

## Formulation and Assessment of Herbal Facial Mask

Damu Uma Sankar, Dr.Konathala Rajesh, Gudisi Ramakrishna, D.Thirupathi Rao, G.Adhi, G.Indu Sri, G.Supriya, G.Radha, G.Sriharitha, J.Aruna, J.Bharghavi, K.Nagamani, K.L.K.Annapurna, K.Naveen, K.Akhila, Y.Haritha

Bhaskara Institute of Pharmacy Komatipalli(V), Bobbili(M), Vizianagaram, Andhra Pradesh

### ABSTRACT:

The predominant assortment of cosmetic formulations present within the commercial sphere is predominantly synthetic, which often correlates with a spectrum of deleterious side effects when utilized over protracted periods. The application of herbal cosmetics emerges as a potential remedy to mitigate this predicament. It is posited that herbal cosmetics possess a generally favorable safety profile, incurring minimal adverse effects. A plethora of prevalent dermal afflictions includes, but is not limited to acne, erythema, dermal creases, periorbital discoloration, pustules, xeroderma and the presence of desquamated skin. The employment of herbal cosmetic preparations such as facial masks, exfoliants, and emulsions may contribute to the alleviation of these concerns. The primary aim of the present investigation involves the formulation and assessment of a herbal facial mask utilizing natural constituents, with the intention of achieving radiant skin. Four distinct formulations characterized by varied concentrations of ingredients including Fuller's Earth (multani-mitti), Curcuma longa (turmeric), Aloe barbadensis miller (aloe vera), Santalum album (sandalwood), citrus peel (orange peel), Azadirachta indica (neem), and Rosa species (rose petals) were subjected to a rigorous evaluation encompassing their organoleptic attributes, stability, physicochemical metrics, irritancy assessments, and microbial load analyses.

**Keywords:** Formulations, Herbal cosmetics, Xeroderma facial mask, multani-mitti, organoleptic attributes, stability, physicochemical metrics and irritancy assessments.

### INTRODUCTION

Over a span of time, the prevalence of skin care products has considerably expanded in its appeal. Individuals engage in the application of an assortment of items to safeguard their dermal layers, augment their personal aesthetics, and mitigate unpleasant body scents, utilizing products such as foot powder, lipstick, mouthwash, and complexion-enhancing treatments.<sup>[1]</sup> The category of items that are meant to be administered via methods including but not limited to rubbing, pouring, sprinkling, spraying, and injecting into various body regions, are identified as skin care preparations, which aim to purify, enhance, and, in a manner, transform the external appearance of the skin. In the Ayurvedic tradition, there exists reference to a plethora of botanicals, such as alma and haldi, formulated within cosmetic compositions.<sup>[2]</sup> It is worth noting that numerous women in Europe during the eighteenth century, who were largely oblivious to the associated hazards, consumed lead carbonate in an attempt to achieve facial pallor, resulting in fatalities due to lead toxicity.<sup>[3]</sup>

The quest for eternal youth and radiant skin has been a longstanding human obsession, with individuals seeking out various treatments and products to achieve the perfect complexion. In recent years, the beauty industry has witnessed a significant shift towards natural and organic products, with consumers increasingly opting for herbal remedies as a means of achieving healthy, glowing skin.<sup>[3][1]</sup> Herbal face packs, in particular, have gained popularity due to their ability to provide a range of benefits, from hydration and brightening to anti-aging and anti-inflammatory effects.<sup>[3][2]</sup>

Herbal remedies have been used for centuries in traditional medicine to treat various ailments, including skin conditions. The ancient Greeks and Egyptians used herbs such as lavender and chamomile to soothe

and calm the skin, while the Ayurvedic system of medicine in India has long relied on herbal remedies to treat a range of skin conditions. The use of herbs in skincare is rooted in their ability to provide antioxidant, anti-inflammatory, and antimicrobial properties, which can help to combat a range of skin concerns, from acne and hyper pigmentation to fine lines and wrinkles.<sup>[4]</sup>

Despite the growing interest in herbal remedies, there is a dearth of research on the use of herbal face packs as a standalone skincare treatment. Most studies have focused on the use of individual herbs or extracts, rather than exploring the potential benefits of combining multiple herbs in a single formula. This study aims to address this knowledge gap by formulating and evaluating a novel herbal face pack that combines the benefits of multiple herbs and natural ingredients.<sup>[4][2]</sup>

