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Research Article

Formulation And Evaluation Of Activated Charcoal Face Pack

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ABSTRACT

The purpose of this study is to create and assess a herbal face pack that uses natural herbal components to promote bright skin. Everyone desires to be treated fairly and lovely skin. Acne, black heads, and pimples are frequent among those who experience them nowadays. Ayurveda says that blood impurities are typically the cause of skin issues. Herbal face masks are employed to replicate blood flow, revitalize the muscles, preserve skin suppleness, and eliminate debris from skin pores. Herbal cosmetics have the advantage of being nontoxic, reducing allergic reactions, and having many substances that have been shown to be effective throughout time. Consequently, an effort has been made in the current work to create the perfect face pack that is appropriate for everyone skin tones. A number of characteristics, including color, look, pH, consistency, washability, and antimicrobial activity, were assessed when the face pack was made. The application of herbal face packs or masks helps to retain the flexibility of the skin, improve blood circulation, revitalize muscles, and clear impurities from skin pores. Consequently, we discovered good qualities for the face pack in the current work. The majority of cosmetics on the market are synthetic in nature and have a number of negative side effects when worn over extended periods of time. Use of herbal cosmetics is one way to address this issue. Cosmetics made from herbs are thought to be safe for daily use and to have few negative effects.


INTRODUCTION

In cosmetics, activated charcoal has gained popularity. Burning wood, coconut shells, peat, and olive pits in a low-oxygen atmosphere creates

holes and increases the surface area of the fine black powder by several folds, up to approximately three times.

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grammes per thousand square meters. These pores have the ability to decrease pores, treat skin disorders, alleviate acne, treat insect bites, and pull bacteria and pollutants from the skin by trapping or absorbing substances.

Skin care is vital to our lives since skin is a highly delicate and protective layer of the human body that is exposed to damaging UV rays and environmental contaminants. Compared to the rest of the body, the skin on the face is thinner and more delicate, thus even more consideration and care from us. Activated charcoal is therefore only meant to be applied to the face as a cream, lotion, face mask, face cleanser, or peel-off mask in cosmetic applications. In addition to protecting our skin from potentially dangerous microorganisms and hazardous pollutants, using the right facial cleanser can also make us feel more confident. The 1700s saw the description of charcoal's adsorbent qualities, and the early 1800s saw the first clinical use of the material. Its use as a detox component is a result of these adsorptive qualities. Gwyneth Paltrow's newsletter Goop suggested blended lemonade with charcoal in 2014. As one of the best juice cleansers of the year, putting the ingredient in the spotlight for wellness. Charcoal is most recognized to the modern generation for its ability to remove skin imperfections and whiten teeth. As a result of this growing admiration, activated charcoal surpassed all other cosmetic and beauty product sales in terms of marketing. This resulted in the large-scale commercial manufacture of charcoal, which was used in pore strips, face cleansers, and carbonated face masks in addition to everyday soaps and handwashes. International Nomenclature was established in 2015.

148 skincare products with charcoal powder as an ingredient were listed by the Institute of Cosmetic Ingredients (INCI); this is a remarkable accomplishment for a relatively new skincare

component like activated charcoal, and in just four years, the number has already increased fivefold from 2015. Activated charcoal has made a huge journey to become a luxury cosmetic trend, from long-gone beauty myths and medicinal applications to the newest skincare trends of the twenty-first century and from cautious, doubtful consumers to reluctant, dubious consumers. Because of its micropores, activated charcoal has more surface area and is therefore more adsorptive. As a result, when rinsed or peeled off, it can effectively capture toxins and chemicals from the skin's surface, unclogging any clogged pores and detoxifying the skin. The chemical equilibrium between the activated charcoal/toxin combination and the free toxin, however, is what drives this activity.

It is highly effective at adsorbing non-polar and hydrophobic organic poisons since the toxins are adsorbed in non-ionized forms. (2)

Charcoal:

