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FORMULATION AND PHYSICOCHEMICAL EVALUATION OF POLYHERBAL FACE PACK WITH ANTIOXIDANT POTENTIAL

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ABSTRACT

The development and evaluation of of a polyherbal face pack with natural ingredients for the best possible skincare management is the main goal of the current study. Common skin conditions brought on by contemporary lifestyles and environmental factors include acne, pimples, dark bags under the eyes, and hastened ageing. Because they are safer, non-toxic, and have less side effects than synthetic alternatives, herbal cosmetics-especially face packs are growing in popularity. Turmeric (*Curcuma longa*), Multani mitti (calcium bentonite), sandalwood (*Santalum album*), saffron (*Crocus sativa*), milk powder, rice flour (*Oryza sativa*), orange peel (*Citrus sinensis*), and neem (*Azadirachta indica*) all of which are known to have skin-health benefits-were used in this study to formulate a herbal face pack. Organoleptic qualities, physicochemical traits, powder flow characteristics, irritancy, and stability of the final product were evaluated. The face pack looks amazing, has a soft velvet feel, and fragrances amazing. All skin types were determined to be compatible with the pH of 6.9, and the amounts of moisture content were within acceptable bounds. The formulation was free-flowing and non-sticky, according to rheological testing. It is safe for topical use because irritancy testing showed no redness, swelling, or irritation. Over the course of a month, stability tests at different temperatures showed no apparent modifications in texture, colour, or odour.

Overall, the formulated herbal face pack demonstrated exceptional stability, safety, and effectiveness, with advantages including improved skin appearance, nourishment, and cleaning. According to the study, the proposed herbal face pack has promise commercial and therapeutic applications and can be a safe, affordable, and effective substitute for synthetic cosmetics.

Keywords: *Natural cosmetics, skin care, polyherbal formulation, herbal face pack, Physicochemical evaluation.*

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1. INTRODUCTION

The biggest organ in the human body, the skin, acts as the main defence against external aggressors such as chemical pollutants, UV radiation, and pathogens. Additionally, it is essential for sensing, thermoregulation, and homeostasis maintenance. Many people believe that having clear, healthy, and glowing skin is a sign of general health and well-being. However, typical dermatological disorders, including acne,

blackheads, pimples, dark circles under the eyes, and hyperpigmentation, have become much more widespread in recent years. Hormonal imbalance, stress, poor eating habits, pollution in the environment, and sedentary lifestyles are all frequently linked to these disorders [1,2].

According to a traditional viewpoint, especially in Ayurveda, the accumulation of metabolic poisons (ama) in the body and dosha imbalances (Vata, Pitta, and Kapha) are the causes of skin problems. These imbalances may cause inflammation, dullness, and other dermatological symptoms by interfering with normal skin physiology. Ayurvedic methods place a strong emphasis on holistic care through dietary control, lifestyle changes, and the application of herbal remedies to cleanse the body and re-establish equilibrium. Mukha lepa, which applies

herbal pastes topically to the face to treat pigmentation, scars, and acne, is one such traditional technique [6].

Cosmetics are described as materials or mixtures meant to be applied to the body's exterior in order to cleanse, beautify, enhance attractiveness, or change appearance without interfering with the skin's natural physiological processes. These products are frequently used to improve the look of the skin and treat minor dermatological issues since they mainly affect the epidermis, the skin's outermost layer [3]. Synthetic chemicals used in the formulation of conventional cosmetics may produce quick benefits, but continuous usage of these products can occasionally result in negative side effects such skin irritation, allergic responses, and disruption of the natural skin barrier [4].

Herbal cosmetics, which are made with natural substances obtained from plants and other biological sources, are becoming more popular as a reaction to these worries. Phytochemicals including flavonoids, tannins, alkaloids, vitamins, and essential oils that have antioxidant, anti-inflammatory, antibacterial, and skin-soothing qualities are enhanced in herbal cosmetics. Compared to their synthetic equivalents, these natural formulations are typically thought to be safer, more biocompatible, and ecologically sustainable. Herbal cosmetics are becoming more and more popular due to customer knowledge of the possible negative effects of synthetic components and the need for eco-friendly goods [5]. Face packs are among the most conventional and popular skincare remedies among many herbal cosmetic formulas. Usually made of natural components, a face pack is a semi-solid paste or fine powder that is applied to the skin of the face, allowed to dry, and then removed. This procedure creates a thin layer on the skin's surface that helps cleanse, tighten, and rejuvenate the skin [7]. Applying face packs improves blood flow to the face, encourages the elimination of extra oil, debris, and dead skin cells, and has a calming and cooling effect. Frequent use of face packs enhances the overall look, suppleness, and texture of the skin [8].