The formulation will be based on a combination of herbs that have been traditionally used in Ayurvedic medicine, including turmeric, neem, and aloe vera. Turmeric contains curcumin, a potent antioxidant that has been shown to have anti-inflammatory and anti-aging properties, while neem has been used for centuries to treat skin conditions such as acne and eczema. Aloe vera, meanwhile, is known for its moisturizing and soothing properties, making it an ideal ingredient for dry or sensitive skin.<sup>[4][3]</sup>

The evaluation of this herbal face pack will involve a comprehensive analysis of its efficacy in improving skin texture, reducing fine lines and wrinkles, and providing antioxidant protection. The study will also examine the safety and tolerability of the face pack, as well as its potential benefits for different skin types and concerns. By exploring the potential benefits of this novel herbal face pack, this study aims to contribute to our understanding of the role of herbal remedies in skincare and provide valuable insights for practitioners and consumers alike.<sup>[5]</sup>

In this study, we will use a combination of in vitro and in vivo experiments to evaluate the efficacy and safety of our herbal face pack. The formulation will be tested using a range of methods, including cell culture assays and human clinical trials. The results will be analyzed using statistical software to identify any significant changes in skin texture, fine lines and wrinkles, and antioxidant status.<sup>[6]</sup>

In recent years, there has been a growing interest in the use of herbal remedies for skin care due to their natural and non-invasive properties. Herbal face packs are a popular form of skincare treatment that involves applying a mixture of herbs, spices, and other natural ingredients to the face to achieve various benefits such as hydration, brightening, and anti-aging. This study aims to formulate and evaluate a novel herbal face pack using a combination of herbs and natural ingredients that can provide effective skin care benefits while being gentle and non-irritating on the skin. The formulation will be based on a combination of herbs such as turmeric, neem, and aloe vera, which are known for their anti-inflammatory, antioxidant, and moisturizing properties.<sup>[7][5]</sup> The evaluation will involve testing the face pack's efficacy in improving skin texture, reducing fine lines and wrinkles, and providing antioxidant protection. The quest for a flawless and radiant complexion has been a longstanding pursuit in the field of dermatology. With the increasing awareness of the importance of skin health and the growing demand for natural and organic products, the development of herbal facial masks has gained significant attention in recent years. The use of natural constituents in skincare products offers a promising approach to address various skin concerns, such as acne, hyperpigmentation, and aging. Herbal facial masks, in particular, have been found to be effective in providing moisturizing, antioxidant, and anti-inflammatory benefits to the skin.<sup>[8]</sup>

This study aims to formulate and assess a herbal facial mask utilizing natural constituents that can provide a unique combination of benefits for the skin. The mask will be developed using a blend of herbs that have been traditionally used in skincare and have been scientifically proven to have beneficial effects on the skin. The objectives of this study are to formulate a herbal facial mask that is effective in improving skin hydration, reducing fine lines and wrinkles, and providing a natural glow.<sup>[9]</sup> The efficacy of the mask will be assessed through clinical trials and laboratory tests to evaluate its effects on skin hydration, elasticity, and overall skin health.<sup>[10]</sup>

**MATERIALS**

S.No	NAME	SYNONYM	BIOLOGICAL SOURCE	MACROSCOPY	CHEMICAL CONSTITUENTS	CHEMICAL TESTS	BIOLOGICAL SOURCE	USES
1	Neem	Margosa	Azadirachta indica Family- Meliaceae	Size- 15-30cm Shape- serrated edges Colour- green Odour- Garlic or Sulfur smell	Polyphenolic compounds Proteins, Carbohydrates, Vit-C	(a) Dragendorff's reagent test (b) Chlorogenic test	Neem tree	Reduces wrinkles Treats acne
2	Turmeric	Curcuma domestica	Curcuma longa Family- Zingiberaceae	Size- Can grow upto 1m Shape- Spherical , Cylindrical Colour- Bright yellow Odour- mildly aromatic scent.	Curcumin, curcuminoids, Terpenoids	(a) Wagner's reagent (b) Shinoda test	Rhizome of the curcuma longa plant	Anti oxidant Improves skin health Brings out natural glow
3	Aloe vera	Aloe musabbar	Aloe barbadensis miller Family- Asphodelaceae	Size- Cubes 2cm Shape- Triangular leaves up to 0.9m	Albino Barbaloin, $\beta$ -barbaloin and Isobarbaloin	(a) Hager's reagent (b) Gelatin test	Dried latex of leaves of Aloe vera.	Skin smoothing

