FORMULATION AND EVALUATION OF HERBAL CREAM

Uttam Ram, Saurabh Rana, Ankita Gupta

1,2 Students, 3 Assistant Professor
1,2 B pharmacy, 3 Department of Pharmacognosy
Abhilashi college of pharmacy
Ner-Chowk, Mandi, Himachal Pradesh-175021, India

Abstract- Aloe vera, Neem extract, Tulsi extract are medicinal plant they are used as traditional ancient year in various herbal medicines such as Ayurveda Siddha, Homeopathic. Cosmetics and some medicinal products are made up from the mucilaginous tissue in the Centre of aloe vera leaf and called aloe vera gel. Aloe vera gel contains no anthraquinone. Which are Responsible for the strong laxative effects of aloes. However, total leaf extract may contain Anthraquinone. Aloe vera contains 75 potentially active constituents like Vitamins, Enzymes, Minerals, Sugars, Saponins, Amino acids. Neem is a natural herb from the neem tree, other names for which include Azadirachta indica and Indian lilac. There are some potential health benefits of neem, but it is also possible for someone to have a neem allergy or sensitivity. The extract comes from the seeds of the tree and has many different traditional uses. Tulsi (Holy basil) contains bioactive compounds like eugenol, camphene, cineole, and camphor that may help to open your airways and improve breathing. These compounds may also have antimicrobial and antiviral activities that help reduce the duration of common cold and flu symptoms.

Keyword: Aloe vera, Neem, Tulsi, Evaluation.

Introduction: -
Herbs: - Herb have used in the traditional system of medicine of medicine since time immemorial to alleviate human illness and for the maintenance of general health.

For thousands of years, herbs have been an essential component of human culture, serving as culinary, medicinal, and fragrant ingredients. Numerous types of these adaptable plants exist, each with a unique flavour, aroma, and possibly even health benefits

Herbs used in cooking: A variety of herbs are used to improve the flavour of meals. They can be added to recipes while they are cooking or as garnishes, and they are frequently used both fresh and dried. Herbs used in cooking include mint, oregano, sage, cilantro, parsley, rosemary, thyme, and basil, among many more.

Medicinal Herbs: For a very long time, traditional medical systems all over the world have relied on the therapeutic qualities of herbs.

Herbal treatments are used to treat a wide range of illnesses, including respiratory, intestinal, and other conditions. Echinacea, ginger, garlic, chamomile, ginseng, and turmeric are a few popular therapeutic plants. These plants are frequently taken topically in creams and salves, or as teas tincture and capsules.

Aromatic Herbs: Aromatic herbs are highly valued for their scents, which are frequently extracted and applied to cosmetics, aromatherapy products, and fragrances. Herbs prized for their wonderful smells include peppermint, lavender, rosemary, and chamomile. These herbs' essential oils are well-known for their medicinal benefits, which include promoting calmness, relieving tension, and elevating mood.

Gardening and Cultivation: Home gardeners often choose herbs because they are comparatively simple to grow. While certain herbs do better in outdoor garden beds, many herbs can grow well in pots on balconies or windowsills. Growing herbs enhances the beauty and smell of the garden in addition to providing a fresh supply for culinary and medicinal purposes. Because some herbs-like oregano and mint-can grow rather quickly, it's important to schedule their growth appropriately.

Harvesting and Preserving: Throughout the growing season, herbs can be collected; the most widely utilized components are usually the leaves and stems. Since the oils that give an oil its flavour and aroma are most concentrated
in the morning, harvesting is frequently done then. Herbs can be preserved by freezing, drying, or infusing them into vinegars or oils.

All things considered, herbs have several advantages, ranging from improving food preparation to fostering health and wellbeing. Whether you're an experienced cook, an aspiring herbalist, or a passionate gardener, using herbs in your life may make it more vibrant and richer.

History of Herbs
The history of herbs is closely linked to the history of human civilization, spanning millennia and including a wide range of cultural traditions worldwide.

Ancient Civilizations: Mesopotamia, Egypt, China, and India are just a few of the ancient civilizations that used herbs. Herbs were employed in religious rites, medicine, and culinary arts in these societies in addition to their gastronomic uses. The Ebers Papyrus is a medical document from ancient Egypt that dates back to approximately 1550 BCE and has a wealth of herbal cures for a variety of diseases.

