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A REVIEW ON HERBAL ANTI-INFLAMMATORY LOTION

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Abstract-

Herbal cosmetics are created when consumers' desire for herbal products led to the use of natural herbs and their products for their aromatic value in cosmetic preparations, which in turn created a need for natural products and natural extracts. Lotions are applied to improve beautify by means of washing and extraction of greasy secretions, as well as blood circulation, emollience, prolongation of astringency, freshening, bleaching, and therapeutic characteristics. Finely divided insoluble matter is advantageous for herbal lotions, which are usually applied frictionlessly. Particles that are closer to colloidal dimensions are kinder to inflammatory regions and more potent on contaminated surfaces. Lotions can be made with a variety of chemicals to improve their dispersion and highlight their drying, relaxing, cooling, or protecting qualities. This review's goal is to gather data on various lotion formulations made using herbs and assess them. Numerous researchers have examined herbal lotion formulations, and they can use this information to develop new herbal cosmetic formulations using fresh herbs.

Keywords- Herbal Cosmetic, Herbal Lotion, Anti-Inflammatory

Introduction –

Any material used to clean, enhance, or modify the appearance of the skin, hair, nails, or teeth is considered a cosmetic. The term "Herbal Cosmetics" refers to products that are produced utilizing a variety of approved cosmetic ingredients as a base, and then one or more herbal compounds are added to provide specific cosmetic benefits. Herbal cosmetics are created when consumers' desire for herbal products led to the use of natural herbs and their products for their aromatic value in cosmetic preparations, which in turn created a need for natural products and natural extracts. 1. Liquid preparations called lotions are designed to be applied externally without causing friction. They are put directly onto the skin with the aid of a substance that absorbs, like gauze or cotton wool soaked in it.[1,2,3]

Lotion benefits for skincare:

1. Rehydration: They help rehydrate dry skin, making it smoother and softer.

2. Targeted Treatment: Herbal lotions can replenish extra dry or rough spots on the skin, providing targeted treatment.

3. Pleasant Sensation: They feel and smell good, enhancing the overall sensory experience.

4. Relaxation: Herbal lotions can contribute to relaxation, promoting a sense of well-being during use

5. Skin Softening: They soften the roughest parts of the body, such as elbows and knees. 6. Enhanced Glow: Herbal lotions can make the skin glow, giving it a healthier appearance.

Ideal properties of Herbal Lotion:

1. They should give cooling effect on application

2. They should be free from particles.

3. They should produce emollient effect.

4. They should not cause any skin toxicity.

5. They should be compatible with skin PH.

Advantages of Herbal lotion-

1. Ease of Manufacture: They are easy to manufacture, making them accessible for both producers and consumers.

2. Availability: Herbal lotions are readily available and can be found in a wide variety of plants, catering to diverse preferences and needs.

3. Non-allergenic: They typically do not provoke allergic reactions and have minimal to no negative side effects, making them suitable for sensitive skin types.

4. Compatibility: Herbal lotions easily integrate with both skin and hair care routines, offering versatility in usage.

5. Pharmacological Effects: Extracts from plants in herbal lotions retain their pharmacological properties, providing additional benefits beyond skincare.

Disadvantages of Herbal Lotion-

1. Herbal remedies are safe but sometimes they cause side effects. These can include Stomach, upset, Sleepiness and pain in your muscle or joints.
2. Less satable than solid dosage form .
3. need to shak the container before use in case of emulsion suspension type of lotion.
4. Babies can swallow if applied to hand.

Skin

Even though you may not think of the skin as an organ, it is made up of tissues that work together as a cohesive structure to perform a variety of essential functions. The skin and the tissues that support it make up the integumentary system, which provides general protection to the body. The several layers of cells and tissues that make up the skin are held to the underlying structures by connective tissue. The deeper layer of skin is well vascularized, with many blood vessels present. Along with a significant number of sympathetic and autonomic nerve fibres that support brain-to-brain communication, it also has a big number of sensory fibres.
The three layers of skin are as follows:

- Epidermis
- Dermis
- Subcutaneous (hypodermis)

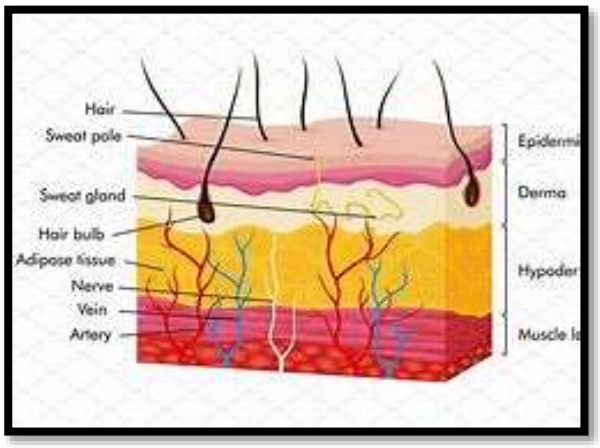

Fig.No 1 Anatomy of Skin

Function of Skin-

skin is the body's largest and heaviest organ. It is made up of several different types of cells and its main purpose is to protect the inside of the body from the environment. Alongside its role as a protective barrier, the skin helps people maintain the right internal temperature and allows them to sense the world through nerve endings[.4,5,6,]