				Colour - Green Odour-Bitter				
4	Rose petals	Flora leaf	Rose rubiginosa Family- Rosaceae	Size- Vary in size Shape- Round at the end with a pointed tip. Colour- White, pink Odour- Floral fragrance	Flavanoids , polyphenols, Esters, Fatty acids	(a) Zinc test (b) Mayer's reagent	Rose flowers are rich in biologically active compounds.	Improves skin texture Pore clearing
5	Sandal wood	Chandan	Santalum album Family- Santalaceae	Size- 13-16m Shape- cylinder Colour - Brown Odour- Specific	Polysterols, Fatty acids Phenyl propanoids	(a) Molisch's test (b) Barfoed's test	Genus santalum	Skin lightening Skin care Anti-aging

6	Vempali	Wild Indigo , common Tephrosia	Tephrosia purpurea Family- Fabaceae	Size- 4- 85mm long & 6-10mm length Colour- purple Shape- star shaped Odour- musk like fragrance	Flavanoids Retenoids , Sterols	(a)] Iodine test (b) Lead acetate test	Tephrosia purpurea is a species of Flowering plant.	Skin smoothing Recovers dead cells
7	Orange peel	Apricot, Orange cortex	Citrus sinensis Family-	Size- 2-4 inches	Essential oils, flavonoids ,	(a) Sannie test	Consists of fresh and dried outer	Anti- inflammatory,

			Rutaceae	Shape- spherical Colour- orange Odour-sweet and tangy	carotenoids , steroids , terpenoids , alkane group, ethyl esters	(b) Molisch's test	Part of the pericarp of Citrus aurantium linn.	Helps clear skin
8	Multa ni mitti	-	-	-	-	-	-	Cleanser
9	Rose water	-	-	-	-	-	-	Vehicle ,flavoring agent

{ Table-1-Materials }

## AIM:

The aim of formulating and assessing herbal facial mask is to create a natural skin care product that utilizes the therapeutic properties of botanical ingredients to enhance skin health and appearance. The formulation will aim to address various skin concerns such as hydration, exfoliation, anti-aging, and soothing of irritated skin.<sup>[11]</sup>

## OBJECTIVES:

The objective of formulating and assessing a herbal facial mask is to develop a natural skincare product that effectively addresses specific skin concerns while utilizing the beneficial properties of various herbal ingredients.<sup>[12]</sup> The formulation aims to promote skin health by incorporating botanicals known for their hydrating, soothing, anti-inflammatory, and antioxidant effects.<sup>[13]</sup> The assessment phase involves evaluating the mask for its safety, efficacy, and sensory qualities through user feedback, skin analysis, and stability testing. This includes determining the mask's texture, ease of application, and observable effects on skin conditions such as dryness, irritation, or signs of aging. Ultimately, the goal is to create a safe, effective, and appealing herbal facial mask that meets consumer needs and promotes a healthy skincare routine rooted in natural ingredients.<sup>[14]</sup>

## METHODOLOGY

The methodology for formulating and assessing a herbal facial mask involves several key steps:

- 1. Ingredient Selection:** Identify and select herbal ingredients based on their therapeutic properties, such as clay (for oil absorption), aloe vera (for hydration), turmeric (for anti-inflammatory benefits).<sup>[15]</sup>
- 2. Formulation Development:** Combine the selected ingredients in specific ratios to achieve the desired consistency and efficacy. This may include mixing powders, gels, and oils while ensuring proper blending.<sup>[16]</sup>
- 3. Preparation:** Prepare the mask by accurately measuring and mixing the ingredients. Ensure uniform distribution to maintain consistent formulation across batches.<sup>[17]</sup>
- 4. Stability Testing:** Conduct stability tests to evaluate the mask's physical and chemical properties over time under different temperature and light conditions. This assesses the product's shelf life and efficacy.<sup>[18]</sup>
- 5. Sensory Evaluation:** Conduct sensory assessments to evaluate texture, aroma, and ease of application through consumer panels or focus groups. Gather feedback regarding user experience and preferences.<sup>[18]</sup>
- 6. Efficacy Assessment:** Conduct clinical trials or controlled studies to assess the mask's effectiveness on various skin types. Parameters to measure may include skin hydration, elasticity, and reduction in redness or blemishes.<sup>[19]</sup>
- 7. Safety Evaluation:** Perform patch tests to check for potential allergic reactions or irritations. Ensure all ingredients comply with safety regulations.<sup>[20]</sup>
- 8. Data Analysis:** Analyze the collected data to determine the effectiveness of the mask, and refine the formulation based on feedback and observed results.<sup>[21]</sup>
- 9. Finalization:** Finalize the formulation based on testing outcomes, consumer feedback, and market trends, ensuring it meets safety standards and consumer expectations.<sup>[22]</sup>