Classical Antiquity: The medicinal qualities of herbs were also valued by the Greek and Roman civilizations. Western herbal medicine has its roots in the documentation of medicinal use of herbs by Greek physicians such as Hippocrates and Dioscorides. The Romans advanced the science of herbs and used them in both their everyday and medical routines.

Europe in the Middle Ages: Herbalism was very popular in Europe during this time, and monasteries were important hubs for the production and study of herbs. Herbal knowledge was conserved and disseminated in part by monks who maintained old herbal manuscripts and grew medicinal gardens. Written texts and oral tradition were the two ways that herbal knowledge was transmitted.

Renaissance and Early Modern Era: During this time, there was a resurgence of interest in classical education, which included herbalism. Proponents of using herbs to heal illnesses, such as Nicholas Culpeper in England and Paracelsus in Europe, questioned conventional medical procedures. Rich and noble patrons began to favor herbal gardens.

Colonialism and International Trade: The spread of European colonialism during the Age of Exploration made it easier for plants and botanical knowledge to be traded between continents. Global trade networks emerged as a result of plants from Asia and the Americas, such as black pepper, cloves, and cinnamon, becoming highly valued commodities in Europe.

Industrialization and Modern Medicine: Traditional herbal medicines were less common in Western civilizations as modern medicine and pharmaceuticals emerged in the 19th and 20th centuries. Nonetheless, worries about the negative effects of synthetic pharmaceuticals and an increasing respect for natural therapies have led to a rebirth of interest in herbal therapy in recent decades. Herbal medicine today includes a broad spectrum of techniques, ranging from contemporary herbalism and naturopathy to ancient systems like Ayurveda and Traditional Chinese Medicine. Herbs remain an essential component of aromatherapy, alternative medicine, culinary arts, gardening, and fostering a connection between ourselves and the natural world.

Herbal Cream: -
The herbal cream is just an emulsion of water and oil. The following natural components were used to prepare the herbal cream: neem, papaya, aloe vera, Tulsi, and turmeric. These substances were selected based on their unique qualities.

Types of herbal cream: -

Moisturizing Creams: These creams are made to soften and hydrate the skin, leaving it with a persistent moisture barrier. In order to seal in moisture and stave off dryness, they frequently include substances like shea butter, cocoa butter, or coconut oil in addition to herbal extracts like aloe vera, chamomile, calendula and lavender.

Anti-Aging Creams: Herbal anti-aging creams are designed to improve skin elasticity and firmness while diminishing the appearance of wrinkles, age spots, and fine lines. Usually, they contain antioxidant-rich herbs like pomegranate, rosehip, ginseng, and green tea to help fight free radical damage and encourage skin rejuvenation.

Acne Treatment Creams: People with oily or acne-prone skin are the target audience for herbal acne creams. They frequently contain antibacterial and anti-inflammatory herbs, such as calendula, witch hazel, neem, and tea tree oil, which help mend blemishes, relieve inflammation, and lessen acne outbreaks without irritating the skin.
**Herbal sunburn creams:** are intended to calm and restore sun-damaged skin, thereby mitigating the discomfort, swelling, and peeling that come with sunburn. In order to moisturize and nourish the skin, they frequently include hydrating substances like coconut oil or vitamin E together with cooling plants like aloe vera, lavender, chamomile, and cucumber.

**Creams for Scar Treatment:** Creams for treating scars, whether they result from surgery, an injury, or acne, are made with herbs to lessen their appearance. Herbs that encourage tissue regeneration and collagen formation, such as gotu kola, comfrey, rosehip, and arnica, may be used in them. Over time, these effects can help erase scars.

**Creams for Sensitive Skin:** These creams are mildly formulated and ideal for people with reactive or sensitive skin. Calendula, chamomile, and oatmeal are common relaxing herbs found in them, along with hypoallergenic components that reduce inflammation, redness, and irritation without exacerbating the condition.

**Herbal First Aid Creams:** Designed to treat small burns, scratches, bug bites, and other skin irritations, herbal first aid creams are multipurpose compositions. In order to encourage quick wound healing and stave off infection, they frequently include antibacterial and healing substances in addition to herbs like lavender, calendula, plantain, and yarrow.

