

**EVALUATION AND FORMULATION OF HERBAL CREAM**

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ABSTRACT:

Creams are semi-solid dose forms that are typically administered topically to the skin. Homoeopathic, Siddha, and Ayurvedic cosmetics and certain pharmaceutical items consist of the Aloe Vera leaves that have mucilaginous tissue in the centre. Aloe Vera gel doesn't contain Anthraquinones. Which Are in Charge of the Aloes has potent laxative properties. Still, the entire leaf. Anthraquinoid may be present in the extract. Vera aloe includes in the 75 components that may be active, such as Minerals, sugars, enzymes, vitamins, salons, and amino acids. Amino acids found in amla include praline, aspartic acid, and glutamic acid, among others. Minerals and protein. Peels from cucumbers are high in fibre. and include minerals such as potassium, magnesium, and quartz. Silica is a necessary ingredient in hold upon your healthy tendons, bones, and muscles. Additionally, it moisturises our skin and enhances our vision and appearance^[2]

Keywords:

Aloe vera gel, Ocimum tenuiflorum / Ocimum sanctum (tulsi), Azadirachta indica (neem), cosmetic herbs^[4]

INTRODUCTION

It also provides the skin with necessary nutrients and moisture. Herbal cream consists of just some water and oil. Natural ingredients used as herbs include neem, papaya, aloe vera, tulsi and turmeric. The selection of various products depends on the particular quality of each product. Neem according to Bhowmik D. et al. It is effective in treating many skin conditions such as psoriasis and dry skin eczema. Tulsi is used to enhance wound healing and give skin glow recuperation. Along with these health-promoting measures, Traditionally, tulsi is advised as skin conditions, anxiousness . Papaya is well-known for its anti-wrinkle properties, enzyme activity, and inflammatory-reducing . Our worker's primary goal is to de-Create a herbal cream that has multiple

Face creams provide a softening and cleaning effect when used in mekap .Illness state An imitation is a system where one fluid is distributed in unbreakable conditions. By adding a, macroscopic phase separation is prevented. appropriate surfactant More people are using water-in-oil emulsion to treat dry skin and apply emollients . This composition can be enhanced by adding an active component with particular aesthetic outcomes. Benefits of cosmetic emulsion preparation in particular are achieved when using antioxidants as active components body, hand, and massage creams at night. Global attention is being accorded to polyherbal cosmetic formulations, which provide an elevated sense of efficacy, purity, and protection. A lot of cream is used in the market as emulsifiers, fragrance agents, synthetic polymers, thinkers, surfactant, and pigments to create the base. There is a widespread requirement for natural substances to replace harmful synthetic compounds from base.

Turmeric was first utilised approximately 4,000 years ago in the Indian vedic culture, when it was both a culinary spice and a sacred ingredient. It most likely made its way to China around 700 AD Initially, it was utilised as a dye, and subsequently for its purported folk medicinal benefits. It

moved to Southeast Asia from India. in addition to Buddhism and Hinduism, since the robes are coloured with yellow dye. of priests and monks. There are other reports of turmeric in Tahiti, Hawaii, and Prior to European contact, Easter IslandTurmeric is frequently used in herbal products to aid in the absorption of excess serum. skin purification and pore opening. Skin irregularities are eliminated by turmeric.improves the tone of the skin and minimize wrinkles. This soothing herbal lotion with turmeric helps to smooth and invigorate your skin while shielding it from the damaging effects of pollution.The body's skin is its biggest organ, composed of minerals, lipids, protein, and water.Your skin shields your prevents infection and controls body temperature. Skin nerves enable you to feel feelings of warmth and cold.Skin Type Normal. This skin type is just right—not very oily or dry. More often than not, sensitive skin reacts to stimuli that normal skin does not respond to . Skin that is dry. Skin that is oily. Skin type: combination Skin Scaly.

Numerous drug delivery systems are required in the pharmaceutical sector to guarantee that the medication reaches the designated area or portion of the body. There are a lot of factors to take into account when choosing a drug delivery method. Topical delivery systems work best for creams.

Topical drug delivery systems are those that apply medications to the skin in order to treat skin conditions. infections. Blisters, acne, and localised skin infections can all be treated with them. topical medication delivery methods are superior to alternative medication delivery methods in terms of toxicity and effectiveness. There are various kinds of creams, including massage, night, vanishing, cleansing, cold, and hand and body creams. Our primary goal is to create a herbal cream that can provide multi functional impact, such as moisturising, reducing rashes and acne, wrinkles, psoriasis, and other skin conditions.

Three natural ingredients were used in our recipe. Neem is applied topically to alleviate skin irritation, redness, pigmentation, scarring, and inflammation .Tulsi is applied topically to enhance skin radiance and facilitate wound healing Skin infections significantly represent major worldwide health issues, although being frequently ignored. According to studies on global health and the WHO report, skin diseases are Among the diseases that impose a global burden (GBD) numerous fatalities and the fourth-highest global cause of disability board .What is still astonishing is that the current petroleum antibacterial medications made of chemicals that are marketed do not seem to handle the issue because of the opposition evolved over time by the bacteria to the medications. Healthcare professionals faced difficulties as a result of resistance. from now on, require immediate care to resolve .Usually, Tinea capitis, Candida albicans, and Most commonly, Staphylococcus aureus is recognized for its thought to be responsible for topical skin diseases.Furthermore, These bacteria have grown resistant to the conventional antibiotic medications to the point where skin infections are now common and incurable in the local people. Both Staphylococcus aureus and Candida albicans Even more perilous, opportunistic, and pol-microbiological in origin, resulting in extremely complex infectionstions for healing .This suggests that handling fungus

While utilising traditional medications to treat bacterial skin infections is still difficult. However, looking for and creating fresh anti-microbiological agents that will resolve resistance concerns and Reducing the number of skin infections is still essential. Ours. Currently, scientists have devoted close attention to the Mission to look for novel or substitute antibacterial substances from therapeutic plants to treat skin diseases. Pharmaceutical .Plants are a new and exciting development in the medicinal industry. growth in opposition to both infectious and non-infectious.[5]

CREAMS:

Many types of drugs are used in the pharmaceutical industry. These are a mixture of water and oil. Cosmetics are a significant component of the cosmetics industry because of their hydrating result.

