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FORMULATION AND EVALUATION OF HERBAL FACE PACK

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ABSTRACT

The demand for herbal cosmetics is rising on the international market. The purpose of the current effort is to prepare and evaluate a herbal face pack for skin utilising a variety of natural powders. Shade-dried commercial date powder, bael fruit powder, sandalwood powder, liquorice powder, honey powder, and lemon powder are among the natural powders utilised. All of the powdered natural ingredients were purchased from a local market in the form of dried powder. They were then accurately weighed, mixed geometrically for uniform preparation, and evaluated for parameters such as organoleptic, physical, Physicochemical, phytochemical constituents, irritancy, as well as stability studies. As a result, we developed a herbal face pack in this study using components that were easily available. After evaluation, we found good flow characteristics, no skin irritants and stable storage conditions. Result of this study provided scientific confirmation that herbal face packs have the capacity to effectively reduce skin ageing. These compositions produce positive results and promote skin health without having any negative side effects.

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INTRODUCTION

Since from ancient era of time, people are known about use of plants for the healthy, beautiful and nourish to the skin by the use herbal medicines[1].Cosmetics are exterior preparations for colouring, softening, cleansing, nourishing, waving, setting, mollification, preservation, removal, and protection of external body parts such as nails, skin, and hair[2]. Face skin is the measure part of the body,which indicate health of individual[3]. Face pack is made up of substances such as amino acids, lipids, and carbs. As a result, for the skin to remain clear, shiny, and healthy, it requires a well-balanced diet. The herbal paste is known as "mukhalepa" in Ayurveda and is used as a face therapeutic. This herbalpaste is used to treat acne, pimples, scars, markings, and pigmentation on the face. Face packs are essentially supplements that provide additional advantages. For different kinds of skin, different herbal face packs are employed. Wrinkles, pimples, acne, and dark circles can all be reduced with herbal face packs. Increase the skin's fairness and smoothness as well. It also aids in the development of self-confidence. Ayurveda is the most effective and efficient method for accomplishing this goal[1].

Natural face packs are rich in vitamins that are necessary for our skin's health and radiance. These compounds are also advantageous to our skin in a variety of ways. Natural Facial Packs are less complicated and easy to apply. They assist us in increasing blood circulation inside the veins of the face by demonstrating its merit, as well as keeping an eye on the skin. Because their benefits are usually transient, face packs should be used 2-3 times a week for consistent glowing skin[4].

Benefits of Applying Face Pack:

1. Face packs supply essential nutrients to skin.
2. Based on its natural constituents, it helps to minimize acne, pimples, scars, and blemishes.
3. These face masks provide a soothing and relaxing effect on skin.
4. Natural face packs give the appearance of youthful and healthy skin.
5. Natural face packs can successfully control the formation of wrinkles, fine lines, and skin sagging.
6. They help to prevent premature aging of skin.
7. Natural face masks provide skin a healthy shine and improve skin texture and tone.
8. Face packs can be used to effectively prevent the detrimental effects of pollution and severe weather.
9. They aid in the restoration of skin's lost radiance and brightness in a short period of time[5].

MATRIAL AND METHOD

Following materials (in powder form) are used in herbal face pack.

Date

More investigation is required to determine the different date types overall antioxidant potential, free radical scavenging activities, reducing power, anti-inflammatory capabilities, and protection against chronic [6]. Due to its numerous antioxidant activities and anti-inflammatory qualities, date fruits and seeds have a tremendous potential for safeguarding human skin. Active components like flavonoids, phenolic, and phenolic acid found in date fruit and seed waste help to inhibit the production of free radical species, which are the primary cause of skin damage. Fruit pulp has superior potential for preserving the skin due of its complex makeup, even though isolated dates seed oil offers considerable potential in this regard. The seed oil can both protect the skin from UV rays and repair it. It also has a high level of oxidative stability and an increased storage capacity. Due to the presence of phytohormones that can improve suppleness and minimize wrinkles, date seed oil also demonstrates anti-wrinkle capabilities. Additionally, the date extractor's ascorbic acids and vitamin E increase collagen levels and enhance skin moisture by stimulating dermal fibroblasts. These nutrients also strongly correlate with anti-aging [7].

