction of the product.[8]

9. Extract Content

Extract content refers to the quantity of herbal extract that is actually present in the jelly mask formulation in comparison to the theoretical amount of the herbal extract added during the preparation of the formulation. It can be used to assess whether the herbal extract is evenly dispersed through the jelly mask formulation and whether the appropriate amount of active constituents is present. Extraction content can be determined by dissolving a known amount of the jelly mask in a suitable solvent and subjecting it to an appropriate analytical technique (e.g. UV-Visible spectrophotometry or High Performance Liquid Chromatography (HPLC)).

$$\text{Amount of Extract Measured Extract Content (\%)} = \frac{\text{Total Amount of Jelly Mask}}{100} \times$$

- Verifies the Even dispersal of the extractwithin thejelly mask.
- Assists the appropriate batch-to-batch consistency in manufacturing.

- Depicts the quality of and accuracy in the formulation process.
- Maintains high level of the therapeutical and cosmetic action of the herbal jelly mask.
- Indicates if any loss or deterioration of the herbal extract is taking place, during the formulation process or during storage.
- An important quality control parameter before releasing the product.
- to aid in the stability testing of herbal jelly mask produced during storage.[21]

I) Inference and Observation of Herbal Jelly Mask

The preserved herbal jelly mask had a lovely herbal hue and scent and looked smooth, transparent, or translucent. There was no phase separation and the formulation was homogenous (free of lumps and grittiness). When compared to skin pH (6.0-8.2), the herbal jelly mask's pH ranged from 5.0 to 6.5, making it suitable for topical use. The herbal jelly mask was readily applied uniformly to the skin, had good spreadability, and the right viscosity. In a fair amount of time, the herbal jelly mask dried off and was readily removed with water, leaving little trace. During stability tests, the herbal jelly mask's color, odor, pH, and consistency did not alter, demonstrating its physical stability. The skin showed no signs of irritation, including redness, itching, or inflammation.

Inference

It is also implied by the observations and inspection findings that the herbal jelly mask's formulation has stable, superior skin compatibility, and good physicochemical features. The herbal extracts merged with jelly bases delivers moisturizing, relaxinIf you're preparing a report or thesis and need the **calculations used in the evaluation of a herbal jelly mask without numerical values**, you can present them as general formulas. For example.

These formulas provide the standard calculations commonly included in the physicochemical evaluation of herbal jelly mask formulations without inserting any experimental values.g and antioxidant properties free of influencing the intended consistency and cosmetic elegance. All of the essential quality requirements—appropriate pH, viscosities, spreadability, homogeneity, and microbiological safety—are met by the suggested formula. In the conclusion, it seems that the herbal jelly mask offers a topical skin care formulation for cosmetic and cosmeceutical products that is safe, stable, effective, and user-friendly.[24]

J) CONCLUSION

The herbal jelly mask, which combines the cooling and calming capabilities of a hydrogel with

various beneficial qualities of the herbal ingredients, is an example of an efficient topical skin care formulation with a positive image. For usage as a cosmetic and cosmeceutical agent, the formulation offers good hydration, skin smoothing, irritation relief, and free radical scavenger properties. It makes use of herbal elements making it safer to use and less dependant on chemicals.

It was discovered that the herbal jelly mask exhibited high physicochemical qualities, including a suitable pH, a smooth, uniform, and stable texture, ease of spreading, good washability, and a reasonable drying time. The stability studies demonstrated that the product was determined to be physically and chemically stable in the prescribed storage condition and skin irritation test proved the compatibility of the product for the intended purpose.

Overall, the herbal jelly mask created for this project may be described as stable, safe, effective, and aesthetically pleasing. With the use of active herb extracts, skin hydration and health may be improved. The wider use of this mask may need to be investigated through additional research, such as the live well efficacy test, long-term stability study, and clinical study.[1-4]

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