Cosmetics are applied to the skin to improve its beauty and attractiveness. These cosmetics shield the skin from both internal and externally harmful substances. With cosmetics, one can achieve longevity in addition to creating beautiful beauty by reducing skin inflammation. Cosmetics are products used to beautify the human body. It is more beautiful, encouraging attractiveness, and changing its appearance without changing how the body is built or operates. In the past 50 years, face cream has become popular as a way to enhance appearance and complexion. Dark complexion can be attributed, in part, to melanin. It is less oily in appearance and is easily removed with water. Known as W/O cream, this formula contains water in the oil phase. Although the W/O type is difficult to control, they are more hydrating because they form barriers that reduce moisture in the stratum corneum. This cream is formulated with an easy-to-use formula to control melanin distribution. The pigment that controls skin colour is called melanin^[7]

IDEAL CHARACTERISTIC OF CREAMS:

In order for the drug in the sugar to have the desired effect, it must be non-toxic and have good permeability to avoid side effects such as skin irritation, which can penetrate the red skin or cause rashes to appear.

- It should spread readily across skin when applied.
- When applied to skin, it ought to melt or liquefy at body temperature.
- It must not irritate the skin or produce any inflammation^[3]

TYPES OF CREAMS:

Oil-in-water emulsion (o/w):

Water-in-oil emulsion (w/o):

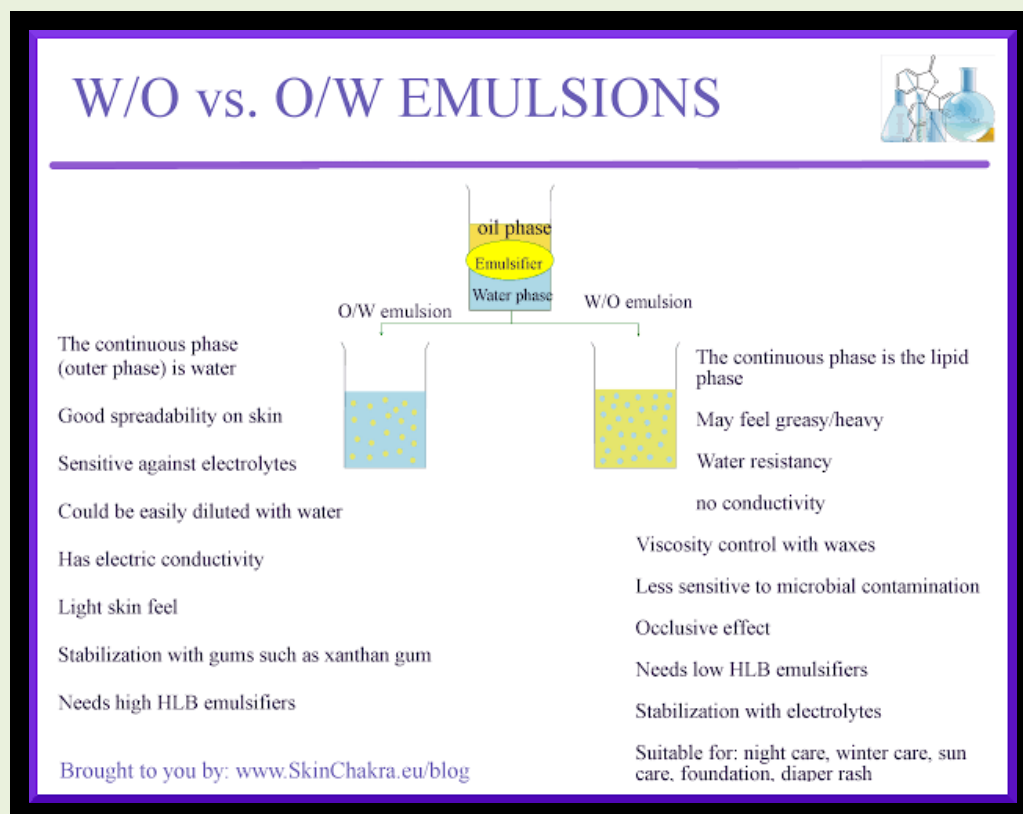


Figure 2: Type of cream

HERBAL CREAM:

Synthetic creams may cause negative skin reactions. Herbal creams are being used to prevent this. All of the ingredients in herbal creams come exclusively from herbs and shrubs. They are extensively utilised since they have no negative effects on skin when applied. An additional benefit is that they are simple to prepare because the ingredients are found in nature. There are various kinds of creams, such as hand and body creams, massage, vanishing, night, cleansing, cold, and foundation.

As India is a country rich in herbs and herbs, herbal medicine has been produced in India since ancient times. India includes Ayurveda and various herbal preparations.

Since prehistoric times, many medicinal plants have been developed to protect the body from injuries or illnesses caused by other diseases or other factors. The demand for herbal cosmetics is quite high due to the discovery of many new herbal ingredients. Calendula is a component of herbal medicine.^[11]

Calendula:

- Calendula anti-inflammatory properties..
- small wounds , cuts.

❖ Aloe Vera:

- cosmetics and skin care products.
- The development of sun protection products can reduce skin irritation .

- applied in moisturiser, helps lessen acne and pimples, and therapy for burn injuries.