Charcoal has been used since 3750 B.C., when the Egyptians utilized it extensively to cure a variety of intestinal issues, including diarrhea, bloating, and constipation, in addition to masking the smells of mining. The Egyptians utilized it as well during the mummification process. In addition, the Greeks and Romans of antiquity employed it to preserve their dental hygiene. By 400 BC, the civilizations residing in and around the Indus valley had also begun to utilize charcoal powder to purify their water. Although activated charcoal has been used for ages, it wasn't until the 1700s that its adsorbent properties were first identified in science. Lowitz, a scientist, noticed that charcoal was able to successfully remove color from other materials. Furthermore, a French pharmacist by the name of Tourey fearlessly demonstrated the adsorptive properties of charcoal in 1830 by ingesting a significant amount of charcoal and a deadly dose of strychnine, a highly toxic colorless pesticide used to kill rodents and birds. Not only



that, but Tourey also showed that he was remarkably unaffected by his risky action. Later in 1834, powdered charcoal was used by American physician Hort to heal a patient who had been poisoned by mercury dichloride. (2)

Uses:

Cosmetic preparations for skin-lightening creams contain activated charcoal, which has the ability to absorb fat, dark spots, and pollutants that stick to our skin. It is also frequently found in soaps, carbonated face masks, pore strips, and facial cleansers. Additionally, a number of pharmaceutical and cosmetic companies assert that their products, which contain charcoal, can aid in the treatment of adult acne, wounds, minor infections, seborrheic dermatitis, and itchy scalps. Additionally, some dermatologists think that since activated charcoal forms strong bonds with poisons and eventually flushes them out of the body, if it can successfully perform gastric lavage in poisoning patients in the past, it can also use this mechanism to bind with dead skin and bacteria that attract sebum on skin that has been exposed to pollutants in the environment and, after washing, leaves the skin clear and healthy. Furthermore, psoriasis and eczema can be treated with it due to its antibacterial and antifungal qualities. Not only that, but it also efficiently cleans the scalp of debris and dandruff, which makes it a useful supplement to shampoos. Moreover, charcoal is an ingredient in a number of mouthwashes and dental pastes that advertise teeth whitening, which suggests that charcoal's abrasive quality helps remove stains. (2)



Figure:1-Charcoal

Benefits of charcoal face mask:

- The removal of emergency toxin
- Detoxification of the skin
- Oil cleansing
- Reduction of acne
- Reduction of skin irritations
- Prevention of premature aging
- Smoothing of the skin
- and reduction of inflammation

Gram flour:

Gram flour, sometimes referred to as started, has been widely used for its benefits to enhance beauty from ancient times. It helps clean and smooth the skin, acting primarily as a tonic for it. All that gram flour is made of is ground chickpea flour. It has several benefits for both skin and hair. It is applied to lessen skin tanning and oiliness, making it an effective anti-pimple agent. Since it lightens skin tones, it is directly used as a fairness agent. (3) This is a pulse flour made from ground chickpeas, sometimes referred to as orgarbanzo or Bengal gram. An essential component of Indian subcontinental cuisine, this flour is made from either raw or roasted chickpeas. The roasted type has more flavor than the raw one, which is slightly bitter.

Gram flour, sometimes referred to as started, has been widely used for its benefits to enhance beauty since ancient times. It primarily functions as an atonic for the skin, aiding in its cleansing and sluffing. All that gram flour is made of is ground-up chickpeas. It has several benefits for both the skin and the hair. As it lessens skin oiliness and reduces skin tanning, it works well as an anti-pimple agent. Gram flour, sometimes referred to as started, has been widely used for its benefits to enhance beauty since ancient times. It helps clean and smooth the skin, acting primarily as a tonic for it. All that gram flour is made of is ground chickpea flour. It has several benefits for both the skin and the hair. It is applied to lessen skin tanning and oiliness, making it an effective anti-

pimple agent. Since it lightens skin tones, it is directly used as a fairness agent. It evens out the skin tone and is a natural exfoliator. It brightens and thoroughly cleanses your skin. Zinc, which is present in gram flour, fights dark spots, minimizes blemishes, and delays the onset of aging. Furthermore, it regulates the production of sebum and relieves irritated skin. Besan is a very popular ingredient in most Indian kitchens, and, when it comes to treating skin issues, it is quite amazing. Whatever your skin concern, Besan will almost always assist you in addressing it. Beautifying your skin tone, reducing hyperpigmentation and sun tan, and enhancing your complexion besan does it all.



Figure: 2- Gram flour

Gram Flour What Does It do For Your Skin?

Grind your chickpeas to make gram flour. Protein, unsaturated fatty acids (such as oleic and linoleic acids), and vitamins (such as riboflavin, niacin, folate, and beta-carotene) are all abundant in this flour.

Aids fight acne:

Gram flour enriched with zinc helps fight infections that cause acne. Packed with alkaline and exfoliating qualities, gram flour unclogs your skin's pores to help remove pollutants and shield against outbreaks or pimples.