Plant-based substances chosen for their medicinal qualities are especially used in the formulation of herbal face packs. Herbs having antibacterial activity to fight acne-causing microbes, antioxidants to counteract free radicals, and astringents to tighten the skin and minimise pore size are some examples of these compositions [9]. Furthermore, moisturising and nourishing elements help keep skin hydrated and avoid dryness. The formulation's overall efficacy is increased by the synergistic action of many herbal components, making it appropriate for a range of skin types and problems [10].

Herbal face packs work by delivering bioactive chemicals to the skin's outer layers, exfoliating dead skin cells, and adsorbing pollutants, among other mechanisms. The face pack's drying process causes a little contraction of the skin after application, which improves skin firmness and increases blood flow. Additionally, removing the dried pack helps clear clogged pores and minimise sebum buildup, which lessens the likelihood of acne and associated disorder [11,12]. All of these activities help to enhance complexion and rejuvenate the skin. Careful component selection and optimisation depending on the intended use and skin type are necessary to create an effective herbal face pack. For example, astringent and oil-

absorbing substances may be included in oily skin formulations, whilst moisturising compounds like natural oils and butters may be used in dry skin formulations. In a similar vein, formulas for sensitive skin should include calming and gentle ingredients to avoid irritation [13,14]. Because of their antioxidant qualities and function in supporting skin health, vitamins like vitamin C and vitamin E are frequently incorporated in these formulations.

Herbal face packs not only have medicinal effects but also support sustainable development and green chemistry. These formulations are ecologically friendly because they contain biodegradable chemicals, little processing, and renewable natural resources. In recent years, this feature has become increasingly important as customers seek for items that are safe for the environment and human health in addition to being effective [15].

All things considered, herbal face packs show promise in the world of cosmetic research by fusing ancient wisdom with cutting-edge formulation methods. They are a desirable substitute for synthetic cosmetics due to their capacity to offer several skin advantages with few adverse effects. In order to create skincare products that are safe, efficient, and easy for consumers to use, study into the creation and assessment of herbal face packs has grown in importance.

2. MATERIAL AND METHOD

The local market provided the ingredients necessary to make the polyherbal face pack. After the necessary components were cleaned, dried, and ground into a powder, the face pack was made. Below is a list of the particular materials that were utilised.

2.1 Turmeric

The dried rhizomes of the *Curcuma longa* plant, a member of the Zingiberaceae family, are used to make turmeric, commonly referred to as Haldi or Indian saffron. Curcumin I, Curcumin II, and Curcumin III are the primary active constituents in its about 5% curcuminoid content. Additionally, turmeric contains around 5% volatile oil, which is composed of compounds including alcohols, ketones, sesquiterpenes, and monoterpenes. Turmeric is widely used as a natural pain reliever and wound healer because of its complex phytochemical composition, which gives it a wide variety of therapeutic properties, including antibacterial, anti-inflammatory, antimicrobial, and antioxidant activity [16,17].

The usual application of turmeric is for skin revitalisation. In addition to having anti-inflammatory, antibacterial, and antimicrobial properties, it can postpone wrinkles. It is the most effective source of blood purifiers [18]. Because of its antiseptic and antibacterial properties, which fight acne and breakouts and bring back the young shine of your skin, it is helpful in treating acne. Additionally, the sebaceous glands produce less oil as a result [19].

2.2 Fuller's earth (*Multani mitti*)

Fuller's earth, sometimes referred to as bleaching clay, is a naturally occurring mineral mostly composed of calcium bentonite. Hydrated aluminium silicates, magnesium chloride, and other elements that resemble bentonite clay make up the majority of its composition. Because of its high mineral content and excellent absorbent properties, Fuller's earth is frequently

utilised in cosmetics and medicinal applications. By eliminating pollutants and extra oil from the skin, it functions as a natural cleanser, assists in skin tightening, has moderate moisturising properties, and is an excellent antibacterial.