❖ **Hibiscus:**

- It is claimed that hibiscus has an amino acid-rich tanning effect.

❖ **Neem:**

- It also helps reduce redness, scarring, pigmentation and itching

❖ **Tulsi:**

- Tulsi is used to enhance skin radiance and accelerate the healing of wounds.

❖ **Okra:**

Known to most people as okra, this plant has historically been used to treat many ailments such as syphilis, gonorrhoea, diarrhoea and urinary tract infections. It acts as a moisturiser and anti-itch on the skin.[14]

1)Aloe

Creams provide a softening and cleansing effect when used cosmetically. Virus state replication is a system in which one liquid splits into another liquid, becomes unbreakable. A suitable surfactant for inhibiting macroscopic phase separation



Figure 3 : Aloe-vera leaf

It is a perennial herb that is illegal in the Arabian Peninsula, but grows wild in tropical, subtropical and dry climates around the world. It has been grown for commercial purposes, often as a cosmetic, which has been used for centuries. In addition to being attractive for aesthetic purposes, this species is also of interest. It does well as a houseplant. Taking aloe vera extract by mouth can be dangerous because it can cause side effects

Benefits of Aloe Vera for the Face

- discomfort, edema and caused by cuts or wounds
- It relieves sunburns and rashes by cooling them
- It facilitates collagen synthesis and release.
- Maintain the health of your face .
- Provides moisture in the dry skin.
- Eases psoriasis and eczema
- Gets rid of dead skin cell
- Attend to sunburns
- Give skin a healthy sheen.
- Moisturise the skin using necessary
- Prevents ageing too soon
- Diminish the appearance of stretch marks.[15]

2)Turmeric

The rhizomes of the plant are harvested every year, some for display for the next season and some for food.



Figure 4 : Turmeric powder

Turmeric

Turmeric flower Turmeric rhizome

The rhizome is used fresh or boiled and dried and ground into a dark orange-yellow powder; Because of the strong colour that curry provides, it is frequently used as a colouring and flavouring agent in many Asian cuisines, especially curries. . Curcumin, turmeric extract

Curcumin, a yellow substance derived from the turmeric plant, has been approved by the World Health Organization, the European Parliament and the US Food and Drug Administration. Curcumin is a yellow substance obtained from the turmeric plant and is recommended as a food supplement. The foods are approved by the World Health Organization, the European Parliament and the US Food and Drug Administration.

□ **Turmeric's health benefits include:**

- ✓ Its natural anti-inflammatory compound;
- ✓ It strengthens the heart and guards against cancer and Alzheimer's
- ✓ Strong antioxidant
- ✓ Manage and avoid diabetes
- ✓ Enhance the condition of the skin
- ✓ Addresses depression
- ✓ Treats acne
- ✓ Diminish shadows around eyes
- ✓ May benefit psoriasis and dermatitis
- ✓ Makes the skin clear
- ✓ Promotes the healing of wounds
- ✓ Encourages loss of weight
- ✓ Keep your body safe from free radical damage.
- ✓ Agent antimicrobial [19]

3)Neem

Neem trees are members of the Meliaceae and Mahogany families. India, Burma, Bangladesh, Sri Lanka, Malaysia, and Pakistan are their home nations. It serves as Hyderabad's state tree as well.



Figure 5 : Neem leaf

In India, neem trees grow quickly and can grow to be as tall as 15 to 20 metres.

It occasionally reaches heights of 35–40 m (115–131 ft). This plant is evergreen. It is present in a few of Tamil Nadu's most populous districts, including Tuticorin and Tirunelveli. curry

□ **advantages of powdered neem leaf**

- ✓ Provides protection from dandruff
- ✓ It works for both hair and the face.

- ✓ Take care of dry scalp to make it shiny and smooth.
- ✓ Boost brightness and have an ageing effect
- ✓ Promotes better blood flow
- ✓ Maintain healthy, glowing skin
- ✓ Neem has antibacterial properties that help get rid of acne.
- ✓ Neem brightens and fades scars caused by acne.
- ✓ Helps relieve eczema
- ✓ acne treatment
- ✓ Prevention of skin infections
- ✓ Creates an even skin tone.[22]

4)Tulasi

Hindus consider it to be an earthly manifestation of Goddess Tulasi. She is considered the avatar of Lakshmi and the consort of Lord Vishnu. In another version, as Vrinda, she was married to Jalandhara. It is recommended to offer leaves when worshipping Vishnu and his avatars such as Krishna and Vithoba.



Figure 6 : Tulsi leaf

Tulasi**Personification of the Tulasi plant**

Other names	Vrinda
Devanagari: Sanskrit	तुलसी
transliteration:	Tulasi
Affiliation:	Devi, Lakshmi
Abode	Bhuloka, Vaikuntha
Symbol:	Tulsi plant
Festivals:	Tulasi Vivaha
Parents:	Dharma Dhawaja (father) Kalanemi and Svarna (as Vrinda)
Consort:	Vishnu (as Tulasi) Jalandhara (as Vrinda)Ocimum tenuiflorum

Table 1 : Personification of the Tulasi plant

The plant is grown for religious purposes and its essential oil.

□ **Tulsi leaf powder benefits include:**

- ✓ Boosts immunity naturally
- ✓ Lower blood pressure and stress levels
- ✓ Beneficial to skin health
- ✓ Beneficial for kidney stones
- ✓ Combat acne
- ✓ Encourages ageing skin health
- ✓ Treats skin conditions such as eczema
- ✓ A good supply of vitamin K
- ✓ Excellent for treating skin conditions
- ✓ Avoid breakouts anti-ageing benefits [33,34]

4)Papaya

Not to be confused with South American papaya or Eastern North American papaya. For other papayas, see *Chaenomeles spinosa* or *Pseudocarya sinensis*. For further details, see "Preservation of Plants and Fruits" in Kohler's Medicinal Plants (1887). There is not enough information



Figure 7 :papaya fruit

Scientific classification

Papaya is a plant belonging to the genus *Carica*, one of the 21 species of the genus *Caricaceae*. They first lived in Central America, now southern Mexico and Central America. It grows in hot climates in many countries. In 2020, India produced 42% of the world's papaya rice.

