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FORMULATION AND EVALUATION OF POLY HERBAL TOPICAL WOUND HEALING CREAM

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ABSTRACT

Creams have been used as topical medications since time immemorial due to their ease of operation to the skin and also their junking. Pharmaceutical creams have a variety of operations ranging from ornamental purposes similar as sanctification, beautifying, altering appearance, moisturizing etc. to skin protection against bacterial, fungal infections as well as mending cuts, becks, injuries on the skin. The mortal skin is fluently vulnerable to injury but it has the capability to heal on its own. Still, the natural mending process can take time and there's also threat of infection especially in the early stages of injury. In similar cases, creams can be applied to the point of injury to speed up the mending process as well as cover the crack from infection. In this review of literature, we've concentrated on the use of pharmaceutical creams for crack mending with detailed discussion relating to the crack mending process, suitable styles of medication of creams; their bracket grounded on their function, characteristics and conflation type and the colorful types of creams, constituents used in the expression of creams and their colorful evaluation parameters. Creams are the topical medications which can be applied on the skin. Creams are defined as "thick liquid orsemi-solid mixes of either the oil painting- in- water or water- in- oil painting type" lozenge forms which thickness varies by oil painting and water. Creams are used for ornamental purposes similar as sanctification, beautifying, perfecting appearances, defensive or for remedial function. These topical phrasings are used for the localized effect for the delivery of the medicine into the underpinning subcaste of the skin or the mucous membrane. These products are designed to be used topically for the better point specific delivery of the medicine into the skin for skin diseases. Creams are considered as a pharmaceutical product as they're prepared grounded on ways developed in the pharmaceutical assiduity; unmedicated and treated creams are largely used for the treatment of colorful skin conditions or dermatos. Creams can be ayurvedic, poly herbal or alopathy which are used by people according to their requirements for their skin conditions. They contain one or further medicines substances dissolve or dispersed in a suitable base. Creams may be classified as o/ w or w/ o type of conflation on the base of phases. The term ' cream' has been traditionally applied to circumfluous formulated as either water- in- oil painting(e.g. cold wave cream) or oil painting- in- water. Crack mending is a complex process driven by a series of stages that bear a suitable crack check terrain, attributable to numerous factors. still, several factors contribute to detention in mending processes, including infection and the presence of certain conditions. Under unfortunate circumstances, an shy crack mending process could lead to amputation. reek is the traditional dressing to cover up injuries but tends to dry the crack bed. thus, a wettish dressing may prove helpful in furnishing a suitable terrain, precluding skin blankness, and enhancing angiogenesis of the crack area. The operation of topical cream could expedite crack mending better than a wettish dressing, as the former facilitates the form process by maintaining the hydration situations of the affected skin. The issues mentioned over are bandied in detail in this review paper, fastening on recent advances, advantages and downsides of topical creams for crack treatment. In addition, the composition includes suggestions to ameliorate topical cream phrasings for effective delivery of the demanded remedial agents to help in crack form. Crucially, topical creams could play a crucial part in particular crack care and grease regenerative drug. new strategies for speedy crack mending are in demand to palliate the healthcare fiscal burden.

KEYWORDS: Wound healing, Anti bacterial, Curcumin, Neem, Tulsi, Ginkgo biloba.

INTRODUCTION

Creams are the topical medications which can be applied on the skin. Creams are defined as " thick liquid orsemi-solid mixes of either the oil painting- in- water or

water- in- oil painting type" lozenge forms which thickness varies by oil painting and water. Creams are used for ornamental purposes similar as sanctification, beautifying, perfecting appearances, defensive or for remedial function. These topical phrasings are used for the localized effect for the delivery of the medicine into the underpinning subcaste of the skin or the mucous membrane. These products are designed to be used topically for the better point specific delivery of the medicine into the skin for skin diseases. Creams are considered as a pharmaceutical product as they're prepared grounded on ways developed in the pharmaceutical assiduity; immediate and treated creams are largely used for the treatment of colorful skin conditions or dermatoses. Creams can be ayurvedic, poly herbalor alopathic which are used by people according to their requirements for their skin conditions. They contain one or further medicines substances dissolved or dispersed in a suitable base. Creams may be classified as o/ w or w/ o type of conflation on the base of phases. The term 'cream' has been traditionally applied to circumfluous formulated as either water- in- oil painting(e.g. cold wave cream) or oil painting- in-water(e.g. evaporating cream).

