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Formulation and Evaluation of Herbal Gel for Skin and Beauty Care

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ABSTRACT-

Skin is like a beautiful, delicate cloth that wraps around our body. It protects us from the outside world, keeps us warm, and helps us feel sensations like touch and pain.

The skin is the largest organ of the human body, serving as a protective barrier between the internal systems and the external environment. It is composed of three primary layers: the epidermis, dermis, and subcutaneous tissue.

Skin also plays a vital role in the immune system, helping to protect against pathogens and harmful substances. Skin health is influenced by various factors, including genetics, environment, and lifestyle choices, making skincare an important aspect of overall health and well-being.

Herbal Gel for Skin is A soothing, natural gel made from herbs and plants.It Used to calm, protect, and nourish the skin.Helps with skin issues like acne, dryness, and irritation.Promotes healthy, glowing skin A combination of herbal extracts, including aloe vera, turmeric, and neem, were used to create a gel formulation. The gel was tested for its antimicrobial, anti-inflammatory, and antioxidant properties.

KEYWORDS- Skin health, Skin care,Skin protection ,Skin nourishment, Skin hydration,Skin glow, Herbal gel,Natural,Soothing,Nourishing,Normal skin, Combination skin,Oily skin,Dry skin,Sensitive skin, Mature skin.

INTRODUCTION-

Skincare is a vital practice for preserving the appearance and health of the skin of your face and body. In recent years, herbal formulations are becoming more and more popular because of their many benefits and few side effects. Herbal cosmetics, such as face wash, conditioner, soaps, creams, shampoos,gels, and many others, are quite popular with the general public. The best part about herbal cosmetics is that they are made completely of herbs and shrubs, thus they provide only benefits and no side effects. Herbal Gel for Skin is A Natural Solution Herbal gel is a natural, plant-based skincare product that combines the benefits of herbs and gel to provide hydration, nourishment, and protection to the skin. Made from extracts of herbs, botanicals, and other natural ingredients, herbal gel helps to soothe, calm, and rejuvenate the skin, promoting healthy, glowing skin.

Herbal formulations are receiving more concentration in public because of their high-quality properties and less side effects. Additionally, it also provides the skin with necessary nutrients and required moisture. The choice of these ingredients is based on their individual properties. Aloe vera is used as a moisturizer and anti-acne agent. A gel is a semi-solid substance that is typically transparent or translucent. It's a colloidal state of matter, meaning it's a mixture of two or more substances that don't normally mix, like liquids and solids. Gels are often used in skincare, haircare, and pharmaceutical products. Herbal gels are popular for their natural healing properties and versatility in skincare. They can be a great addition to a natural skincare routine.Herbal gel is generally good for sensitive skin. It is mostly made from natural ingredients, which are free from harsh chemicals. Therefore, it does not irritate the skin and provides a soothing effect.Ingredients like aloe vera, chamomile, and neem found in herbal gels have anti-inflammatory and calming properties, which can help relieve sensitive skin.Herbal gels are made from natural ingredients like aloe vera, neem, and basil, which nourish the skin and help reduce irritation. They provide soothing effects, especially for conditions like sunburn or rashes. For instance, aloe vera gel has a cooling effect that can relieve discomfort.Herbal gels hydrate the skin effectively without leaving an oily residue, making them beneficial for people with oily skin. Many herbal gels have anti- inflammatory properties that help reduce redness and swelling.Gels like tea tree gel are effective for treating acne due to their antibacterial properties, which can help eliminate acne-causing bacteria.

Ideal properties of a HERBAL GEL-

1. Natural Ingredients: Made with a blend of plant extracts and essential oils, free from harsh chemicals.

2. Gentle on Skin: Non-irritating and suitable for sensitive skin types.
3. Hydrating: Contains humectants to lock in moisture and keep skin supple.
4. Soothing: Helps calm inflammation and redness.
5. Antioxidant-Rich: Protects skin from environmental damage.
6. Fast-Absorbing: Doesn't leave a greasy residue.
7. Pleasant Scent: Naturally derived fragrance that is refreshing and calming.
8. Multi-Purpose: Can be used for various skin concerns, such as dryness, acne, and irritation.