**Purpose of herbal Cream:**

1. **Moisturization and Hydration:** Herbal creams keep the skin hydrated for a long time, preventing it from becoming dry and rough.
   - They keep skin healthy and stop moisture loss.

2. **Controlling Oil Production:** Certain herbal lotions are designed specifically for people with oily skin. They encourage a matte appearance, control oil production, and stop excessive shine.

3. **Relief for Dry Skin:** Herbal lotions, which are rich in concentrated natural components, can provide relief for dry skin in the winter.
   - Aloe vera and beeswax, for example, form a protective barrier that keeps moisture in and keeps skin supple and soft.

4. **Soothing and calming:** Herbal lotions can relieve itching, redness, and discomfort by calming and soothing irritated or inflamed skin. Herbs that have anti-inflammatory qualities, such as aloe vera, calendula, and chamomile, aid in healing by reducing inflammation.

**Evaluation Parameter:**

- Physical Evaluation
  - Odor
  - Texture
  - State
  - Colour
- Irritation
  - Irritant Effect of Erythema
- PH
- Washability
- Viscosity
- Greasiness
- Irritant Effect of Edema
- PH
- Washability
- Viscosity
- Greasiness
LITERATURE REVIEW

Pharmacognosy of Drugs

1. Aloe vera: The genus Aloes comprises more than 500 species of succulent plants that bloom and store water in their swollen, newly formed leaves, stalks, or roots.

The most well-known species is ALOE VERA, also known as "true aloe," so named because it is grown as the primary source for pharmaceutical and medical applications.

Some species, including Aloe ferox, are also grown for comparable purposes.

<table>
<thead>
<tr>
<th>Synonyms</th>
<th>Common Name</th>
<th>Hindi Name</th>
<th>Sanskrit Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aloe vera</td>
<td>Aloe, Barbados Aloe, Medicinal Aloe, Burn plant</td>
<td>Gwar Patha</td>
<td>Ghritkumari</td>
</tr>
</tbody>
</table>

**Biological Source:** -
- Dried juice extracted through incision from the bases of the leaves of different aloe species.
- Aloe barbadensis Miller

**Geographical Source:** - Indigenous to East and South Africa, West indies and tropical countries. It is also cultivated in Caribbean Island, Europe and many parts of India, including north west Himalayans region.

**Family:** - Liliaceae

**Morphology of Aloe vera:** -
Here is a comparison of the morphological characteristics of all four commercial varieties.

**Aloe vera, or curacao aloe:**
- These are distinguished by their Transparency
- It occurs as Opaque mass.
- It has a waxy, somewhat resinous texture.
- Color: Chocolate brown to yellow-brown.
- Strong smell that is similar to that of iodoform.
- Taste: Acrid and disagreeable.
Cape aloe:
- Occurs as olive brown masses.
- It breaks with Glassy fracture.
- Color: Dark brown to greenish brown.
- Odor: Characteristic, Sour.
- Taste: Bitter & Unpleasant.

Socotrine aloe:
- Color: Yellow brown to dark brown.
- Irregular and porous surface.
- Taste: Bitter.
- Odor: Unpleasant.

Zanzibar aloe:
- Opaque, more firm than Socotrine.
- Color: Liver Brown.
- It is Smooth as wax.
- Odor: pleasant.
- Taste: Bitter.

Chemical Constituents:
- Anthracene glycosides (11 to 40%).
- Isoberbaloin, aloe-emodin and aloesone.

Chemical Structure:

Marketed Formulation:
"Marked formulation" may refer to a particular Aloe vera product or treatment that has been designed with a specific function in mind. Aloe vera is frequently utilized in a variety of goods, including supplements, beverages, lotions, and gels. An instance of a marked formulation is as follows:

Aloe Vera Gel for Skin Care:
Ingredient:
- Aloe vera gel, made from the plant's inner leaves.
- Preservatives found naturally (like tocopherol or citric acid).
- Supplementary ingredients (such vitamin E, essential oils, or plant extracts).