Fig. 1: Formulation of herbal cream.

Types of Cream

1) Make up cream (o/ w conflation)
a) Evaporating creams.
b) Foundation creams.
2) sanctification cream, sanctification milk, sanctifying embrocation (w/o conflation)
3) Winter cream (w/ o conflation)
a) Cold cream or moisturizing creams.
4) Each- purpose cream and general creams.
5) Night cream and massage creams.
6) Skin defensive cream.
7) Hand and body creams.

- **Wound healing**

Crack mending is the complex process by which the body repairs damaged towel, similar as skin, muscle, or other apkins, after an injury or trauma.

- **Wounds**

Injuries may be defined as a loss or breaking of cellular and anatomic or functional durability of the deep skin towel or the living apkins. Injuries may be produced by physical, chemical, thermal, viral, microbial, violence or the immunological trauma to the face of the skin. Injuries not only affect the case physically and emotionally but can also significantly bring them and the scars may remain for the continuance of the case. Injuries are generally nominated as the physical injury that causes opening and breaking of the skin. Injuries can be classified substantially on the base of mode of infliction and causative agent.

Types of Wound

1. Closed crack- bruise, closed fracture, etc.
2. Open crack
a) Sharp cut.
b) rent.
c) Bruise.
d) Avulsion.
e) Crush crack.
f) Punctured crack.
g) Bite crack.
h) Burn crack.

Classification of wound healing creams

- **Based on poly herbal ingredients**

1. Single-herb creams: Contain a single poly herbalingredient, such as aloe vera or tea tree oil.
2. Multi-herb creams: Contain a combination of multiple poly herbalingredients, such as turmeric, neem, and ghee.
3. Poly herbalextracts creams: Contain extracts of herbs, such as plantain extract.

- **Based on poly herbal properties**

1. Antimicrobial creams: Contain herbs with antimicrobial properties, such as tea tree oil or neem.
2. Anti-inflammatory creams: Contain herbs with anti-inflammatory properties, such as turmeric or ginger.
3. Antioxidant creams: Contain herbs with antioxidant properties, such as green tea or grape seed extract.

- **Based on wound type**

1. Acute wound creams: Designed for acute wounds, such as cuts or lacerations.
2. Chronic wound creams: Designed for chronic wounds, such as diabetic foot ulcers or pressure ulcers.
3. Surgical wound creams: Designed for surgical wounds.

- **Based on preparation method**

1. Traditional preparation creams: Prepared using traditional methods, such as Ayurvedic or Unani medicine.
2. Modern preparation creams: Prepared using modern methods, such as nanotechnology or micro emulsion.

- **Examples of poly herbal wound healing creams**

1. Turmeric cream: Contains turmeric extract and is used for wounds, cuts, and skin irritation.

a. Ideal properties of wound healing cream

a. Moisturizing
b. Non-adherent
c. Breathable
d. pH balanced
e. Antimicrobial
f. Anti-inflammatory
g. Cell proliferation
h. Growth factor stimulation

b. Criteria for good quality of cream

a. Texture: Smooth, non-greasy, and easy to apply.
b. Color: Uniform color, no separation or sedimentation.
c. Odor: Mild, pleasant odor, no strong or unpleasant smell.
d. Moisturizing ability: Maintains a moist environment to promote wound healing.
e. Adhesion: Adheres well to the skin, but does not stick to the wound.
f. Durability: Remains effective over time, resistant to wear and tear.

c. Advantages of wound healing cream

a. Accelerated wound closure
b. Improved tissue regeneration
c. Pain relief
d. Antimicrobial activity
e. Moisturizing ability
f. Easy to use
g. Non-invasive
h. Cost-effective

Drugs use in wound healing herbal topical cream

1. Curcmin

Fig. 2.