Through this comprehensive methodology, the developed herbal facial mask aims to provide functional benefits while appealing to consumers seeking natural skincare solutions.<sup>[23]</sup>

**FORMULA**

S.No	INGREDIENT	QUANTITY FOR 100gm	FORMULATION USES	PHARMACEUTICAL USES
1	Neem	10gm	Reducing wrinkles	Anti bacterial, and anti microbial
2	Multani mitti	15gm	Cleanser activity	Prevents Radiation effects
3	Turmeric	10gm	Skin tone improver	Colouring agent, Anti bacterial and anti microbial
4	Aloe vera	30gm	Moisturizer	Rheological improver and Anti inflammatory
5	Rose petals	10gm	Anti aging and skin tone developer	Colouring and flavoring agent
6	Sandal wood	10gm	Skin lightener	Flavoring agent
7	Vempali	10gm	Exfoliation effect	Antioxidant
8	Orange peel	5gm	Hydrates skin and skin brightener	Viscosity enhancer
9	Rose water	Quantity sufficient	Smoothing and rehydrating element	Buffer, Vehicle and flavoring agent

{ Table-2-Herbal facial mask Formulation }

**PREPARATION OF POWDERS**

Spread the materials on a clean surface or a tray, ensuring they are in a single layer to allow for even drying. You can either sun-dry the materials for 3-5 days, turning them occasionally, or use a dehydrator for faster results.<sup>[26]</sup> The materials should be completely dried and brittle to the touch. Avoid using an oven, as high temperatures can destroy the bioactive compounds.<sup>[27]</sup> [4]

Once the materials are fully dried, they can be ground into powder using a blender, spice grinder, or mortar and pestle. Ensure the grinder is clean to prevent contamination. Start by breaking the dried leaves into smaller pieces to ease the grinding process. Pulse the machine in short bursts to achieve a fine powder, being careful not to overheat the grinder, which can affect the potency of the powder.<sup>[27]</sup> [5]

After grinding, sift the powders through a fine mesh screen to remove any coarse particles. Store



the final powder in an airtight container, preferably glass or BPA-free plastic, and keep it in a cool, dark place to maintain its properties.<sup>[28][6]</sup> Properly prepared powders can be used for various applications, including natural pest control in gardening, skincare formulations, and traditional herbal remedies, making it a valuable addition to eco-friendly projects or practices. Always perform a patch test before using it on the skin to avoid allergic reactions and consult with a healthcare professional when using it for medicinal purposes.<sup>[29]</sup>

## RESULTS

Creating and assessing the results of a herbal facial pack involves multiple steps, including formulation, application, and evaluation of effectiveness. Here's a structured approach to this process:

1. Sample Preparation: Collect and dry neem plant material, followed by grinding it into a fine powder for extraction.
2. Extraction: Use suitable solvents such as ethanol, methanol, or water to extract phytochemicals. Common methods include maceration, soxhlet extraction, or cold infusion.
3. Qualitative Screening: Conduct preliminary tests to identify the presence of various phytochemicals, such as alkaloids, flavonoids, saponins, tannins, terpenoids, and phenolic compounds. This can be achieved using standard reagents and methods like color change tests or precipitate formation.
4. Preservation & Storage: Since herbal packs are often free from preservatives, it's important to make them in small batches.
5. Immediate Effects: Check for immediate skin feel (hydration, smoothness) and appearance (glow, brightness). Skin Reaction: Monitor for any adverse reactions (redness, irritation).
6. Long-Term Evaluation: Skin Condition: Assess changes in skin texture, tone, and moisture levels over a few weeks of regular use (2-3 times a week recommended).
7. Assessment: Self-assessment can include how the skin feels and looks after use.