Instruction of Formulation:
- Gather the aloe vera plant's mature leaves.
- To get a smooth consistency, blend the gel.
- Incorporate organic preservatives to extend the gel's storage longevity.
- For even greater skin advantages, you can choose add extra healthy substances like essential oils or vitamin E.
- Place the gel into appropriate packaging.
Benefits of Aloe vera:
- **Skin Health**: Aloe vera gel is frequently used to hydrate and calm the skin. It can aid in wound healing, reducing inflammation, moisturizing dry skin, and sunburn relief. Because of its cooling qualities, it’s a common ingredient in skincare products.
- **Wound Healing**: - Aloe vera includes chemicals that promote skin repair and regeneration in the healing of wounds. It can help minor burns, wounds, and abrasions heal more quickly when administered topically.
- **Anti-Inflammatory Properties**: Acemannan is one of the anti-inflammatory chemicals found in aloe vera.
  Aloe vera is good for skin diseases like psoriasis, eczema, and acne because of these chemicals that can help reduce inflammation.
- **Sunburn Relief**: The cooling properties of aloe vera gel can help ease the agony of sunburns. Additionally, it has ingredients that lessen UV-induced inflammation and aid in the restoration of skin harmed by the sun.
- **Moisturization**: Because aloe vera gel has a high-water content and functions as a natural moisturizer, it can be used to soften and hydrate skin. It is frequently found in creams, lotions, and hydrating masks.
- **Hair Care**: Aloe vera has a number of advantages for the scalp and hair. It can lessen dry scalp and dandruff, hydrate and condition hair, and encourage strong, healthy hair development. Aloe vera gel is applied topically to the scalp by some people, or it can be mixed into DIY hair masks.
- **Digestive Health**: The possible digestive advantages of aloe vera juice are well-known. It might ease gastrointestinal pain, encourage regularity, and enhance gut health in general. Aloe vera juice should be taken in moderation, though, as too much of it can have laxative effects.
- **Oral Health**: Studies have indicated that adding aloe vera gel to toothpaste or using it as a mouthwash may help lessen gingivitis and plaque. Oral infections may be avoided in part because of its antimicrobial qualities.

2. Neem:  
*Azadirachta indica*, or neem, is a plant whose therapeutic virtues have made it popular throughout the world in recent years.  
- Widely utilized in homeopathic, Unani, and Ayurvedic medicine, neem has gained popularity in contemporary medicine.
- Neem leaf in particular has been shown to offer medical benefits.

<table>
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<tbody>
<tr>
<td>Neem</td>
<td>Nimba tree, Indian lilac, Miracle tree</td>
<td>neem</td>
<td>Nimba</td>
</tr>
</tbody>
</table>

**Biological Source**: *Azadirachta indica* leaves, either fresh or dried, and seed oil are what make up neem.

**Geographical Source**:  
- It is indigenous and widely grown in India.
- It grows in various tropical and subtropical regions.

**Morphology of Neem**:  
- **Leaves**: - Neem leaves are compound, consisting of several leaflets on each leaf. The leaflets are lanceolate or oblong in shape, usually ranging in length from 2 to 6 cm, and they are placed oppositely along the stem. They are smooth in texture and feature serrated edges.
• **Stem:** The neem tree has an upright, straight trunk covered with tough, fissured greyish-brown bark. Younger branches have smoother bark. In mature trees, the stem can grow as high as fifteen to twenty meters.

• **Fruits:** Neem tree fruits are drupes, which usually have an olive-like look. When young, it is green, but as it ripens, it turns yellow. A solitary, elongated seed covered in a thin pulp is present in the fruit. Neem fruits taste somewhat sour and are bitter.

• **Seeds:** Neem oil, which has a wide range of uses in medicine, agriculture, and cosmetics, is derived from neem seeds. The oval, brown seeds are one to one and a half centimetre in length. A slender, pale kernel encases them, embedded in the fruit's pulp.

• **Roots:** Neem trees are drought-tolerant due in part to their large and deep root system. The tree is firmly anchored in the ground by its extensive, fibrous roots.

**Chemical Constituents:**
There are many active compounds in the neem tree. The most common are as follows:

- **Azadirachtan:** provides repellent, antifreedant properties.
- **Nimbin:** anti-inflammatory, anti-fungal, anti-pyretic properties.
- **Nimbidin:** anti-bacterial, anti-ulcer, analgesic and anti-fungal properties.
- **Nimbidol:** anti tubercular, anti-protozoan, anti-pyretic properties.
- **Salannin:** repellant properties.
- **Quercetin:** anti protozoal, antioxidant, anti-inflammatory and anti-bacterial properties.