Remove sunburn from your skin:

Gram flour works wonders for removing tans. The skin is softly exfoliated by the finely crushed gram flour without becoming irritated. In addition, it will lessen tanning and assist in restoring the

natural brightness of your skin.

Regulates the production of oil:

Because it clears pores and eliminates oil, gram flour is a great solution for oily skin. When combined with a scrub or face pack and applied. When applied topically, gram flour absorbs excess oil from the skin. This aids in maintaining oil-free skin for extended periods of time.

Eliminates facial hair:

For millennia, gram flour has been a common component of natural skin cures in Indian culture. Gram flour works really well as a scraper to remove facial hair. Its exfoliating and alkaline qualities aid in the reduction of fine hair. When combined with turmeric, this will help make your skin appear more radiant by lightening the color of your hair.

Eliminates Grease:

Over time, the oil on your skin collects debris and contaminants. Since dirt can cause acne and other skin issues, it is crucial to have clean skin. Gram flour acts as a purifier to get rid of pollutants and dead skin cells. your dermis.

Brightens the Skin:

Gram flour is a great way to make your skin look lighter. It evens out the skin tone and is a natural exfoliator. It brightens and thoroughly cleanses your skin.

Combats Dark Spots:

Zinc, which is present in gram flour, fights dark spots, minimizes blemishes, and delays the onset of aging. Furthermore, it regulates the production of sebum and relieves irritated skin.

Cures Flaky and Dry Skin:

Since it works for all skin types, grain flour is the most adaptable component. It is a natural cleanser and moisturizer that works well on its own or in combination with other substances. Without removing the skin's natural oils, it hydrates the skin naturally. Dry, flaky skin is prevented and treated with this.

Removes whiteheads and blackheads:

Scrubbing with gram flour will Get rid of whiteheads and blackheads on your skin. The bothersome whiteheads and blackheads block pores, irritate the skin, and can lead to other skin issues.

Stops Early Aging Symptoms:

One of the best stabilizing agents is gram flour. It lessens wrinkles and fine lines around your lips and eyes. Antioxidants found in abundance in this substance help delay the onset of aging. It cures skin damage, increases collagen, and improves skin elasticity. This results in youthful, naturally glowing skin.



Nutmeg:

Most taxonomists are aware of nutmeg (*Myristica fragrans*), an evergreen tree that is a member of the *Myristicaceae* family of flowering plants that are native to Asia, Africa, the Pacific Islands, and America. Because of its well-known member, *Myristica fragrans*, which is the source of the spices mace and nutmeg, it is also referred to as the nutmeg family. About 150 species make up the genus *Myristica*, which is distributed throughout Asia and the western Pacific. Due to insufficient blooms on a single tree for both sexes, nutmeg trees cross-pollinate. There are several names for *Myristica fragrans* across the world. It is known as Pala in Indonesia and Jaiphal in Hindi, specifically in India. In Arabic, it's called Josat at-Tib. It is referred to as jaifal in Urdu. Speaking French, It is

referred to as muscade and is termed moschokarido in Greek. *Myristica fragrans* is the most commercially successful species in the *Myristica* genus. In addition to *M. fragrans*, many other species of *Myristica*, such as *M. argentea*, *M. fataua*, and *M. malabarica* (Indian), are planted across the tropical regions. They resemble *M. fragrans* in appearance, but they taste and smell less strong and cost less money. (4)

Top Benefits Of Using Nutmeg For Skin:

Applying nutmeg topically on a regular basis can aid in minimizing indications of age, such as puffiness and redness. Its exfoliating qualities can help exfoliate dead skin cells and clear clogged pores for smoother, more radiant skin. Furthermore, nutmeg contains antimicrobial qualities that make it a useful component in the fight against acne and the prevention of new outbreaks. All in all, adding nutmeg to your skincare regimen has a lot of advantages for a complexion that is radiant and healthy. These are a few of its main advantages.

1. Helps Treat Acne:

One of the main benefits of nutmeg for skin is its antimicrobial properties. The active ingredient in nutmeg, Myristicin, has been shown to have antibacterial, antifungal and antiviral properties. Because it aids in the destruction of the germs responsible for acne outbreaks, nutmeg is a useful element in the treatment of acne. Furthermore, nutmeg works well in the treatment of eczema and candidiasis, among other skin ailments.