## PLANTS



**Fig: (1)**  
PLANT – Neem  
FAMILY- Meliaceae



**Fig: (2)**  
PLANT- Aloe vera  
FAMILY- Liliaceae



**Fig: (3)**  
Multani mitti



**Fig: (4)**  
PLANT- Orange peel  
FAMILY- Rutaceae





**Fig: (5)**

PLANT- Rose petal  
FAMILY- Rosaceae



**Fig: (6)**

PLANT- Sandal wood  
FAMILY-Santalaceae



**Fig: (7)**

PLANT- Turmeric  
FAMILY- Fabaceae



**Fig: (8)**

PLANT- Vempali  
FAMILY- zingiberaceae

**PREFORMULATION STUDIES:**

**MACROSCOPY**

S.no	Characters	Neem	Multani mitti	Turmeric	Aloevera	Rose petals	Sandalwood	Vempali	Orange peel	Rose water
1	Size	15-30 cm	-	1 cm	1-2cm cubes	Vary in size	13-16cm	4-85mm long&6-10mm length	2-4 inches	-
2	Shape	Serrated edges	-	Spherical & cylinder	Tringular leaves upto 0.9m	Round at the end with A pointed tip	Cylinder	Star shaped	Spherical	-
3	Odour	Garlic or Sulfur smell	Specific	Mildly Aromatic scent	Pungent and oniony smell	Floral fragrance	Specific	Musk like fragrance	Sweet &tangy	Floral fragrance
4	Colour	Green	Cream& yellow	Bright yellow	Green	Pink and red	Brownish colour	Purple	Orange	Colour less

{ Table-3-Macroscopical study }

## CHEMICAL TESTS FOR PLANTS



**Fig: (9)**  
Chemicals and extractive products for evaluation



**Fig: (10)**  
Test for Neem extract



**Fig: (11)**  
Test for Aloe vera extract



**Fig: (12)** Test for Sandal wood extract  
**Fig: (14)** Test for Rose petals extract



**Fig: (13)** Test for Orange peel extract

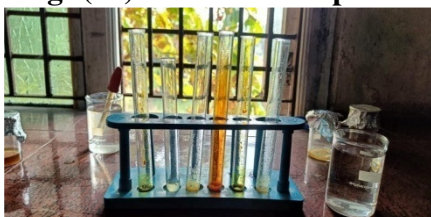




Fig: (15) Test for Turmeric extract



Fig: (16) Test for Vempali extract

**CHEMICAL TESTS:**

S.NO	CHEMICAL TESTS	Sandal wood	Turmeric	Rose petals	Aloevera	Orange peel	Neem	Vempali
	<b>ALKALOIDS</b>							
1	Drangendorff's Reagent test:	√	√	√	√	√	√	√
2	Hager's reagent test:	√	-	√	√	√	√	√
3	Mayer's reagent test:	-	√	√	√	√	√	√
4	Wagner's Reagent test:	√	√	√	√	√	√	√
	<b>GLYCOSIDES</b>							
1	Keller-killiani test:	-	√	√	√	√	√	√
2	Legal test:	√	√	√	√	√	√	√
3	Borntrager's test:	√	√	√	√	√	√	√
4	Modified borntrager's test:	√	√	√	√	√	√	√
5	Libermann's test:	√	√	√	√	√	√	√
6	Kedde's test:	√	√	√	√	√	√	√
	<b>TANNINS</b>							
1	Chlorogenic test:	-	√	√	√	√	√	√
2	Gelatin test:	√	√	√	√	√	√	√
3	Ferric chloride test:	√	√	√	√	√	√	√
4	Bromine water:	√	√	√	√	√	√	√
5	Lead acetate test:	√	√	√	√	√	√	√
	<b>RESINS</b>							
1	HCl test:	-	√	√	√	√	√	√
2	FeCl <sub>3</sub> test:	√	√	√	√	√	√	√