Classification of HERBAL GEL

Gels come in different types based on their:

1. Ingredients: Water-based, oil-based, or other materials.
2. Internal structure: Straight, branched, or multiple networks.
3. Consistency: Solid, semi-solid, or liquid.
4. Purpose: Medicine, cosmetics, food, etc.
5. Chemical makeup: Polymers, inorganic materials, or biological materials.
6. Water absorption: Swell, don't swell, or super absorbent.
7. Heat response: Change state with temperature or stay the same.

BENEFITS OF HERBAL GEL-

1. Reduces inflammation and irritation
2. Calms and soothes skin irritations, such as acne,redness, and itching
3. Provides relief from sunburn, minor cuts, and scrapes
4. Hydrates and moisturizes the skin, leaving it feeling soft and supple
5. Helps to lock in moisture, reducing the appearance of fine lines and wrinkles
6. Provides long-lasting hydration, even in dry environment

REVIEW OF LITERATURE-

Liju, V.B-(2011)-

"Anti-inflammatory and antioxidant activities of turmeric powder",Journal of Pharmacy and Pharmacology,Volume and Issue 63(7), 857-863 This study evaluated the anti-inflammatory and antioxidant activities of turmeric powder using various in vitro and in vivo models. Turmeric powder extract possesses significant anti-inflammatory and antioxidant activities, which may contribute to its potential therapeutic applications.

Anti-inflammatory and antioxidant properties of turmeric powder, which may be useful in the prevention and treatment of various diseases, including arthritis, diabetes, and cancers .The researchers used different doses of turmeric powder extract to evaluate its antioxidant and anti-inflammatory activities. Turmeric powder extract possesses significant antioxidant and anti-inflammatory activities.Turmeric powder extract may be useful in the prevention and treatment of various diseases, including arthritis, diabetes, and cancer

Srinivasan, M., et al(2007)-

"Turmeric Powder and Curcumin: Antioxidant and Anti-Inflammatory Effects".Journal of Agricultural and Food Chemistry,55(11), 4425-4431.Antioxidant and anti-inflammatory effects of turmeric powder and curcumin. The ability of turmeric powder and curcumin to scavenge free radicals, inhibit lipid peroxidation, and reduce inflammation in vitro and in vivo.Turmeric powder and curcumin showed significant antioxidant activity, with IC50 values of 12.5 μg/mL and 5.6 μg/mL, respectively.

Turmeric powder and curcumin showed significant anti-inflammatory activity, with a maximum inhibition of 55.6% and 63.2%, respectively.Turmeric powder and curcumin possess significant antioxidant and anti-inflammatory effects, which may contribute to their potential therapeutic applications.The antioxidant and anti-inflammatory properties of turmeric powder and curcumin, which may be useful in the prevention and treatment of various diseases, including arthritis, diabetes, and cancer.The study had some limitations, including the use of a single solvent for extraction and the evaluation of anti-

inflammatory activity using only one in vivo model. Further studies are needed to confirm the results and explore the potential therapeutic applications of turmeric powder and curcumin.

S.C. Gupta, J.A. Patchva, and B.B. Aggarwal,(2010)-

"Turmeric-The Spice of Life" Journal of Nutritional Biochemistry, Volume and Issue, 21(10), 797-808

Turmeric's bioactive compounds have been shown to exhibit anti-inflammatory effects by inhibiting The production of pro-inflammatory enzymes and cytokines.

Turmeric's antioxidant properties help protect against oxidative stress and cell damage.

Turmeric's bioactive compounds have been shown to inhibit the growth of cancer cells and induce A apoptosis (cell death).1

Turmeric's bioactive compounds may help reduce the risk of cardiovascular disease by improving lipid Profiles, preventing platelet aggregation, and reducing blood pressure.

Turmeric's Medicinal Properties:-

The review emphasizes turmeric's rich history of use in traditional medicine, particularly in India, where it has been used to treat various ailments, including biliary disorders, anorexia, cough, diabetic wounds, hepatic disorders, rheumatism, and sinusitis [1].