2. Reduces swelling and itching

Additionally, nutmeg has anti-inflammatory qualities that make it a useful element in the management of rosacea, psoriasis, and eczema. Nutmeg's anti-inflammatory qualities aid in lowering the redness, swelling, and itching connected to these ailments.

3. Postpones aging signs:

Additionally, being high in antioxidants, nutmeg helps shield the skin from harm from free radicals.

Unstable chemicals called free radicals can harm skin cells and hasten the aging process.

By helping to neutralize these free radicals, antioxidants help to stop the harm that they can do. Because it helps to slow down the aging process and maintain the youthful appearance of the skin, nutmeg is an excellent element in the treatment of aging skin.

4. Skin Exfoliation:

As a natural exfoliator, nutmeg also helps to exfoliate dead skin cells, enhance the texture of the skin, and encourage skin renewal. Frequent exfoliation aids in pore cleaning, hence reducing the likelihood of blackheads and acne flare-ups. Exfoliation also increases the effectiveness of other skin care treatments by enhancing their absorption. (5)

5. Skin Brightening:

It has been demonstrated that nutmeg evens out skin tone and makes the skin look younger and more radiant. This is because nutmeg contains a lot of vitamin C, which is well known for its ability to brighten skin. Vitamin C aids in the synthesis of collagen, which helps to tighten and firm the skin, giving it a more youthful appearance.

6. Fights skin discoloration:

Nutmeg's high vitamin C content contributes to skin brightness and vibrancy, and its antioxidant qualities shield the skin from free radical damage. Nutmeg is a helpful component for people who are wanting to treat pigmentation concerns because it can help to enhance skin texture and minimize the appearance of dark spots when applied regularly to the skin. (5)



Figure:3-Nutmeg

Sandal wood :

These trees produce wood with a distinct, fragrant scent. This genus contains a wide variety of tree species, the most common being the Australian sandalwood (*S. spicatum*) and the Indian sandalwood (*Santalum album*). Indian sandalwood is a tiny evergreen tree that can reach a height of thirty feet. The wood has a pleasant scent. has oval leaves, dark reddish-black fruit, and yellow to maroon flowers. It is a tropical tree that grows throughout the nation. with Tamil Nadu and Karnataka seeing the largest growth. Maharashtra, Rajasthan, Uttar Pradesh, Bihar, Kerala, Andhra Pradesh, Orissa, Manipur, and Madhya Pradesh are the other states where they are grown.



Figure:4-sandal wood

Sandalwood Face Pack Powder

This paste made of herbs is applied to the face to cure pigmentation, scars, markings, and acne. Face Pack has a similar concept; it's a smooth powder that's put to the face as a paste or liquid, then left to dry and set to provide tightening from the film. cleaning and fortifying properties for the skin. Typically, they are applied to the skin for fifteen to thirty minutes in order to completely evaporate the water; this causes the ensuing films to constrict, harden, and become easily removeable with water. The face pack's exfoliating and tightening properties help to rejuvenate the skin on the face. The Ayurvedic literature describes a variety of nutritious face packs. astringent, cleansing, restorative, and qualities that are antiseptic. They improve the skin's sheen and smoothness while lessening dark spots, wrinkles, and acne.

Benefits of Sandalwood Face Pack Powder

1. Nourishes the skin and gives it the vital nutrients it needs.
2. Aids in minimizing skin scars and marks, acne, and pimples.
3. Face packs typically eliminate the skin's dead cells.
4. The skin feels calmed and relaxed after using a face pack.
5. In a short amount of time, they aid in restoring the skin's natural radiance.
6. Natural face packs improve skin texture and tone and give the skin a glow when used regularly.
7. The appropriate use of face packs can help mitigate the negative impacts of pollutants and extreme weather.
8. They aid in delaying the onset of premature skin aging.
9. With the use of natural face packs, wrinkles, fine lines, and skin sagging can be effectively managed.
10. Natural face packs give the skin of the face a youthful, healthy appearance. (6)