When used as a cosmetic, face cream has a softening and cleansing effect. extracts to treat numerous diseases is the Ayurvedic system .An imitationsion is a system where one fluid is distributed in another that itunbreakable.By adding a, macroscopic phase separation is prevent appropriate surfactant (Pine DJ and Imhof A, 1997)

Papaya's skin benefits include:

- ✓ It reduces wrinkles;
- ✓ It acts as an enzyme
- ✓ It was utilised for its anti-inflammatory qualities.
- ✓ Manage acne
- ✓ Eliminate dead skin cells.
- ✓ Enhance the skin stone
- ✓ Calms skin irritation
- ✓ Rehydrates parched skin
- ✓ Aid in losing weight
- ✓ Promoting the health of the skin

- ✓ Skin and recovery
- ✓ Increases immunity
- ✓ Rich in vitamins, minerals, and antioxidants
- ✓ Preserve vision
- ✓ Aids in the treatment of hypertension
- ✓ The ability to prevent ageing
- ✓ Treats cutaneous infections
- ✓ Avoids wrinkles
- ✓ Address morning sickness.[35]

5)Amla

Indian gooseberry is known as “amla” in Hindi and “आम्रवृक्ष” in Marathi. Hashim Amla is a South African cricketer, born in 1983. His brother Ahmed Amla was born in 1979. Amla (Madhya Pradesh) is a city in the Indian state of Madhya Pradesh. Amla (Vidhan Sabha constituency), Madhya Pradesh

Amla belongs to the Phyllanthaceae family of deciduous trees. It has fruit that is edible and goes by the same name. The Middle East, several nations in Southeast Asia, and India are home to the Indian gooseberry tree. For thousands of years, Ayurvedic medicine has utilised Indian gooseberries. The fruit of the tree is still used today to manufacture medication. With the second-highest ascorbic acid content of any cultivated fruit, ranging from 0.9% to 1.3%, amla fruits are a very rich source of vitamin C



Figure 8 : Amla

- Gooseberry juice may help your skin age more slowly. One of the unique aspects of getting older is the constant desire to look younger as we age . Still, who would not desire to appear youthful? To drink, just prepare some amla juice, stir in some honey, and enjoy. This beverage has a ton of antioxidants that can improve the appearance and health of your skin.cells ageing. Amla contains vitamin C, which promotes radiant skin. Consuming

- amla juice on a regular basis can help avoid dark spots, fine wrinkles, and early aging and furrows.

- **Addresses Pimples**

- Another option is to prepare amla paste, apply it to the afflicted area of your face, and then wait for it to Dry for a maximum of fifteen minutes. This will support in controlling the fine wrinkles, zits, and decrease acne-induced scarring. It purifies blood naturally. It prevents acne breakouts and its aftermath. Amla juice therefore offers you beautiful skin.

- **Healthy Skin Tone**

- Skin that has a high collagen content is firmer and more youthful-looking. seem floppy. Frequent use of amla juice increases the amounts of vitamin C and aids in raising the
- the amount of collagen your skin produces. This will give the appearance of delicate, young skin.

conventional use of medicine

Fresh and dried fruits Herbal remedies used in Ayurvedic treatment include fruits, seeds,

Leaves, bark, roots, flowers. According to Ayurveda, amla fruit has three secondary tastes (anuras): sweet (madhura), bitter (tikta), and spicy (katu). The main tastes are sour (amla) and astringent (kashaya). Its qualities (gunas) are dryness (ruksha) and light (laghu), its energy (virya) is coolness (shita), and its post-digestion effect (vipaka) is sweetness (madhura).

Health benefits of Amla

1)It strengthens your immunity: Amla, which is high in vitamin C, can strengthen your immunity. Elderly people, adults, and children all need vitamin C.

2)It improves the health of your heart: Amla's high vitamin C content is excellent for heart health. fortifies and thickens the heart's arteries. This is particularly crucial for those with elevated.

3) The amount of Vitamin C you consume greatly influences the health of your skin and hair. Vitamin C makes collagen function properly, which tightens and enhances the condition of your skin. Amla provides you with the radiant skin you have always desired. Yoghurt and amla powder can be combined to make a face mask. For hair, you can deeply massage your scalp by combining watered-down l. It might assist to increase the quality of your hair and get rid of dandruff and dry skin on the scalp.

4)It lessens inflammation: Our immune systems are compromised by free radicals, which can harm our hearts, skin, and other tissues. This is due to the fact that inflammation, which is essentially the underlying cause of most diseases, is brought on by free radicals. Amla's antioxidants aid in the body's reduction of inflammation and elimination of free radicals.

5)Amla is an abundant supply of fibre; a diet high in fibre is necessary for a healthy digestive system. But be careful—consuming too much fibre might aggravate your digestive system and raise your chance of developing irritable bowel syndrome. Consume the appropriate quantity of fibre in your diet

to prevent stomach ulcers, acidity, and constipation. Amla lessens hyperacidity and ulcers by encouraging the stomach's natural production of acid.