Bael

Herbalism makes use of medicinal plants. In rural and tribal regions, they serve as the readily accessible source for medical needs. An effort has been undertaken in the current study to gather the phytochemical and pharmacological studies conducted on the significant medical herb Aegle marmelos. Aegle marmelos has been shown through extensive experimental and clinical studies to possess antidiarrheal, antimicrobial, antiviral, radio protective, anticancer, chemo preventive , antipyretic, ulcer healing, antigenotoxic, diuretic, antifertility, and anti-inflammatory properties, which enable it to prevention and treatment of many diseases. Therefore, it is important to review its medical properties to give scientist both modern and ancient a general idea of its position. Due to the aforementioned plant's extensive pharmacological range, this review also covers its possible use in the pharmaceutical industry [8]. The bail fruit should be seen as a blessing in the herbal word. It has been utilized by humans from the beginning of existence. In addition, bael is used to treat conditions of the skin [9].

Liquorice

G. glabra's anti-oxidant activity is one of the reasons it is used in cosmetics and is frequently linked to other processes like photo protection. The found anti-oxidant activity attributed to is most likely caused by the phenolic content. Chalcones, methylated isoflavones, flavonoids, and isoflavones. In a specialized article on the possible benefits of anti-oxidants, glabridin's anti-oxidant potential was examined. On the other hand, it seems that the anti-oxidant action of liquorice extracts is not solely due to phenolic components. Anti-oxidant activity, indicating a potential application in cosmetic body wash products. Three different G. glabra species' polysaccharides also showed ant-oxidant activity. Liquorice polysaccharides are recommended as an ingredient to postpone skin ageing and reduce the production of chloasma in cosmetics because of their potent anti-oxidant capabilities [10].

Honey

Honey has long been used for both domestic and medical purposes, but it has only recently gained, attention for its antioxidant properties. As the need for antioxidants in food is growing, honey is gaining popularity as an antioxidant source. The use of honey is a topical treatment for wounds and skin infections has the greatest therapeutic potential. Honey has anti-inflammatory, immune-boosting, and antioxidant properties. Applying honey to wounds, burns, and ulcers speeds up healing by eradicating infections, creating sterility, encouraging tissue growth and regeneration, and reducing dehydration of the affected area. Honey has demonstrated antibacterial properties. A wide variety of bacterial species are inhibited by honey [11].

Lemon

It is always preferable to use natural skin care ingredients rather than treatments containing dangerous chemicals. The use of natural ingredients also have advantages and disadvantages. Lemon is a common elements in skincare products. While using it on your face may result in skin irritation or other skin sensitivities, it is beneficial as an antioxidant or skin lightening agent and prevents premature ageing. Lemon have a high acidic content and can be used as an efficient remedy to remove dark spots, clear up acne, and prevent early symptoms of ageing, among other things. It is a traditional home cure for a variety of skin issues. Because of its antioxidant characteristics, rubbing a slice of lemon on the skin instantly rejuvenates it. Other organic foods like honey, sugar, and milk blend nicely with it. For all skin types, honey and lemon are thought to make the greatest face and skin care products [12].

Sandalwood

Skin allergies can be treated with Raktachandan, according to the Santalum album. The cooling and soothing properties of Raktha Chandan powder shield the skin from the damaging effects of environmental population and maintain cool, clear, and healthy skin. Sandalwood is beneficial an ayurvedic herb with antibacterial activities [13]. Sandalwood has anti-aging and anti-tanning properties. Sandalwood maintains cool, clear, and healthy skin by shielding it from the damaging effects of environmental pollutants. A beneficial herb for Ayurveda is sandalwood. Having antibacterial properties is used to treat different skin conditions. The components of sandalwood can revitalize wrinkled skin in a number of ways [14].