Bioactive Compounds:-

Turmeric's medicinal properties are attributed to its bioactive compounds, primarily curcumin and essential oils. These compounds exhibit a wide range of biological activities, including anti- inflammatory, antioxidant, anti-carcinogenic, anti-mutagenic, anticoagulant, antifertility, anti-diabetic, antibacterial, antifungal, antiprotozoal, antiviral, anti-fibrotic, anti-venom, antiulcer, hypotensive, and Hypocholesteremic activities [1].

Therapeutic Potential:-

The review highlights turmeric's potential as a therapeutic agent, citing its safety and efficacy in various studies. The authors suggest that turmeric and its constituents may be useful in the prevention and treatment of various diseases, including cancer, diabetes, and cardiovascular disease [1]

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.K.Kulkarni(2019)-

"Curcuminoids from Turmeric Powder: A Review of Their Pharmacological and Therapeutic Application" Journal of Pharmacy and Pharmacology

Volume and Issue,71(8), 1131-1146

The review article provides a comprehensive overview of the pharmacological and therapeutic applications of curcuminoids, which are bioactive compounds extracted from turmeric powder.

Turmeric, a spice derived from the rhizomes of Curcuma longa, has been used for centuries in traditional medicine. Curcuminoids, particularly curcumin, are the bioactive compounds responsible for the medicinal properties of turmeric. The pharmacological properties of curcuminoids, including:

Curcuminoids have been shown to inhibit the production of pro-inflammatory enzymes and cytokines. They have antioxidant properties that help protect against oxidative stress and cell damage.

Curcuminoids have been found to inhibit the growth of cancer cells and induce apoptosis.They may help reduce the risk of Cardiovascular disease by improving lipid profiles and preventing platelet aggregation.

The potential therapeutic applications of curcuminoids in various diseases, including

They have been found to be effective in reducing tumor growth and inducing apoptosis in cancer cells. Curcuminoids may help reduce the risk of cardiovascular disease by improving lipid profiles and preventing platelet Aggregation.

They have been found to be effective in reducing blood sugar levels and improving insulin sensitivity.

Curcuminoids may have neuroprotective effects and be effective in reducing the risk of neurodegenerative diseases such as Alzheimer's and Parkinson's.

Curcuminoids are promising therapeutic agents with a wide range of pharmacological properties.

NEED OF STUDY-

The study of herbal products is essential due to their widespread use in traditional and modern Medicine. Herbal remedies, derived from plant-based compounds, have been integral to healthcare Systems, especially in Asia and Africa, where up to 80% of the population may rely on them for Primary health care. They offer potential therapeutic benefits, serving as sources for drugs like Artemisinin, quinine, and digoxin. However, it's crucial to study

these products rigorously, as some Have been linked to adverse effects, including liver toxicity. Understanding their efficacy, safety Profiles, and possible interactions with other medications ensures that herbal products can be used Safely and effectively in modern healthcare.

Natural skin care Is essential as it focuses on using plant-based, organic ingredients and traditional Remedies to maintain and improve skin health without relying on synthetic chemicals. This approach Emphasizes the importance of understanding the benefits of natural oils, herbs, and other botanical Elements in nourishing and protecting the skin. Natural skin care often seeks to avoid harsh chemicals That can cause irritation or long-term damage, offering a gentler, eco-friendly alternative. Research in This area helps identify effective natural ingredients, their roles in skincare routines, and their potential To address various skin concerns, such as aging, acne, and dryness, while promoting overall skin wellness.

AIM- Formulation and evaluation of herbal skin gel from turmeric and aleo vera

OBJECTIVE-

The objective behind preparing a herbal gel from turmeric and aloe vera is to combine the therapeutic properties of both plants for enhanced skincare benefits. Turmeric, known for its anti-inflammatory, antimicrobial, and antioxidant properties, helps in soothing irritated skin, reducing redness, and promoting healing. Aloe vera, with its moisturizing, cooling, and wound-healing qualities, aids in hydrating the skin, alleviating burns, and supporting skin regeneration. The herbal gel aims to provide a natural, effective solution for various skin concerns such as acne, inflammation, dryness, and minor wounds, offering a gentle, safe alternative to chemical-based products.

