Formulation And Evaluation of Poly Herbal Under Eye Gel

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ABSTRACT: The Poly herbal under eye gel is a cosmetic gel which is prepared by using natural ingredients by weighing accurately. It is formulated and evaluated by using aloe Vera, mint powder, coconut oil, lemon juice, honey, glycerin, rose water, etc. It has a goodness of aloe Vera and mint and the gel base is prepared by using corn starch and aloe Vera in which the aloe Vera is slightly get evaporated by applying heat and the poly herbal under eye gel was prepared by homogenous mixing of all the herbals extracts. The herbal under eye gel was evaluated by different parameters such as physical test, irritant test, viscosity test, wash ability, absorption test and pH test was observed. As it is be non-irritant to the skin and can wash easily from skin. The poly herbal under eye gel can be safely used on skin.

KEYWORDS: Aloe Vera, Mint, Honey, Lemon juice, Coconut oil, Glycerin.

1. INTRODUCTION: -
Dark circle under eyes are a common beauty problem. These under eye dark circles give us an appearance of tiredness or illness. They make us to feel worse and are rather detrimental to our self-esteem. Human eyes are referred to as "Windows of our Soul." The skin under the eyes is very thin and blood passing through the big veins bluish tinge. When the skin around eyes become too thin it produced dark circles or when the melanin produced around the eyes is higher than usual, it gives them a darker color. Dark circles under your eyes usually are not a sign of a medical problem. Dark under eye circles, also known as Peri-orbital dark circles, tend to develop due to a combination of factors, some of which are inevitable, some of which can be merged. Dark circles are a relatively prevalent condition that affects people of all ages under or around the eyes. It's also known as a darkening of the skin around or under both eyes that is uniform and circular. Infra-orbital dark circles can be caused by excessive pigmentation, shadows from bags under the eyes, infra-orbital fat prolapsed, shadows from infra-orbital sagging and wrinkles, and thin, translucent skin over the Orbicularis oculi muscle. It occurs because of deficiencies of vitamin B12, E, K, and D. Dark circles can form under the eyes from stress or lack of sleep. These are typically most noticeable near the inner corner of the eyes and then spread under the eye, towards the outer corner.

2. Mixed Dark Circles:
Enlarged veins and thin under eye skin causes bluish dark circle. This enlarged veins are caused by caffeine, energy drinks, and other medications. These stimulants dilate the blood vessels, causing the under eye area to look bluish. Purplish tones are the types of dark circles which can be caused by allergies, poor blood circulation, lack of sleep and certain medications.
It is a combination of two or three types of dark circles such as pigmented structural, pigmented vascular, pigmented vascular structural dark circles, etc.

3. Structural Dark Circles:
These dark circles are shadows that are caused by skin laxity, fat loss under the skin, and eye bags.

4. Brownish Tone / pigmented Dark Circles:
These are caused due to post-inflammatory pigmentation. These clusters of brown pigment collect under the eye due to sun damage, genetics, or chronic rubbing, making the dark circles look brownish-black. This type of dark circles is more common in medium to dark-skinned tones. These dark circles can be results of extra melanin production and uneven pigment distribution.

II. B. CAUSES OF DARK CIRCLES:
1. Genetics can contribute to having dark circles, as they can run in the family.
2. Aging can contribute to dark circles, as the skin loses its elasticity and becomes thinner with age. This causes the darkened blood vessels around the eyes to become more visible, making the area appear darker.
3. Allergies may also cause dark circles, due to the inflammation and irritation of the nose and eyes. This results in increased blood flow to the area, where the dark circles appeared on the skin.
4. Inadequate sleep and lack of hydration can cause this condition due to the lack of rest the body needs and the decrease in hydration levels, which can cause the skin to dry out and darken.
5. Exposure to the sun can result in dark circles harmful UV rays can damage the skin and can cause it to become darker and more prominent.
6. Smoking and stress can lead to dark circles due to the toxins and free radicals released in the body.
7. Hyperactive satiation, which happens when the body produces further melanin.
8. Reduced conditions of adipose tissue around the eyes.