6) diabetes because it contains chromium, which helps to stabilise blood sugar levels. It increases your cells' sensitivity to insulin, which is advantageous for those who have type 2 diabetes.[37]

METHODS AND MATERIAL

Materials in plant : Aloe vera and Amla are the subjects of the planned study. Peel cucumbers from your local area. Preparation of the extract involves air drying and grinding cucumber, amla and aloe vera peels into a coarse powder. These were treated separately in Soxhlet using petroleum ether followed by gradual addition of ethanol. [1]

Cream composition

Propylene glycol and beeswax were added to the first glass. Cucumber peel, aloe vera extract, amla extract, white soft paraffin, distilled water, sodium benzoate, zinc oxide, and glycerin were collected. In the second glass. The water bath was heated and the aqueous phase was separated. Then continue to stir until a semi-solid mass forms.[6]

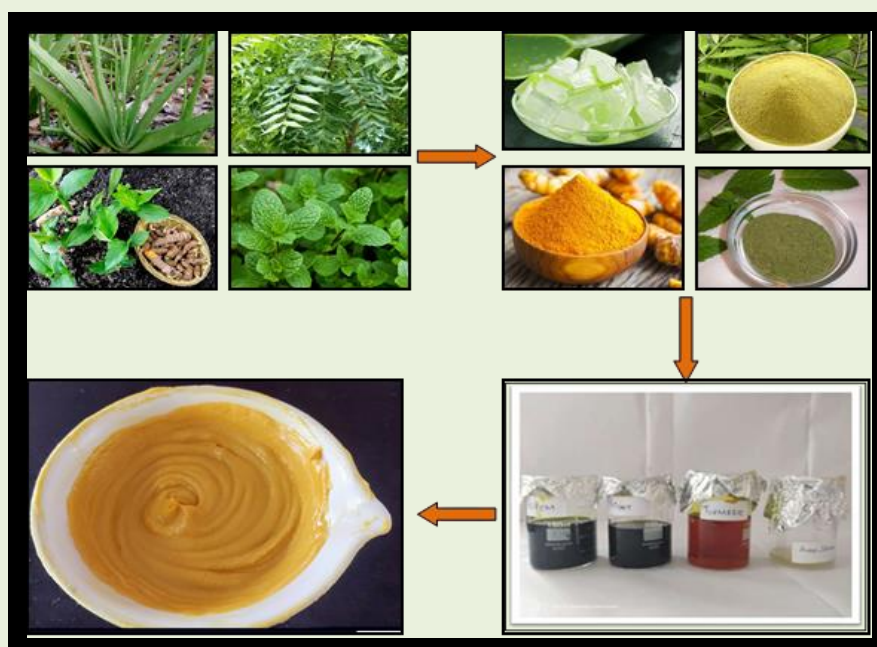


Figure 9 : Formulation of herbal cream

Sr. No	INGREDIENTS
1	Aloe vera
2	Amla
3	cucumber peels

4	Beeswax
5	White soft paraffin
6	Methyl paraben
7	Distilled water
8	Menthol
9	Glycerine
10	Propylene glycol
11	Zinc oxide
12	Sodium benzoate

Table : 2 Formula of cream formulation

HERBAL EXTRACTS:

Herbal extracts are used to make herbal face cream. To use the extracts in the creation of herbal face cream, care must be taken when extracting the herbal ingredients

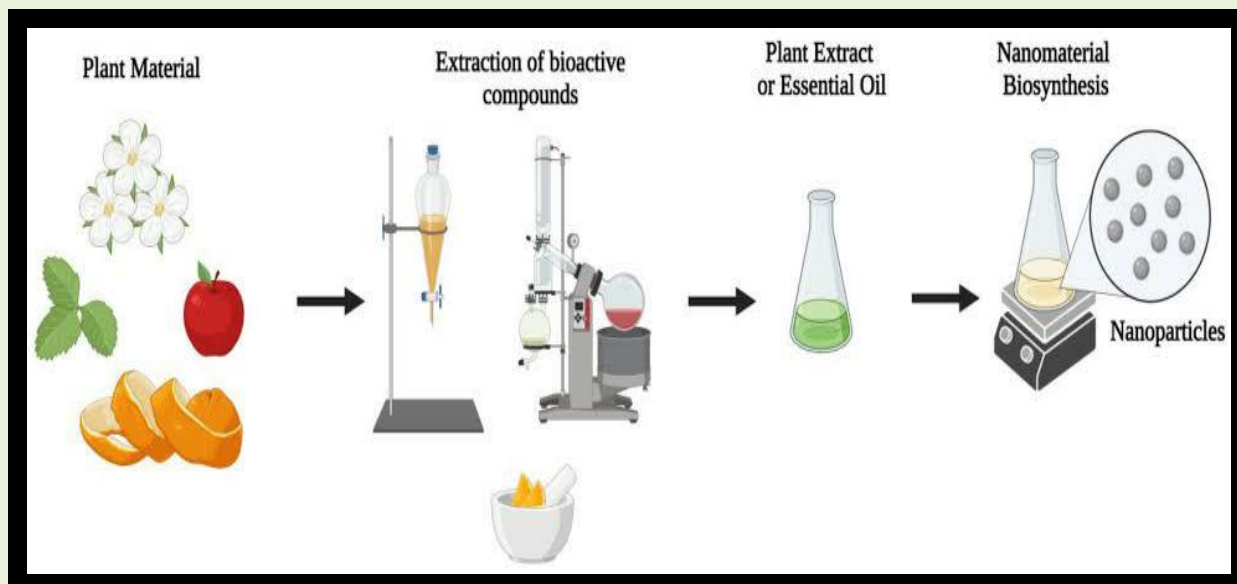


Figure : 10 EXTRACTION PROCESS OF SOME HERBAL INGREDIENTS:

Water-in-oil emulsions are increasingly used to treat emollients. The benefits of cosmetic emulsion formulations are especially evident when antioxidants are used as active ingredients. There are several kinds of cream, such as vanishing, cleaning, cold, foundation, body, hand, and massage creams at

night. The multi-herbal makeup formulation is becoming more and more well-known globally as they provide the improved sensation of efficacy, safety, and purity. A lot of cream is present in the bazaar.[8]



