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FORMULATION AND EVALUATION OF VANISHING HERBAL CREAM OF CRUDE DRUGS

Shinde Prajakta* and Khule Shahu

Department of Pharmaceutics, SMBT College of Pharmacy, Nashik - 422403, Maharashtra, India.

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Correspondence to Author:

Shinde Prajakta

Department of Pharmaceutics, SMBT College of Pharmacy, Nashik - 422403, Maharashtra, India.

E-mail: pp_shinde123@rediffmail.com

ABSTRACT: The purpose of the present research work was to formulate and evaluate vanishing herbal cream. Herbal creams offer several advantages over other creams. The majority of existing creams which has prepared from drugs of synthetic origin and give extras fairness to face, but it has several side effects such as itching or several allergic reactions. Herbal creams do not have any of these side effects; without side effects, it gives the fairness look to the skin. The method carried out to prepare herbal cream was very simple. Firstly, the oil phase was prepared, the mixture of stearic acid (17%), potassium hydroxide (0.5%), sodium carbonate (0.5%) were melted at 70 °C. Secondly, the aqueous phase was prepared, a mixture of alcoholic extract of crude drugs, including *C. officinalis* and *A. indica*, Turmeric, Nutmeg, Cinnamon, are commercially available as extracts and in the different formulation to be used either for cosmetic purposes or for medical use. Glycerin (6%), perfume (0.5%), water (71%) heated at 70 °C. Then aqueous phase was added into the oil phase at 70 °C with continuous stirring. Now, once the transfer was completed, it was allowed to come at room temperature all the while being stirred. The perfume was added at last just before the finished product was transferred to a suitable container. The above prepared herbal cream was evaluated. The physical parameters such as pH, homogeneity by visual and by touch, appearance (color), rubout (Spreadability, wetness), washability, consistency, Patch test, irritancy test, accelerated stability studies, type of smear, emolliency were determined. Further, studies are needed to investigate this formulation for its performance.

INTRODUCTION: Now a day's herbal extracts are used in cosmetic preparations for augmenting beauty and attractiveness. Herbal cosmetics are classified on the basis of dosage form like cream, powder, soaps, solutions, *etc.* and according to part or organ of the body to be applied for like; cosmetics for skin, hair, nail, teeth, and mouth, *etc.*¹. Creams are semisolid emulsions intended for application to the skin or mucous membrane. A low-fat moisturizer that disappears into the skin is called as a vanishing cream. It softens skin, leaving nothing behind².

Vanishing cream is o/w emulsion-based preparations containing aqueous phase and oil phase³. Depending on the proportion of water to grease, the cream can be water-miscible and washed away easily or be thick and sticky. It is perhaps the commonest prescribed topical medicament. As it is less oily, messy, and sticky, most patients find it more user friendly⁴. The traditional systems of medicine evolved over centuries had been responsible for safeguarding healthcare in the world until the advent of the allopathic system of medicine.

As the latter system used knowledge of modern biology and chemistry for both discovery and treatment, it found fast acceptability among the users, and now it occupies predominant space in the area of health care. In spite of this, the contribution of the traditional preparations, which are normally polyherbal, is increasing because of

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the general impression that these products are safe, while the single-molecule based modern drugs used in the allopathic system can have severe adverse effects ⁵. The skin is the body’s first line of defense for external exposure.

The signs of aging are most visible in the skin. Although aging skin is not a threat to a person, it can have a detrimental effect on the psychology of a person ⁶. Much of the premature aging occurs as a direct or indirect result of the skin’s interaction with the environment.

Exposure to sunlight is recognized as a major factor in the etiology of the unwanted progressive changes in skin appearance ⁷. Photochemoprotective agents are capable of preventing the adverse effects of ultraviolet radiation on the skin, which are caused by excessive generation of reactive oxygen species ⁸.






This herbal vanishing herbal cream consists of various crude drugs including *C. Officinalis* (*Calendula officinalis* Family Compositae) and *A. indica* (*Azadirachta indica* Family Meliaceae), Turmeric (*Curcuma longa*, Family Zingiberaceae), Nutmeg (*Myristica fragrans*, Family Myristicaceae), Cinnamon (*Cinnamomum zeylanicum*, Family Lauraceae) ⁹.

Objective: The objective of this research work was to formulate the vanishing cream, which does not cause any side effects or adverse reactions. The cream also acts as a fairness expert in day to day life by removing aging signs. It also possesses nutritional value, which provided required nutrients to the skin.

MATERIALS AND METHODS:

Materials: All crude drugs were collected from SMBT College of pharmacy Campus, Nashik.

