

FORMULATION AND EVALUATION OF HERBAL FACE PACK BY USING PIGEON PEA LEAVES

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ABTRACT:

Pigeon pea leaves has been used as an active ingredient in cosmetic products. Due to its skin brightening properties, it is well being used in some kinds of beauty products from face masks to cleansers. pigeon pea leaves is used as an active ingredient in this formulation. Natural remedies are more acceptable in the belief that they are more safe with fewer side effects than the synthetic formulations. Herbal formulations have growing demand in the world market. Herbal facepack are applied to increase the blood circulation, treat acne, reducing fine lines, wrinkles, hydrates the skin and helps to maintain the skin elasticity and it also remove the dirt from skin pores. It is a very good herbal face pack containing various herbal powders. The main advantage of herbal cosmetics is its non-toxic nature, and it reduces the allergic reactions. In this article, we have formulated herbal face pack by using pigeon pea leaves and also evaluated it by using different test . The formulation showed amazing results after its application. The use of this face pack includes cleansing, moisturizing and nourishing facial skin. Pigeon peaf face pack can be used as a remedy in treatment of facial skin related problems such as darkspots, dead skin, white heads and especially used to open the closed pores then remove dirt and closing it. Its main role is to Stimulate the metabolism.

KEYWORDS: Pigeon pea leaves, Anti-wrinkle, Anti-aging

INTRODUCTION:

Now-a-days, the whole world there is return towards the use of herbal products and to adopt more natural way of life. Peoples prefer natural food, herbal medicines, herbal product and natural curing practices for healthy life. There is much enthusiasm for the usage and more demand for the cosmetics. All this happened due to herbal products are having less side effects and less health hazards and also much awareness is created amongst the consumers for health and better quality lives, which led towards more use of herbal drugs, herbal cosmetics and herbal product. It is not simple to define the term “Cosmetic “because of its many scope and application. The cosmetic is decorative to enhance the general appearance of face and other body parts to minimize the skin defects to a considerable extent. It is applied to maintain and improve the status of skin, it greatly helps men and women to look more impressive, stylish, beautiful and smart to a considerable extent.^[1] In ancient times, women were very conscious about their beauty and took special care of their specific skin type such as oily or dry skin. Even today people especially in rural areas go for the natural remedies like plants extracts for various cosmetics purposes like Orange peel, Rose powder, Alovera, Turmeric etc. Herbal cosmetics are the products which are used to purify and beautify the skin. The main advantage of using herbal products is that it is pure and does not have any side effects on the human body. According to Ayurveda, skin problems are normally due to impurities in blood. The herbal pack which is applied on face to treat acne, pimple, scars, marks and pigments .This beauty therapy is now popularly termed as facial.^[3]

Different types of packs are available in market separately for the oily, normal and dry skin. Face packs are used to increase the beauty, fairness and smoothness of the skin. It reduces wrinkles, Pimples, acne and dark circles of the skin. Face packs which are recommended for oily skin treat to acne, white head, black heads usually control the rate of sebum discharge from sebaceous glands and fight the harmful bacteria present inside acne. Herbal face packs are being used on a large scale, due to the various benefits of them over chemical based packs. They are non-toxic, non-allergic and non-habit forming. They are natural in every aspect.^[2] Herbs are now widely used as therapeutic agents because of their easily availability, affordability, lack of toxicity and less side effect. People are therefore confident in these natural remedies. Herbs have been used by humans for self management, hygiene, and good aesthetic purposes. Beauty

products with desirable physiological activity, such as those that improve skin texture, smooth, heal, or condition skin, are referred to as cosmetics. These days, dark circles, white heads, black heads, and pimples are more common in young people and acne sufferers. According to Ayurveda, most skin problems are caused by impurities in the blood. Toxins accumulated in the blood due to poor nutrition, bad habit and lifestyle choices are the main cause of many skin disorders.^[4]

Benefits of Applying Face pack: ^[5,6,7,8,9]

1. Nourishes the skin, face packs gives essential nutrients to the skin.
2. Face pack which is required for acne, pimple, black heads, wrinkles usually control the over discharge of sebum from sebaceous glands and remove the harmful bacteria inside acne lesion.
3. The scars and marks of skin can be reduced by adding fine powder of pigeon pea leaves, tulsi powder.
4. Face packs usually remove dead cells of the skin and dirt.
5. These face packs and masks provide cooling and relaxing effects on the skin.
6. They facilitate to restore the lost shine and glow of skin in short span of time.
7. Regular use of natural face packs brings shine and glow to the skin, improve skin texture and complexion.
8. The harmful effects of dirt, pollution and harsh elements can be effectively challenge with judicious use of face pack.
9. They help to prevent early aging of the skin.
10. Formulation of wrinkles, fine lines and wilting of skin can be effectively controlled by using natural face packs.
11. Natural face packs make the skin look shiny, young and healthy.
12. It nourishes the skin.