	<b>FLAVANOIDS</b>							
1	Shinoda test:	√	√	√	√	√	√	√
2	Modified shinoda test:	√	√	√	√	√	√	√
3	Sulphuric acid	√	√	√	√	√	√	√
4	Lead acetate test:	√	√	√	√	√	√	√
5	Zinc test:	√	√	√	√	√	√	√
	<b>TERPENOIDS</b>							
1	Salkowski test:	-	√	√	√	√	√	√
2	Libermann Burchard test:	-	√	√	√	√	√	√
3	Sannie test:	√	√	√	√	√	√	√
	<b>CARBOHYDRATES</b>							
1	Molisch's test:	√	√	√	-	√	√	√
2	Iodine test:	√	√	√	√	√	√	√
3	Barfoed's test:	√	√	√	√	√	√	√
	<b>PROTEINS</b>							
1	Biuret test:	√	√	√	√	√	√	-
2	Lead acetate test:	√	√	√	√	√	√	√
3	Ninhydrin test:	-	-	-	-	√	√	√
	<b>STERIODS</b>					√	√	√
1	Zimmermann test:	-	√	√	√	√	√	√
2	Salkowski reagent:	-	√	√	√	√	√	√

{Table-4-Phyto Chemical tests}

## POST FORMULATION STUDIES

When formulating and assessing herbal facial mask, it is essential to conduct a series of tests to ensure product safety, efficacy, and stability. Below are key tests that can be performed during both formulation and assessment.

### 1. Stability Testing

Purpose: To assess how the product maintains its physical and chemical properties over time.

Method: Store samples of the herbal mask at different temperatures (refrigerated, room temperature) and observe changes in consistency, color, odor, and separation over weeks or months.

### 2. pH Testing



Purpose: To determine the acidity or alkalinity of the mask, which is crucial for skin compatibility.

Method: Use a pH meter or pH strips to measure the mask's pH before and after formulation to ensure it falls within an acceptable range (typically 4.5 to 5.5 for facial products).

### 3. Viscosity Testing

Purpose: To ensure the mask has the desired thickness for easy application.

Method: Use a viscometer to measure the viscosity of the formulation; ensure it is neither too thick (difficult to apply) nor too runny.

### 4. Irritation/Allergy Testing

Purpose: To assess the potential for skin irritation or allergic reactions.

Method: Conduct a patch test with a small group of volunteers. Apply a small amount of the formulation on the inner forearm and observe for reactions over 24-48 hours.

## Application Tests

### 1. Product Application Testing

Purpose: To evaluate how easily the mask spreads, adheres to the skin, and removes cleanly.

Method: Have users apply the mask and provide feedback on texture upon application, adherence during wear, and ease of removal.

### 2. Skin Condition Evaluation

Purpose: To monitor improvements in skin conditions such as acne, blemishes, or pigmentation.

Method: Take before-and-after photographs and have participants rate their skin's condition concerning specific concerns (e.g., acne reduction, even tone).

### 3. Sensory Evaluation

Purpose: To assess the sensory attributes of the mask.

Method: Evaluate attributes such as aroma, texture, appearance, and after-feel using descriptive sensory analysis protocols.



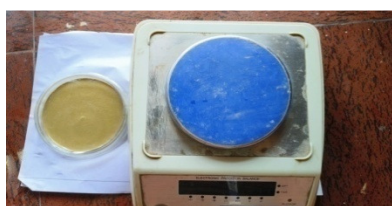
**Fig:(17)** Organoleptic properties



**Fig:(18)** pH test



**Fig: (19)** Irritation test



**Fig: (20)** Moisture content test



**Fig: (21)** Ash value test



**Fig: (22)** Washability test

## RESULTS

### 1. Organoleptic properties

S.No	Test name	Result
1	Colour	Yellowish green
2	Odour	Pleasant
3	Appearance	Good
4	Texture	Slightly rough
5	Grittiness	Yes
6	Washability	Easily washable

{Table-5-Organoleptic properties}

### 2. Physical properties

S.No	Test name	Result
1	pH	7 (Neutral)
2	Moisture content	58.9
3	Ash value	0.90

{Table-6-Physical properties}

### 3. Irritancy test

S.No	Test name	Result
1	Irritation	No Irritation
2	Photo irritation	Not observed

{Table-7-Irritancy test}

### 4. Stability studies (at room temperature)

S.No	Test name	Result
1	Colour	No change
2	Odour	No change
3	Appearance	Good appearance there is no change
4	Texture	Observable changes are not there
5	Washability	Good
6	pH	No changes occurred

{Table-8-Stability studies}

## CONCLUSION

The pre-formulation stage of herbal product development is crucial for ensuring the efficacy, safety, and stability of the final product. This phase involves meticulous selection and characterization of raw materials, assessment of their physical and chemical properties, and the formulation of optimal combinations that enhance bioavailability and therapeutic benefits. By addressing factors such as excipients, dosage forms, and regulatory compliance, researchers and formulators can create herbal products that meet consumer expectations and quality standards, ultimately paving the way for successful commercialization in a competitive market.