1. **Protection**
   An anatomical barrier from pathogens and damage between the internal and external environment in bodily defence, Langerhans cells in the skin are part of the adaptive immune system.

2. **Sensation**
   Contains a variety of nerve endings that react to heat and cold, touch, pressure, vibration, and tissue injury, see somatosensory system and haptics.

3. **Control of evaporation**
   The skin provides a relatively dry and semi-impermeable barrier to fluid loss. Loss of this function contributes to the massive fluid loss in burns.

4. **Aesthetics and communication**
   Others see our skin and can assess our mood, physical state and attractiveness.

5. **Storage and synthesis**
   Acts as a storage centre for lipids and water, as well as a means of synthesis of vitamin D by action of UV on certain parts of the skin.

6. **Water resistance**
   The skin acts as a water-resistant barrier so essential nutrients aren't washed out of the body

Ingredients used in lotion:

1. Aloe Vera
2. Lemon
3. Almond
4. Honey
5. Sandalwood
6. Turmeric
7. Camphor

1.Aloe vera

Aloe vera does have a lot of advantages for skin health. Because it stimulates fibroblasts, more collagen and elastin are produced, which increases skin elasticity and decreases wrinkles. Furthermore, the skin is softer due to its

cohesive action on epidermal cells. It is a member of the Liliaceae family and is frequently used in lotions and cosmetics because of its antibacterial, hydrating, and healing qualities for skin wounds. Its cooling properties might also aid in avoiding sunburn. Aloe vera is generally used as a moisturizer to treat or prevent a range of skin conditions, including irritations, dryness, roughness, and itching.

Fig.No.2 Aloe barbadensis miller

Kingdom –Plantae

Family –Liliaceae

Genus – Aloe L

Species – Aloe Vera(L) Burm.f

Class – Liliopsida

2. Lemon

It is safe to use lotions and creams containing lemon juice on your skin, and they are unlikely to irritate it. Citric acid-containing products can help lighten discolouration and black spots, and they are safer than unfiltered lemon juice. It possesses antifungal qualities. It contributes to skin whitening.

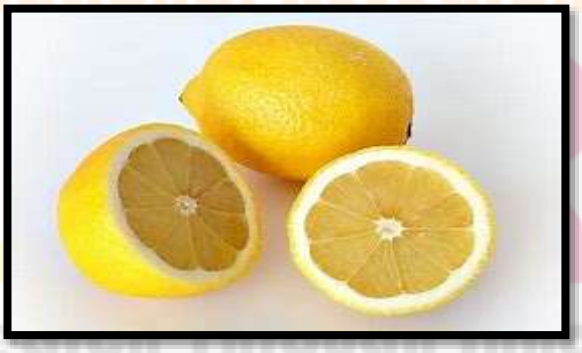

Fig.No.3 Citrus Limon

Kingdom- Plantae

Family- Rutacaeae

Genus- Citrus

Species -C. limon

Class- Magnoliopsida

3.Almond

aids in producing smooth, silky skin. preserves our skin healthy and shields it from harm in the future. Make the skin brighter and clearer by reducing the dry, harsh texture. Almond oil functions as an emollient and a moisturizer. Water is delivered to the skin by moisturizers, who then trap it in with an oleic acid. Emollients fill up small crevices in the skin and smooth it. By strengthening the skin's barrier function, they aid in moisture retention rather than causing it to be added.

Fig.No.4 ***Terminalia catappa***

Kingdom- Plantae

Family- Rosaceae

Genus- Prunus

Species – P.dulcis

Class- Magnoliopsida

4.Honey

Honey is a natural humectant (aka an ingredient that draws moisture into the skin). If your skin needs a hydrating boost, this is the perfect ingredient. It is antibacterial, anti-inflammatory, and acts as an anti-viral/anti-fungal. Honey is a natural humectant (aka an ingredient that draws moisture into the skin). If your skin needs a hydrating boost, this is the perfect ingredient. It is antibacterial, anti-inflammatory, and acts as an anti-viral, anti-fungal.