**Chemical Structure:**

**Marketed Formulation:**
Neem is a highly effective treatment for a variety of medical conditions. Whether consumed as a decoction, as oil, as powder, or as a tablet or capsule, the health advantages of this miracle herb are endless. Let's see how these four formulas are made.

**Neem formulation:**

A) **Churna Nimbaka**  
Ingredients: four to five neem leaf twigs.  
**Method:** Gather every leaf.  
- To remove moisture, place them immediately in the sun to dry.  
- Powder them to a fine consistency.  
- Once more, expose the powder to direct sunlight to drive off any last traces of moisture.  
- Sieve it through 100 times to get rid of any solid particles.

B) **Nimbaka Kwath:**  
Ingredients: 3–4 neem leaf sprigs.  
Purified Water.  
- Method: Remove the neem leaves from their stems and give them a quick wash under the faucet.  
- Fill a big container with filtered water.  
- After adding the leaves, simmer it for 20 minutes.  
- Remove the leaves from the solution and filter it in a vessel after a few hours.  
- To use later, store it in a glass bottle.
C) Gutika Nimbaka: -
- Ingredients: two cups of churna negmba.
- Two tablespoons of acacia gum.
- Method: The binding agent in this case, gum acacia, is thoroughly combined with the purified nimbaka churna.
- Now, take a tiny teaspoon of the mixture and gently roll it between your two palms to form a ball.
- When the gutikas or tablets are prepared, let them air dry in the sun to get rid of any last traces of moisture.
- For later usage, keep them in an airtight container in a cool environment.

D) Tailam Nimbaka: -
Nimbaka Tailam, also known as neem oil, is sometimes called the "Shea Butter of the East" and has many nourishing and moisturizing qualities. It is the best option for rapidly resolving skin issues and hair problems because of its high content of fatty acids and Vitamin E. It makes sense that a number of beauty firms are releasing their own formulas, and with the advancement of technology, neem oil-based beauty DIYs are abundant. Both the hot infusion and the cold compression methods can be used to prepare.

Neem oil:
- Ingredients: Two cups of leaves of neem. One cup of coconut oil.
- Method:
  - Use running water to wash the neem leaves.
  - Using a grinder, grind it into a thick paste.
  - In a pot with a thick bottom, boil the coconut oil until it becomes translucent.
  - Now whisk continually while adding the neem paste to the heated oil.
  - Stir the mixture constantly while letting it boil until it becomes green.
  - Turn off the flame, place a lid on the vessel, and let it cool.
  - To get rid of the plant pieces, strain the oil now.
  - Transfer it into a glass jar and utilize it according to your own requirements.

Benefits of Neem: -
- Neem contains anti-bacterial properties.
- Neem can be work as contraceptive in some cases.
- Neem can cure asthma.
- Neem can control diabetes.
- Neem can maintain the oral hygiene and health.
- Neem can help in leprosy.
- Neem can help to enhance the immunity.
- Neem can be used for removing blackheads and dullness in the face.

3. Tulsi: 
Basil or sacred Tulsi is an excellent shrub and known as "queen of herbs."
- Many Indians revere the Tulsi herb, which is considered to be exceedingly sacred. Many Indians adore these plants, which are grown in most Indian homes.
- Due to its therapeutic qualities, this plant has gained popularity.
- The dried roots, seeds, and leaves of Tulsi are the portions that are typically utilized. About 70% eugenol, 20% methyl eugenol, and 0.7% volatile oil components are found in Tulsi leaves.

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<tbody>
<tr>
<td>Tulsi</td>
<td>Holy Basil</td>
<td>Nandini, Vrindavani</td>
<td>Vrinda</td>
</tr>
</tbody>
</table>

Biological Source: -The drug of Tulsi consists of fresh and dried leaves and roots.
- Ocimum Sanctum-holy basil
- Ocimum Basilicum-sweet basil

Geographical Source:
- Annual herb found through India.
Morphology of Tulsi:
- Holy basil is an erect, many branched subshrub, 30-60 cm in tall with hairy stems.
- Leaves are green or purple; they are simple, petiole, with an ovate, up to 5 cm long blade, which usually has a slightly toothed margin.
- They are strongly scented and decussate phyllotaxy.
- The purplish flower is placed in close whorls on elongated racemes.

