



REVIEW ON FORMULATION AND EVALUATION OF HERBAL COLD CREAM

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ABSTRACT

Nowadays ,the herbal products are gaining popularity .herbal cosmetics are used for enhancement of beauty of human appearance .The current study is for formulation and evaluation of herbal cold cream which are formulated using plant extracts ,liquid paraffin as a lubricating agent ,methyl paraben as a antibacterial agent ,bees wax as a stabilizer by using the water in oil method .The neem oil and almond oil is used in preparation of cold cream .After the preparation of cold cream ,the cream is evaluated using different parameters like appearance ,PH, stability test ,viscosity dye test, spread ability and test for microbial growth . From the evaluation study it was concluded that the neem oil and almond oil which are natural ingredients are very good for formulation of herbal face pack .The herbal cold cream has many benefits on skin, because of all natural ingredients used in its formulation. It reduces all the risk of side effects on skin.

Keywords: Almond oil, Bee wax, Borax, Cold cream, Neem oil.

INTRODUCTION

The word 'Cosmetic' derived from a Greek word – 'kosmesticos' that means to adorn. From that time any materials used to beautification or promoting appearance is known as cosmetic.[14]

The first known people who used cosmetics to enhance their beauty were the Egyptians. Makeup those days was just simple eye coloring or some material for the body. Now-a-days makeup plays an important role for both men and women.

Herbal cream is defined as the semisolid emulsion which are water in oil or oil in water .these creams are intended for the external use on the skin. The use of turmeric is from the vedic culture in India ,it is used as a culinary spice and had religious significance. the use of turmeric the reached to China .It is used as dye.From India ,it is spread to Southeast Asia .Neem is used to control excess sebum and unclog the clogged pores which removes dirt and purifies the skin .Neem is a potent antifungal and antioxidant agent.

the cosmetic products are used mainly to look good and enhance the appearance ,so the importance of cream has increased in people who want to stay young and attractive. Today cosmetic products are available in wide range of varieties like eye shadows,lip balm, lips stick, kajal ,hair sprays.

cosmetics also used as to add fragrance to the body i,e as perfumes

pharmaceutical creams are used for various different purposes such as cleansing ,beautifying ,moisturizing.

There are two types of skin creams

1.Oil- in-Water(O/W): They are composed of small droplets of oil is dispersed in continuous phase and an emulsion in which oil is dispersed in aqueous phase is called as oil-in-water emulsion.

2.Water-in-Oil(W/O): They are composed of small droplets of water is dispersed in continuous oily phase.

TOPICAL DRUG DELIVERY

The treatment of diseases is done by the administration of drugs to human body through the various routes namely oral, sublingual ,rectal, parental ,topical and inhalation . The topical drug delivery can be defined as using a drug containing formulation directly to the skin to treat cutaneous disorder or the cutaneous manifestations of a general disease (eg. psoriasis) with the intent of containing the pharmacological or the effect of drug to the surface of the skin or within the skin.[1]

Advantages of the topical drug delivery system

- It Avoids first pass metabolism.
- It is very convenient and easy to apply on skin.
- It avoids kind of risk.
- Inconveniences of intravenous therapy and of the varied conditions of absorption like Ph changes presence of enzymes gastric emptying time etc.
- Achievement of efficacy with lower total daily dosage of drug by continuous drug input.
- It Avoids the fluctuation of drug levels inter and intra patient variations.
- The Skin irritation or dermatitis can occur due to the drug or excipients.
- It has Very slow absorption.

Advantages of herbal cold cream

- 1.It helps to prevent ageing and it provides hydration to skin.
- 2.As cold cream contain oil and water, they protects skin from the rough environment.
- 3.They keeps skin safe and moisturized.
- 4.Herbal cold creams are used to remove makeup and provides smoothness to skin.
- 5.Herbal cold cream is mainly used for the treatment of skin
- 6.Cold cream balances the moisture of skin.
- 7.It is used as cleansing preparation to remove the makeup
- 8.Cold cream provides the emollient effect and forms a oily protective layer on the skin.
- 9.Herbal cold cream provides a chemical barrier .

Ideal properties of the herbal cold cream

- 1.cold cream should not be normally diluted.
2. The cold cream should provide a very thin waxy protective layer on the skin to protect the water loss from the surface of skin
3. The cold cream should give a faster emollient effect, so it can plump up the dry skin.
- 4.The cold cream should be less greasy than the ointment so that it could Easily spread on the skin.
- 5.The cold cream should have good shelf-life.
6. The excipients used in the formulation of cold cream should be compatible with each other.
- 7.The cold cream should be sterile.
- 8.The pH of the cold cream should be from 4.6–6.0 .
9. The consistency of cream should be optimum so, it can be easily applied on skin.
10. The cold cream should give a cooling effect after external application on the skin.

Skin is the largest part of body ,it protects skin from infections and environment. And skin has several functions

GENERAL INGREDIENTS USED IN THE PREPARATION OF SKIN CREAMS

These are the ingredients, which are used in the manufacturing of skin creams include:

- **Water:** Water is a most important and widely used raw material in formulation of any cream . Water is the cheapest and easily available ingredient. In skin creams formulation, water is a solvent which is used to dissolve the other ingredients of cream. As water, is free from any toxins, pollutants, microbes, etc.it is used in preparation of creams. Water can also be used in form of emulsions, it depends on how much of quantity of water is used in the preparation.[2]
- **Oil, fates and waxes:** Oils, fats and waxes comprise an essential portion of creams. Waxes in cream formulation act as an emulsifier, fats act as the thickener agent and oil act as a perfuming agent and preservatives are used to inhibit the microbial growth in creams ,according to its function .Oil may be of two types' mineral and glyceride.
- **Fats:** There are different types of fats used in the formulation of creams. Fats can be obtained from the animals, plants . Glyceride oils and fats are obtained from animals or vegetable origin. fats are the combinations of higher fatty acids and glycerin. When they are saponified they forms soap, or fatty acid and glycerin, depending upon process used on processing the fats . The most commonly used fatty acids are lauric, margaric, plamitic, stearic, saturated group. Oleic acid is the liquid and most popularly used unsaturated fatty acid.[3]
- **Lanolin:** Lanolin is derived from the wool fat of sheep. Lanolin are of two types. Lanolin is a ingredient which act as a lubricant on the skin surface, and makes the skin soft and smooth in appearance. Lanolin also helps to form the emulsion and mixes perfectly with the other ingredients used in cosmetic and personal care products formulation.
- **Colours:** colours primarily are obtained from the naturally occuring ingredients found in the nature like turmeric, saffron, indigo, etc. Today colours are made in the laboratory and are found to be much more stable .And they have greater colouring intensity. Colours can also be produced without using plants harvested in the wild.[4]
- **Emollients:** Emollients, are commonly considered as moisturizers, and these are the products that help to soften skin or to treat the dry skin. Most emollients are formed of the oil or grease, such as mineral oil, squalene, and lanolin. Emollients increase the water holding capacity of water and make a layer of oil on skin to prevent water loss from skin.[5]
- **Humectants:** Humectants are used to provide moisturization to the skin .[6]
- **Perfumes:** Perfume is a ingredient used as a scent or order, including pleasant smell. The natural perfumes used in creams are- eg ,White Blossoms[7]
- **Vitamins:** Vitamins plays an essential role in maintainance of the physiological function of whole human body and the skin. Vitamin A, B, C, E etc. are used in the formulation of creams.
- **Preservatives:** The preservatives are used to prevent the alteration caused by microorganism and contamination during formulation, shipment, storage and consumer use. Synthetic preservatives are used in very small amount.[8]

Ingredients for formulation of herbal cold cream

The ingredients which are used in herbal cold cream formulation are :

Ingredient	Composition

Methyl paraben	0.010 gm
Borax	0.25 gm
Bee wax	15 gm
Liquid paraffin	50 gm
Neem oil	23 gm
Almond oil	25gm

Neem



Figure 1

It is anti-inflammatory and boosts the immunity of body. It contains the omega-3 fatty acids, and therefore almond oil helps you to maintain the healthy cholesterol level in body and improve memory power. It can also help lower the risk of diseases like cancer and other heart problems.

Neem oil is obtained naturally from the seeds of the neem tree. It is a natural pesticide. Neem oil is made using a mixture of different components.

Azadirachtin is the potent component for the repelling and killing of pest.

Borax



Figure 2

Borax when combined with wax, is used in the preparation of many cosmetic formulations like gels, creams, and lotions. It is popularly used in the preparation of

hand soaps to get rid of the oil or grease from the hands. Borax has an alkaline nature which makes it a perfect ingredient in the preparation of cleansers and toners. In the cosmetic formulation, borax can be used as an emulsifying agent, buffering agent, or can be used as a preservative in moisturizing products, creams, shampoos, gels, lotions.

Bee wax



Figure 3

Beeswax helps in healing and softening of skin, and it is

an antibacterial agent. Borax can help you fight the conditions like acne skin, dry skin, eczema, and stretch marks on skin. The use of raw beeswax can be done to formulate a new and your own skin care moisturizers and lotions which is specially formulated just for you.

Almond oil



Figure 4

Almond oil is full of the vitamin E. It has anti oxidant and anti inflammatory properties so it is very beneficial for skin and hair health. Almond oil is very useful in the treatment of many diseases like cancer and other cardiovascular disorders. It lowers the risk of the cancers .Almond oil is very safe to use on the skin .Almond oil provides moisturization to the skin. It helps the skin to fight the free radicals ,and thereby reduces the wrinkles on the skin.

Rose water



Figure 5

rose water is a moisturising agent ,it works great when it is combined with other moisturizing agents like glycerin or ceramides .rose water has anti oxidating and anti inflammatory properties ,so it works wonder on the skin. It is used to reduce the acne,as a toner and used in other cosmetic formulations. It can maintain the ph balance and improve the complexion of the skin

The preparation of herbal cold cream

1. Firstly, take the specific required quantity of liquid paraffin and the bee wax in a porcelain dish
2. Heat the mixture of these ingredients in the water bath and melt them together. Then Remove the dish from the water bath.
3. Now take the borax and distilled water together in a beaker. Then heat this solution of borax and distilled water in water bath for 75 C.
4. The solution of borax is then added drop wise in porcelain dish with continuous stirring. Add the Methyl paraben as a preservative in porcelain dish and dissolved it.
5. Add the Neem oil and Almond oil in this solution and mix well. At last add perfume for fragrance.
6. And the Herbal Cold Cream is ready to use.

Evaluation of cold cream

1. Morphological Evaluation: the physical properties

Physical properties:

The physical properties of cream was observed like the color, odor and appearance.

Physicochemical Evaluation: -

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

- **pH:** The pH meter was calibrated with the help of standard buffer solution. The Weighed cream of 0.5 gm dissolved in 50 ml of distilled water and its pH was then measured by the of digital pH meter.
- **Viscosity:** The Viscosity of the cream was determined with the help of Brookfield viscometer at 100 rpm.
- **Spread ability test:** The cream sample was applied between the two glass slides and was compressed to form uniform thickness by placing 100 gm, of weight for time of 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 to determine the spread ability of the cream .
Spread ability= $m \cdot l/t$
- **Irritancy test:** Mark an area of 1 sq.cm on the right-hand dorsal surface. The cream was applied to the specified area and the time was noted. Then the Irritancy, erythema, edema, was checked if any for regular intervals upto 24 hrs. and then reported.
- **Test for microbial growth:** This is very important test for the semisolid preparations. Firstly, the Agar media was prepared and then the formulated cream was inoculated on the plate's agar media by using the steak plate method and a controlled is prepared by omitting the cream. The plates were placed in the incubator and are incubated in 37 0 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. Then Place a drop of the cream on a microscopic slide

and covers it with a cover slip, then observe it under the microscope. If the disperse globules appear red the ground colorless. Then the cream is o/w type. The reverse condition are occurs in the w/o type creams i.e. the disperse globules appears colorless.

- **Homogeneity:** Homogeneity was tested with the visual appearance of cream and tests of the creams .
- **Acid value:** The Ether and alcohol solvent mixture was used for the acid value determination. In 7gm of the formulated cream in 25ml methanol and ether was refluxed until the cream dissolved. 0.1N NaOH used to titrate the sample solution and phenolphthalein is used as an indicator. The solution was then titrated until the pink colour appeared; it was the end point. Noted, in titration, 0.1N NaOH was used. The acid value was calculated: $\text{Acid value} = \frac{v \times 5.6}{w}$ Where, $v = 0.1N \text{ NaOH}$ [11]
w = weight .

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