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Research Article

Formulation and Characterization of An Acne-Targeting Herbal Pimple Face Pack

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Abstract:
The most important objective of this research article is to formulation and evaluation of herbal pimple face pack for acne treatment using natural ingredients in varying concentrations, including multani mitti, acorus calamus, coriandrum sativum, symplocos racemose roxb, neem powder, chandan powder, and rose powder. Ayurvedic remedies are safer than synthetic formulations since their negative effects are minimal. The primary objective of herbal face packs is to remove dark circles, pimples, acne, and dirt particles from the skin pores.
Thus, in the current study, we developed a pimple herbal face pack that may be quickly produced with readily available substances. Following evaluation, we discovered that the face packs had good properties, were free of skin irritation, and retained their consistency even after being stored under stable settings. All of the face pack formulations were found to be satisfactory in physical parameters and free of skin irritations, thus we concluded that the face packs had good flowing properties and were suitable for human skin.

Keywords: Pimple, Formulation, Face Pack, Characterization.

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1. Introduction:

Cosmetics are products that clean, beautify, and encourage an attractive appearance.[1] The skin of the face is the most important aspect of the body since it acts as a mirror, reflecting an individual's health.[2] The primary benefit of utilizing herbal cosmetics is that they are pure and have no negative effects on the human body.[3] People have tough skin, and if they do not take proper care, the skin darkens as a result of overexposure to the sun and other contaminants. In this post, we've created an herbal face pack for men and women that will naturally whiten, lighten, and brighten their complexion. This face pack has natural skin lightening properties and can be simply made at home.[4,5]
Face packs made with natural ingredients are high in critical vitamins, which are necessary for skin health and radiance.[6] These compounds have been shown to benefit the skin in a

variety of ways. Natural face packs are simple to use. They stimulate blood circulation in the face's veins, enhancing the skin's vitality. A good herbal face pack must provide the skin with required nutrients in the form of a free-flowing powder that is applied externally to the face.[7,8]

Nowadays, distinct packets are available for oily, normal, and dry skin. Face packs are used to improve the complexion and smoothness of the face.[9] It minimizes wrinkles, pimples, acne, and dark circles on the skin.[10] Face packs advised for oily skin prone to acne and blackheads typically decrease the rate of sebum discharge from sebaceous glands and combat the dangerous bacteria present within acne lesions. Herbal face packs are currently widely utilized due to the numerous benefits they provide over chemical-based packs. They are not toxic, allergenic, or habit-forming.[11,12,13]

They are completely herbal and have a longer shelf life. They include no additional preservatives. They are simply formulated and can be stored for a longer period.[14] The current research paper focuses on the development and evaluation of an herbal face pack for acne-targeting pimples utilizing herbal materials such as multani mitti, acorus calamus, coriandrum sativum, symplocos racemose roxb, neem powder, Chandan powder, and rose powder.[15,16]

2. Applications of Herbal Pimple Face Pack:[17-23]

- Its natural ingredients reduce acne, pimples, scars, and marks
- Acne, pimple, and blackhead facial masks eliminate germs and reduce sebum production.
- Herbal face packs nourish and hydrate skin.
- They can eliminate dead skin cells.
- Use herbal pimple face packs for safe, smooth, and radiant skin.
- They promote even skin tone and naturally alleviate skin concerns.
- Herbal cosmetics are non-toxic.

Face powders can address skin concerns like acne, pimples, and blemishes.

Skin can be regenerated in a short time.

3. Material use for Herbal Pimple Face Pack:

3.1 Neem Powder:[24]

- Common Name: Neem
- Scientific Name: *Azadirachta indica*
- Family: Meliaceae
- Category: Tree
- Genus: azadirachta
- Uses: acne Treatment, reduces pimples and blemishes, skin whitening and brightening.



Fig. 1 Neem Powder

3.2 symplocos racemose roxb:[25]

- Common Name: Symplocos racemosa
- Scientific Name: *Symplocos racemosa* roxb.
- Family: Symplocaceae
- Genus: Symplocos
- Species: S. racemosa
- Uses: antioxidant property.