FORMULATION OF FACE CREAM-

Sr.No	Ingredients	Quantity	Role
1.	Turmeric powder	1 gm	Antioxidant, Skin brightner
2.	Aleo Vera	350 gm	Skin soothing and hydration
3.	Almond Oil	5 ml	Nourishment
4.	Coconut Oil	5 ml	Moisturizing and anti-microbial
5.	Rose Water	5 ml	Fragrance

MATERIALS AND METHODS-

Ingredients used in FACE CREAM-

1. **Turmeric powder**-

-Turmeric contains curcumin, a powerful antioxidant and anti-inflammatory compound.

- Turmeric may help reduce inflammation, improve heart health, and support immune function.
- Turmeric is a popular spice used in Indian, Middle Eastern, and Asian cooking.
- Turmeric has been used for centuries in Ayurvedic and traditional Chinese medicine to promoting health and well being

2. **Rose Water**

-Rose water balances skin pH, reduces pores, and soothes acne.

-Rose water's antioxidants help reduce fine lines, wrinkles, and age spots.

-Rose water's anti-inflammatory properties calm irritated skin, reducing redness and inflammation

-Rose water is used in skincare routines, hair masks, and as a natural perfume due to its pleasant.

3. **Aleo Vera**-

Aloe Vera gel reduces inflammation, soothes burns, and calms irritated skin.

-Aloe Vera gel deeply moisturizes and hydrates the skin, reducing dryness and itchiness.

Aloe Vera gel promotes skin elasticity, reduces acne, and nourishes hair, promoting healthy growth.

-Aloe Vera gel is a natural remedy for sunburns, minor cuts, and scrapes, and can be used as an after-sun care product.

4. **Coconut Oil**

Coconut oil deeply hydrates and nourishes the skin, reducing dryness and irritation.

-Coconut oil promotes healthy hair growth, reduces dandruff, and repairs damaged hair.

-Coconut oil's antimicrobial properties help reduce plaque, bad breath, and gum inflammation.

- Coconut oil's anti-inflammatory properties help reduce acne, soothe skin irritations, and promote wound healing.

5. Almond Oil:-

-Almond oil deeply nourishes and hydrates the skin, reducing dryness and irritation.

-Almond oil's antioxidants protect the skin from damage, reducing fine lines, wrinkles, and age spots.

-Almond oil promotes healthy hair growth, reduces dandruff, and soothes an itchy scalp.

-Almond oil's anti-inflammatory properties help to reduce acne, calm irritated skin, and promote overall skin health

METHOD OF FORMULATION-

1. Prepare Turmeric Infusion – Mix 1 teaspoon turmeric powder with 2 tablespoons distilled water in a Saucepan and heat on low flame for 3–5 minutes, stirring continuously. Let it cool and strain using a fine Sieve or cheesecloth.
2. Coconut Oil – If coconut oil is solid, gently warm 2 tablespoons until it turns into a liquid.
3. Almond Oil- Take 2 tablespoons of almond oil .
4. Mix Aloe Vera Gel and Coconut Oil and Almond Oil– In a clean bowl, combine 3 tablespoons aloe Vera gel with melted coconut oil, almond oil and stir well until fully blended.
5. Incorporate Turmeric Infusion – Gradually add the strained turmeric infusion to the aloe vera and Coconut oil mixture while stirring continuously.
6. Achieve Smooth Consistency – Mix well until the gel has a uniform, smooth texture. If needed, add a Little more aloe vera to adjust the consistency.
7. Transfer to a Sterilized Container – Store the prepared herbal gel in a clean, sterilized glass jar for Freshness.
8. Storage & Usage – Keep in a cool, dark place or refrigerate for a shelf life of 1–2 weeks at room Temperature, upto 1 month if refrigerated. Apply twice daily for best results.

Herbal Skin Gel

PLANT OVERVIEW-

1. **Curcumin Plant**

Tamarind (Tamarindus indica) is a leguminous tree bearing edible fruit that is indigenous to tropical Africa and naturalized in Asia. Tamarindus is the only species in the genus; it is a monotypic group. It is a member of the Fabaceae family.

