International Journal of Science and Research (IJSR)
ISSN: 2319-7064
SJIF (2022): 7.942

Formulation and Evaluation of Vanishing Cream using Natural Extracts

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Abstract: ***Our beauty market is filled with synthetic origin cosmetics. Vanishing creams of synthetic origin found in the market provide glow to the skin but impart side effects to the skin. Whereas the vanishing creams containing natural extracts are safe, beneficial to skin with negligible side effects. This vanishing cream provides soothing as well as moisturizing effect to the skin without causing any irritation to the skin. The vanishing cream was prepared by using natural extracts of muskmelon, cucumber, and Aloe vera. All the natural extracts used in the cream are rich in vitamins and minerals. Moreover, Aloe vera has wound, burn healing and anti - inflammatory properties. Quality of the formulated product was assessed by different evaluation parameters. The formulated cream showed good consistency, spreadability, homogeneity, pH, non - greasiness, no evidence of phase separation during period of research. Further studies are required to investigate therapeutic value of the formulated cream.***

Keywords: Oilinwateremulsion, Aloe vera, muskmelon, cucumber, vanishingcream

1. Introduction

In today's age and time, cosmetics have gained an immense popularity among all the age groups. Everyday new trends are emerging in sector of cosmetics and skin care. Cosmetics havealways been used by women and men for centuries. Cosmetics are used in personal care as well as for skin care purposes to cleanse and exfoliate skin. Vanishing creamsare water in oil emulsion. They differ from cold creams in terms of greasiness as vanishing creams are greaseless. Because of its non - greasiness, vanishing creams are widely used as skin moisturizer for oily skin and as skin cleanser. They are characterized by easy washability and oil free texture of cream. They are used to blemish pimples or scars and prevent skin chapping and roughness. Despite having several advantages certain disadvantages like skin allergies and skin reactions can occur due to certain compounds present in the cream. Extracts of natural ingredients used in creams are gaining recognition for being harmless to skin. These natural extracts provide additional benefits based on their nutritive values. **[1] [2]**

2. Objective

The objective of this research work is to formulate vanishing cream containing natural extracts. These natural extracts are rich in vitamins and minerals. Apart from providing soothing, hydrating effect and rejuvenating the skin, the formulated cream can have therapeutic value. **[3]**

3. Materials and Methods

3.1 Materials

A. Natural Extracts

Muskmelon

Botanical name: *Cucumis melo belongs* to Cucurbitaceae family. **[4]**

Chemical constituents: The fruit is rich in vitamin A, C and B6, folic acid, inositol, minerals. **[5]**

Uses for Skin – **[5]**

- Rejuvenates and hydrates skin
- Helps in skin regeneration
- Prevents premature ageing
- Treats eczema and other skin conditions
- Treats chapped lips

Cucumber

Botanical name: *Cucumis sativus* belongs to Cucurbitaceae family **[6]**

Chemical constituents: It is rich in vitamin C, K, folic acid, minerals, caffeic acid, Citrulline.**[7] [8]**

Uses for Skin – [9]
- Soothes inflammation
- Provides hydration to skin
- Maintains Skin Health
- Helps to soothe inflammation
- Relieves Sunburns

Aloe Vera

Botanical name: *Aloe barbadensis miller* belongs to Asphodelaceae family. **[10]**

Chemical constituents: It is rich in vitamin A, E, C, B12, folic acid, minerals. **[11] [12]**

USES FOR SKIN – [**11] [12]**
- Its anti - inflammatory properties can reduce pain, swelling, and soreness of wounds or injuries.
- It increases the production and release of collagen.
- It reduces wound healing time and limits scarring.
- It has antioxidant properties used to treat sun damage.
- It helps to reduce skin blemishes and fine lines.
- It helps in treating certain skin related problems such as acne, psoriasis and eczema.

B. Chemical Ingredients -

Table 1: Chemicals

S. no.	Name of ingredient	Uses
1.	Stearic acid	Emulsifier, Emollient, Lubricant, Softens the skin and prevents products from separating. [13] [15]
2.	Potassium hydroxide	Stabiliser of pH in product. [13]
3.	Cetyl alcohol	Helps prevent creams from separating into oil and liquid, as a moisturizer. [15]
4.	Butylated hydroxytoluene	As an antioxidant [14]
5.	Methylparaben	As a preservative. [15]
6.	Glycerine	As a humectant. [13]

3.2 Preparation of vanishing cream [1] [2] [3] [13]

The process of preparation of vanishing cream using natural extracts is as follows –

1) **Preparation of natural extracts:**
Fruits of muskmelon and cucumber were crushed using mortar and pestle and the natural extract was extracted using muslin cloth. Aloe gel was extracted directly by cutting and scraping the gel from matrix of aloe vera.
2) **Preparation of oil phase:**
Stearic acid (3%), cetyl alcohol (0.10%), butylated hydroxytoluene (0.10%) was taken intoone porcelain dish and this mixture was melted at 70°C.
3) **Preparation of aqueous phase:**
Potassium hydroxide (0.14%), glycerine (1.6%), water (1.3%) was taken into another porcelain dish and heatedthis mixture at 70°C.
4) **Addition of aqueous phase to oil phase:**
The aqueousphase along with extracts of muskmelon, cucumber, and aloe vera (14%) was added gradually to the oil phase at 70°Cwith continuous stirring. The prepared cream was transferred and allowed to cool. Perfume (q. s) was added at last and the formulated cream was transferred to suitable container. Evaluation of cream was performed by using different parameters.