III. AIM AND OBJECTIVE:-
Aim: - To study the Formulation and evaluation of poly herbal under eye gel.

Objectives:-
- Eye gel helps to prevent common signs of aging.
- It can diminish appearance of wrinkles.
- It minimizes the look of puffiness.
- It helps reduce the appearance of dark circles.
- Eye gel delivers hydration near eyes.
- It prepares your skin for makeup.
- It soothes tired eyes.
- Eye gel can rejuvenate skin and give it a youthful glow & even skin tone.

IV. DEFINITION:-
Poly herbal under eye gel:
Herbal gel is a solid or semisolid system of at least two constituents, consisting of a condensed mass enclosing and interpenetrated by a liquid. Herbal gels are composed of small amounts of plant herbs which are dispersed in relatively large amount of liquid. Generally it is a poly herbal under eye gel and it is light Weight gel to lighten the dark circles & make the skin firm. The gel has a perfect blend of Organic herbs & Essential oil to remove the dark circles quickly. It fights Puffiness & Fine lines. It has a vital fusion of Mint and Aloe Vera which refreshes your skin, & has antioxidant agents which tightening the skin. It is rich in essential oil that soothes puffy eyes and lightens the skin around the eyes.

V. PLAN OF WORK:-
1. Collections and Extraction of herbs.
2. Preparation of poly herbal under eye gel.
3. Results and discussion.

V.1. Collection and Extraction of herbs:
The collections of natural herbs are done by collecting them from natural source and some are from the market. They are:-
- Honey.
- Aloe Vera,
- Mint powder,
- Coconut oil,
- Lemon juice,
- Corn starch,
- Glycerin.

1. HONEY: -

FAMILY: - Apidae.
SOURCE: - Honey is a sugar like secretion deposited in honey comb by the bees Apis Mellifera.  

CHEMICAL CONSTITUENTS: - Honey is an aqueous solution containing 35% glucose, 45% fructose, & 2% Sucrose.

DESCRIPTION: - Honey is a sweet, viscous liquid food, dark golden in color, produced in the honey sacs of various bees from the nectar of flowers. Some of the most commercially desirable honeys are produced from clover by the domestic honeybee.

USES: -
1. It is used as food for humans,  
2. Anti-bacterial,  
3. Anti-oxidant,  
4. Expectorant.

SIDE EFFECTS OF HONEY:-
1. Dizziness  
2. Nausea  
3. Vomiting  
4. Excessive Perspiration  
5. Irregular heart rhythms.

2. ALOE VERA GEL:-

FAMILY: - Liliaceae.
SOURCE: - It consists of dried or fresh mucilage of Aloe Vera.

CHEMICAL CONSTITUENT: - It contains an Acids, Amino acid, Lipids, Minerals, Polysaccharide, and Urea.

DESCRIPTION: - It is a stem less or very short-stemmed plant growing to 80-100 cm tall, spreading by offsets and root sprouts. The leaves are lanceolate, thick and fleshy, green to grey-green, with a serrated margin. The flowers are produced on a spike up to 90 cm tall, each flower pendulous, with a yellow tubular corolla 2-3 cm long. The tissue in the center of the aloe leaf contains a gel which yields aloe gel or aloe Vera gel.

USES: - 1. It is used to heal burn and wound,  
2. Moisturizer,  
3. Anti-inflammatory,  
4. Sunburns.

SIDE EFFECTS OF ALOE VERA:-
1. Dehydration due to frequent stools,  
2. Stomach cramping,  
3. Irregular heartbeat,  
4. Lowered potassium levels,

Extraction of Aloe Vera:-

- Take mature aloe Vera leaf
- Clean and washed it
- Cut the base and tip portion
- Remove the sharp spines from leaf
- Extract the gel by using spatula
- Grind the gel in grinder
- Filter the mixture to extract juice
3. MINT:

