Formulation And Evaluation of Herbal Facepack from Natural Ingredients

Mr. Abhay A. Narwade[1], Mr. Rakesh Thamke[2], Dr. Kavita Kulkarni[3]
[1]*Student, Shri Sai Institute of Pharmacy, Aurangabad*
[2]*Assistant Professor, Shri Sai Institute of Pharmacy, Aurangabad*
[3]*Principal, Shri Sai Institute of Pharmacy, Aurangabad*

Abstract*—Herbal facepacks have gained significant attention in recent years due to their safety, skin-friendly nature, and effectiveness in enhancing skin health without the adverse effects associated with synthetic cosmetic formulations. The present study focuses on the formulation and evaluation of an herbal facepack using natural ingredients selected for their traditional therapeutic value, dermatological benefits, and synergistic activity. Ingredients such as Multani mitti (Fuller's earth), Turmeric, Neem powder, Sandalwood powder, orange peel powder, Aloe vera gel, and Rose water were chosen for their roles in oil absorption, antimicrobial action, exfoliation, skin brightening, and hydration. The facepack was prepared using the dry mixing and trituration method, ensuring uniform blending and stability. The formulated herbal facepack was evaluated for organoleptic properties (colour, odour, texture), physicochemical parameters (pH, spreadability, washability), particle size, moisture content, and stability studies under accelerated conditions. Microbial load testing was conducted to confirm the safety and shelf stability of the formulation. Results indicated that the formulated facepack exhibited desirable cosmetic characteristics, an acceptable skin-compatible pH, smooth texture, excellent spreadability, and easy washability. No signs of irritation or adverse reactions were observed during patch testing on human volunteers. Stability studies confirmed that the formulation remained physically and chemically stable without any significant changes. Overall, this study demonstrates that the herbal facepack developed from natural ingredients is safe, stable, and effective for routine skincare, offering a promising alternative to commercial synthetic products. The use of natural, locally available ingredients also promotes sustainability and cost-effectiveness, making the herbal facepack suitable for large-scale preparation in the cosmetic and pharmaceutical industry

***Index Terms*—Herbal Facepack, Natural Ingredients, Skin Care Formulation, Physicochemical Evaluation, In vitro and In vivo Studies, Antimicrobial Activity, Stability Studies, Cosmetic Herbal Preparations.**

I. INTRODUCTION:

In recent years, there has been a growing trend towards natural and herbal products in the cosmetic industry, driven by a heightened awareness of the potential adverse effects of sic chemicals on the skin and a preference for sustainable and eco-friendly alternatives. Among these natural products, herbal face packs have gained significant popularity due to their perceived effectiveness in improving skin health and radiance. Herbal face packs, often composed of various natural ingredients such as herbs, fruits, clays, and essential oils, have been used for centuries in traditional medicine and skincare practices across different cultures. These formulations are believed to offer a plethora of benefits, including moisturization, exfoliation, acne reduction, skin tightening, and anti-aging effects, among others. The formulation of herbal face packs involves careful selection and combination of ingredients to harness their individual properties synergistically. Each ingredient contributes unique bioactive compounds, vitamins, minerals, and antioxidants that can nourish and rejuvenate the skin. Furthermore, these formulations are often devoid of harsh chemicals, making them suitable for individuals with sensitive skin or those seeking natural alternatives to commercial skincare products. Despite the widespread use of herbal face packs, there is a notable dearth of scientific research validating their efficacy and safety. Many formulations lack standardized preparation methods, and there is limited understanding of the mechanisms underlying their

purported benefits. Therefore, there is a pressing need for systematic studies to evaluate the effectiveness, safety, and potential mechanisms of action of herbal face packs. This study aims to address this gap by formulating a herbal face pack using natural ingredients and evaluating its efficacy through comprehensive in vitro and in vivo experiments. By elucidating the effects of the herbal face pack on various skin parameters, such as hydration, elasticity, sebum production, and collagen synthesis, this research seeks to provide valuable insights into its potential as a skincare product.

II. DESCRIPTION OF DRUG PROFILE:

1. Fuller's earth: It is a type of calcium bentonite, that eliminates all impurities and dead skin cells. Multani Mitti is excellent for inflamed and irritated skin and helps brighten the skin. Its cooling effects calm the skin and reduce irritation brought on by aggravated pitta. The accumulated pollutants and dead skin cells are removed, leaving the skin clean, clear, and glowing.

Fig. 1: Fuller's Earth.

2. Rubia Cordifolia: Rubia Cordifolia is a renowned herb for skin treatment. It improves the gloss and luminosity of the skin and aids in the removal of acne, freckles, and discoloration when applied externally and internally.

Fig.Rubia Cordifolia

3. Curuma longa: Curuma longa possesses anti-allergic and anti-inflammatory qualities. It possesses the best blood purifier, which makes it efficient against all ailments brought on by blood impurities as well as healing wounds. Haridra rejuvenates the skin and is a skin rejuvenator. It delays ageing symptoms like wrinkles. Fig. 3: Curuma longa.

Fig. 3: Curcuma longa

4. Santalum album: Red sandalwood powder, or Ramachandran, is useful for treating skin allergies. Laksa Chandan powder protects the skin from the effects of environmental pollution and keeps it cool, beautiful, and healthy thanks to its cooling and soothing action. An effective Ayurvedic plant with antibacterial qualities, sandalwood is used to treat a number of skin conditions as well as scar removal. Fig. 4: Santalum album.

Fig. 4: Santalum album.

5. Symplocosracemosa: Sanskrit for "firm body," the name Lodhra means "firm body." Ludhera nourishes the skin and aids in the treatment of wrinkles, acne, and other skin related conditions. It evens out skin tone, lessens skin irritability, and aids in the treatment of acne, wrinkles, and other skin-related issues. Skin disorders that call for cleansing benefit with lodra.

Fig. 4: Symplocosracemosa

III. OBJECTIVE

Certainly, here's a breakdown of objectives for the topic "Formulation and Evaluation of Herbal Facepack from Natural Ingredients":

1. Identification of Natural Ingredients:

Objective: Identify and select natural ingredients with known skincare benefits, such as herbs, fruits, clays, and essential oils, for inclusion in the herbal face pack formulation.

2. Formulation Development:

Objective: Develop a standardized formulation for the herbal face pack by combining selected natural ingredients in appropriate proportions to maximize synergistic effects and efficacy.

3. Physicochemical Characterization:

Objective: Characterize the physicochemical properties of the formulated herbal face pack, including pH, viscosity, texture, particle size distribution, and stability, to ensure quality and consistency.

4. In vitro Efficacy Studies:

Objective: Conduct in vitro studies to evaluate the efficacy of the herbal face pack formulation in various aspects of skincare, such as moisturization, exfoliation, antioxidant activity, anti- inflammatory properties, and inhibition of acne-causing bacteria.

5. In vivo Efficacy Studies:

Objective: Perform in vivo studies on human volunteers to assess the effects of the herbal face pack on skin parameters, including hydration levels, elasticity, sebum production, pigmentation, and wrinkle reduction.

6. Safety Assessment:

Objective: Conduct safety evaluations, including skin irritation tests, patch testing, and sensitization studies, to determine the safety profile of the herbal face pack formulation and identify any potential adverse reactions or irritations.

7. Comparative Analysis:

Objective: Compare the efficacy and safety of the herbal face pack formulation with commercially available synthetic skincare products through comparative analysis, highlighting the potential advantages of natural ingredients.

8. Optimization and Validation:

Objective: Optimize the formulation based on the results of efficacy, safety, and mechanistic studies, and validate the effectiveness and safety of the optimized herbal face pack formulation through rigorous testing and validation protocols.

9. Documentation and Dissemination:

Objective: Document the findings of the study comprehensively and disseminate the results through scientific publications, presentations at conferences, and educational materials to contribute to the body of knowledge on herbal skincare products and promote informed consumer choices.

IV. PLAN OF STUDY

1. Literature Review:
- Conduct a thorough review of existing literature on natural skincare ingredients, herbal formulations, and evaluation methods for face packs.

2. Ingredient Selection:
- Identify and select natural ingredients with proven skincare benefits, considering factors such as efficacy, safety, and compatibility.

3. Formulation Development:
- Develop a standardized formulation for the herbal face pack, optimizing ingredient ratios and preparation methods.

4. Physicochemical Characterization:
- Characterize the physicochemical properties of the formulated face pack, including pH, viscosity, texture, and stability.

5. In vitro Efficacy Studies:
- Assess the efficacy of the herbal face pack through in vitro studies on moisturization, exfoliation, antioxidant activity, and antimicrobial effects.

6. In vivo Efficacy Studies:
- Conduct in vivo studies on human volunteers to evaluate the effects of the face pack on skin hydration, elasticity, sebum production, and pigmentation.

7. Safety Assessment:
- Evaluate the safety profile of the face pack formulation through skin irritation tests, patch testing, and sensitization studies.

8. Mechanistic Studies:
- Investigate the underlying mechanisms of action of the face pack formulation through gene expression analysis, enzyme assays, and histological examinations.

9. Optimization and Validation:
- Optimize the formulation based on study results and validate its effectiveness and safety through rigorous testing and validation protocols.

10. Documentation and Dissemination:
- Document the findings of the study and disseminate results through scientific publications, conference presentations, and educational materials.

V. MATERIAL METHOD:

S.no.	Ingredients	Quantity of sample for 50 gm
1.	Calcium bentonite	15%
2.	Rubia cordifolia	10%
3.	Curuma longa	10%
4.	Santalum album	10%
5.	Symplocos racemosa	5%

Formulation steps
- Plant material gathering.
- Drying.
- Grinding up all plant materials.
- Sieving (mesh number 40).
- Weighing.
- Mixing.
- Airtight container storage. Evaluation of herbal face pack
- Organoleptic examination - The sensory metrics included the physical features of the face pack after washing as well as its appearance, color, fragrance, and texture.
- Physical evaluation - A microscope is used to measure particle size. Impact density, apparent density, funnel angle, Hausner ratio, Kerr index, and roughness tests were used to assess the flowability of dry powder in the bound state.

VI. CONCLUSION

I With the idea that they are safer and have fewer adverse effects than synthetic medications, natural medicines are becoming increasingly popular. The demand for herbal products is rising on the global market. The effort to make a herbal face pack using a variety of herbal powders is highly commendable. In this study, more optimisation research is required to determine the advantages of face packs for usage as cosmetics on people.

REFERENCES

[1] Rani SR, et al., “Drug delivery systems & Cosmetics & Herbal drug technology” Text book of Industrial pharmacy, Universities press (India) Ltd., 2002; 2(1): 248-253.

[2] Sowmya KV, et al., “Formulation & Evaluation of Poly-herbal Face wash gel” World J Pharm & Pharma Sci., 2015; 4(6): 585-588.

[3] Millikan L, et al., “Cosmetology, cosmetics, cosmeceuticals: definitions and regulations” Clinics in dermatology, 2001; 19(4): 371-374.

[4] Mithal B.M, et al., “A Hand book of cosmetics: MK Jain”, 2004; 2: 21-37.

[5] Saraf S, et al., “Cosmetics a practical manual” Pharmamed press, 2005; 2: 126-129. 7.

[6] Chanchal D, et al., “Herbal Photoprotective Formulations and their Evaluation” The Open Nat Prod Journal, 2009; 2(1): 71-76.

[7] Mendhekar SY, et al., “Formulation and Evaluation of Polyherbal Face Pack” W.J.P. Pharmaceutical Science, 2015; 5(3): 18-25.

[8] Amit A, et al., “A review on herbal face pack” Research journal of pharmacology and pharmacodynamics, 2022; 14(3): 146-150.

[9] Rashmi S.P, et al., “In-house preparation and standardisation of herbal face pack” The open dermatology journal, 2017; 11(2): 72-80.

[10] Sachin B.S, et al., “Formulation and evaluation of cosmetic herbal face pack for glowing skin” International journal of research in Ayurveda and pharmacy, 2017; 8(3): 199-203

[11] Ravi k, et al., “Formulation and evaluation of herbal face pack” Asian journal of pharmaceutical research, 2021; 11(1): 9-12.

[12] Ramakrishna S, et al., “Formulation and evaluation of herbal face pack” Journal of emerging technologies and innovative research, 2021; 8(12): 179-186.