3.3 Evaluation of vanishing cream: [1] [2] [3] [13]

- **Physical properties**: The cream was observed for colour, odour and appearance.
- **Washability**: The cream was applied on the hand and observed under the running water.
- **pH**: Weighed10 mg of cream, dissolveditin10mlofdistilled water and its pH was measured with the help of digital pH meter.
- **Viscosity**: Viscosity of the cream was determined by Brookfield viscometerat50 rpm with the spindle no. S 64.
- **Spreadability test**: The spread ability of the formulated cream was judged by spreading over skin.
- **Irritancy test**: Marked an area (1sq. cm) on the left - hand dorsal surface. The cream was applied to the specified area and time was noted. Irritancy, erythema, edema, were checked if any for regular intervals upto 24 hrs and reported.
- **Homogeneity**: Homogeneity was tested via visual appearance.

1) **Determination of type of emulsion:**
   - Dye test: The amaranth solution was mixed with the cream. Placed a drop of the cream on a microscopic slide, covered it with a cover slip, and examined it under a microscope**.** If the continuous phase appears in red colour the cream is o/w type. If the dispersed phase appears red coloured globules the cream is w/o type.
   - **Formation of creaming:** Heated the sample vanishing cream in suitable test tube for 10 minutes and observed the result. If the creaming is upward then the emulsion is o/w type. If the creaming is downward then the emulsion is w/o type. **[16]**
2) **Patch Test:** About 1g of material to be tested was applied directly to the hands of skin. The cosmetic to be tested was applied to an area of 1sq. m of the skin. The site of patch was inspected after 24 hrs. As there was no reaction the test was repeated three times. If reaction is

not observed on third application, the person may be taken as non - hypersensitive.

3) **Smear type:** The test was conducted after the application of cream on the skin. The smear formed can be oily or aqueous in nature.
4) **Determination of emolliency:** Emolliency, slipperiness and amount of residue left after the application of fixed amounts of cream was checked.
5) **Stability studies:** Stability studies were performed on the formulated cream by maintaining at room temperature for 20 days. During the stability studies the parameters like homogeneity, viscosity, physical changes, pH and type of smear were studied.

4. Results and Discussion: [1] [2] [3]

The natural extract containing vanishing cream was prepared by using o/w emulsion method using mixture of natural extracts of muskmelon (*Cucumis melo)*, cucumber (*Cucumis sativus*), and Aloe vera (*Aloe barbadensis miller*).

1) **Physical properties**: Prepared formulation is pale yellow in color. It has pleasant odor and smooth texture.
2) **Washability:** The cream applied on skin was easily removed by washing with tap water.
3) **pH**: The pH of the cream in the rangeof4.6to6isgoodforskin. . The formulation has pH 5.19whichis optimum for the skin.
4) **Viscosity**: Viscosity of formulated cream was determined by Brookfield viscometer at 50 rpm using spindle no. S 64. The viscosity of formulated cream was found to be 480cpthatiseasilyspreadablebysmallamountofshear.
5) **Spread ability**: The formulated cream has good spread ability because the time taken to spread over the skin was less.
6) **Irritancy test**: The formulated cream showed no redness, edema, irritation and inflammation on application to skin. The formulated cream is safe to use.
7) **Dye test**: When amaranth dye was mixed with the cream and examined under microscope, the continuous phase was red in color with colorless dispersed globules. It proves that the emulsion is o/w type.
8) **Formation of creaming:** The creaming was upward so the emulsion is o/w type. **[16]**
9) **Homogeneity test**: Thehomogeneityoftheformulatedcreamwasjudgedbythe visualappearanceand touch. The appearance and touch of the cream were good.
10) **Smear type:** It was found that the cream produced non - greasy film on the skin surface.
11) **Emolliency**: No residue was left on skin surface after application.

Table 2: Evaluation Parameters

S. No.	Parameter	Observation
1.	Appearance	Yellowish white
2.	Odour	Pleasant
3.	pH	5.19
4.	Spreadability	Uniform and easily spreadable
5.	Dye test using amaranth dye	o/wemulsion
6.	• Homogeneity by visual • By Touch	Homogenous Smooth and Consistent
7.	Patch Test	Non - hypersensitiveness
8.	Type of Smear	Non - greasy
9.	Emolliency	No residue left
10.	Viscosity	480 cp
11.	Consistency	Good
12.	Washability	Washable
13.	Irritancy test	No redness and swelling
14.	Stability study	Stable
15.	Grittiness	No gritty particles
16.	Foaming of cream	Upward foaming indicating o/w type of emulsion.

5. Conclusion

The vanishing cream formulated using natural extracts has good consistency, spreadability, homogeneity, pH, non - greasiness and there is no phase separation during study period. From the above study it can be concluded that the vanishing cream is safe to use as it is developed from natural extracts like muskmelon, cucumber and Aloe vera. It was prepared by simple method and less amount of equipments were required. The prepared natural cream has soothing and hydrating activity. It is highly recommended to use in summers. On literature survey it was found that this type of formulation of the vanishing cream has not been prepared earlier. The formulated cream was evaluated. Evaluation and results show that this cream can be used as a multipurpose cream and the ingredients mixed can produce synergistic effect on the skin providing skin with glow, hydration and shiny texture. Further investigations can be made to study therapeutic applications of the cream.

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