The bright yellow pigment in turmeric (Curcuma longa), is a poly phenol with a wide array of potential health benefits, including antioxidant and anti-inflammatory properties. It's known for its ability to scavenge free radicals, inhibit inflammatory pathways, and potentially protect against chronic diseases like cancer and neuro degenerative disorders. However, its poor bio availability and instability pose challenges for its therapeutic use. the active compound in turmeric, exhibits significant wound-healing properties due to its antioxidant, anti-inflammatory, and antimicrobial actions, accelerating healing by enhancing collagen deposition, granulation tissue formation, and wound contraction.

2. Neem

Fig. 3.

Scientifically known as Azadirachta indica, is a fast-growing, evergreen tree in the mahogany family (Meliaceae) native to the Indian subcontinent and known for its medicinal and pesticidal properties. It's a resilient tree, thriving in dry, rocky soils and known for its ability to withstand harsh conditions. particularly its oil and extracts, exhibits promising wound- healing properties due to its antimicrobial, anti-inflammatory, and antioxidant effects. Active compounds like nimbidin and nimbin contribute to these benefits, accelerating tissue regeneration and reducing infection risk.

3. Tulsi

Fig. 4.

Also known as holy basil, exhibits wound-healing properties due to its antioxidant, anti- inflammatory, and antimicrobial activities, which promote faster healing and reduce infection risk. scientifically is Ocimum tenuiflorum or Ocimum sanctum, is a revered herb in India with a long history of medicinal and spiritual uses. It belongs to the Lamiaceae family (also known as Labiatae) and is native to the Indian subcontinent, with cultivation and naturalization in other tropical.

4. Ginkgo biloba

Fig. 5.

A particularly extracts, shows promise in wound healing due to its potential to enhance blood circulation, promote collagen synthesis, and exhibit anti-inflammatory and antioxidant effects. Some studies have shown that ginkgo biloba can accelerate wound closure and improve wound appearance. a "living fossil" and the sole surviving species of its order, is a deciduous tree with fan-shaped leaves and a long history of medicinal use, particularly in traditional Chinese medicine. Its extract, containing flavonoids and terpenoids, is used for various conditions, including circulatory problems and cognitive function, though scientific evidence for these claims is mixed.

5. Bees wax

Fig. 6.

Beeswax, a natural wax secreted by worker bees, is a complex lipid-based organic compound primarily composed of esters of fatty acids and long-chain alcohols used for building honeycombs. It's secreted as scales from wax glands in the abdomen, then chewed and modified by the bees before being incorporated into the hive structure. Beeswax, a natural product from honeybees, has shown promising wound-healing properties due to its antimicrobial, anti-inflammatory, and antioxidant effects, as well as its ability to create a protective barrier on the skin.

6. Tea Tree Oil

Fig. 7.

It is derived from Melaleuca alternifolia, is an essential oil known for its antimicrobial properties and is used topically for various skin conditions. It's composed of compounds like monoterpenes (including terpinen-4-ol) and sesquiterpenes, contributing to its antiseptic and anti-inflammatory effects and derived from Melaleuca alternifolia, exhibits promising wound-healing properties due to its antimicrobial, anti-inflammatory, and antioxidant effects, potentially accelerating healing and reducing infection risk.

7. Vitamin- E.

Fig. 8.

Stands out as the preeminent fat-soluble non-enzymatic antioxidant, celebrated primarily for its capacity to impede the actions of pro-oxidant agents produced by reactive oxygen species (ROS). Vitamin E possesses the capability to neutralize free radicals triggered by internal and/or external sources like UV radiation, medications, and environmental pollutants, thus preventing their harmful consequences. In numerous skin therapy regimens, oral supplementation of vitamin E is commonly advised.

8. Olive Oil

Fig. 9.

It is derived from the Olea europaea fruit, is rich in monounsaturated fatty acids, particularly oleic acid, and contains antioxidants like polyp henols, contributing to its health benefits. particularly extra virgin, shows promise for wound healing due to its anti-inflammatory and antioxidant properties, potentially accelerating tissue regeneration and reducing inflammation. It contains compounds like phenolic acids and omega-3 fatty acids that contribute to these effects.