13. Packs of herbs give skin essential nutrients.
14. The amount of scars, marks, acne, and pimples reduced depends on the herbal ingredients used.
15. Dead cells on the skin are usually removed by face packs.
16. These face pack relax and calm the complexion.
17. They help quickly regain lost skin and radiance.
18. Regular use of the face pack improves the texture and fairness of the skin, making it shiny.
19. It is possible to mitigate the harmful effects of pollution and extreme weather by using face pack appropriately.
20. They help stop skin from aging prematurely..

Precautions to be taken while applying for face : ^[10,11]

1. Select the face pack according to your skin type. Take the suggestion of a natural therapist or concerned with skin expert before applying a face pack.
2. The face pack should not be left on the face more than 15 to 20 min. Keeping for very long time may result in the formation of wrinkles, wilting skin and enlargement of open pores.
3. Apply face pack once in a week.
4. Spray water (which is at room temperature) on the face before removing dried face pack. After removing the pack, roll an ice cubes on facial skin. This helps to close open pores and tightens skin. It also tones and soothes the skin.
5. Do not Scrub face vigorously. This may result in the burst of pimple, dark spots and damage the skin.
6. Stay away from heat when you have applied a face pack.

7. Avoid applying face pack near" eye zone". The skin around the eye is very delicate. The process of removing face pack may damage the skin around eyes

MATERIAL AND METHODS:

The all natural materials used in the present study i .e pigeon pes leaves powder, tulsi leaves powder, turmeric powder, mushroom powder, neem powder,orange peel powder,aloevera gel were collect from local area in the dried Powder form. Natural ingredient powders were prepared by shade drying and Grinded to make fine powder by using Size reduction mill and Grinder such as Turmeric, tulsi, neem, pigeon peas powder, Orange peel powder.

Pigeon peas :

Pigeon pea leaves contain antioxidant that help protect the skin from damage caused by free radicals, reducing fine lines and wrinkles. The leaves have anti-inflammatory properties that can help soothe and calm irritated skin, reducing redness and inflammation. Also, have antibacterial properties that can help prevent acne and skin infection. The leaves can help tone and tighten the skin, reducing the appearance of pores. Pigeon peas leaves can help hydrate the skin, leaving it feeling soft and supple.^[12]

Turmeric:

Turmeric has been used in the formulation due to antiseptic action. It treat the skin diseases occurring due to blood impurities. It is a very good anti-inflammatory and antiallergenic agent. The phyto constituents mainly terpenoids present in it helps to lighten the skin tone. Turmeric delays the signs of aging like wrinkles, improves skin elasticity. It cures pigmentation, tight skin tone and cure dull skin. ^[13]

Neem powder:

Leaves of neem was dried in sunlight for 24 hours and then grind it by using mixer grinder. Finally, powder was obtained. It have antibacterial, anti-fungal, anti-inflammatory, antiseptic properties and also it is highly beneficial for oily and acne prone skin.^[14]

Tulsi powder:

Tulsi leaves powder help to control acne, pimples and other skin infection. Reduces redness, swelling and inflammation of the skin. Reduces redness, swelling and inflammation of the skin .Antioxidant properties, protect the skin from damage caused by free radicals, reducing fine lines and wrinkles. Skin toning , help to balance skin tone and reduce the appearance of pores. Tulsi powder can help to hydrate and moisturize the skin. ^[15]

Orange peel powder:

It cures blackheads, cell build up around the pores brightness your face, dark circles, dry skin, wrinkles, aging, prevent acne. Orange peel can be used for facial cosmetics. Orange as a folk medicine. And it is a good source of Vit C, B, Flavonoids, terpenes have antibacterial, antifungal, larvicidal activity.^[16]

Glycerin :

Glycerine helps retain moisture in the skin , leaving it feeling soft, supple and hydrated. Glycerine has anti-inflammatory properties that can help soothe and calm irritated skin, reducing redness and inflammation. Glycerine helps protect the skin from environment stressors, such as wind, cold weather and dry air. Glycerine can help improves skin elasticity, reducing the appearance of lines and wrinkles. Glycerine can help brighten the skin, reducing the appearance of hyperpigmentation and dark spots.^[17]

Perfuming agent:

Mood enhancement, perfuming agents can uplift and calm the mind, reducing stress and anxiety. Fragrance can create a pleasant sensory experience, making the face pack application more enjoyable. Perfuming agent can mask any unpleasant odors from other ingredients in the facepack. ^[18]

Preservatives:

Vitamine E is use an antioxidant that help prevent spoilage and protects the skin from damage caused by free radicals. Aloe vera gel can be used as a natural preservative in facepack due to its antimicrobial and antioxidant activity. ^[19]

PREPARATION OF POWDERS:

Pigeon peas leaves powder:^[12]

Collect fresh and healthy pigeon peas leaves. wash the leaves with clean water and dry them. dry the leaves under sunlight. grind the dried leaves into a fine powder using a mixer grinder or blender. filter the ground powder through a sieve to remove any large particles or impurities. store the filtered powder in an airtight container to maintain its quality.