The brown, pod-like fruits of the tamarind tree have a sweet, acidic pulp that is utilized in cuisines all around the world. The pulp is also used as a metal polish and in conventional medicine. The wood of the tree can be utilized for woodworking, and the seeds can be utilized to extract tamarind seed oil.

The fragile young leaves of the tamarind are utilized in Filipino and South Indian cooking. Tamarind is grown in tropical and subtropical regions all over the world due to its many applications.

The tamarind tree is a medium-growing, long-living tree that can grow up to 25 metres (80 feet) in height at its crown. Dense foliage forms an uneven, vase-shaped outline around the top. The tree thrives in direct sunlight. It favors soil types that are clay, loam, sandy, and acidic; it is highly resistant to drought and aerosol salt, which is salt carried by the wind and prevalent in coastal areas.

Chemical constituents:

Polyphenolic compounds: (+)-catechin, procyanidin B2, (−)-epicatechin, procyanidin trimer, procyanidin tetramer, procyanidin pentamer, and procyanidin hexamer

Flavonoids: Taxifolin, apigenin, eriodictyol, luteolin, and naringenin

Fatty acids: Pentadecanonic, nonanoic, nonacosatrienoic, n-nonanoate, n-hxocosanoate, n-tridecanoic, methyl-n-tricosanoate, n-docosanoate, n-eicosenoate, detricasonic, 1-octanoate, and methyl-n- heptanoate.

2. Aleo Vera

Aloe vera (Aloe barbadensis miller) is a perennial, succulent plant that belongs to the Asphodelaceae family. It is native to The Arabian Peninsula but is now cultivated worldwide, especially in tropical and subtropical regions. The plant has thick,

fleshy leaves with serrated edges, and these leaves store water in the form of a translucent gel. Aloe vera is renowned for its skin- healing properties, commonly used to treat burns, cuts, sunburns, and other skin conditions. Its antimicrobial and anti-inflammatory properties help soothe irritation and accelerate wound healing. In addition to external applications, aloe vera is also consumed as a juice or supplement to aid digestion, promote gut health, and support the immune system. It is believed to help with conditions like acid reflux, constipation, and ulcers due to its natural laxative effect.

In the cosmetic and skincare industry, aloe vera is a key ingredient in moisturizers, shampoos, and face masks because of its hydrating and anti-aging properties. It helps retain moisture, reduce acne, and improve skin elasticity. Beyond health and beauty, aloe vera is also used in agriculture as a natural pesticide and in household products like detergents.despite its numerous benefits, excessive consumption of aloe vera (especially the latex found in the outer leaf) can have side effects such as diarrhea, abdominal cramps, and electrolyte imbalances. Therefore, it should be used in moderation. With its versatility and healing potential, aloe vera remains a valuable plant in natural medicine, skincare, and overall wellness.

Chemical Constitute:-

1. Polysaccharides:-Acemannan,Glucomannan,Cellulose.
2. 2.Anthraquinones:-Emodin,Aloe-emodin,Chrysophanol.
3. Enzymes Amylase:-Lipase,Cellulase,Alkaline phosphatase
4. Vitamins:-Vitamin A (beta-carotene),Vitamin C (ascorbic acid),Vitamin E (tocopherol),B-complex vitamins
5. 5.Minerals:-Calcium,Magnesium,Zinc,Copper,Iron,Potassium,Manganese

6. Amino Acids:-Essential and non-essential amino acids, including lysine and valine
7. Saponins (Natural cleansing agents)
8. Fatty Acids:-Cholesterol,Campesterol,B-Sitosterol,Lupeol

3. Rose petals-

Rose petals are one of the most delicate and fragrant parts of the rose flower, often symbolizing love, beauty, and romance. They come in a variety of colors, including red, pink, white, yellow, and even bi-colored variations, each carrying different symbolic meanings. Red petals are commonly associated with deep love and passion, while white represents purity and new beginnings. The velvety texture and soft appearance of rose petals make them highly desirable for various decorative and therapeutic purposes.