9. Rose water

Fig. 10.

Rose water, derived from steam-distilling rose petals, exhibits potential benefits for wound healing due to its antiseptic and antibacterial properties, aiding in faster healing and reducing infection risk. While more research is needed, some studies suggest its anti-inflammatory and antioxidant properties may contribute to these effects.

Excipienused in wound healing cream

1. Methyl paraben

Methylparaben is a synthetic preservative commonly used in personal care products, pharmaceuticals, and food. It is a member of the paraben family, which has been widely used for decades due to their antimicrobial properties.

Fig. 11.

Chemical Properties

1. Chemical Name: Methylparaben
2. Chemical Formula: C8H8O3
3. Molecular Weight: 152.15 g/mol
4. Melting Point: 125-128°C
5. Boiling Point: 270-280°C
6. Structure

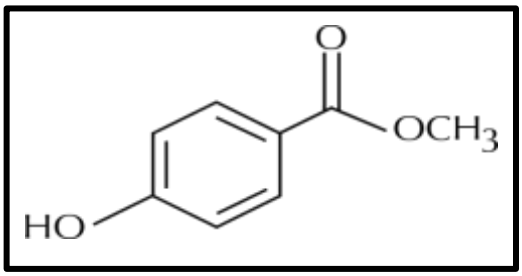

Fig. Methyl Paraben.

2. Borax

Borax, also known as sodium tetraborate, is a naturally occurring mineral compound. It has been used for various purposes, including cleaning, pest control, and personal care.

Fig. 12.

Chemical Properties

1. Chemical Name: Sodium tetraborate
2. Chemical Formula: Na2B4O7·10H2O
3. Molecular Weight: 381.37 g/mol
4. Melting Point: 743°C
5. Boiling Point: 1,575°C
6. Structure:

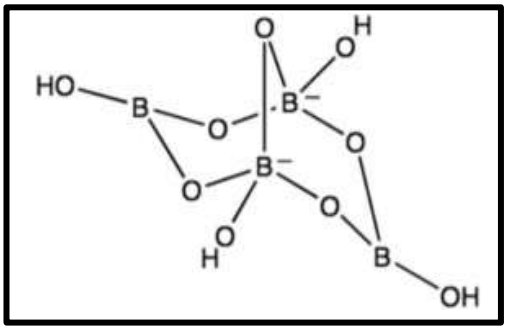

Fig. Borax.

3. Liquid paraffin

Liquid paraffin, also known as mineral oil, is a colorless, odorless, and tasteless oil that is commonly used in various industries, including cosmetics, pharmaceuticals, and food.

Fig. 13.

2. Chemical Formula: C15H32-C40H82
3. Molecular Weight: 200-600 g/mol
4. Melting Point: -10°C to -30°C
5. Boiling Point: 250°C to 400°C
6. Structure :

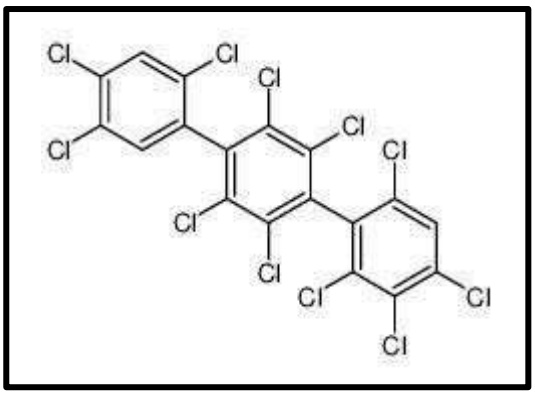

Fig: Liquid paraffin.

Chemical properties

1. Chemical Name: Liquid paraffin

MATERIAL AND METHOD

Formula for wound healing cream formulation

Table 1: Formulation Table.