Biological source- *Cajanus cajan* is a plant species that belongs to the Fabaceae family. Chemical constituents like methionine, lysine, tryptophan, vitamin A, niacin, riboflavin, minerals, fiber, protein, saponins etc

Classification:

Kingdom: Plantae

Order: Fabales

Family: Fabaceae

Genus: Cajanus

Species: C.cajan



Figure 1: Pigeon peas

Tulsi leaves powder:^[15] Collect the fresh and healthy tulsi leaves. Wash the leaves with clean water and dry them. Dry the leaves under sunlight. Grind the dried leaves into a fine powder using a mixer grinder or blender. Filter the ground powder through a sieve. Store the filtered powder in an airtight container.

Biological source: *Ocimum sanctum*, also known as Holy Basil, is a plant species that belongs to the Lamiaceae family.

Classification:

Kingdom: Plantae

Order: Lamiales

Family: Lamiaceae

Genus: Ocimum

Species: *O. sanctum*

In tulsi leaves powder contains chemical constituents like eugenol, linalool, beta-caryophyllene, ferullic acid, vicerin, tulsiiin, tulsides etc



Figure 2: Tulsi Leaves

Turmeric powder:^[13]

Collect the fresh and healthy turmeric rhizomes. Wash the roots with clean water and dry them. Dry the rhizomes under sunlight. Grind the dried rhizomes into a fine powder using a mixer grinder or blender. Filter the ground powder through a sieve. Store the filtered powder in an airtight container.

Biological source: *Curcuma longa* is a popular spice derived from the rhizomes of the turmeric plant.

Classification:

Kingdom: Plantae

Order: Zingiberales

Family: Zingiberaceae

Genus: Curcuma

Species: C.longa

In turmeric contains chemical constituents like curcumin, turmerone, atlantone, zingiberene etc.



Figure 3: Turmeric

Orange peel powder:^[16]

collect fresh sweet oranges. The fruits were washed, weighed, peeled by using knife and were cut into small pieces, after that they were washed using hot water. After that peel surface moisture was removed, and then it was followed by drying. After dried, peel was grinded mixer jar or coffee grinder to make a fine powder.

Biological source: Orange peel also known as citrus peel, is obtained from the outer layer of the fruit of the orange tree *citrus sinensis*.

Classification:

Kingdom: Plantae

Order: Sapindales

Family: Rutaceae

Genus: Citrus

Species: C.sinensis

In orange peel contains chemical constitutes like limonene, beta-pinene, alpha-pinene, naringin, hesperidin, eriocitrin, ferullic acid, sinapic acid, lycopene, vitamin C etc.



Figure 4: Orange peel powder

Neem powder:^[14] Leaves of neem was dried in sunlight for several hours and then grind it by using mixer or grinder. Finally, powder was obtained. It contain Antibacterial, anti-fungal, anti-inflammatory, antiseptic properties and also it is highly beneficial for oily and acne prone skin.

Biological source: Neem is derived from the leaves, seeds, and bark of the neem tree

Azadirachta indica.

Classification:

Kingdom: Plantae

Order: Sapindales

Family: Meliaceae

Genus: Azadirachta

Species: A.indica

In neem powder contains chemical constitutes like azadirachtin, salannin, nimbin, nimbidine, beta-sitosterols, tannins, saponins etc



Figure 5: Neem Leaves

Aloe vera gel:^[19] Alovera was obtained from the garden. Peel off the outer layer of alovera and get the pulp. Lastly, alovera gel was obtained by grinding the pulp in grinder. Alovera moisturizes the skin and keeps the skin fresh all time. Aloe vera has anti-microbial property as well as treating acne and pimples.

Biological source: Aloe vera is derived from the leaves of the aloe vera plant *Aloe Barbadensis* miller.

Classification:

Kingdom: Plantae

Order: Asparagales

Family: Asphodelaceae

Genus: Aloe

Species: *A. barbadensis*

In aloe vera contains chemical constituents like aloin, pectin, alectin, aloe-emodin, kaempferol,

Sr. No	Ingredients	Quantity(35 gm)	Role in formulation
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quercetin, vitamin A, Vitamin C etc.