METHOD OF PREPARATION

Four distinct formulations designated F1, F2, F3 and F4 were formulated with various quantities of all-natural substances for this formulative investigation. Each ingredient's concentration was listed in the table 1. The powered ingredients were sieved through #85 mesh, weighed using a digital balance, and then mixed geometrically. This was then used for additional evaluation trials after being tagged and kept in an airtight container.

Table 1: Formulation Table.

Sr. No.	Ingredients	F1	F2	F3	F4
1	DatePowder	15	13	15.5	16
2	BaelFruitPowder	5	5.5	3.5	4
3	LiquoricePowder	10	11	8	8
4	HoneyPowder	7	7.5	8	8
5	LemonPowder	0.5	0.5	0.5	0.5
6	SandalwoodPowder	12.5	12.5	14.5	13.5

Figure 1: Formulation of herbal face pack.

PROCEDURE OF FACE PACK APPLICATION

As per requirement take prepared face pack powder in bowl add rose water in it. Mix well and apply on the facial skin. Kept for complete drying and then wash with water.

EVALUATION OF FACE PACK

Organoleptic evaluation

The physical qualities of the substance were manually assessed for the organoleptic parameters which include itsnature, colour, odour feel and consistency [3].

Physical evaluation

The microscope approach was used to measure the particle size. By using the angle of repose by funnel method, bulkdensity, and tapped density by tapping method the flow property of the dried powder in mixed form was assessed [15].

Physicochemical evaluation

pH: Using pH paper the pH was calculated by initially dipping the pH strips tip into the test sample. After a short while, the paper was removed and the pH strips colour was compared to colour chart.

Determination of moisture content: Determining content is crucial for plant based medications since insufficient drying could result in the enzymatic degradation of active ingredients. In a petri dish, weigh precisely 3 gm of powered medication after 30 min, in a hot air oven, measure the weight to the standard weight.

Ash value: In order to ascertain the inorganic components that are distinctive for a herb. The ash value is counted about 1 gm of face pack powder was placed in crucible dish, that had already been lit and weighted down and the temperature was raised gradually by increasing the heat but not until the colour become red after complete burning ash is weighted after cooling [4].

Phytochemical Evaluation

Phytochemical evaluation of herbal face was done for checking the phytoconstituents [16].

Irritancy test:

Mark a 1-square-centimeter area on the left hand dorsal surface .the region was covered with certain amounts of prepared face packs and the application time was recorded, the presence of erythema, redness or edema was monitored over the course of up to 24 hours then reported [17].

Stability studies

The created formulation needed to be tested for the stability by being kept at various temperature for a month, including room temperature and 40°C and physical characteristics including colour, odour, pH, consistency etc. were assessed [18].

RESULT AND DISCUSSION

Following evaluation parameters were performed to ensure superiority of prepared face pack:

Organoleptic Evaluation:

The Organoleptic parameters of the herbal face pack were assessed in Table 2.The color of formulation was Brown. The odour of prepared formulations was pleasant and good acceptable which is desirable to cosmetic formulations. Texture and smoothness was acceptable as per requirement of cosmetic formulations.

Table 2: Organoleptic Evaluation.

Sr. No.	Parameter	Observation			
		F1	F2	F3	F4
1	Colour	Brown	Brown	Brown	Brown
2	Odour	Pleasant	Pleasant	Pleasant	Pleasant
3	Appearance	Smooth, Fine	Smooth, Fine	Smooth, Fine	Smooth, Fine
4	Texture	Fine	Fine	Fine	Fine
5	Smoothness	Smooth	Smooth	Smooth	Smooth

Physicochemical Evaluation

The physicochemical properties of the herbal pack are listed in Table 3.The formulation's pH was discovered to be close to neutral to meet the needs of all skin types. Ash and moisture levels were within acceptable ranges. The range of formulations particle sizes was determined to be 25.3±2.5µm.

Table 3: Physicochemical Evaluation.