Sr. No	Ingredients	F1C	F2C	F3C
1.	Curcumin	3 ml	2.5 ml	2 ml
2.	Neem	1 ml	0.88 ml	0.65 ml
3.	Tulsi	0.83 ml	0.75 ml	0.55 ml
4.	Ginkgo-biloba	0.01 ml	0.03 ml	0.02 ml
5.	Tea Tree Oil	0.3 ml	0.2 ml	0.1 ml
6.	Bess wax	6 gm	5.5 gm	3 gm
7.	Borax	3 gm	2.7 gm	2 gm
8.	Methyl paraben	1 gm	0.5 gm	0.2 gm
9.	Liquid paraffin	12 ml	11 ml	10 ml
10.	Vitamin-E oil	0.5 ml	0.4 ml	0.2 ml
11.	Olive oil	0.4 ml	0.2	0.2 ml
12.	Rose water	Q.s	Q.s	Q.s
13.	Dist. water	Q.s	Q.s	Q.s

Ingredients and their roles

Table 2: Roles of Ingredients.

Sr.No	Ingredients	Roles
1.	Curcumin	Anti- inflamntory, antibacterial properties
2.	Neem	Anti inflamentory & anti-oxidant
3.	Tulsi	Tissue strength improver & scarring reducer
4.	Ginkgo-biloba	Growth factor promoter
5.	Tea Tree Oil	Preventive activity
6.	Bess wax	Protective barrier
7.	Borax	Emulsifier
8.	Methyl paraben	Preservative & Stabilizer
9.	Liquid paraffin	Emollient
10.	Vitamin-E oil	Efficacy enhancer
11.	Olive oil	Burn care
12.	Rose water	Fragerance agent
13.	Dist.Water	Vehical

1. Collectionof plant material

Curcumin powder

Has anti-inflammatory and antibacterial properties, helping to reduce redness and swelling associated with wounds.

- Biological Source: It is obtained from the rhizome of herb Curcuma longa.
- Family: Zingiberaceae
- Chemical Constituents: Turmeric powder is about 60-70% carbohydrates, 6-13% water, 6-8% protein, 5-10% fat, 3 7% dietary minerals, 3--7% essential oils, 2-7% dietary fiber, and 1-6% curcuminoids. The golden yellow color of turmeric is due to curcumin. The rhizomes are used fresh or boiled in water and dried, after which they are ground into a deep orange-yellow powder commonly used as a coloring and flavoring agent in many Asian cuisines, especially for curries, as well as for the dyeing characteristics imparted by the principal turmeric constituent, curcumin.

Neem powder

Has anti-inflammatory and anti-oxidant properties, helping to reduce redness and swelling associated with wounds.

- Biological Source : it is obtained from neem azadirachta indica
- Family: Meliaceae
- Chemical Constituents :- Azadirachtin: 0.2-0.4%, Nimbidin: 0.1-0.3%, Nimbinin: 0.05-0.1%, Quercetin: 0.1-0.2%, Triterpenoids: 1-2%, Flavonoids: 1-2%, Saponins: 1-2%, Tannins: 5-10%

Tulsi powder

Has tissue strainght and scarring reducer properties, helping to growth of tissue and swelling associated with wounds.

- Biological Source : It is obtained from leaves of lamiaceae
- Family: Lamiaceae
- Chemical Contituents :- Eugenol: 1-3%, Ursolic Acid: 0.5-1.5%, Rosmarinic Acid: 1-2%, Apigenin: 0.5-1.5%, Luteolin: 0.2-0.5%, Volatile Oils: 0.5-1.5%, Flavonoids: 1-2%, Phenolic Acids: 1-2%.

Ginkgo biloba

Has growth factor promoter properties, helps to improving cells and skin tissue and swelling associated with wounds.

- Biological Source: It is obtained from leaves of ginkgoaceae.
- Family : Ginkgoaceae
- Chemical Constituents - Flavonoids: 0.5-1.5%, Terpenoids: 0.2-0.5%, Ginkgolic Acids: 0.1-0.3%, Biflavonoids: 0.1-0.3%, Polysaccharides: 1-2%, Volatile Oils: 0.1-0.3%, Phenolic Acids: 0.1-0.3%.