Figure 6: Alovera Gel

Method of preparation: [20,22,23,24,25]

1. Firstly, weighed all the ingredients accurately.
2. Took mortar and pestle and put pigeon pea powder and tulsi powder in it.
3. Triturate the above mixture properly.
4. After then, add neem powder, orange peel powder, and turmeric powder by one respectively and also triturate the mixture after every addition for proper mixing.
5. Add aloevera to the powder mixture.
6. Finally preservative was added to the above preparation and formulation was prepared.
7. Perfuming agent was added to the formulation to enhance the odour of product.

1.	Pigeon pea powder	5 gm	Anti-aging agent
2.	Neem powder	3 gm	Antioxidant
3.	Tulsi powder	5 gm	Skin toner
4.	Turmeric powder	1 gm	Anti-wrinkle agent
5.	Orange peel powder	2 gm	Complexion
6.	Glycerine	9 ml	Hydration
7.	Aloe vera gel	10 gm	Moisturizer
8.	Vitamine E	q.s	Preservative
9.	Rose oil	q.s	Perfuming agent

Table 1: Formulation table for herbal face pack

EVALUATION OF HERBAL FACEPACK

1. Organoleptic properties:

We have done the visual inspection of facepack product and observed that

Colour:-Dark green

Odour:-Floral

State:-Semi solid

Consistency:- Smooth and thick. ^[26,27]

2. pH:

The pH value of this purely herbal facepack was determined by using digital pH meter and pH value of this herbal facepack was found to be 6.6.^[28,29]

3. Irritancy test:

The irritation test was done by applying a formulation of herbal facepack on hand's back skin and leave it for 15 minutes to check irritation reaction such as swelling, itching and redness effect on the skin.^[30,31]

4. Spreadability test:

Placed 2 gm formulation on a butter paper and on the formulation put watch glass. After that 3 gm weight was placed on watch glass for 5 minutes to compress the sample to uniform thickness and its diameter was measured.^[32,33]

5. Peel off test:

The formulation film of 5 mm was spread on backside of the hands skin. Leave it facepack for 15-20 minutes to dry properly. After 15-20 minutes, peel off the dry film from the skin surface. Easy removal of peel of herbal facepack without any complications was observed.^[34,35]



RESULTS:

Table No.2 - The prepared herbal facepack was evaluated and data was reported in table 2

Sr.No	Test	Result
1.	Color	Green
2.	Odour	Floral
3.	State	Semi solid
4.	Consistency	Smooth and thick
5.	pH	6.6
6.	Irritancy test	No irritation effect shown
7.	Spreading ability test	Smooth and light to spread
8.	Peel off test	Easily removal

Herbal face pack was evaluated for morphological parameters showed in the Table 2. The colour of formulation was dark green. 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. Herbal face pack was evaluated for pH, Irritancy test, spreading ability test, peel off test showed in the table

DISCUSSION:

Herbal face packs are used to stimulate blood circulation, rejuvenate the muscles and help to maintain the elasticity of the skin and remove dirt from skin pores. The advantage of herbal formulation is their non toxic nature, reduce the allergic reactions, reduce inflammation and time tested usefulness of many ingredients. Formulation was dark green in colour and had semisolid

consistency. The formulation of herbal facepack was found to be homogenous, easily washable and also had very slightly alkaline pH which were compatible with normal skin physiology.

CONCLUSION:

Natural product is more acceptable in the belief that they are safer with less side effects than the synthetic product. Herbal formulations have growing demand in the world market. It is a good attempt to establish the herbal face pack containing different powders of plants. Thus in the current work, we found good properties for the herbal face packs and further optimization studies are required on this study to find the useful benefits of face packs on human use as cosmetic formulation

Presently, people need cure or treat various types of skin related problems without side effects. Herbal ingredients provide an opportunity to formulate cosmetics formulation without any harmful effect. Herbal formulations are more acceptable in the confidence that they are safer and having fewer side effects as compare to synthetic product. Thus, in the present work study, formulation shows good attempt to formulate the herbal facepack containing naturally available ingredients like pigeon peas, tulsi, turmeric, aloe-Vera, orange peel, and neem. In present study, we found that the formulation of herbal facepack was more stable at room temperature. This formulation shows compatibility with all types of skin and shows no irritation effect and no side effect. This herbal facepack showed a good spreadibility and which helps to make people comfortable during application on the surface of body. A good property is shown by the formulation on human skin without causing skin edema or irritation or inflammation or itching. The study of this facepack revealed that it is capable of removing the dirt from skin-pores and improve the cleanliness of the skin by removing dead skin cells from the surface of body. And it also nourishes and protects the skin from the outer environment. Natural products are widely acceptable in the confidence that they are safer with fewer side effects than the synthetic materials. Herbal face packs are used to stimulate blood circulation, reactivate the muscle and help to maintain the elasticity of the skin and remove dirt from skin pores. Herbal cosmetics have many advantages are nontoxic in nature, reduce the allergic reaction ,inflammation, itching. This face pack is profitable, economical, and passed all evaluation parameters.

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