Aloe- vera

The Arabic word aloe, which means a dazzling, bitter material, is where the term aloe originates. *Aloe barbadensis* Miller is the botanical name for aloe vera. It is a perennial, xerophytic, succulent colony that is shrubby or arborescent and a member of the Asphodelaceae (Liliaceae) family. It is primarily found growing in arid regions of America, Europe, Asia, and Africa. It can be found in Tamil Nadu, Rajasthan, Maharashtra, Gujarat, and Andhra Pradesh, India.[2] Aloe is also widely used in Ayurvedic and traditional Chinese medicine. In Indian traditional medicine, or Ayurveda, aloe vera is used topically—often in conjunction with licorice root—to cure psoriasis and eczema. It is also used internally as a laxative, anti-helminthic, hemorrhoid treatment, and uterine stimulant. In Arabian herbal medicine, the newly made gel is applied to the forehead can be applied

topically to reduce fever or used as a headache treatment. It can also be used topically to treat conjunctivitis, mend wounds, and act as a disinfectant. Aloe vera includes vitamins, enzymes, minerals, carbohydrates, lignin, saponins, salicylic acids, and amino acids, among its seventy-five other possibly active ingredients. The plant *Aloe barbadensis* is divided into two halves, each of which create chemicals with entirely distinct chemical compositions and medicinal qualities. The transparent, thin, tasteless substance that resembles jelly is called aloe vera gel, or mucin, and it is produced by the parenchymal tissue that makes up the interior part of the aloe leaves. By separating the gel from the internal cellular detritus, this tissue can be extracted from the leaf. The remaining portion of the plant consists of a collection of specialized cells called pericyclic tubules, which are found immediately underneath the leaf's outer green rind. These cells secrete an exudate that has strong laxative-like properties and is composed of a bitter yellow latex.



Figure:5-Aloe -vera

Banana

Tropical fruits like bananas are farmed in more than 122 nations across the globe. Up until 2004, the fruit ranked fourth in terms of production behind rice, corn, and milk, with a planted area of 3.8 million hectares and a total production of 56.4 million metric tons. (7)

Bananas often have a short shelf life and begin to lose their quality as soon as they are plucked. The fruit's flesh is the portion of bananas that is most

commonly used; the peel is solely utilized. While mature dessert bananas are eaten raw, plantains and unripe bananas are cooked and used as vegetables, chips, snacks, powder, etc. Banana peel has been used in the production of biofuel, biosorbents, pulp and paper, cosmetics, energy-related activities, organic fertilizer, environmental remediation, and biotechnology-related processes in the recent past. Phytochemical substances found in banana peels are higher than in the pulp. Banana peel's antifungal and antibacterial qualities can be used to make effective use of. The peel is a common home cure for a variety of skin conditions, such as allergies and rashes. Its high-value components, such as the dietary fiber fraction, which has enormous potential for use in the creation of functional meals, can nevertheless be used to solve the issue. (8)



Figure:6-Banana pulp

Banana Biological name: *Musa acuminata*, *Musa balbisiana*

Family: Musaceae

Chemical Constituent: Numerous bioactive substances, including phytosterols, carotenoids, phenolics, and biogenic amines, are found in bananas.

Uses:

1. Rich in moisture and potassium.
2. Hydrate your skin to combat dry skin.
3. Bananas contain vitamin A, which evens and smooths the skin.
4. Has anti-aging and anti-acne properties.
5. It lightens and minimizes dark patches on the skin.

❖ **Benefits of a banana face mask:**

Silica, a related substance to silicone, is one of the most noteworthy components of bananas when it comes to topical applications. Proponents assert that bananas' silica can aid in boosting the creation of collagen, which is a naturally occurring protein that keeps skin smooth and moisturized. Nutrients found in bananas may benefit skin health in certain cases. Among them are:

1. Potassium
2. B-6 vitamin
3. Calcium
4. Minimum amounts of vitamin A (9)

Rose water:

A mixture of water and rose petals is called rose water. Its sweet aroma makes it a popular perfume, but it also has culinary and medical uses. (10)

Rose petals are steeped in water to create rose-flavored water. It is the hydrosol fraction of the rose petal distillate, which is a leftover after rose oil is extracted for use in fragrances. Throughout Eurasia, rose water is also utilized for religious purposes, as a component of several cosmetic and medicinal products, and to flavor food. During feasts, rose water was used at the dinner table to wash hands in medieval Europe. A typical component of scent is rose water. Rose water is occasionally used in cosmetics like cold creams, toners, and face washes, as well as in rose water ointment, which is used as an emollient. Some individuals In the winter months, especially, utilize rose water sprayed directly on the face as a moisturizing and scent-enhancing product. In order to greet guests, it is also frequently sprinkled at Indian weddings. Given that rose water has been used for thousands of years as a cosmetic, its ability to lighten redness and enhance complexion should come as no surprise. The antimicrobial qualities might lessen acne. The anti-inflammatory qualities help lessen redness on the skin. Puppy treats and a reliable source. Rose petals are extracted to produce a moderately fragrant

aqueous solution known as rose water. It can be made in three ways: by distilling, by simmering, or by processing essential oils. These techniques can be done at home, but they also need the knowledge of experts. (11)



Figure:7-Rose water

Rose Water: Benefits and Uses

1. Helps soothe skin irritation

Rose water's potent anti-inflammatory qualities are among its biggest advantages. These qualities can aid in the treatment of numerous internal and exterior illnesses. It might even aid in reducing irritability. reliable source for rosacea or eczema.