Sr. No.	Parameter	Observation			
		F1	F2	F3	F4
1	pH	6-7	6-7	6-7	6-7
2	Moisture content	5%	5%	5.3%	5%
3	Ash content	1.01	1	1.06	1.01
4	Particle size(µm)	25.30	25.30	25.30	25.30

Physical Evaluation

Physical parameters (powder property) of the herbal face pack were examined as shown in Table 4. Rheological findings justified the flow (powder) properties of the herbal face pack. It was found to be a free-flowing and non-sticky in nature.

Table 4: Physical Evaluation.

Sr. No.	Parameter	Observation			
		F1	F2	F3	F4
1	Tapped density	0.73	0.74	0.73	0.75
2	Bulk density	0.64	0.64	0.61	0.61
3	Angle of repose	29.68	29.68	29.68	29.68
4	Hausner's ratio	1.14	1.15	1.10	1.22
5	Carr's index	12.32	13.51	16.43	18.66

Phytochemical Evaluation

Phytochemical parameters of herbal face pack are showed in the Table 5. It was found that different phytoconstituents present such as carbohydrates, alkaloids, glycosides, tannins and phenolic compound which act as good nourisher for the skin.

Table 5: Phytochemical Evaluation.

Sr. No.	Parameter	Observation			
		F1	F2	F3	F4
1	Carbohydrates	+	+	+	+
2	Alkaloids	+	+	+	+
3	Glycosides	+	+	+	+
4	Tannins	+	+	+	+
5	Phenols	+	+	+	+

Irritancy Test

The results of irritancy test for herbal face pack were shown in Table 6. The formulation showed absence of irritation, redness and swelling during irritancy studies. This formulation have safe to use on skin.

Table 6: Irritancy Test.

Sr. No.	Parameter	Observation			
		F1	F2	F3	F4
1	Irritation	No	No	No	No
2	Redness	No	No	No	No
3	Swelling	No	No	No	No

Stability Studies

Table 7, 8, 9, 10 shows the results of the stability test. No change in colour, odour, texture and smoothness was observed at mentioned conditions of stability except pH. The stability studies showed a slight change in pH of formulation at **40 ^{0}C.**

Table 7: Stability Studies.

Sr. No.	Parameter	Observation (F1)	
		Room temperature	40 ^{0}C
1	Colour	No change	No change
2	Odour	No change	No change
3	pH	6-7	6-7
4	Texture	No change	No change
5	Smoothness	No change	No change

Table 8: Stability Studies.

Sr. No.	Parameter	Observation (F2)	
		Room temperature	40 ^{0}C
1	Colour	No change	No change
2	Odour	No change	No change
3	pH	6-7	6-7
4	Texture	No change	No change
5	Smoothness	No change	No change

Table 9: Stability Studies.

Sr. No.	Parameter	Observation (F3)	
		Room temperature	40 ^{0}C
1	Colour	No change	No change
2	Odour	No change	No change
3	pH	6-7	6-7
4	Texture	No change	No change
5	Smoothness	No change	No change

Table 10: Stability Studies.

Sr. No.	Parameter	Observation (F4)	
		Room temperature	40 ^{0}C
1	Colour	No change	No change
2	Odour	No change	No change
3	pH	6-7	6-7
4	Texture	No change	No change
5	Smoothness	No change	No change

CONCLUSION

Herbal formulations have always received a lot of attention around the world because they are thought to have a better efficacy and fewer adverse effects than the harmful synthetic chemicals. Antioxidants, vitamins, essential oils, tannins, alkaloids, dyes, carbohydrates, and terpenoids are examples of bioactive compounds found in plants that are used in cosmetics for skin, body, and other body parts. It's a fantastic attempt to formulate a herbal face pack with various powdered components. In this study, four distinct formulations were formulated and evaluated in different ways. These compositions produce positive results and promote skin health without having any negative side effects. The antioxidant, anti-inflammatory, antibacterial, and sun-protective qualities of the various components may be responsible for this therapeutic effect.

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CONFLICTS OF INTEREST

The authors state that the publishing of this paper does not include any conflicts of interest.

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