Fig.No.5 Honey

Kingdom- Animalia

Family- Apidae

Genus- Apis

Species – Apis Mellifera

Class- Insecta

5. Sandalwood

Its efficacy in treating blemishes, rashes, and acne has led to its widespread usage in skincare and cosmetic products. Its cooling qualities also aid in clearing the skin of dullness and tan lines. Sandalwood is useful for skin care, reducing inflammation, softening the skin, and enhancing blood circulation. It also has astringent, deodorant, antiseptic, stimulant, and tonic properties. Because of its astringent qualities, oily skin benefits greatly from its use.

Fig.No.6 Santalum album

Kingdom- Animalia

Family- Santalaceae

Genus- Santanum

Species – S.album

Class-Magnoliosoda

Excretion Process:

1Skin permeation: Sandalwood oil penetrates the skin through transcellular and intercellular routes.

2. Absorption: Sandalwood oil is absorbed into the bloodstream through skin capillaries.

3. Distribution: Sandalwood oil is distributed throughout the body, with high concentrations in skin and fatty tissues.

4. Metabolism: Sandalwood oil is metabolized in the liver by CYP450 enzymes.

5. Excretion: Sandalwood oil is excreted primarily through:

- Urine (50-60%): Sandalwood oil metabolites are eliminated in urine.

- Feces (20-30%): Unabsorbed sandalwood oil is eliminated in feces.

- Sweat (5-10%): Sandalwood oil is eliminated through sweat.

6.Turmeric

Because of its inherent coloring qualities, turmeric is used in skincare and cosmetic products. In Indian customs, it's sometimes mixed with milk to be consumed internally and used externally as a lotion to improve the appearance of the skin. In some regions of South Asia, it's also thought to give the skin a glow and guard against dangerous microbes when applied to the skin of the bride and groom before to wedding festivities. Additionally, curcumin's capacity to suppress the growth of undesired hair on female skin, particularly facial hair, has been investigated.

Fig.No.7 Curcuma longa

Kingdom- Plantea

Family- Zingiberaceae

Genus- Curcuma

Species - C.longa

Class-Liliopsida

7. Camphor

It is true that camphor has an intense, crisp, and clean scent. Its cooling action on the skin can help lessen inflammatory problems, which makes it advantageous for burns, ulcers, acne, and oily skin types. Additionally, bruising can be effectively treated with cold compresses containing camphor.

Fig.No.8 Cinnamomum camphora

Kingdom- Plantea

Family- Lauracea

Genus- Camphora

Class- Magnoliosoda.[7,8]

METHOD OF PREPARATION

Extraction Processes

1. **Aloe vera Extraction**
   Mature, healthy and fresh aloe Vera leaves were collected and washed with distilled water. Then after proper drying of leaves, the outer part of the leaf was dissected using a sterile knife. Then the aloe Vera gel that is the colourless parenchymatous tissue was removed using the sterile knife. Then it is filtered to remove the fibres and impurities. Then the filtrate or the filter product which is a clear aloe Vera gel was used in the preparation.

2. **Curcuma Longa Extraction**
   Conventional extraction using Soxhlet: The rhizomes of turmeric were dried in oven at 105 °C for 3 h. Dried rhizomes were triturated using mortar and screened through a sieve with mesh 80 to obtain uniform powder with particle size of 0.18 mm. The turmeric powder was stored in refrigerator to prevent moisture uptake. The Soxhlet extraction, as the reference method, was performed as follows: 15 g ground turmeric powder was weighed and embedded in a thimble and put in the Soxhlet apparatus which was gradually filled with acetone as the extraction solvent. The extraction experiment was carried out at 60 °C within 8 h. Upon completion of the extraction, the acetone was separated from the extract using rotary evaporator (Stuart RE300) under vacuum at 35 °C. The residue (oleoresin) was dried and weighed; then dissolved in 10 ml methanol for calculation of curcumin content using HPLC. In all extraction experiments acetone was used as the extraction solvent due to its high solubilization capacity

3. **Lemon Extraction**
   Solvent extraction using a soxhlet technique yields an aqueous extract from dry lemon powder. This soxhlet device has a bulb condenser at the top and a circular bottom flask at the bottom, with a glass extractor positioned between them. Placed inside the thimble in the glass thimble holder is a solid matrix of seeds. Using an electro thermal heating mantle, the round-bottom distillation flask was initially filled with the extracting solvent and heated to 65°C. As the solvent vapor rose to the condenser, it condensed and pooled inside the additional

4.Honey in Extraction Infusion: Steep herbs in honey to extract bioactive compounds Decoction: Boil herbs in honey and water to extract compounds. Maceration: Soak herbs in honey and oil mixture to extract compounds. Percolation: Use honey as a solvent to extract compounds through a percolation process.