Chemical Constituents:
- Tulsi contains volatile oil. The oil contains about 70% Eugenol, 20% methyl-Eugenol, Carvacrol, Cineole.

Chemical Structure:
- Structure of Carvacrol

Marketed Formulation:
- **Tulsi Tea**: Herbal tea blends are made from dried Tulsi leaves. Because of its ability to relax and relieve stress, Tulsi tea is well-liked. In order to make various kinds of herbal tea, it is frequently combined with other herbs or Flavors.
- **Tulsi Extracts**: For easy absorption, Tulsi extracts are either encapsulated or blended into supplements. The adaptogenic and immune-stimulating qualities of these supplements are promoted. They might also be advertised as helping to lower inflammation and improve respiratory health.
- **Tulsi Essential Oil**: The plant's leaves and stems are used to extract the essential oil from them. Its antibacterial, anti-inflammatory, and fragrant qualities make it valuable. Aromatherapy, massage oils, and skincare products all contain Tulsi oil.
- **Tulsi Hair Care Products**: Tulsi extracts are promoted as helping to promote hair growth, lessen dandruff, and nourish the scalp in shampoos, conditioners, and hair oils. It is thought that Tulsi contains qualities that strengthen hair follicles and promote scalp health.
- **Tulsi Skincare Products**: Creams, lotions, and face masks are just a few of the skincare products that contain Tulsi ingredients. The antioxidant qualities of these products, along with their capacity to cleanse and revitalize the skin, are what sell them.
• **Tulsi toothpaste and mouthwash:** Due to its antibacterial qualities, Tulsi is frequently used as an ingredient in dental care products. The goal of marketing Tulsi mouthwash and toothpaste is to encourage good dental hygiene and fresh breath.

• **Herbal supplements containing Tulsi:** Tulsi is frequently used in herbal formulations that address particular health issues, such as digestive health, stress relief, immune support, and respiratory health.

**Benefits of Tulsi:**

• **Stress Relief:** Tulsi is an adaptogen, which means that it supports general resilience and equilibrium while also assisting the body in adapting to stress. It can aid in lowering tension, anxiety, and mental exhaustion while fostering calmness and relaxation.

• **Immune Support:** Tulsi helps control the immune system because of its immunomodulatory qualities. It might strengthen the body's defenses against illness, guard against infections, and support healthy immune system operation.

• **Respiratory Health:** Tulsi is frequently used to promote respiratory health and lessen the symptoms of respiratory ailments like sinusitis, bronchitis, asthma, and coughs and colds. Its expectorant and mucolytic qualities aid in clearing respiratory airways and releasing mucus.

• **Digestive Health:** Tulsi aids in the healing of digestive problems such as gas, bloating, indigestion, and cramping in the stomach. It eases the digestive tract, encourages gut health, and increases the synthesis of digestive enzymes.

• **Cardiovascular Health:** By lowering blood pressure, cholesterol, and preventing blood clots, Tulsi may assist preserve cardiovascular health. Additionally, it possesses cardioprotective qualities that lessen the risk of harm to the heart and blood vessels.

• **Effects against Inflammation:** Tulsi has anti-inflammatory qualities that help lessen inflammation and soothe the symptoms of inflammatory illnesses like rheumatism, arthritis, and inflammatory bowel disorders.

**Material And Methods:**

**Collection of plant material**
Aloe vera, Neem, Tulsi leaves were collected from the local Herbs Garden at Abhilashi College of pharmacy.

**Excipients and herbal ingredients with their roles**

<table>
<thead>
<tr>
<th>S.no.</th>
<th>Ingredient</th>
<th>Roles</th>
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<tbody>
<tr>
<td>1.</td>
<td>Aloe vera</td>
<td>Anti-ageing, Anti-Inflammatory, moisturizer</td>
</tr>
<tr>
<td>2.</td>
<td>Tulsi</td>
<td>Antibacterial, adds glow to the face.</td>
</tr>
<tr>
<td>3.</td>
<td>Neem</td>
<td>Promote wound healing, relieves skin dryness.</td>
</tr>
<tr>
<td>4.</td>
<td>Bees Wax</td>
<td>Emulsifying agent, stabilizer and gives thickness to the cream.</td>
</tr>
<tr>
<td>5.</td>
<td>Liquid Paraffin</td>
<td>Lubricating agent</td>
</tr>
<tr>
<td>6.</td>
<td>Borax</td>
<td>Alkali agent which reacts with emulsifying agent to form soap.</td>
</tr>
<tr>
<td>7.</td>
<td>Methylparaben</td>
<td>Preservative</td>
</tr>
<tr>
<td>8.</td>
<td>Rose oil</td>
<td>Fragrance</td>
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</table>
Extraction processes