2. Extraction of poly herbal drugs

- **Extraction process of curcumin**

1. Harvesting of Curcumin : Curcumin is a bioactive compound extracted from the rhizomes of the turmeric plant (Curcuma longa). Harvesting curcumin involves several steps, from cultivation to extraction.
2. Washing : Washing is a critical step in the processing of curcumin, a bioactive compound extracted from the rhizomes of the turmeric plant (Curcuma longa). Washing helps remove impurities, dirt, and other contaminants from the curcumin.
3. Peeling : Peeling involves removing the outer layer of the rhizome to expose the inner layer, which contains the curcumin.
4. Grinding : Grinding is a critical step in the processing of curcumin, a bioactive compound extracted from the rhizomes of the turmeric plant (Curcuma longa). Grinding involves reducing the size of the curcumin particles to increase their surface area and enhance their bioavailability.
5. Straining : Straining involves passing the liquid extract through a filter or a mesh to remove impurities and improve the quality of the curcumin.
6. Extraction : Curcumin is a bioactive compound extracted from the rhizomes of the turmeric plant (Curcuma longa). The extraction of curcumin involves several steps, including harvesting, drying, grinding, and extraction using various solvents or methods.
7. Boiling : The boiling method is a traditional and simple technique used to extract curcumin from the rhizomes of the turmeric plant (Curcuma longa). This method involves boiling the turmeric rhizomes in water or a solvent to release the curcumin.

Fig. 14.

8. Filtration: filtration is a basic method used to separate curcumin from impurities and other substances. This method involves passing the curcumin mixture through a filter medium, such as a membrane or a paper filter, to remove impurities and improve the purity of the curcumin.

Fig. 15.

- **Extraction Process of Neem**

Harvesting: Neem (Azadirachta indica) is a tree native to the Indian subcontinent and is widely cultivated for its medicinal and agricultural uses. Harvesting neem involves collecting its leaves, seeds, and other plant parts for use in various applications.

Washing: Washing neem leaves is an essential step in preparing them for use in various applications, including medicinal, agricultural, and cosmetic uses. The washing process helps remove dirt, debris, and other impurities from the leaves.

Drying: Drying neem leaves is an essential step in preserving their quality and potency. Drying helps remove excess moisture from the leaves, preventing spoilage and extending their shelf life.

Crushing: Crushing neem leaves is a process used to release their bioactive compounds, such as azadirachtin, which is a natural insecticide. Crushing can be done using various methods, including manual and mechanical techniques.

Sieving: is a process used to separate crushed neem powder into different particle sizes. This is an important step in ensuring the quality and consistency of the final product.

Boiling: Boiling neem powder is a process used to extract its bioactive compounds, such as azadirachtin, which is a natural insecticide. Boiling can be done using various methods, including hot water extraction.

Fig. 16.

1. **Filtration:** Filtration is a basic method used to separate solid particles from a liquid or gas. It is a common technique used in various industries, including water treatment, pharmaceuticals.

Fig. 17.

- **Extraction Process of Tulsi**

Tulsi, also known as holy basil, is a plant that has been used for centuries in traditional medicine and spiritual practices. The extraction process of tulsi involves separating the bioactive compounds from the plant material to create various products, such as essential oils, extracts, and powders.

Harvesting: Harvesting of tulsi, also known as holy basil, is a crucial step in the production of tulsi products. The harvesting process involves collecting the leaves, stems, and flowers of the tulsi plant, which are used for medicinal, spiritual, and culinary purposes.

Washing: Tulsi leaves is an essential step in preparing them for use in various applications, including medicinal, culinary, and spiritual purposes. The washing process helps remove dirt, debris, and other impurities from the leaves.

Drying: Drying tulsi leaves is an essential step in preserving their quality and potency. Drying helps remove excess moisture from the leaves, preventing spoilage and extending their shelf life.

Crushing: Crushing tulsi leaves is a process used to release their bioactive compounds, such as essential oils and other nutrients. Crushing can be done using various methods, including manual and mechanical techniques.