2. Soothes sore throats

Antibiotics are frequently prescribed by doctors for sore throats, but you might also wish to try rose water. Traditionally, sore throats have been relieved with rose water. Trusted Source. Although more research is required to confirm its efficacy, there is ample anecdotal evidence in favor of it, and there is very little danger involved in giving it a try.

3.Reduces skin redness

Given that rose water has been used for thousands of years as a cosmetic, its ability to lighten redness and enhance complexion should come as no surprise. The antimicrobial qualities might lessen acne. The anti-inflammatory qualities help lessen redness on the skin. Dependable source and swollenness.

4. Helps prevent and treats infections

Strong antimicrobial qualities in rose water help both prevent and treat illnesses. Rose water is frequently used in a wide range of herbal and medical remedies. According to a study by Trusted Source, rose water's antibacterial and analgesic qualities even assisted in the treatment of ocular diseases, including conjunctivitis, when applied as eye drops.

5. Contains antioxidants

Numerous potent antioxidants found in rose petals and rose oil can help shield cells from harm. According to one study, these antioxidants may have inhibitory effects on lipid peroxidation (trusted source). As a result, this offers strong cell protection.

6. Heals cuts, scars, and burns

Rose water has antibacterial and antiseptic qualities. Reliable source that promotes quicker wound healing. These qualities can aid in cleaning and prevent burns and injuries from becoming infected. Additionally, they can hasten the healing of burns, wounds, and even scarring. (12)

METHOD OF PREPARATION

Sr. No	Constituents	50gm
1	Charcoal Powder	12.5gm
2	Gram Flour	7.5gm
3	Sandalwood Powder	10gm
4	Aloe-Vera Ge	7.5gm
5	Nutmeg	7.5gm
6	Banana Pulp	5gm
7	Rose Water	Q.S

Table:1-Formulation table for charcoal face pack

1. Take Four clean and dried mortar and pestles
2. Add Separately, Sandalwood Powder, Gram flour, Nutmegte, charcaol powder to each mortar and pestle and triturate well
3. To this mixture add required quantity of banana pulp and Aloe vera and continue the trituration.
4. To the above mixture add sufficient quantity of Rose Water

5. Then properly mix all the above ingredients.



Figure:8- Preparation of formulation

Evaluation Parameter

Organoleptic Evaluation: This is the process of assessing a herbal face pack based on its look, texture, color, and other attributes. We looked at the formulation's exterior features using the methodology of Siddiqui et al.

Physicochemical Evaluation: The extractive value, ash value, pH, and moisture content were among the physicochemical characteristics that were ascertained.

Physical evaluation: A microscope approach was used to measure the particle size. By calculating bulk density, tapped density, and angle of repose using the funnel method, as well as bulk density and tapping method, the flow property of the dried powder in mixed form was assessed.

Evaluation of phytochemicals: Using conventional protocols, the herbal face pack's aqueous extract was screened for the presence of several phytoconstituents

Irritancy test : On the dorsal surface of your left hand, mark a square centimeter. A certain amount of ready-made face packs were applied to the designated region, and the time was recorded. For a full day, irritability, erythema, and edema were monitored at regular intervals and reported.

Studies on stability: A month-long stability test of the obtained formulation was carried out by

storing it at various temperatures. The formulation's packed glass vials were kept at various temperatures. stability analyses The developed formulation was subjected to a period of storage at varying temperatures in order to verify its stability.

RESULT

❖ **Organoleptic Evaluation:** Organoleptic characteristics indicated in Table 2 were assessed for the herbal face pack. Brown was the color of the formulation. Preparation formulations had a nice, well-accepted smell, which is ideal for cosmetic formulations. Smoothness and texture were appropriate given the specifications of the cosmetic formulas.