**Aloe Vera gel:** Aloe Vera leaves that were fresh, healthy, and mature were gathered and cleaned with distilled water. The outer portion of the leaf was then longitudinally cut using a sterile knife following the proper drying of the leaves in a hot air oven. The colorless parenchymatous tissue, or aloe vera gel, was then cut out using a sterile knife. The fibers and contaminants are then filtered out using muslin cloth. The preparation then made use of the filtrate, also known as the filter product, which is a transparent aloe Vera gel.

**Extraction of neem leaves:** After being gathered, neem leaves were cleaned with distilled water and dried in a hot air oven. Leaves were pulverized once they had properly dried. Next, 5g powdered neem leaves at 80–100 degrees Celsius. A volumetric flask containing dimethyl sulfoxide was placed on a mechanical shaker and agitated for three days. After heating the mixture to between 80 and 100 °C on a water bath, it was concentrated to a volume of 20 milliliters and filtered through muslin fabric to eliminate any remaining contaminants. Next, the preparation was done using the filtrate, or filter product, which is a clear solution or clear extract of neem leaves.

**Extraction of Tulsi leaves:** After gathering, Tulsi leaves were cleaned in distilled water and dried in a hot air oven. After the leaves had dried properly, they were pulverized. Subsequently, a volumetric flask containing 1g of Tulsi leaf powder and 10 ml of dimethyl sulfoxide was placed on a mechanical shaker and shaken for three days. After a few minutes of heating the solution over a water bath between 80 and 100 degrees Celsius, the mixture was concentrated to 5 milliliters and filtered through a muslin cloth to get rid of any remaining contaminants. Next came the filtrate, or filter product, which was made using a clear Tulsi leaf extract or solution.

Formulation of cream

Heat liquid paraffin and beeswax in a borosilicate glass beaker at 75 °C and maintain that heating temperature (Oil phase). In another beaker, dissolve borax, methylparaben in distilled water and heat this beaker to 75 °C to dissolve borax and methylparaben and to get a clear solution (Aqueous phase). Then slowly add this aqueous phase to heated oily phase. Then add a measured amount of aloe Vera gel, Neem extract, and Tulsi extract and stir vigorously until it forms a smooth cream. Then add few drops of rose oil as a fragrance. Put this cream on the slab and add few drops of
distilled water if necessary and mix the cream in a geometric manner on the slab to give a smooth texture to the cream and to mix all the ingredients properly. This method is called as slab technique or extemporaneous method of preparation of cream.

![Fig.7: Final product of herbal cream](image)

**Table 2: Formulation of cream**

<table>
<thead>
<tr>
<th>S.no.</th>
<th>Ingredients</th>
<th>Formulation</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>Aloe vera gel</td>
<td>1.5ml</td>
</tr>
<tr>
<td>2.</td>
<td>Neem extract</td>
<td>0.5ml</td>
</tr>
<tr>
<td>3.</td>
<td>Tulsi extract</td>
<td>1.5ml</td>
</tr>
<tr>
<td>4.</td>
<td>Bees wax</td>
<td>3g</td>
</tr>
<tr>
<td>5.</td>
<td>Mineral Oil</td>
<td>10ml</td>
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<tr>
<td>6.</td>
<td>Borax</td>
<td>0.2g</td>
</tr>
<tr>
<td>7.</td>
<td>Methylparaben</td>
<td>0.02g</td>
</tr>
<tr>
<td>8.</td>
<td>Distilled Water</td>
<td>Q. S</td>
</tr>
<tr>
<td>9.</td>
<td>Rose Oil</td>
<td>Q. S</td>
</tr>
</tbody>
</table>

**Evaluation of cream**

**Physical evaluation**

In this test, the cream was observed for Color, Odor, texture, state (table 3)

**Irritancy**

Mark the area (1 cm²) on the left-hand dorsal surface. Then the cream was applied to that area and the time was noted. Then it is checked for irritancy, erythema, and edema if any for an interval up to 24 h and reported (table 4).