## FUTURE SCOPE

The formulation and assessment of a herbal facial mask present significant future opportunities in both cosmetic and therapeutic skincare sectors. As consumer demand for natural and organic products continues to rise, research can explore a diverse range of plant-based ingredients known



for their skincare benefits, such as antioxidants, anti-inflammatory agents, and skin-soothing properties. Future studies could focus on the synergistic effects of combining various herbal extracts, enhancing efficacy while minimizing skin irritation. Additionally, innovative delivery systems, such as nanotechnology or biocompatible materials, could improve the penetration and stability of active compounds. Sustainability is another critical aspect, prompting research into eco-friendly sourcing and packaging to meet environmentally-conscious consumer demands. Furthermore, leveraging advanced technological techniques, such as artificial intelligence, might help in formulating personalized skincare solutions based on individual skin types and conditions. Overall, the continuous exploration of herbal facial masks offers vast potential for advancements in skincare efficacy, sustainability, and consumer customization.

## BIBLIOGRAPHY

1. AswalA, Kalra M, Rout A. Preparation and evaluation of poly herbal cosmetic cream. *Der. Pharmacia. Lettre*. 2013; 5(1): 83-88.
2. Silveira JPS, Seito LN, Eberlin S, Dieamant GC, Nogueira C, Pereda MCV, Stasi LCD. Photoprotective and antioxidant effects of Rhubarb: inhibitory action on tyrosinase and tyrosine kinase activities and TNF- $\alpha$ , IL-1 $\alpha$  and  $\alpha$ -MSH production in human melanocytes. *BMC Complementary and Alternative Medicine*. 2013; 13: 49.
3. Fawole OA, Makunga NP, Opara UL. Antibacterial, antioxidant and tyrosinase inhibition activities of pomegranate fruit peel methanolic extract. *BMC Complementary and Alternative Medicine*. 2012; 12 (200): 1-11.
4. Hapsari R, Berna E, Juheini A. Formulation and evaluation of antioxidant and tyrosinase inhibitory effect from gel containing the 70% ethanolic *Pleurotus ostreatus* extract. *Int. J. Med. Arom. Plants*. 2012; 2(1): 135-140.
5. Kaur CD, Saraf S. Development of photoprotective creams with antioxidant polyphenolic herbal extracts. *Research Journal of Medicinal Plant*. 2012; 6: 83-91.
6. Lee SJ, Cho SW, Kwon YY, Kwon HS, Shin WC. Inhibitory effects of ethanol extracts from *Nuruk* on oxidative stress, melanogenesis, and photoaging. *Mycobiology*. 2012; 40(2): 117-123.
7. Mishra AK, Mishra A, Verma A, ChattopadhyayP. Effects of calendula essential oil-based cream on biochemical parameters of skin of albino rats against ultraviolet B radiation. *Sci. Pharm*. 2012; 80: 669–683.
8. Nagulwar DB, Bhoyar PK, Baheti JR, Biyani DM, Mundhada DR, Kathade PP. Development and validation of herbal antiseptic topical formulation. *World Journal of Pharmacy and Pharmaceutical Sciences*. 2012; 1(2): 674-692.
9. Sahu RK, Roy A, Kushwah P, Khare M, Mudotiya R. Formulation and development of whitening polyherbal face cream. *Research Journal of Topical and Cosmetic Science*. 2012; 3(1): 23-27.
10. Sahu RK, Roy A, Kushwah P, Sahu A. Formulation and development of face cream containing natural products. *Research Journal of Topical and Cosmetic Science*. 2012; 3(1): 16-19.
11. Sharma P, Jha AB, Dubey RS, Pessarakli M. Reactive oxygen species, oxidative damage, and antioxidative defense mechanism in plants under stressful conditions. *Journal of Botany*. 2012; 2012: 1-12.
12. Wang BS, Juang LJ, Yang JJ, Chen LY, Tai HM, Huang MH. Antioxidant and antityrosinase activity of *Flemingia macrophylla* and *Glycine tomentella* roots. *Evidence- Based Complementary and Alternative Medicine*. 2012; 1- 7.
13. Akhtar N, Mehmood A, Khan BA, Mahmood T, Khan HMS, Saeed T. Exploring cucumber extract for skin rejuvenation. *African Journal of Biotechnology*. 2011;10(7):1206- 1216.14. Akhtar N, Khan HMS, Iqbal A, Khan BA, Bashir S. *Glycyrrhiza glabra* extract cream: effects on