**FAMILY:** - Lamiaceae.
**SOURCE:** - Mint is popular aromatic and medicinal herb the mint powder is extracted by grinding the leaves of mint plant.
**CHEMICAL CONSTITUENT:** - It comprises around 0.5% to 4% essential oil, 25% to 78% menthol, 14% to 36% menthone, 1.5% to 10% isomenthone.
**DESCRIPTION:** - Mint leaves are a tender herb with gentle stems. It is also known as amazing appetizer which promotes the digestive system by stimulating digestive enzymes. It creates a cooling sensation on the skin when applied on it.
**USES:** - 1. It is used to relief from cold,
2. Soothing effect for asthmatic patients,
3. Anti-oxidant,
4. Anti- microbial,
5. Flavoring food.
**SIDE EFFECTS OF MINT:** -
1. Heartburn,
2. Nausea,
3. Abdominal pain,
4. Dry mouth.
**Extraction of Mint:** -
- Pluck some mints leaves from mint plant
- Allow it to dry in sunlight for 1-2 days
- Collect the dry mint leaves
- Grind it
- Passed the grinded mint through ‘o’ size sieve
- Collect the mint powder.

4. COCONUT OIL:

**FAMILY:** - Arecaceae.
**SOURCE:** - The coconut palm is the most important perennial source of oil, which is grown in India.
**CHEMICAL CONSTITUENT:** - Coconut oil contains high proportion of glycerides of lower chain fatty acids.
**DESCRIPTION:** - Coconut oil is 100% fat, 80-90% of which is saturated fat. This gives it a firm texture at cold or room temperatures. Fat is made up of smaller molecules called fatty acids, and there are several types of saturated fatty acids in coconut oil.
**USES:** -
1. Coconut oil is an antiviral,
2. Antifungal,
3. Antibacterial.

**SIDE EFFECTS OF COCONUT OIL:**
1. High cholesterol.
2. Increases blackheads.
3. Increases Acne.
4. Increases Whiteheads.

**5. LEMON JUICE:**

**FAMILY:** Rutaceae.

**SOURCE:** Lemon is an important medicinal plant citrus fruit such as orange, lemon, have been widely cultured and processed as juice.

**CHEMICAL CONSTITUENT:** It contains essential oil (6%), which is composed mostly of limonene (90%) and citral (5%).

**DESCRIPTION:** The Lemon is a hybrid citrus tree of cultivated origin. The fruit are used primarily for their juice, though the pulp rinds are also used, primarily in cooking. Lemon juice is about 5% citric acid, which gives lemon a sour taste and a pH of 2 to 3.

**USES:**
1. It is used as antibacterial,
2. Anti-fungal,
3. Anti-diabetic,
4. Anti-cancer,
5. Anti-viral.

**SIDE EFFECTS OF LEMON JUICE:**
1. Skin irritation.
2. Phytophotodermatitis.
3. Redness.
4. Skin peeling.

**Extraction of Lemon juice:**

1. Take fresh yellow lemon
2. Clean and wash it
3. Cut the lemon into 2 half
4. Squeeze one by one half of lemon
5. Filtered it

**6. CORN STARCH:**

**SOURCE:** Corn starch is a starch derived from corn grains. The starch is obtained from the endosperm of the kernel.

**CHEMICAL CONSTITUENTS:** It is composed of two polymer Amylopectin and amylose, and normally constitutes about 75% of the starch granules.
DESCRIPTION: - Corn starch is a white, tasteless, odorless powder, used in food processing, papermaking, and the production of industrial adhesives; it is also a component of many cosmetics and oral pharmaceutical products.

USES: - 1. It is commonly used to thicken liquid based foods,
2. Remove ink stain,
3. Sunburn relief.

SIDE EFFECTS OF CORN STARCH: -
1. Weight gain,
2. Excessive blood sugar,
3. Cholesterol.

7. GLYCERIN: -

SOURCE: - Glycerin occurs naturally in fermented foods and beverages, including beer, honey, and vinegar, wine and wine vinegar.

DESCRIPTION: - Glycerol, also called glycerin, is a simple triol compound. It is colorless, odorless, viscous liquid that is sweet-tasting and non-toxic. The glycerol backbone is found in lipids known as glycerides.

USES: - 1. It is used in food industry as sweetener and preservative,
2. Thickening agent,
3. Moisturizing agent,
4. Lubricant,
5. Humectants.