Fig. 2 Symplocos racemosa powder

3.3 Acorus calamus:[26]

- Common Name: Sweet flag, Calamus, Rat root, Flag root
- Scientific Name: Acorus calamus
- Family: Acoraceae
- Category: Perennial herbaceous plant
- Genus: Acorus
- Species: Acorus calamus (the most commonly known species of the genus)
- Uses: antioxidant properties, antiseptic, antibacterial, it used in face packs for its ability to improve skin tone, reduce puffiness.



Fig. 3 Acorus calamus powder

3.4 Multani Mitty:[27]

- Common Name: Clay Powder, Fuller's Earth
- Scientific Name: *Fuller's Earth*
- Family: *Montmorillonitaceae*
- Category: Natural mineral
- Genus: *Bentonite*
- Uses: oil control and acne treatment, skin brightening and tan removal.



Fig. 4 Multani Mitty powder

3.5 Coriandrum sativum:[28]
- Common Name: Coriander
- Scientific Name: Coriandrum sativum
- Family: Apiaceae
- Category: Annual herb
- Genus: Coriandrum
- Uses: antioxidant, antibacterial and antifungal properties, it is used as to help brighten the skin and reduce blemishes.



Fig.5 Coriandrum sativum powder

3.6 Chandan Powder:[29]
- Common Name: Sandalwood powder
- Scientific Name: *Santalum album*
- Family: Santalaceous
- Category: Medicinal and Aromatic Plant
- Genus: *Santalum*
- Species: *album*
- Uses: Used in face packs and creams for glowing skin, acne, and blemish treatment.



Fig. 6 Chandan Powder

3.7 Rose Powder:[30]

- Common Name: Rose Powder
- Scientific Name: *Rosa* spp.
- Family: Rosaceae
- Category: Medicinal and Aromatic Plant
- Genus: *Rosa*
- Uses: Hydrates and moisturizes, which helps fade dark spots and gives your skin a natural glow.



Fig.7 Rose Powder

4. Formulation Profile of Herbal Pimple Face Pack:

Table No – 1 Ingredients Profile

Sr. No	Ingredients	Quantity
1.	Neem Powder	5 gm
2.	symplocos racemose roxb	10 gm
3.	Acorus calamus	3 gm
4.	Multani Mitty	6 gm
5.	Coriandrum sativum	5 gm
6.	Chandan Powder	2 gm
7.	Rose Powder	2 gm

5. Procedure of Preparation of Herbal Pimple Face Pack:

5.1 Weighing:

All of the herbal powders needed to make the herbal face pack were carefully weighing

Accurately. the quantity and compositions are listed in Table No.1.

5.2 Mixing:

All of these fine materials were completely combined by a mixer to produce a homogeneous fine powder.

5.3 Sieving:

Then the fine powder was then put through a sieve to obtain a sufficient quantity.

5.4 Collection and storage:

The powder combination was collected, stored in a suitable plastic container, and properly labeled.

6. Precautions to be taken while using herbal pimple face pack:

- Do not leave the face mask on for longer than 15-25 minutes.
- Prolonged storage can cause wrinkles, sagging skin, and enlarge pores.
- Apply the face mask two times each day.
- Do not attempt to peel or dry an irritating face pack.
- Avoid using face masks around the "eye area".
- The removal of the face mask might cause harm to the skin
- It can irritate the underlying skin.
- avoid roughly rubbing the face around the eyes.

7. Procedure of Herbal Pimple Face Pack Application:

- In a small bowl, weight and mix all required Herbal Face Pack Powder.
- Add milk and rose water to get the mix properly.
- Stir until you get a smooth, thick paste.
- Apply the paste evenly on your face.
- Leave it on for 15 – 25 minutes, then wash with water, gently massaging the skin.
- Finally clean the face surface wash with water.

8. Evaluation Parameter of Herbal Pimple Face Pack:

The Herbal Pimple Face Pack formulated was evaluated for the followings.