skin pigment melanin. International Conference on Bioscience, Biochemistry and Bioinformatics. 2011; 5: 434-439.

14. Akhtar N, Khan HMS, Iqbal A, Khan BA, Bashir S. Formulation development and moisturising effects of a topical cream of Aloe vera Extract. World Academy of Science, Engineering and Technology. 2011; 51.

15. AlamN, Yoon KN, Lee TS. Evaluation of the antioxidant and antityrosinase activities of three extracts from *Pleurotus nebrodensis* fruiting bodies. African Journal of Biotechnology. 2011; 10(11): 2978-2986.

16. Balakrishnan KP, Duraisamy A, Rohini S, Narayanaswamy N. Antityrosinase & antioxidant activity of various part of *Mimusops elengi*. Int. J. Res. Cosmetic. Sci. 2011;1(1): 17-22.

17. Kaur CD, Saraf S. Photo chemoprotective activity of alcoholic extract of *Camellia sinensis*. International Journal of Pharmacology. 2011; 7: 400-404.

18. Kaur CD, Saraf S. Photoprotective herbal extract loaded nano vesicular creams inhibiting ultraviolet radiations induced photoaging. International Journal of Drug Delivery. 2011; 3: 699-711.

19. Kotta KK, Sasikanth K, Sabareesh M, Dorababu N. Formulation and evaluation of diacerein cream. Asian J. Pharm. Clin. Res. 2011; 4(2): 93-98.

20. Narayanaswamy N, Duraisamy A, Balakrishnan KP. Screening of some medicinal plants for their antityrosinase and antioxidant activities. Int. J. Pharm. Tech. Res. 2011; 3(2): 1107- 1112.

21. Rajvanshi A, Sharma S, Khokra SL, Sahu RK, Jangde R. Formulation and evaluation of *Cyperus rotundus* and *Cucumis sativus* based herbal face cream. Pharmacology online. 2011; 2:1238-1244.

22. Sachdeva M, Kharya MD, Ahmed A, Katyal T. Photoprotective effects of hydro alcohol *Tagetes Erectus* extract against UV-induced oxidative damage in mice. Tropical Journal of Pharmaceutical Research. 2011; 10 (6): 747-753.

23. Sahu AN, Jha S, DubeySD. Formulation & evaluation of Curcuminoid based herbal face cream. Indo-Global Journal of Pharmaceutical Sciences. 2011; 1(1): 77-84.

24. Sariri R, Sabbaghzadeh R, Poumohamad F. In-vitro antioxidant and anti-tyrosinase activity of methanol extracts from *Crocus sativus* flowers. Pharmacology online. 2011; 3: 1- 11.

25. Singh M, Sharma S, Khokra SL, Sahu RK, Jangde R. Preparation and evaluation of herbal cosmetic cream. Pharmacology online. 2011; 2: 1258-1264.

26. Abbasi MA, Kausar A, Aziz-ur-Rehman, Saleem H, Jahangir SM, Sabahat Zahra Siddiqui SZ, Ahmad VU. Preparation of new formulations of anti-acne creams and their efficacy. African Journal of Pharmacy and Pharmacology. 2010; 4(6): 298-303.

27. Caetano PJ. Topical cosmetic skin lightening compositions and methods of use thereof. EP 2219600 A1. Aug. 25, 2010.

28. Das KK, Dang R, Machale MU. Formulation and evaluation of a novel herbal gel of stevia extract. Iranian Journal of Dermatology. 2010; 12: 4.

29. Kale S, Sonawane A, Ansari A, Ghoghe P, Waje A. Formulation and invitro determination of sun protection factor of *Ocimum basilicum*, linn. leaf oils sunscreen cream. Int. J. Pharm. Sci. 2010; 2(4): 147-149.