Sieving: Sieving tulsi leaves is a process used to separate the leaves into different sizes or to remove impurities. Sieving can be done using various methods, including manual and mechanical techniques. Boiling : Boiling tulsi leaves is a traditional method used to extract their bioactive compounds, such as essential oils and other nutrients. Boiling can be done using various methods,

including hot water extraction.

Fig. 18.

1. **Filtration:** Filtration is a method used to separate solid particles from a liquid or gas. In the context of tulsi leaves, simple filtration can be used to remove impurities and debris from tulsi tea or extracts.

Fig.19.

- **Extraction process of Ginkgo Biloba**

Ginkgo biloba is a popularpoly herbalsupplement known for its potential health benefits, including improved cognitive function and memory. The extraction process of ginkgo biloba involves separating the bioactive compounds from the plant material to create various products, such as extracts, powders, and teas.

1. **Harvesting:** Ginkgo biloba is a deciduous tree native to China, and its leaves are widely used in traditional medicine and dietary supplements. Harvesting ginkgo biloba leaves is a crucial step in the production of ginkgo biloba products.
2. **Washing:** Washing ginkgo biloba leaves is an essential step in preparing them for use in various applications, including medicinal, dietary, and cosmetic products. The washing process helps remove dirt, debris, and other impurities from the leaves.
3. **Drying:** Drying ginkgo biloba leaves is an essential step in preserving their quality and potency. Drying helps remove excess moisture from the leaves, preventing spoilage and extending their shelf life.
4. **Crushing:** Crushing ginkgo biloba leaves is a process used to release their bioactive compounds, such as flavonoids and terpenoids. Crushing can be done using various methods, including manual and mechanical techniques.
5. **Sieving:** Ginkgo biloba leaves is a process used to separate the leaves into different sizes or to remove impurities. Sieving can be done using various methods, including manual and mechanical techniques.
6. **Boiling:** Boiling Ginkgo biloba leaves is a traditional method used to extract their bioactive compounds, such as flavonoids and terpenoids. Boiling can be done using various methods, including hot water extraction.

Fig.20.

7. Filtration: filtration is a method used to separate solid particles from a liquid or gas. In the context of Ginkgo biloba, simple filtration can be used to remove impurities and debris from Ginkgo biloba extracts or teas.

Fig. 21.

Formulation & procedure for wound healing cream

- Take 75 °C liquid paraffin and bees wax and heat it there (oil phase) in a borosilicate glass breaker.

⇩

- Borax and methyl paraben should be dissolved in distilled water in another beaker while maintaining a temperature of 75°C with a water bath.

⇩

- The aqueous phase of the solution should be stirred with a glass rod until all solid particles are dissolved.

⇩

- Gently pour the hot aqueous phase into the heated oily phase while continuing to mix.

⇩

- Curcumin extract, Tulsi extract, neem extract, ginkgo biloba extract & tea tree oil, Vit-E oil and Olive oil should be added right away after combining the two stages.

⇩

- Glass rod blending should continue until a smooth cream emerges. Rose oil should be added as a fragrance once the cream has formed.

1. Evaluation Parameters

Following are the evaluation parameters were performed to ensure superiority of prepared poly- herbal cream.

- **Colour:** Pale yellow
- **Odour:** Characteristic
- **Texture/Appearance**: Smooth
- **Nature:** Semi solid
- **Consistency:** Good
- **ph:** 7

Fig. 22.

- **Washability:** washable

Little quantity of cream was applied over the skin and washed with water.

- **Nature of skin after wash**: Smooth.

After washing skin with water, it was checked that nature of skin and colour difference skin.

- **Irritability:** Non irritant

It was evaluated by patch test. It is not verified test but as per mentioned on marketed preparations label, had performed this test also. Little quantity of the cream was applied on the surface of skin and kept it as it is for few minutes.

Fig. 23.

- **Grittiness:** Not Gritty

Grittiness was checked manually.

- **Moisture content:** No

As we use only solid material that is in powder form so no moisture content is there which can any microbial contamination.