SIDE EFFECTS OF GLYCERIN: -
1. Headache,
2. Dizziness,
3. Bloating,
4. Nausea,
5. Diarrhea.

V.2. PREPARATION OF POLY HERBAL UNDER EYE GEL: -
Take some fresh lemon juice in a 100 ml beaker and label it as beaker no.1 and add rose water to the same beaker. Add mint powder to it, and stir it well by using glass rod. Filter it by using filter paper so that the big crystals of mint are remains on filter paper and we get the filter mixture. Now take some honey and coconut oil along with it a preservative. Add all these in beaker no. 1. Mix all these ingredients well. To prepare gel base take some Glycerin and Aloe Vera in other 100 ml of beaker and label it as beaker no. 2 to it add corn starch. Mix it until the starch lumps are totally dissolved in it. Then transfer the mixture of beaker no.1 into beaker no.2. Mix it well by using spatula. Now allow it to heat at 50°C to 70°C for 10-15 minutes the Aloe Vera start evaporating heat it until it form a transparent gel. The herbal gel is prepared. Add some perfume and color to it. Mix it. Now transfer the poly herbal under eye gel in a transparent container and label it.

• FORMULATION OF POLY HERBAL GEL: -
The following ingredients are used for poly herbal under eye gel.

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Ingredients</th>
<th>Qty</th>
<th>Role of ingredient</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Lemon juice</td>
<td>5 ml</td>
<td>Antioxidant</td>
</tr>
<tr>
<td>2.</td>
<td>Rose water</td>
<td>5 ml</td>
<td>Vehicle</td>
</tr>
<tr>
<td>3.</td>
<td>Mint powder</td>
<td>0.25 gm</td>
<td>Anti-bacterial, Anti-inflammatory</td>
</tr>
<tr>
<td>4.</td>
<td>Honey</td>
<td>3 ml</td>
<td>Moisturizes and hydrate skin</td>
</tr>
<tr>
<td>5.</td>
<td>Coconut oil</td>
<td>2 ml</td>
<td>Emollient</td>
</tr>
<tr>
<td>6.</td>
<td>Glycerin</td>
<td>3 ml</td>
<td>Moisturizing agent</td>
</tr>
<tr>
<td>7.</td>
<td>Corn Starch</td>
<td>1.5 gm</td>
<td>Help in lighten dark circles</td>
</tr>
<tr>
<td>8.</td>
<td>Aloe Vera</td>
<td>80 ml</td>
<td>Anti-ageing, Moisturizer</td>
</tr>
<tr>
<td>9.</td>
<td>Methyl Paraben</td>
<td>0.002 gm</td>
<td>Preservative</td>
</tr>
</tbody>
</table>

V.3. RESULTS AND DISCUSSION:-

1. Physical test:-

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Parameter</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Color</td>
<td>Yellowish with mint crystals.</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>Semi-solid</td>
</tr>
</tbody>
</table>

2. Irritant Test: - The irritant test was evaluated by applying the small amount of gel on left hand and leave it up to 24 hrs, there is no irritancy occurred.

3. pH Test: - The pH of this formulation was evaluated by using digital pH meter and is found to be 4.2 indicating that it can be used safely on skin. As the pH of gel is closely related to skin Ph.

4. Viscosity Test: - The viscosity of herbal gel was measured with a by using Brooke field viscometer at temperature of 25 °C with spindle at speed 60 RPM.

5. Wash Ability: - Applying a little amount of gel to the left hand and washing it with tap water was used to access wash ability. This gel is simple to clean was observed.

6. Absorption Test: - By applying tiny amount of gel on the hand and rub it slightly with finger tips the gel is totally absorb in the skin. The absorption is 100% was observed.
VI. CONCLUSION:-
It is concluded that the Result obtained from the above given data has been carried out that the formulation containing herbal substances has been prepared and it passes the evaluation test such as physical test, pH Test, skin Irritant test, wash ability test, Absorption test. These herbal under eye gel can provides cooling effects around the eyes that will help to reduce dark circle and even puffiness. And further studies are need to be conducted for making it effective in removal of dark circles and for getting more accurate results.

VII.REFERENCE:-