Figure 11 : Extraction of herbal plants

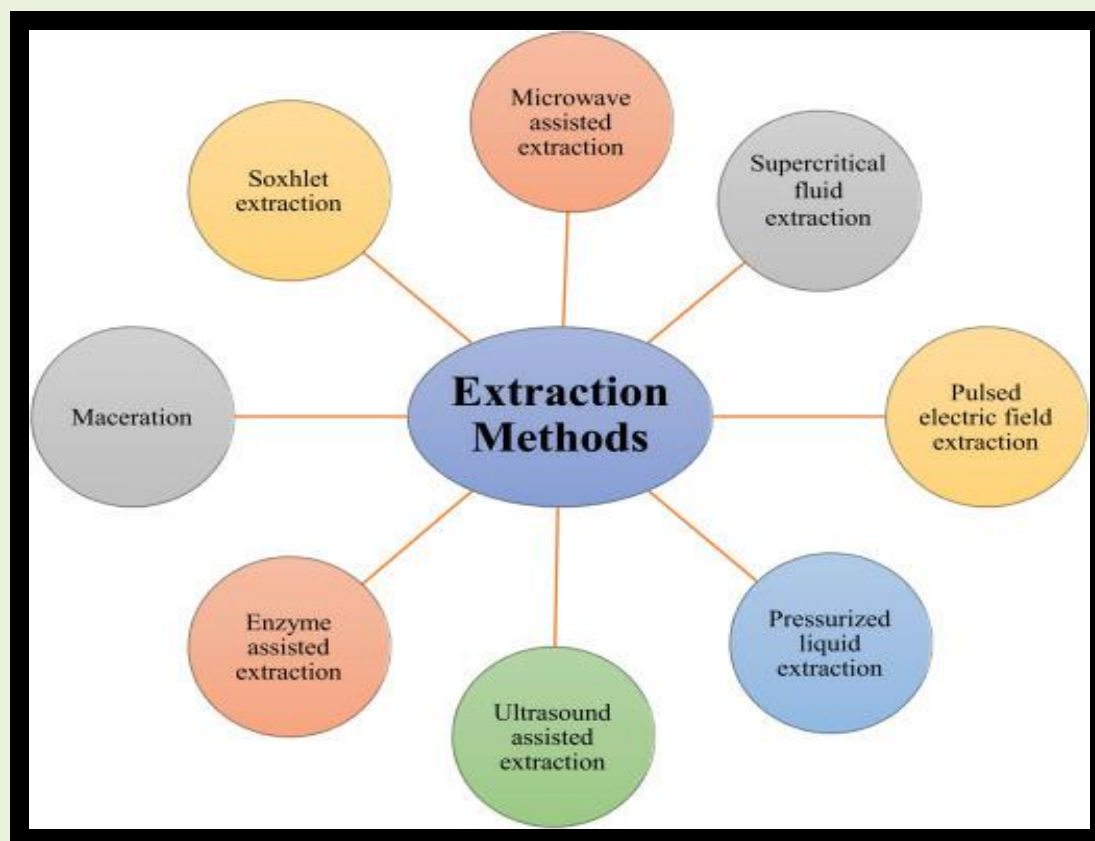


Figure 12 : Extraction Methods Excretion

✦ Tulsi extract:

Tulsi leaves are gathered and either naturally or with the use of a hot air oven, dried for three to four days. The leaves are crushed or powdered to create a fine powder once they have dried. Next, 10 millilitres of dimethyl sulfoxide are added to a beaker containing one gram of tulsi powder. Then it trembled violently and heated to between 80 and 100°C on a water bath.[10]

✦ The Extract of Aloe Vera :

First, the harvest matures. After drying, cut the outer part of the aloe vera leaves with a sterile knife. Then use a sterile knife to remove the aloe vera gel. [23]

✦ Neem extract:

Wash neem leaves after harvesting. The leaves are crushed and dried. Then add 5 grams of neem powder and mix with dimethyl sulfoxide until dissolved. After that, the solution is heated to 80–100°C in a water bath. After the solution is filtered, a clear solution that can be used is produced for making herbal cream.[30]

✚ Lycopene extract:

Tomato paste is weighed, dissolved in methanol, and then vigorously shaken. Leave it alone for three hours. The top yellow filtrate was disposed of after three hours. Methanol and carbon tetrachloride were then added in equal parts. Through filtering The uppermost layer of methanol was isolated. Water is added to this layer to create a white emulsion. Once more, When anhydrous sodium sulphate was added, the methanolic layer was separated. Blend was subsequently Filtered, the filtrate was placed in a water bath to evaporate. A dark, greasy residue was produced, and this is in benzene and dissolved. Ultimately, lycopene was crystallised by adding boiling water dropwise Methanol.[32]

✚ Papain extract:

After harvesting ripe papaya fruit, it is cleaned. After drying, it is divided into pieces.

After crushing the pieces, 100 millilitres of distilled water are filtered. Herbal cream is prepared using the obtained clear solution.[9]

✚ Green tea extract:

Collect plant material used to make green tea. After drying in the shade, it was crushed into coarse particles. Green tea is then extracted by cold maceration using a water-alcohol solvent at a ratio [12]

Analysis of Herbal Extracts:

Phytochemical quality analysis is performed to determine the phytochemicals present in plants.

o Alkaloid**Test of the Mayer's :**

After taking 2 ml of 1% HCl and mixing it with the crude extract, it was gently heated.

A precipitate forms in the tulsi extract and the presence of alkaloids is indicated by the formation of a dark orange colour in the lycopene extract.[16]

o Test of the Dragendorff's :

The test tube was filled with crude extract. The crude extract is then combined with the dragendorff reagent. The alkaloid is present in the tulsi extract when it produces an orange-red colour and in the lycopene extract when it produces a yellow-orange colour.[12]

Test of the Lead ethanoate :

The determine the presence of flavonoids. Lead ethanoate (1 millilitre) was added to the extract. The formation of a buff-coloured solution signifies the presence of flavonoids.

o Shinoda test:

A test tube is filled with crude extract. Magnesium and concentrated HCL are added in small amounts. The presence of flavonoids is indicated by the appearance of a pink scarlet colour.

o Test of the Ferric chloride

The crude extract is mixed with 1 millilitre of ferric chloride.If a black colour develops, tannins are present. Check for proteins.[17]

Test for proteins:**o Biuret test:**

A test tube is filled with crude extract. Biuret reagent (2 ml) is added. It trembles. After five minutes, it warmed up. The presence of proteins is indicated by the appearance of red or violet colour.

o Millon's test:

2 millilitres of reagent are added to a test tube containing crude extract.After that, the extract precipitates. If this precipitate becomes red upon heating, it signifies the existence of proteins. Check for carbohydrates.[31]

Carbohydrate Testing:**o Felling Test:**

After mixing equal parts Fehling A and Fehling B reagents, 2 millilitres of the mixture add this to the herbal extract and warm the sample slowly. Appearance of brick red precipitate as an indicator of carbohydrate

o Iodine test:

Combine 0.5–1 millilitre of crude extract with 2 millilitres of iodine solution. Carb shadows are indicated by colours blue or purple. Gathering of botanical specimens The leaves of tulsi, neem, and aloe vera were gathered at the botanical park close to Solapur.[28]

Studies of excipients and herbs**Table 1: Ingredients' roles**

Sr.	Ingredients	Roles
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No

1. Gel of aloe vera. **anti-inflammatory, anti-aging, moisturising, and acne-reducing.**

 2. **Tulsi.** **anti-inflammatory and adds shine to the face.**
 3. **.Neem** **promotes wound healing and reduces dry and itchy skin**
 4. **Beeswax.** **emulsifier, stabiliser and concentration enhancer**
 5. **Paraffin.** **oil lubricant**
 6. **Borax.** **alkaline substance that reacts with the emulsifier to form**
 7. **Methylparaben.** **Reaction**
 8. **rose oil.** **scent**
-

Fragrance Extraction Methods (See Figure 1 for a list of various plant extracts)[28]

I Aloe Vera gel

Collect fresh, healthy, mature aloe vera leaves and wash them with distilled water. Then, after drying the leaves thoroughly in a hot oven, cut the outer part of the leaf lengthwise with a sterile knife. Then use a sterile blade to cut away the pigment-free parenchyma or aloe vera gel. Then use a muslin cloth to filter out fibres and bacteria. Then, a filter with pure aloe vera gel, also known as a filter, is used in the preparation process.[26]

ii] Removing the leaves of neem

Neem leaves are harvested, cleaned in distilled water, and then dried in a hot air furnace. The leaves are pounded into a powder after they have dried. Next, heat five grams of powdered neem leaves between 80 and 100 degrees Celsius. For three days, the dimethyl sulfoxide container was shaken on a REMI RSB-12 shaker.

After heating the mixture in a water bath to 80 to 100 °C, concentrate to a volume of 20 ml and filter through muslin to remove any remaining impurities. The preparation is then done using a filter or filter media.[25]

iii] Tulsi leaf extraction

The leaves are pounded into a powder after they have fully dried. After that, a REMI RSB-12 mechanical shaker was used to shake a container holding 1 g of Tulsi leaf powder and 10 ml of dimethyl sulfoxide for a period of three days. The solution is heated to 80 to 100 degrees Celsius in a water bath for a few minutes. To eliminate any leftover contaminants, the liquid is concentrated to 5 millilitres and filtered through muslin. Next, the pure Tulsi leaf extract or solution is used to create the filtrate, or filtered product.[12]

Extracts of natural plant ingredient



Figure : 13 Extracts of natural plant ingredient

Creating a Cream

Get the Cream Ready. Beeswax and liquid paraffin should be heated to 75 °C in a borosilicate glass and then kept there. oil saturation point. To make a clear solution, dissolve borax and methylparaben in separate beakers of distilled water, then blend by heating to 75°C.(water container). This aqueous phase is slowly added to the heated gas phase [7]. Then add the appropriate amount of tulsi, neem and aloe vera gel and mix well until the paste becomes smooth. Then for the sake of perfume To decorate the tile, spread this paste, mix it in a geometric pattern and add a few drops of distilled water as required.[32]



Figure 14 : Slab and spatula**❖ Evaluation of the cream Physical evaluation:**

An assessment of the cream Physical assessment: This assessment looks at the cream's color, consistency, texture, and scent.

1. Physical evaluation :

An assessment of the cream Physical assessment: This assessment looks at the cream's color, consistency, texture, and scent. The three formulations' states, odours, colours, and textures were examined in this test. Anger marked area on the dorsal surface of the left hand (1 cm²). Then apply cream to the area and write down the time. After that, it is observed for up to 24 hours and reported if there is any erythema, edema, or irritation. The results showed that none of the three formulations exhibited any symptoms of erythema, edema, or irritation. The physical characteristics of herbal medicine are also examined, including color, consistency, odor, and structure.

a) Colour: Check the colour of the visible face.

b) Fear: Discover the smell of butter.

c) Condition: Visually check the adhesive. The cream is solid in this form.

d) Thickness: Check the formula by manually rubbing the cream with your hands. The cream has smoothness.[27]

2. Washing powder:

After rinsing your hands with tap water, apply a tiny amount of cream (Table 5). Apply a tiny amount of cream to your hands and wash them with tap water to evaluate the cleansing efficacy..Washing all three of the formulations was simple.[20]

3. PH :

Using a digital pH metre, determine the pH of 0.5 g of cream dissolved in 50 ml of distilled water.

The findings showed that all three of the formulations had PH values that were closer to skin pH, indicating that they could be applied to the skin without risk.[32]

4. Viscosity :

The viscosity of the glue was measured at 25 °C and 2.5 rpm on spindle number 63 (Table 7). The viscosity of the adhesive was measured at 25°C using a Brookfield viscometer with a spindle number 63 at 2.5 RPM. The findings indicated that the viscosity of all three formulations was suitable.[38]

5. Phase division:

The prepared glue is kept between 25 and 100 °C in a covered container that is shielded from light. After that, phase separation was noted for 24 hours each day for 30 days. Any modifications to the phase separation were noted and verified. The findings show that none of the three formulations showed signs of phase separation.[23]

6. Spread capability :

All three formulations had their spreadability tested. Of these, it had the best spreadability because it took the two slides less time to separate; As stated in the evaluation guide, the better the detail, the shorter

Spreadability is measured by measuring the number of seconds it takes for two slides separated by a layer of sugar to separate from the sugar at a given load. The finer the detail, the shorter the time it takes to separate two slides. Standard size slides are divided into two groups. Then choose a slide of the right size and place the cream sample on it. A second slide is then positioned over the arrangement. Next, a weight or other stress is applied to the top slide to evenly condense the cream of the two slides into a thin layer. The layout is then covered by a second slide. To evenly condense the cream of the two slides into a thin layer, a weight or other tension is then applied to the top slide. you slide, pay attention to how long it takes to climb the slide. The expansion capacity is equal to $m \times l / t$, where m is the standard weight (30g) that is set on or above the top slide, and l is the slide's length (5cm). [36]

7. Oil:

After applying the cream to the skin, the amount of oiliness or oiliness is assessed. [24]

8 Compatibility study:

Use infrared spectroscopy to examine the compatibility of traditional Chinese medicine raw materials and measure the infrared spectrum when the product is solid. The measurement range of the infrared spectrum is 4000.12 to 525.03. Sensitivity is 75%. The infrared spectrum of the herbal API mixture showed the following features: 1026.79, 1368.24, 1438.73, 1604.78, 1728.45 and 3289.05 cm^{-1} . Infrared spectra of individual herbal APIs also showed the same peak. The cream was found to be more active and to differ significantly from those made from all types of herbs when aloe Vera gel, neem, and tulsi were added. Based on investigation and debate, the mixture remains stable at room temperature and poses no risks when applied topically. 8 Compatibility study. [21]

Final verdict:

Utilising neem, tulsi, and aloe vera gel, the cream exhibits a wide range of results. Using aloe vera gel, neem, and tulsi, the lotion exhibits a wide range of effects from each herb. Discussion and study indicate that the formula is stable at ambient temperature and can be applied. [13]

ABBREVIATIONS:

API	Active Pharmaceutical Ingredient
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IR	Infrared
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QS	sufficient quantity
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RESULT:

The creation and assessment of a polyherbal cream was the focus of the current study. The assessment parameters were appearing under the outcomes, such as the physical assessment of the cream made of herbs, the pH of the cream, non-irritancy, spreadability, and washability test, phase separation, and viscosity of the .The table displayed the polyherbal pain reliever. [29]

DISCUSSION:

The current study involves the development and evaluation of various ointments. This formula is oil-in-water based, so the formula washes off easily with water. Apply below.. The ready-made mixture was highly spreadable. Cream's viscosity and pH was excellent. Cream does not exhibit any phase division when being stored. The creme wasn't glassy in appearance and readily removed following usage. The mixture was non-irritating and not harm to the skin .[29]

CONCLUSION:

Human skin is one of the most important organs that needs attention to prevent skin infections caused by bacteria, fungi and other diseases. One of the most vital organs in the human body is the skin, which requires care to avoid infections from bacteria, fungi, and other illnesses. The responsibility for preventing microbiological skin illnesses falls on City collectively. tious by petrochemical pharmaceuticals, and the medicinal The best plants are those that produce large amounts of bioactives. a viable substitute natural supply for medication resistant ancestry that is really noticeable. Herbal remedies Herbal medications are the possible area of interest for drug exploration and advancement both now and in the future. For For example, how well-formulated herbal cream works from Tephrosia vogelii Indian leaf extracts in methanol classified the plant's capacity and potential in relation to the identification of the antibacterial and antifungal substance that could be applied to the management of skin diseases brought on by by A bacterium. Human skin is one of the most important organs that needs attention to prevent skin infections caused by bacteria, fungi and other pathogens. Calectivity City is in charge of preventing microbial skin infections. tious by petrochemical medications, and the therapeutic The best plants are those that produce large amounts of bioactives. a viable substitute natural supply for medication resistant ancestry that is really noticeable. Herbal remedies Herbal medications are the possible area of interest for drug exploration and advancement both now and in the future. For For example, how well-formulated herbal cream works from Tephrosia vogelii Indian leaf extracts in methanol classified the plant's capacity and potential in relation to the identification of the antibacterial and antifungal substance that could be applied to the management of skin diseases brought on by by S bacterium. aureus and Candida albicans fungus. The creams' significant usefulness was attributable to their bioactive ingredients, which are primarily fatty acids. tannins, terpenoids, noids, and terpenes. Thus, this research has validated Tephrosia vogelii's capacity. to act as an organic source where the antimicro-Bial creams might be found and used in the future. help fight S. aureus and Candida albicans skin infections. aureus. formulated Tephrosia vogelii herbal creams shown to be a promising therapeutic development candidate, and prioritise stepping up research into therapeutic plants. to combat illnesses in our neighbourhood.

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