**Washability**

A small amount of cream was applied on the hand and it is then washed with tap water (table 5).

**pH**

0.5 g cream was taken and dispersed in 50 ml distilled water and then pH was measured by using digital meter (table 6).

**Viscosity**

Viscosity of cream was done by using Brooke field viscometer at a temperature of 25 ℃ using spindle No. 63 at 2.5 RPM (table 7).

**Greasiness**

Here the cream was applied on the skin surface in the form of smear and checked if the smear was oily or grease-like (table 8).

**Results And Discussion**

**Physical evaluation**

In this test Color, Odor, texture and state of the formulation were checked
Table 3: In this test Color, Odor, texture and state of the three formulations was checked

<table>
<thead>
<tr>
<th>S.no.</th>
<th>Parameters</th>
<th>Formulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Color</td>
<td>Yellowish</td>
</tr>
<tr>
<td>2.</td>
<td>Odor</td>
<td>Pleasant</td>
</tr>
<tr>
<td>3.</td>
<td>Texture</td>
<td>Smooth</td>
</tr>
<tr>
<td>4.</td>
<td>State</td>
<td>Semisolid</td>
</tr>
</tbody>
</table>

Irritancy
Mark the area (1 cm²) on left hand dorsal surface. Then the cream was applied to that area and the time was noted. Then it is checked for irritancy, erythema, and edema if any for an interval up to 24 h and reported. According to the results of herbal cream showed no sign of irritancy, erythema and edema.

Table 4: Irritancy study observations

<table>
<thead>
<tr>
<th>S.no.</th>
<th>Formulation</th>
<th>Irritant effect</th>
<th>Erythema</th>
<th>Edema</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Herbal Cream</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
</tr>
</tbody>
</table>

Washability
Washability test was carried out by applying a small amount of cream on the hand and then washing it with tap water. All three formulations were easily washable.

Table 5: Washability observations

<table>
<thead>
<tr>
<th>S.no.</th>
<th>Formulation</th>
<th>Washability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Herbal Cream</td>
<td>Easily Washable</td>
</tr>
</tbody>
</table>

pH
According to the results, the pH of herbal cream was found to be nearer to skin pH so it can be safely used on the skin.

Table 6: pH observation table

<table>
<thead>
<tr>
<th>S.no.</th>
<th>Formulation</th>
<th>pH</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Herbal Cream</td>
<td>7.0</td>
</tr>
</tbody>
</table>

Viscosity
Viscosity of cream was done by using Brooke field viscometer at a temperature of 25 °C using spindle No. 63 at 2.5 RPM. According to the results all the three formulations showed adequate viscosity.

Table 7: Viscosity observation table

<table>
<thead>
<tr>
<th>S.no.</th>
<th>Formulation</th>
<th>Viscosity(cps)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Herbal Cream</td>
<td>21025</td>
</tr>
</tbody>
</table>
Greasiness
Here the cream was applied on the skin surface in the form of smear and checked if the smear was oily or grease-like. According to the results, we can say that all three formulations were non-greasy.

Table 8: Greasiness observation table

<table>
<thead>
<tr>
<th>S.no.</th>
<th>Formulation</th>
<th>Greasiness</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Herbal Cream</td>
<td>Non-greasy</td>
</tr>
</tbody>
</table>

Conclusion
From above project we can conclude the cream had a multifunctional effect through the use of Aloe Vera gel, Tulsi, and Neem, and each of these herbal constituents demonstrated notable differences in activity. These cosmetics are used to treat various skin conditions in addition to being utilized for aesthetic purposes. By eliminating the damaging effects of free radicals, these products increase the formation of collagen, preserve the integrity of the keratin structure, and improve the overall health and appearance of the skin.

The formulation was stable at room temperature and could be applied to skin without risk, according to the findings and discussion. Its optimal qualities and nutritional worth, together with its low chemical content, shield the skin against a variety of skin conditions. The cream is also inexpensive because it was made with basic materials and a straightforward procedure. Because natural medicines are thought to be safer and have less adverse effects than synthetic ones, they are more widely accepted.

REFERENCES: