

Formulation And Evaluation Of Herbal Cold Cream

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ABSTRACT

Herbal cosmetics are products intended to enhance and beautify human appearances. In order to nourish and moisturize the skin, the current study set out to formulate and evaluate herbal cold creams that contained plant extracts, liquid paraffin as a lubricating agent, bees wax as stabilizer, methyl paraben as a antibacterial agent by using the water in oil method. The cold cream is prepared by using the neem oil and almond oil. After preparation of cream, cream were evaluated for different parameters like appearance, PH, viscosity, stability test, dye test, spread ability & Test for microbial growth. From evaluation study it was concluded that it is a very good attempt to formulate the herbal face pack containing naturally available ingredients like neem and almond. It was also concluded that the prepared formulation was physico-chemically and microbiologically stable, and possessed characteristics of a standard cosmeceutical's formulation for skincare.

Keywords: cold Cream, methyl paraben, bees wax, stabilizer, plant extracts.

INTRODUCTION

Creams are those emulsions which are her oil in-water or water-in-oil type. It is the nature and colour of these emulsions which assembles the natural milk

FORMULATION

These include water, petroleum oil, vegetable oils, fats and waxes as well as their derivatives, humectants and emulsifying agents.

Water should be either deionised or distilled, if it has to be incorporated in the cream formulations. Unless pure water is used in creams, discolorations and other defects may be encountered with ageing.

Oils, fats and waxes and derivatives there from comprise an essential portion of a cream. Oils may be two types- mineral and glyceride.

Hydrocarbons derived from petroleum: Mineral oil is the most important of these hydrocarbons. Petrolatum or petroleum jelly, paraffin or paraffin wax, ozokerite and ceresin are hydrocarbons of mineral origin which find application in the making of creams. Petroleum in its crude state is dark in colour and has an oily odour. Physically, it is a pasty mixture, insoluble in

water and slightly soluble in alcohol. It finds value in cosmetics because it acts as an emollient, protective and lubricant to the skin. Paraffin consists of hydrocarbons of higher molecular weight and in the crude state is a deep yellow to brown, waxy substance.

The white refined product is used in cosmetics not only in creams but also in lipsticks, epilating waxes and deodorants. Ozokerite, because of its higher melting point is designated as a mineral wax. Because of its high melting point, that is, about 76⁰ C, its use in cosmetics is restricted/ limited.

1. Fatty Substances from Plants and Animals

Glyceride oils and fats may be of animal or vegetable origin. They consist of combinations of higher fatty acids and glycerin. The most common of these fatty acids are lauric, margaric, palmitic and steric, in the saturated group. More specifically the oils most commonly used in creams and other cosmetics are olive oil, almond oil, sesame oil, peanut oils, cocoa-butter fat, mutton tallow, lard and beef stearine. Wool fat or lanolin, also contains fatty acids, but in addition is composed partly of cholestrin and isocholestrin. The hydrogenated fats and oils have an important role

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to play in cosmetics due to their presumed better emollient qualities and better stability.

2. Humectants

Humectants are substances which have the capacity to retain water. They also impart viscosity, softness and emolliency to the products. Examples are glycerol, propylene glycols, sorbitol, glucose. Invert sugars, methyl cellulose Solutions and fatty acid esters.

3. Glycols are dihydric alcohols.

There are a number of glycols available but those used in cosmetics consists mainly of ethylene glycol, diethylene glycol and propylene glycol. It helps to stabilize emulsions and imparts a “drag” to skin cream which is not sticky. Emulsifying agents are an indispensable part of creams as the creams are either o/w or w/o emulsions. The main purpose of these emulgents is to lower the interfacial tension between the water and the oil or other water insoluble substances entering the emulsions. Inorganic solids which form emulsions include bentonite, colloidal kaolin, hydrated lime or magnesia and other clays. Gums and proteins used as emulsifying agents include gum tragacanth, karaya gum, gum Arabic, Agar agar, Irish moss, alginates, pectins, saponin, gelatin, casein, methyl cellulose and egg albumin. These substances when dispersed in water posses a high degree of superficial and internal viscosity. Surface active agents comprise the most important class of emulsifying agents. They can broadly be comprised of soaps, the amines (triethanolamines, morpholine) amino glycol, polyhydric alcohols esters and wetting agents. Glyceryl monostearate (modified) is an important fatty acid ester, useful as an emulsifying agent in cosmetics cream making.

COSMETICS

Cosmetics (pronunciation: cosmetic (help·info)) are substances used to enhance or protect the appearance or odor of the human body. Cosmetics include skin-care creams, lotions, powders, perfumes, lipsticks, fingernail and toe nail polish, eye and facial makeup, permanent waves, colored contact lenses, hair colors, hair sprays and gels, deodorants, baby products, bath oils, bubble baths, bath salts, butters and many other types of products. Their use is widespread, especially among women in Western countries. A subset of cosmetics is called "make-up," which refers primarily to colored products intended to alter the user's appearance. Many manufacturers distinguish between decorative cosmetics and care cosmetics.

2. MATERIAL AND METHODS

Method of Preparation

- Take required quantity of Beeswax and Liquid paraffin in porcelain dish.
- Heat this mixture in water bath for melting purpose. Remove dish from water bath.
- Take Borax and distilled water in beaker. Heat this solution in water bath for about 75 C.
- This Borax solution added drop wise in porcelain dish with continuous stirring. Add Methyl paraben inporcelain dish dissolved it.
- Add Neem oil and Almond oil in this solution. Add perfume for fragrance.
- Herbal Cold Cream was obtained

Name of Ingredient	Scientific name	Quality (for 100gm)
Methyl Paraben	Methyl Phydroxy benzoic acid	0.010 gm
Borax	Sodium tetraboratedeca hydrate	0.2 gm
Beeswax	Apiccerana, Apismel,	10gm

Liquid Paraffin	petrolatum	50gm
Rose water	<i>Rosa indica</i>	30gm
.Almond oil	<i>Prunusdulcis vardulcis.</i>	50gm

TABLE 1: Composition of Herbal cold cream

EVALUATION OF HERBAL COLD CREAM**Morphological Evaluation**

Physical properties: The cream was observed for the color, odor and appearance

Physicochemical Evaluation: -

Washability: The cream was applied on the hand and observed under the running.

Plan of work: The cream was prepared by using the cream base that is bee's wax, liquid paraffin, borax, methylparaben, distilled water, rose oil, *Azadirachta indica*. The cream was prepared by using the slab technique/extemporaneous method for geometric and homogenous mixing of all the excipients and the aloe extracts. By using slab technique, we have developed two batches of our herbal cream, namely F1, and F2. All two batches were evaluated for different parameters like appearance, PH, viscosity, phase separation

pH: The pH meter was calibrated with the help of standard buffer solution. Weight 0.5 gm of cream dissolved it in 50 ml of distilled water and its pH was measured with the help of digital pH meter.

Viscosity: Viscosity of the cream was determined with the help of Brookfield viscometer at 100 rpm with the spindle no.

Spread ability test: The cream sample was applied between the two glass slides and was compressed between the two-glass slide to uniform thickness by placing 100 gm. of weight for 5 minutes then weight was added to the weighing pan. The time in which the upper glass slide moved over the lower slide was taken as a measure of spread ability.

Spread ability = $m * l / t$

Where M =weight tight to upper slide L =length moved on the glass slide

T =time take

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

Test for microbial growth: Agar media was prepared then the formulated cream was inoculated on the plate's agar media by steak plate method and a controlled is prepared by omitting the cream. The plates were placed in the incubator and are incubated in 37 °C for 24 hours. After the incubation period, the plates were taken out and the microbial growth were checked and compared with the control.

Dye test: The scarlet red dye is mixed with the cream. Place a drop of the cream on a microscopic slide then covers it with a cover slip, and examines it under a microscope. If the disperse globules appear red the ground colorless. The cream is o/w type. The reverse condition occurs in w/o type cream i.e. the disperse globules appear colorless.

Homogeneity: Homogeneity was tested via the visual appearance and test.

3. RESULT AND DISCUSSION

Following evaluation parameters were performed to ensure superiority of prepared cold cream

Morphological Evaluation

Herbal cold cream was evaluated for morphological parameters showed in the Table 2. The color of formulation was yellowish. The odor of prepared

formulations was pleasant and good acceptable which is desirable to cosmetic formulations. Texture and smoothness were acceptable as per requirement of cosmetic formulations.

Sr. No	Parameters	Observations
1	Color	Whitish green
2	Odor	Pleasant
3	Texture	Smooth

TABLE 2: Morphological Evaluation

Physicochemical Evaluation

pH: Herbal cold cream was evaluated for physicochemical parameters showed in the Table 3. The pH of the cream was found to be in range of 5.6 to 6.8 which is good for skin pH. The herbal formulation was shown pH nearer to skin required.

Washability: Washability test was carried out by applying a small amount of cream on the hand and then washing it with tap water.

Viscosity: Viscosity of cream was done by using Brooke field viscometer at a temperature of 25 °C using spindle No. 63 at 2.5 RPM. According to the results all the formulations showed adequate viscosity.

Days	C2	C1
5	50000	45000
10	40000	39000
15	39000	35000
20	40000	38000

Table No. 3 Viscosity of the cream

S. No	Parameter	C2
1	Acid value	5.56
2	Saponification value	12.33

Table No. 4 Acid Value and Saponification value

Test for microbial growth: There was no signs of microbial growth after 24 hrs. of incubation at 37°C and it was comparable with the control.

Spread ability test: The spread ability test showed that the formulated cream has good spreadable property. The separate in the description of evaluation test lesser the time taken for separation of the two slides better the spread ability.

Dye test: The scarlet red dye is mixed with the cream. Place a drop of the cream on a microscopic slide covers it with a cover slip, and examines it under a microscope. The dispersed globules appear colorless in the red ground i.e. w/o type cream.

Homogeneity: The homogeneity of the formulated cream was judged by the visual appearance and touch. The appearance and touch of the

cream were good.

Test for microbial growth:

Agar media was prepared then the formulated cream was inoculated on the plate's agar media by streak plate method and a control is prepared by omitting the cream. The plates were placed in the incubator and are incubated at 37 °C for 24 hours. After the incubation period, the plates were taken out and the microbial growth were checked and compared with the control.

S. No.	Agar Media		microbial growth
1.	Plate's Agar Media	37 °C for 24 hours	No microbial growth was observed in the formulation
2.	Microorganisms namely Bacteria (Escherichia coli) and Yeast.	20 ° C to 25 ° C for 5 days	No microbial growth was observed in the formulation

Table 5: Test for microbial growth:

CONCLUSION

Natural remedies are more acceptable in the belief that they are safer with fewer side effects than the synthetic ones. Herbal formulations have growing demand in the world market. Herbal face packs are considered as sustaining and productive way to advance the appearance of skin. Herbal face packs or masks are used to stimulate blood circulation, rejuvenates those muscles and help to maintain the elasticity of the skin and remove dirt from skin pores. Thus, in the present work, it is a very good attempt to formulate the herbal face pack containing naturally available ingredients like neem, almond. It is suggested that the prepared formulation was physico-chemically and microbiologically stable, and possessed characteristics of a standard cosmeceutical's formulation for skincare.

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