Beyond their beauty, rose petals have significant uses in skincare, medicine, and culinary applications. They contain natural antioxidants, vitamins, and essential oils that help hydrate and rejuvenate the skin. Rose petal extracts are widely used in perfumes, rose water, and herbal teas, providing both aroma and health benefits. In traditional medicine, they are used for their anti-inflammatory and calming properties, often infused into teas or used in poultices to soothe the skin. Their gentle

fragrance and healing properties make them a staple in aromatherapy and holistic treatments.

Culturally, rose petals have been used in various ceremonies and traditions for centuries. In weddings, they are scattered Along the aisle to symbolize a path of love and prosperity, while in religious rituals, they are often used to adorn altars and sacred spaces. In literature and poetry, rose petals frequently serve as metaphors for fleeting beauty, love, and the passage of Time. Additionally, dried rose petals are used in potpourri, sachets, and even bath soaks, offering a luxurious and natural way to enhance ambiance and relaxation.

Chemical Constitute

1. Flavonoids – Quercetin, kaempferol
2. Phenolic compounds – Gallic acid, ellagic acid
3. Essential oils – Geraniol, citronellol, nerol
4. Tannins – Catechins, proanthocyanidins
5. Carotenoids – Lycopene, beta-carotene
6. Vitamins – Vitamin C, B-complex
7. Sugars – Glucose, fructose
8. Organic acids – Malic acid, tartaric acid

3. Coconut Oil-

Coconut oil is a versatile and widely used natural oil extracted from the kernel or meat of mature It is rich in healthy saturated fats, primarily medium-chain triglycerides (MCTs), which are known to provide energy and support metabolism. Coconut oil has antimicrobial, antioxidant, and mosturizing properties, making it beneficial for both internal and external use. It is commonly used in cooking skincare, hair care, and even traditional medicine. While it has gained popularity for its potential health benefits, such as improving heart health, supporting brain function, and aiding digestion it should be consumed in moderation due to its high saturated fat content. There are different including virgin, refined, and fractionated, each with its unique characteristics and uses.

Coconut oil comes from the coconut palm tree (Cocos nucifera), which belongs to the Arecaceae family, commonly known as the palm family.Coconut oil is a highly nutritious and multifunctional oil derived from the flesh of mature coconuts, predominantly grown in tropical regions. It contains around 90% saturated fats, mainly medium-chain triglycerides (MCTs) like lauric acid, caprylic acid, and capric acid, which are easily digestible and provide a quick energy source. These MCTs also possess antimicrobial and antifungal properties, making coconut oil beneficial for immune health.

Chemical Constituents:-

1. Fatty Acids (Major Components – ~90% Saturated Fats).

- Lauric acid (C12:0) – 45–52%
  - Myristic acid (C14:0) – 16–21%
  - Caprylic acid (C8:0) – 5–10%
  - Capric acid (C10:0) – 4–8%
  - Palmitic acid (C16:0) – 7–10%
  - Stearic acid (C18:0) – 2–4%
- Oleic acid (C18:1) – 5–8%
  - Linoleic acid (C18:2) – 1–3%

2.. Minor Bioactive Compounds

- Polyphenols (antioxidants)

- Tocopherols & Tocotrienols (Vitamin E compounds)

- Phytosterols (cholesterol-regulating compounds)

- Squalene (skin-beneficial

4. Almond Tree (Prunus Dulcis)

The almond tree (Prunus dulcis) is a deciduous tree native to the Middle East and South Asia, now wiidely cultivated in mediterranean climates, the United States (especially California), and parts of Central Asia. It belongs to the Rosaceae family and typically grows between 4 to 10 meters (13 to 33 Feet) tall. The tree blooms in early spring, producing beautiful pink or white flowers before its leaves Appear. Almonds are classified as drupes, not true nuts, with a hard shell enclosing the edible seed. The Tree thrives in well-drained, sandy or loamy soil, requiring full sun and moderate irrigation. It is highly valued for its nutritional and commercial importance, as almonds are rich in healthy fats, proteins, Vitamins, and minerals. They are used in culinary, cosmetic, and medicinal applications. The almond tree can live 50 years or more, making it a long-term investment for farmers. The almond tree has two main varieties: sweet almonds (Prunus dulcis var. dulcis) and bitter almonds (Prunus dulcis var. amara). Sweet almonds are commonly consumed and used in cooking, baking, and producing almond oil, while bitter almonds contain amygdalin, which can release toxic cyanide if not processed properly. The tree is highly drought-resistant once established, making it suitable for arid and semi-arid regions. Almond orchards require proper pruning, pest management, and pollination, as many almond varieties rely on bees for fertilization. The global almond industry is dominated by California, Which produces over 80% of the world's almonds.