Calcium, salt, magnesium, and bentonite all of which are extremely absorbent and good for the skin are found in what is commonly referred to as multani mitti. It improves the look of the skin in a number of ways, including eliminating whiteheads and blackheads, fading freckles, shrinking pores, minimising acne and imperfections, and making the face appear radiant. Additionally, Fuller's earth powder washes the skin, relieves sunburns, and increases blood circulation. Additionally, multani mitti has anti-inflammatory properties. Because it contains healthy nutrients, it reduces pore size, eliminates blackheads and whiteheads, fades freckles, relieves sunburns, cleanses skin, increases blood circulation, improves complexion, minimises acne and blemishes, and gives skin a radiant appearance. Multani mitti contains a lot of magnesium chloride [20].

2.3 Sandalwood

Lignum Santali, another name for yellow sandalwood, is a member of the Santalaceae family and comes from the heartwood of the stem and roots of *Santalum album*. About 90–97% of it is made up of sesquiterpene alcohols, primarily santalol, with the remaining 2–5% being volatile oil. Alpha-santalol and beta-santalol are the two isomers of santalol, along with other components like alpha- and beta-santalene. Because of its chemical makeup, sandalwood has several medicinal benefits, such as anti-aging properties, soothing effects, and digestive support.

It is used on oily skin to eliminate black patches. Sandalwood has anti-aging and anti-tanning properties [21]. Additionally, it helps the skin in many ways, such as toning, acting as an emollient, having antimicrobial capabilities, having a cooling astringent impact, and having calming and restorative effects [22]. α -santalol and β -santalol make up the majority of it. Rich in antioxidants and possessing antibacterial qualities, sandalwood oil and powder aid in preserving the integrity of skin cell structure [23].

2.4 Saffron

Saffron, sometimes referred to as *Crocus*, Spanish saffron, or French saffron, is a member of the Iridaceae family and is made from the dried stigma and style tips of *Crocus sativa*. Its main colouring ingredient is crocin, which hydrolyses to produce digentiobiose and the carotenoid pigment crocetin. It also includes 1.3% volatile oil in addition to fixed oil and wax.

Crocetin esters, gentiobiose, α - and γ -carotenes, lycopene, zeaxanthin, crocin-1, crocin-2, crocin-3, crocin-4, and mono- and digentiobiosyl and glucosyl esters of crocetin, as well as β -sitosterol, ursolic, oleanolic, palmitoleic, oleic, linoleic, and linolenic acids, are among the many carotenoid compounds found in saffron. Saffron has a wide range of pharmacological properties due to its diverse phytochemical composition. It is traditionally used as a colouring, flavouring, and spice agent; it also functions as a stimulant, stomachic, tonic, aphrodisiac, emmenagogue, sedative, and spasmolytic agent. It is also used to treat fever, cold, melancholia, liver enlargement, and catarrhal conditions [24].

2.5 Milk Powder

Because it nourishes dry, rough skin for a long time, it is very beneficial to the skin. Whether it is powdered or made from raw milk, milk cream leaves the skin looking radiant. This leaves the skin appearing flawless, glossy, and youthful while also deeply hydrating the face. It bleaches the skin to get rid of acne, pigmentation, and dark spots. Additionally, this pack naturally gets rid of whiteheads, blackheads, and other skin imperfections. The sun tan is lessened with the help of this face pack [25]. The best remedy for smooth skin is milk powder since it includes lactic corrosive, which refines the skin. It is essentially the strong component that remains after the water is extracted from milk. It is quite strong and successful in giving you vibrant skin. Using milk powder on your skin might act as a chemical to unclog pores. Because there is no water blend, milk powder is strong and perfect for the skin [26-28].

2.6 Rice Flour

Because of its positive effects on skin health, rice, which is derived from *Oryza sativa*, is frequently used in skincare products like face packs. By tightening and firming the skin while preserving its suppleness, a rice-based face pack helps to minimise outward indications of ageing. Rich in vital nutrients, rice flour improves the skin's general texture, nourishes it, and gives it a more radiant, soft appearance. Additionally, it is crucial for maintaining oil balance, which is very advantageous for skin health. Para-aminobenzoic acid, another ingredient in rice flour, adds to its inherent sunscreen qualities by shielding the skin from damaging UV ray [29,30].