- **Ease of use:** Yes

It is determined that how easily users can use the product. We determined it by using the small amount of product as trial purpose.

1. Evaluation table

Table No. 3: Evaluation table.

Sr.No	Test	Observation
1.	Colour	Pale – Yellow
2.	Odour	Charecterestics
3.	Texture/ Appearance	Smooth
4.	Nature	Semi solid
5.	Consitency	Good
6.	ph	7
7.	Washability	Easily washable
8.	Irritability	Non irritant
9.	Grittiness	Not Gritty
10.	Cleaning effect	Good
11.	Ease of use	Yes

2. Evaluation of physical characteristics

Table No. 4: Evaluation of physical characteristics.

Sr.no	Characteristic	F3
1.	Colour	Pale yellow
2.	Odour	charecterestics
3.	State	Semisolid
4.	Consistency	Smooth

3. pH test

Table 5: pH test.

S.No	Formulation	pH
1.	F3	7

4. Phase separation test

Table 6: Phase Seperation.

S.No	Formulation	PhaseSeparation
1..	F3	No phase separation

5. Spred ability test

Table 7: Spreadability test.

S.No	Formulation	Results
1.	F3	10.16g.cm/s

6. Washability test

Table No. 8: Washability test

Sr. No	Formulation	Washability
1.	F3	Easily wash-able

7. After feel test

Table No. 9: After feel test

S.No	Formulation	After feel test
1.	F3	Good

8. Irritancy Test

Table No. 10: Irritancy test.

S.No	Formulation	Results
1.	F3	Non irritancy

9. Greasiness Test

Table No. 11: Greasiness test.

S.No	Formulation	Gresinesss
1.	F3	Midly-greasy

10. Stability test

Table No. 12: Stability test.

S.No	Formulation	Stability
1.	F3	Stable

RESULT

The formulated poly herbal cream has been evaluated at different parameters. All the organoleptic properties are checked visually such as colour, odour, consistency, and texture. As a result, the colour observed was pale yellow, no bad odour occurred from formulation and the consistency of the formulation was found suitable as required to apply on the wounds.

Washability and cleansing properties of curcumin has found to be good, there was no redness, no irritation or any dermatological effects were observe on skin during irritancy testing.

The Result are as follows

Sr. No.	Test	Result
1.	Colour	Pale yellow
2.	Odour	Charecterestics
3.	Texture/ Appearance	Smooth
4.	Nature	Semi solid
5.	Consitency	Good
6.	ph	7
7.	Washability	Easily washable
8.	Irritability	Non irritant
9.	Grittiness	Not gritty
10.	Cleaning effect	Good
11.	Ease of use	Yes
12.	Phase separation test	No separation
13.	Spred ability test	10.16g.cm/s
14.	Washability test	Easily washable
15.	After feel test	Good
16.	Irritancy test	Non irritancy
17.	Greasiness test	Midly-greasy
18.	Stability test	Stable

CONCLUSION

The cream demonstrated effective wound-healing properties due to the inclusion of Curcumin, Neem, Tulsi, and ginkgo biloba. Each poly herbal constituent exhibited noteworthy therapeutic actions. According to the findings, all formulations—FIC, F2C & F3C were stable at room temperature and safe for topical application. Among these, the F2C formulation proved to be superior compared to FIC & F3C.

The current study focuses on the potential of poly herbal extracts for cosmetic applications. The personal care industry has significantly increased the use of cosmetics containing natural ingredients. Bioactive compounds in the skin's biological processes and provide essential activities for maintaining wound health.

Throughout the trial period, the formulated cream exhibited high consistency, good spreadability, and no signs of phase separation. The resulting poly herbal cream possesses excellent qualities and offers nutritional benefits while minimizing the use of chemicals, thereby protecting the skin from various conditions. It is cost-effective, as it was prepared using simple ingredients and a straightforward method.

These poly herbal cosmetic formulation can serve as a protective barrier for the skin and is considered safe for use. Test results indicate that the cream can be applied topically to safeguard the skin from damage. The belief that natural remedies are safer and have few side effects than synthetic alternatives contributes to their growing acceptance.

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