Almond cultivation, however, faces challenges such as water scarcity, climate change, and pollination issues due to declining bee populations. Despite these challenges, the almond tree remains one of the most economically significant nut trees worldwide

Chemical Constituents:-

2. Lipids (Fats) – About 50-55%, mainly monounsaturated fats (oleic acid) and polyunsaturated fats (linoleic acid).
3. Proteins – Around 20-25%, including essential amino acids.
4. Carbohydrates – About 15-20%, mainly fiber and small amounts of sugar.
5. Vitamins – Rich in Vitamin E (tocopherols), B-complex vitamins (B1, B2, B3, B6, folate).
6. Minerals – High in magnesium, calcium, phosphorus, potassium, iron, zinc.
7. Phenolic Compounds – Includes flavonoids, tannins, and phenolic acids, with antioxidant properties.
8. Phytosterols – Beneficial for cholesterol management.
9. Amygdalin – Found in bitter almonds, can release hydrocyanic acid (HCN), making them toxic if consumed raw.

EVALUATION PARAMETERS-

The formulated herbal cream was further evaluated by using the following evaluation parameters-

Physical evaluation includes the examination of colour, odour, consistency and state of formulation.

a) Colour: -

- The colour of the prepared herbal gel was determined by means of visual examination.

b) Odour: -

- The herbal gel was found to have pleasant.

c) State: -

- The physical state of the herbal gel was determined by visual examination.

- The prepared herbal gel was found to be semi-solid in appearance.

d) Consistency: -

- The final prepared formulation of herbal gel was examined by rubbing it on the hands manually.
- The herbal gel was observed to have a smooth consistency.

e) pH: -

- A digital pH meter was used to measure the pH of the prepared herbal skin gel.
- Using 100 ml of distilled water, the gel solution was made and left for two hours. For each solution, pH was found three times, and the average value was estimated.

f) Spreadability: -

- The spreadability of the gel formulation was assessed by placing sample between two slides and compressing it to an even layer using a specific weight for a certain period of time.
- Spreadability was used to calculate the amount of time needed to divide the two slides.
- Lesser the time taken for separation of two slides results showed better spreadability.

g) Non-irritancy test: -

- The herbal gel formulation was evaluated to determine the non-irritancy of the same.
- The herbal gel did not show any kind of redness or irritancy.

h) Washability: -

- Washability: the skin was treated with the formulation, and the ease with which it could be washed with water was assessed

RESULT AND EVALUATION-

The creation and assessment of the herbal gel was the focus of the current study. The evaluation parameters, which included the herbal skin gel viscosity and phase separation, non-irritancy test, spreadability, washability, pH, and physical evaluation, were listed under the results.

Sr. No	Parameters.	Result.
1.	Colour	Yellow
2.	Odour	Pleasant
3.	State	Semi-solid
4.	Consistency	Smooth
5.	pH	6.9
6.	Spreadability	7.5 gm/cm
7.	Non irritancy	Non-irritant
8.	Washability	Washable

CONCLUSION-

In conclusion, the preparation of herbal gel using turmeric, coconut oil, aloe vera gel, and almond oil results in a natural skincare product with beneficial properties. Turmeric provides anti-inflammatory and antibacterial effects, coconut oil and almond oil offer deep nourishment and hydration, while aloe Vera gel soothes and enhances skin healing. The combination ensures a well-balanced formulation Suitable for promoting healthy skin. Proper mixing, storage, and application help maintain its efficacy and shelf life.

This herbal gel is an excellent natural remedy for skin nourishment, hydration, and healing. Its Antioxidant-rich ingredients work together to soothe irritation, reduce inflammation, and improve skin texture. Regular use can enhance skin health while avoiding harmful chemicals found in synthetic products.

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