5.-Sandalwood Excretion

Skin permeation: Sandalwood oil penetrates the skin through transcellular and intercellular routes.. Absorption: Sandalwood oil is absorbed into the bloodstream through skin capillaries. Distribution: Sandalwood oil is distributed throughout the body, with high concentrations in skin and fatty tissues. Metabolism: Sandalwood oil is metabolized in the liver by CYP450 enzymes. Excretion: Sandalwood oil is excreted primarily through :Urine (50-60%): Sandalwood oil metabolites are eliminated in urine. Feces (20-30%): Unabsorbed sandalwood oil is eliminated in feces. Sweat (5-10%): Sandalwood oil is eliminated through sweat.

6.Turmeric Excretion

Skin permeation: Curcumin penetrates the skin through transcellular and intercellular routes. Absorption: Curcumin is absorbed into the bloodstream through skin capillaries. Distribution: Curcumin is distributed throughout the body, with high concentrations in skin and fatty tissues. Metabolism: Curcumin is metabolized in the liver by CYP450 enzymes and glucuronidation. Excretion: Curcumin is excreted primarily through:[9,10]

Evaluation of Herbal lotion:

1.Homogeneity-
The formulation were tested for homogeneity by visual appearance and by touch.

2. Appearance
The appearance of the lotion

3.PH measurement-

The pH meter was calibrated using standard buffer solution. About 0.5gm of lotion was weighed and dissolved in 50ml of distilled water and its pH was measured using digital pH meter.

4. Irritancy test-
Mark an area (1 sq. cm) on the left hand dorsal surface. The lotion was applied to the specified area and time was noted. Irritancy, erythema, was checked if any for regular intervals upto 24hrs and reported.

5. Viscosity
Viscosity of the formulation was determined was brook field or Ostwald viscometer at 100 RPM, using spindle no. 7 at temp 25oC. The determinations were carried out in triplicate and the average of three reading was recorded.

6. Spreadability-
Two glass slides of standard dimensions (20 × 5cm) were selected. The formulation was over one of the slide. The other slide placed on the top of the lotion such a that the formulation sandwiched between the two slides in an area occupied by a distance of 7.5 cm, alongside 100 gm weight was placed uniformly to form a thin layer. The weight was removed and the excess of lotion adhering to the slides was scrapped off. The two slides in a position were fixed to stand (45° angle) without slightest disturbance and in such a way that only the lower slide held firmly by the opposite fangs of the clamps allowing the upper slide to slip off freely by the force of weight tied to it. 60 gm of weight was tied to the upper slide carefully. The time taken for the upper slide to travel the distance of 5 cm and separate away from the lower slide under the direction of weight was noted. The experiment repeated for 3 times and the mean taken for three such dimensions was calculated.The results were recorded.

The Spread ability is calculated by using formula:

$S = M \times L/T$

Where,

S= Spread ability,

L= Length of glass slide,

M= Weight tied to the upper slide and

T= Time.

7.Washability Test

A portion of lotion was applied over the skin of hand and allowed to flow under the force of flowing tap water for 10 minutes. The time when the lotion completely removed was noted.

8.Sensitivity Test

A portion of lotion was applied on the forearms of 6 volunteers and left for 20 minutes. After 20 minutes any kind of irritation if occurred was noted.

CONCLUSION

present work focus on the potential of herbal extracts from cosmetic purposes. The uses of cosmetic have been increased Herbal cosmetics offer a natural alternative, providing nutrients and antioxidants for healthy skin without adverse reactions. This research suggests that herbal lotions can help avoid skin problems. Herbal ingredient are not only efficacious treat skin dryness as compare to synthetic one but also Capable to substitute synthetic base to some extent. It is upto the cosmetologist to motivate and Encourage the development and use to truly herbal cosmetic. It is use very easy to our body surface Area and very smoothly absorb. It has less amount of side effects [depend upon nature of skin]in Body surface area. As a herbal formulation are great demand to meet the needs to the developing Global market and the main thing is the herbal ingredients showed significant different activities. Aloe vera plant has potential in pharmaceutical, nutritional and cosmetic industries. The Processing of Aloe vera requires critical attention in time, temperature and sanitation. The herbal Gel and body lotion was prepared and subjected to evaluation of various parameters. The herbal Formulation was greenish in colour. The pH was constant throughout the study to about 5.5which Lies in the normal pH range of the skin and the gel did not produce any irritation upon application To the skin. Viscosity is the most important parameter in the evaluation as it governs the many Properties of the formulation such as, spreadability, pourability of the product. The values of Spreadability indicate that the gel is easily spreadable by small amount of shear. The measurement Of extrudability becomes an important criterion. All Gel formulations had an excellent Extrudability. The stability test was carried out for three months and results revealed that the all Gels showed better stability.

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