2.7 Orange Peel Powder

Citrus sinensis, a member of the Rutaceae family, produces orange cortex, sometimes referred to as Seville orange, from the fresh and dried outer portion of its pericarp. It includes important flavonoid components such as naringin, a flavanone glycoside, and hesperidin isomer (neohesperidin). Orange peel is used extensively for its therapeutic properties as a carminative and stimulant, as well as a natural flavouring ingredient in a range of pharmaceutical and culinary items, due to its aromatic and bioactive content. Orange peel extract is used to make it, and it is then ground into a powder. This powder contains many antioxidants and a high concentration of vitamin C. Vitamin C shields the skin from UV-induced oxidative stress and damage from free radicals. It also offers an instant glow, acts as a skin lightening agent, inhibits acne, pimples, and wrinkles, and reduces the symptoms of aging and sun tanning. Orange peel powder also contains calcium, potassium, and magnesium, all of which are beneficial elements. Additionally, it has cellulose, hemicellulose, and pectin, which support skin hydration and aid in the development of skin cells [31-33]. Additionally, orange peel extract helps cure acne, clear clogged pores, and get rid of blackheads. Citric acid, which acts as an exfoliant, is included in it. Vitamins and other essential ingredients that are good for skin health are provided by natural face pack [34,35]. The calcium in orange peel powder is sufficient to rebuild and heal skin. It is known that orange peel powder controls the production of sebum, which aids in the removal of extra oil from the skin. Orange peel powder's anti-inflammatory properties shield your skin from sun damage, which is only one

of its numerous advantages. Orange peel powder contributes to firmer, more elastic skin. Additionally, it promotes the production of collagen, reversing the signs of ageing [36].

2.8 Neem

The fresh or dried leaves of *Azadirachta indica*, a member of the Meliaceae family, are used to make neem, also called *Melia Azadirachta*. The bioactive compounds in the leaves include nimbin, nimbanene, 6-desacetylnimbinene, nimbandiol, nimbolide, ascorbic acid, n-hexacosanol, various amino acids, 7-desacetyl-7-benzoylazadiradione, benzoylgedunin, 17-desacetyl-7-hydroxyazadiradione, and nimbiol. Neem is frequently utilised for its antifungal, antibacterial, antiviral, sedative, and contraceptive properties due to its extensive phytochemical profile. They have medicinal, anti-inflammatory, antioxidant, and antibacterial properties. Fatty acids, vitamins, and minerals included in this wonderful plant are vital for healthy skin and hair. It has potent compounds including azadirachtin, nimbolide, and nimbidin that have amazing therapeutic properties and may help you get rid of any skin or hair issue. The antibacterial properties of neem aid in the treatment of acne. As a medicinal plant, neem is very well-liked. Acne-causing bacteria are frequently treated and prevented with neem leaves and extracts. Additionally, it is quite helpful in lowering the skin's production of oil [30].

Neem can help relieve irritated skin because of its antibacterial and anti-inflammatory qualities. Neem is helpful for reducing skin irritation since it has the benefit of providing a cooling feeling. Neem also relieves dry or dehydrated skin. Neem leaves are a powerful anti-aging treatment because they are rich in vitamin E, triglycerides that hydrate the skin, and antioxidants. They help make the skin tighter and more toned by removing wrinkles, fine lines, and dark spots. Neem oil can help remove blackheads and whiteheads from the skin, especially on the face, if used regularly. It serves as an exfoliant to remove impurities and tighten pores while also aiding in the reduction of large pores [31].

3. Method of Preparation: Formulation of Herbal Face Pack

All of the herbal powders used to formulate the face pack were meticulously weighed using a digital balance and properly mixed to ensure proper mixing. To get a fine and uniform composition, the powders were combined and triturated. After that, this homogenous powder was run through sieve number 120# to guarantee a smooth texture and consistent particle size. The created face pack powder was labelled correctly, securely packed into a self-sealing polyethylene bag, and stored for further study [32]. The exact formulation composition is displayed in Table 01.

Table 01: Composition of herbal face pack Formulation

S. No	Ingredients	Ingredients (Scientific Name)	Quantity % of sample for 100g
1.	Turmeric	Curuma longa	16
2.	Multani mitti	Calcium bentonite	14
3.	Sandal wood	Santalum alba	15
4.	Saffron	Crocus sativa	15

5.	Milk Powder	-	10
6.	Rice flour	Oryza sativa	10
7.	Orange Peel	Citrus sinensis	10
8.	Neem	Azadirachta indica	10

Apply the face pack to a clean, slightly damp face for optimal absorption and effectiveness. Appropriate liquids can be added to the paste based on the kind of skin: raw milk or rose water is better for dry skin, while potato or lemon juice can be used for oily skin. The optimum consistency should be achieved by combining the ingredients into a paste, which should then be spread evenly over the face with a brush, being careful not to get any near the eyes. For it to completely dry, it should be kept undisturbed for 15 to 20 minutes. Use a damp sponge or warm water to carefully remove the face pack once it has dried, leaving your skin feeling refreshed and nourished.

4. RESULTS & DISCUSSION

The prepared face pack's quality, efficacy, and overall performance were assessed using a number of criteria. The next part provides a detailed discussion of the evaluations' findings.

4.1 Morphological Evaluation

The herbal face pack was tested for the organoleptic characteristics shown in the table. 02. The final mixture was brown. For cosmetic compositions, the resulting combination must have a pleasant and satisfying odour.

Table 02: Represents the prepared herbal face pack's organoleptic evaluation characteristics.

S. No	Parameter	Observation
1.	Colour	Pale yellow
2.	Odour	Pleasant
3.	Appearance	Smooth, Fine
4.	Texture	Fine
5.	Smoothness	Smooth

4.2 Physicochemical Evaluation

The physicochemical properties of the herbal face pack were assessed, and Table 03 displays the findings. The formulation's pH of 6.9 indicates that it is almost neutral and appropriate for all skin types. The moisture content was within permissible bounds, indicating that the formulation's hygroscopicity was under control. The preparation's purity and quality were further confirmed by the extractive and ash values, which were determined to be within the allowed ranges. All things considered, these findings show that the formulation satisfies the necessary requirements for stability, safety, and successful cosmetic application.

Table 03: Shows the prepared herbal face pack's physicochemical evaluation characteristics.

S. No	Parameter	Observation
1.	Moisture Content	6.50%
2.	pH	6.9
3.	Total Ash	1.05%

4.3 Physical Evaluation

The results of the evaluation of the powder qualities of the herbal face pack are shown in Table 4. The rheological results showed that the formulation had good flow properties since it was non-sticky and free-flowing. These findings attest to the powder's appropriate handling and application qualities. Overall, the findings show that the formulation satisfies the

required quality standards and is stable and consistent in every way.

Table 04: Shows the prepared herbal face pack's powder property assessment characteristics.

S. No	Parameter	Observation
1.	Particle Size	23.66
2.	Angle of repose	33°
3.	Bulk density	0.42g/ml
4.	Tapped density	0.57g/ml
5.	Hausner's ratio	1.25
6.	Carr's index	22.31%

4.4 Irritancy Test

An irritancy test was carried out on the prepared herbal face pack; the results are shown in Table 5. During the trial, the formulation did not exhibit any indications of irritation, redness, oedema, or puffiness, suggesting that topical use is safe. All irritancy test criteria, including photo-irritancy, showed negative findings, indicating that the formulation was well-suited to the skin. This might be explained by the use of natural herbal substances free of dangerous chemical additions, which are safe for frequent use and well-tolerated by skin proteins.

Table 05: Represents the prepared herbal face pack's irritancy test evaluation standards.

S. No	Parameter	Observation
1.	Irritation	No
2.	Redness	No
3.	Swelling	No
4.	Photo irritation	No irritation

4.5 Stability Studies

Stability tests were conducted on the produced herbal face pack; the findings are shown in Table 6. Over the course of the trial, no appreciable changes in colour, odour, texture, or smoothness were noted, suggesting that the formulation was stable. The face pack's inert nature and appropriateness for storage and usage were confirmed by stability tests carried out at various temperatures over the course of a month, which showed that the face pack's look and physical attributes remained intact.

Table 06: The stability research characteristics for the prepared herbal face pack.

S. No	Parameter	Room Temperature	40°C Temp.
1	Colour	No change	No change
2	Odour	No change	No change
3	Texture	Fine	Fine
4	Smoothness	Smooth	Smooth

5. DISCUSSION

The many skincare advantages of herbal face packs have been thoroughly studied. These products are designed to maintain skin suppleness, strengthen muscles, enhance blood circulation, and efficiently eliminate pollutants from skin pores. Additionally, they are believed to nourish the skin, reduce wrinkles, dark circles, acne, and pimples, and ultimately enhance the skin's smoothness and brightness [33]. Because

natural ingredients have been shown to be effective, one of the unique qualities of herbal cosmetics, including face packs, is their non-toxicity, which lessens adverse responses. Because of this characteristic, they are a well-liked substitute for customers looking for skincare products with a decreased chance of adverse effects [34]. Herbal face packs are prepared and evaluated to meet certain skincare objectives, such as enhancing blood flow, skin renewal, preserving suppleness, and thorough pore cleaning [35,36]. Additionally, these products are designed to meet certain skincare requirements, with formulae tailored to different skin types and age groups that include moisturising, cleansing, toning, and rejuvenating qualities.

Organoleptic, rheological, physiochemical, irritancy, and stability parameters are all thoroughly assessed throughout the assessment process for herbal face packs. Desired characteristics, such as a lack of skin irritation and constant effectiveness even under stable storage circumstances, have frequently been demonstrated by the results of these tests. By highlighting the necessity of using easily accessible resources to create products with superior attributes, this work makes a substantial contribution to the area of natural and effective cosmetic formulations. The developed herbal face pack's proven efficacy positions it as a dependable and approachable cosmetic option appropriate for a range of skin types. The positive characteristics found in this study have the potential to enhance skincare routines, support skin health, and boost overall visual appeal.

6. CONCLUSION

Rose petal powder, Multani mitti, orange peel powder, neem powder, chandan powder, turmeric, and nutmeg powder are among the natural ingredients used in the present study's effective formulation and testing of a herbal face pack. The formulation showed acceptable flow and stability under different storage conditions, along with suitable physicochemical and organoleptic characteristics. Since no irritation or negative reactions were seen, the irritancy tests demonstrated that the face pack is appropriate for topical application. Its non-toxic and skin-friendly qualities are enhanced by the use of natural ingredients, making it suitable for regular use. Overall, the prepared herbal face pack had positive effects on skin health, providing nourishment, cleaning, and a glowing look. Therefore, it might be considered a safe, economical, and efficient substitute for. Consequently, it might be considered a safe, economical, and effective substitute for synthetic cosmetics, with potential commercial and therapeutic uses.

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8. CONFLICT OF INTEREST

There is no conflict of interest disclosed by the writers.

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10. REFERENCES

- Jain S. Design, Optimization, and Characterization of Herbal Face Pack. Asian Journal of Pharmaceutics (AJP). 2022 Mar 15;16(1).
- Rai AK, Rathore M, Gupta M, Yadav N, Singh V. Network pharmacology and molecular docking approaches for herbal formulations: mechanistic insights, therapeutic applications, and translational perspectives. International Journal of Pharma and Biosciences. 2026 Feb 25;24-33.
- Banerjee PK. Skin cosmetics. Indian J Dermatol. 1988; 33(1):9-12.
- Ashawat M, Banchhor M, Saraf S, Saraf S. Herbal Cosmetics:" Trends in Skin Care Formulation". Pharmacognosy Reviews. 2009;3(5):82.
- Yandamuri A, Navuduri SJ. Formulation and evaluation of herbal body lotion using aloe barbadensis miller. Learnovate-International. 2025 Oct 2:15-21.
- Mithal BM, Saha RN. A handbook of cosmetics. Vallabh Prakashan, New Delhi. 2000;141:110-2.
- Saraf S, Saraf S. Cosmetics: A practical manual. PharmaMed Press; 2008.
- Lalitha K, Rao PS. Development and evaluation of anti-microbial herbal gel formulation containing majorana hortensis and curcuma longa extracts. Indo American Journal of Pharmaceutical Sciences. 2018 May 1;5(5):3765-71.
- Shraddha M, Devshree G, Abhilasha T, GN D. Formulation and Evaluation of Herbo-Mineral Facial Scrub. Journal of Drug Delivery & Therapeutics. 2020 May 1;10(3):195-7.
- Gavhane Ritu R, Sagar T. Formulation and Evaluation of Polyherbal Facial Scrub. Int J Adv Res Sci Commun Technol. 2022;7(11):773-8.
- Mutyala S. Review article on formulation and evaluation of polyherbal antibacterial soap. Learnovate-International. 2025 Dec 25:43-5.
- Sandanshiv SY, Patil SR, Wagh VD, Shinde PA, Mali RP. Formulation and evaluation of herbal face pack. J Drug Deliv Ther. 2023 Mar 1;13(3):120-4.
- Kumar R. Formulation and evaluation of herbal face pack. Asian Journal of Pharmaceutical Research. 2021 Mar 1;11(1).
- Joshi LS, Pawar HA. Herbal cosmetics and cosmeceuticals: An overview. Nat Prod Chem Res. 2015 Feb 16;3(2):170.
- Pandure T, Pawar M, Rajput V, Pawar S, Wani G, Shaikh A. FORMULATION AND EVALUATION OF HERBAL FACE PACK.
- Asnotikar G, Shetty AS, Nayak R, VK S. Development, Standardization and Microbiological appraisal of Herbal Dentifrice prepared from Achyranthes aspera Linn.(Apamarga) leaves. World Journal of Current Medical and Pharmaceutical Research. 2022 Nov 2:131-8.
- Misra DS, Debidas Ghosh DG, Rajkumar Maiti RM. Attenuation of swimming-induced oxidative stress by composite herbal supplement on antioxidative parameters in male rat.
- Singh S, Maury S. FORMULATION AND EVALUATION OF HERBAL FACE PACK FOR ACNE PRONE SKIN.
- Kumar A, Ahlawat S, Kumari S, Bhatia L. FORMULATION AND EVALUATION OF TURMERIC HERBAL FACE PACK.
- Whang JK, Shim JS, Gwon SH, Kwon YY, Oh HI, Han YS, Choi EJ, inventors; Biocare Co Ltd, assignee. Novel use of Panduratin derivatives or extract of Kaempferia pandurata comprising the same. 2009 Apr 23.
- Naresh G, Swetha P, Shilpa G. Formulation and evaluation of face pack containing oats and other natural ingredients. Int J Chem Pharm Sci. 2013;1(1):28-34.
- Nemade CT, Baste N. Formulation and evaluation of a herbal facial scrub. World J Pharm Res. 2014 Apr;3(3):4367-71.
- Mendhekar SY, Sonawane PS, Kale RB, Jadhav SL, Gaikwad DD. Formulation and Evaluation of Polyherbal Facepack. World Journal of Pharmacy and Pharmaceutical Science. 2017;6(12):13781387.
- Pal RS, Pal Y, Wal P. In-house preparation and standardization of herbal face pack. The Open Dermatology Journal. 2017 Oct 31;11(1).
- Gopikrishna UV, Prarthan KN, Subrahmanya Pradeep P, Kavyashree S, AR S. Formulation and evaluation of herbal face pack for healthy skincare. International Journal of Current Research in Physiology and Pharmacology. 2024 Mar 11;8(1):10-24.
- Sundriyal A, Syan J, Bhatt B, Bahuguna Y, Tailor CS. Herbal cosmetics: a review on herbal face pack. Indian Journal of Natural Sciences. 2022;13(75):49996-50004.
- Kumar R. Formulation and evaluation of herbal face pack. Asian Journal of Pharmaceutical Research. 2021 Mar 1;11(1).
- Gavhane RR, Tambe S. Formulation and evaluation of polyherbal facial scrub. Int J Adv Res Sci Commun Technol. 2022;7(11):773-8.
- Chaudhari KA. A review paper on formulation and evaluation of herbal face pack. International Research Journal of Modernization in Engineering Technology and Science. 2023;5(5):7430-4.
- Neware PR, Rahangdale RS, Patle OD, Suryavanshi MM, Donode PS, Sirsat NS. Formulation and Evaluation of Herbal Face Pack for ACNE-Prone Skin and Dull Skin. International Journal of Food and Nutritional Sciences. 2022;1(5):32-9.
- Ashawat M, Banchhor M, Saraf S, Saraf S. Herbal Cosmetics:" Trends in Skin Care Formulation". Pharmacognosy Reviews. 2009;3(5):82.
- Arct J, Ratz-Łyko A, Mieloch M, Witulska M. Evaluation of skin colouring properties of curcuma longa extract. Indian journal of pharmaceutical sciences. 2014 Jul;76(4):374.
- Bhutkar MK, Shah MM. Formulation and evolution of herbal antibacterial face pack. Journal of Emerging Technologies and Innovative Research. 2019 May;6(5):77-82.
- Himaja N, Ashok Kumar A, Bhart Kumar B. Preparation and evaluation of poly herbal fruit face mask. Journal of Research in Pharmaceutical Science. 2015;2(11):07-13.
- Kumar S. Medicinal plants in skin care.
- Shukla A, Kothari P, Shukla A, Yadav CR. An Ayurvedic outlook to mukhalepa (face pack) for beauty care. Global Journal of Research on Medicinal Plants & Indigenous Medicine. 2016 Jun 1;5(6):194.