8.1 Tapped Density:[31]

- Tapped density is the increased bulk density obtained by mechanically tapping a container housing the powder sample. After detecting the initial powder volume or mass, the

measuring cylinder or vessel is mechanically tapped for 1 minute, and volume or mass readings are taken until no further volume or mass change is detected. It was measured in grams per cubic centimeter (g/cm3).

8.2 Bulk Density:[32]

• Bulk density is the ratio between a powder's mass and bulk volume. The required amount of powder is dried and poured into a 50 ml measuring cylinder, filling it up to the mark. The cylinder is then dropped from a height of one inch onto a hard wood surface at two-second intervals. The volume of powder is measured. Then the powder is weighed. This is performed to obtain the average values. The Bulk Density is computed using the following formula.

Bulk Density = Volume/Mass

8.3 Angle of Repose:[33]

• It is defined as the greatest feasible angle between the surface of a pile of powder and the horizontal flow. The needed amount of dried powder is placed in a cylindrical tube with open ends and placed on a flat surface. The funnel should be lifted to create a heap. The height and radius of the heap are measured and documented. The angle of repose (θ) can be computed using the formula mentioned. Can be calculated by using the formula.

$\theta = \tan^{-1}(h / r)$

Were, θ – Angle of repose,

h – Height of the heap,

r – Radius of the base.

8.4 Hausner's Ratio:[34]

• It is expressed as the tap density divided by the bulk density.

8.5 Carr's Index: -[35]

• Carr's index is an indication of compressibility of powder.

8.6 Organoleptic Evaluation: -[36]

• The prepared herbal face pack powder was evaluated for a variety of organoleptic properties, including color, odor, smoothness, appearance, texture, and consistency. The senses of touch and sensation were employed to visually assess color, smell, and texture.

8.7 Washability: -[37]

• It was determined how easily a formulation could be washed away. After applying a face pack, the skin was carefully evaluated to determine how readily and thoroughly it could be cleaned with ordinary tap water.

8.8 Irritancy test: -[38]

• Mark a 1-square-centimeter area on the left dorsal surface. A specific measure of organized face packs was applied to the allotted district, and the application time was recorded. Disturbance, erythema, and edema were examined and identified if present at standard lengths for up to 24 hours.

9. Result of Herbal Pimple Face Pack:

Table No –2 Result of Herbal Face Pack

Sr. No	Parameter	Observation
1.	Color	Light Brown
2.	Oduors	Fragrant
3.	Appearance	Fine Powder
4.	Texture	Fine
5.	pH	8.1
6.	Stability	Stable at Room Temp.
7.	Smoothness	Good
8.	Consistency	Solid Powder
9.	Spreadable	Uniform
10.	Solubility	Partially Soluble
11.	Washing capability	Easily washable
12.	Tapped Density	31.23 degree
13.	Bulk Density	0.347gm/ml
14.	Angle of Repose	0.46gm/ml
15.	Hausner's Ratio	4.017
16.	Carr's Index	1.011
17.	Skin Irritation Test	No Irritation

10. Discussion:

• The current study is concerned with the formulation of Herbal Pimple Face Pack acorus calamus, coriandrum sativum, symplocos racemose roxb, Chandan powder, rose powder, Neem powder, and Multani Matti. The prepared face pack powder was dry, had a good appearance, and provided physically proficient effects.

11. Conclusion:

• People today need a therapy for a variety of skin disorders that has no negative side effects. Herbal face packs are used to increase blood circulation, revitalize muscles, preserve skin elasticity, and eliminate debris from pores. It is our best endeavor to create a herbal face pack powder using natural herbal ingredients such as Multani Matti, Acorus calamus, Coriandrum sativum, Symplocos racemose roxb, Chandan powder, Rose powder, and Neem powder. Following evaluation, we discovered that the face pack powder had good qualities, was free of skin irritation, and retained its consistency even under stable storage circumstances. The findings also show that the herbal pimple face pack created is suitable for human skin and has desirable physical qualities.

12. Conflict of Interests:

• The authors declare that they have no known competing financial interests or personal relationship that could have appeared to influence the work reported in this paper.

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