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

Table:2- Organoleptic Evaluation

❖ **Physicochemical Evaluation:** The physicochemical properties of the herbal face pack were assessed and are displayed in Table 3. The formulation's pH was discovered to be almost neutral. Both the moisture and ash contents were within tolerance. It was discovered that the particle sizes of the formulations ranged from $24.3 \pm 2.5 \mu\text{m}$.

Sr. No	Parameter	Observation
1.	PH	6.93
2.	Loss on Drying	2.8
3.	Ash Content	88 ± 0.351
4.	Particle Size	24.4 ± 2.6

Table:3- Physicochemical Evaluation

❖ **Phytochemical Evaluation:** The phytochemical characteristics displayed in Table 4 were assessed for the herbal face pack. It was discovered to contain phytoconstituents that are excellent skin nourishers, including carbohydrates, alkaloids, glycosides, tannins.

Sr. No	Phytoconstituents	Observation
1.	Carbohydrates	+
2.	Alkaloids	+
3.	Glycosides	+
4.	Tannins	+
5.	Volatile oil	+

Table:4-Phytochemical Evaluation

❖ **Physical Evaluation:** The physical parameters (powder property) of the herbal face pack were assessed and are displayed in Table 5. The flow (powder) characteristics of the herbal face pack were validated by rheological results. It was discovered to be non-sticky and free-flowing.

Sr. No	Parameter	Observation
1.	Tapped density	1.327gm/ml
2.	Bulk density	1.08gm/ml
3.	Angle of repose	32.151
4.	Hausner's ratio	1.232
5.	Carr's index	22.92%

Table:5- Evaluation of flow properties

❖ **Irritancy Test:** Table 6 displays the irritancy test findings. In irritancy testing, the formulation exhibited no redness, swelling, or irritation. It is safe to use this mixture on the skin.

Sr. No	Parameter	Observation
1.	Irritation	No
2.	Redness	No
3.	Swelling	No

Table:6- Irritancy Test

❖ **Stability Studies:** Table 7 displays the stability results. With the exception of pH, no changes in color, smell, texture, or smoothness were noticed under the specified stability circumstances. The formulation's pH changed slightly at 400 °C, according to stability testing.

Sr. No	Parameter	Room temperature	400c
1.	Colour	No change	No change

2.	Odour	No change	No change
3.	PH	6.93±.013	6.88±0.12
4.	Texture	Fine	Fine
5.	Smoothness	Smooth	Smooth

Table:7- Stability Test

CONCLUSION

People nowadays require side-effect-free treatments for a variety of skin conditions. Given that natural medicines are safer and have fewer adverse effects than synthetic ones, they are considered more appropriate. In the global market, herbal formulations are in demand. The face pack made of herbs is quite beneficial and includes ingredients such as rose water, aloe vera, gram flour, nutmeg, sandalwood, and charcol. It is suggested that the developed formulation had characteristics of a typical cosmeceutical formulation for cosmetics and was both physically and microbiologically stable. It effectively gives the skin a radiant appearance. Using a herbal face pack helps to enhance blood circulation, preserve skin elasticity, eliminate adherent dirt particles, and revitalize muscles. One advantage of herbal-based cosmetics is that they are safe. It nourishes the skin on the face. The skin receives essential nutrients from this face pack. It facilitates the removal of marks, scars, and acne. In addition to exfoliating the skin, a face pack cools, calms, and soothes it. They give skin its optimal time to regain its natural radiance. These days, people welcome natural medicines because they are less harmful and have less negative effects than solutions made of chemicals. Large quantities of herbal formulations are needed to meet the demands of the expanding global market. It is a successful attempt to create a herbal face pack with various plant powders that have a variety of medicinal uses.

There is very little clinical evidence that can link activated charcoal's highly receptive qualities—



which have benefited humanity since its discovery—to its use in clinical practice in some regions, despite the fact that scientific experiments proving these qualities cannot in any way be refuted. Nevertheless, despite its advantages, people should remember that activated charcoal is a chemical compound and that, like any other chemical, it may react negatively if not used sparingly and in moderation. This is especially true when using activated charcoal for its benefits to the teeth and skin.

The current study uses less-toxic herbal components to produce herbal mukha lepa. Therefore, the current work represents a very good attempt to formulate a herbal face pack using readily available natural ingredients such as bentonite clay, activated charcoal, and sandal wood. The prepared formulation was found to be physically and chemically stable and to exhibit characteristics of a standard skincare cosmeceutical formulation.

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