TABLE 1: HERBAL DRUG INFORMATION ⁹

S. no.	Herbal Extract	Medicinal Importance	Picture
1	<i>C. officinalis</i> (<i>Calendula officinalis</i> family-Compositae)	wound healing activity and used to make oil that protects the skin	
2	<i>A. indica</i> (<i>Azadirachta indica</i> family-Meliaceae)	Neem leaves used to treat skin diseases like eczema, psoriasis	
3	Turmeric (<i>Curcuma longa</i> family Zingiberaceae)	Prevents and heal dry skin, treat skin conditions such as eczema and acne, and retard the aging process.	
4	Nutmeg seed powder (<i>Myristica fragrans</i> , family Myristicaceae)	Anti-inflammatory properties will help reduce the sight of pimples. The stimulating properties will certainly wake up dead skin cells and help those not-so-fine lines around your mouth fade, curative properties that heal scars caused by everything from acne to sunspots.	
5	Cinnamon bark powder (<i>Cinnamomum zeylanicum</i> family Lauraceae)	Cinnamon bark can help enhance nitric oxide function, which causes increased blood flow and lower levels of inflammation.	

Method of Preparation: Steps carried out in the preparation of vanishing herbal cream were as follows ⁶.

Preparation of Alcoholic Extract of Crude Drugs: All above mentioned powdered crude drugs of 5 gm were taken into the conical flask, and then 100 ml. of ethanol was added to it, then the conical

flask was capped with aluminum foil. Then this mixture was placed for maceration for five days in **Table 1**.

Preparation of Oil Phase: Stearic acid (17%), potassium hydroxide (0.5%), sodium carbonate (0.5%) was taken into one porcelain dish, and this mixture was melted at 70 °C.

Preparation of Aqueous Phase: Alcoholic extract of crude drugs mentioned in step-1 (4.5%), Glycerin (6%), Water (71%) were taken into another porcelain dish and heated this mixture at 70 °C.

Addition of Aqueous Phase to Oil Phase: The aqueous phase was added to the oil phase with continuous stirring at 70 °C. Now, once the transfer was completed, it was allowed to come at room temperature, all the while being stirred. Perfume (0.5%) was added at last just before the finished product was transferred to a suitable container. Then cream was evaluated for various physical parameters.

Analysis of Physical Parameters:

Determination of Organoleptic Properties: The appearance of the cream was judged by its color, pearlescence, and roughness and graded¹⁸.

pH: The pH meter was calibrated and measured the pH by placing in the beaker containing 20 mg of the cream¹⁰.

Determination of Homogeneity: The formulations were tested for the homogeneity by visual appearance and by touch.

Spread Ability Test: 500 mg of the cream was sandwiched between 2 slides. A weight of 100 gm was placed on the upper slide. The weight was removed, and extra formulation was scrapped off. The lower slide was fixed on board of the apparatus and the upper slide was fixed with a non-flexible string on which 20 g load was applied. Time taken by upper slide to slip off was noted down¹¹.

$$S = M \times L / T$$

Where S = Spreadability M = Weight tied to an upper glass slide. L = Length moved on a glass slide T = Time taken. The determinations were carried out in triplicate, and the average of three readings was recorded.

Dye Test: The test was done by mixing the cream with red dye then place the drop of cream was placed on a slide and covered with a cover slip, observed under a microscope. If the dispersion phase appears in red-colored globules, the cream was O/W type. If the continuous phase appears red color, the cream was w/o type¹¹.

Homogeneity: The test was done by physical touch with hands¹².

Patch Test: About 1-3 gm of material to be tested was placed on a piece of fabric or funnel and applied to the sensitive part of the skin, e.g., skin behind the ears. The cosmetic to be tested was applied to an area of 1sq.m. of the skin. Control patches (of similar cosmetic of the known brand) were also applied. The site of the patch is inspected after 24 h. As there was no reaction, the test was repeated three times. As no reaction was observed on the third application, the person may be taken as not hypersensitive¹².

Appearance: The appearance of the cream was found by observing its color, opacity, etc.¹².

Smear Type: The test was conducted after the application of the cream on the skin; the smear formed was oily or aqueous in nature¹³.

Determination of Emolliency: Emolliency, slipperiness, and amount of residue left after the application of fixed amounts of cream was checked.

Determination of Viscosity: The viscosity determinations were carried out using a Brookfield Viscometer (DV II+ Pro model) using spindle number S-64 at a 20 rpm at a temperature of 25 °C. The determinations were carried out in triplicate, and the average of three readings was recorded¹⁴.

Wash Ability: The removal of the cream applied on the skin was done by washing under tap water with minimal force to remove the cream¹⁵.

Irritancy Test: The cream was applied on the left hand dorsal side surface of 1 sq.cm and observed in equal intervals up to 24 h for irritancy, redness, and edema¹⁶.

Accelerated stability studies: Accelerated stability studies were performed on all the formulations by maintaining at room temperature for 20 days with a constant time interval.

During the stability studies, the parameters like homogeneity, viscosity, physical changes, pH, and type of smear were studied¹⁷.

RESULTS AND DISCUSSION: The herbal vanishing cream was prepared by using o/w emulsion method using a mixture of alcoholic extract of crude drugs, including *C. officinalis*, and *A. indica*, Turmeric, Nutmeg, and Cinnamon and the *extract* were used and formulated 3 different formulations named B1, B2 and B3 but only B3 pass all evaluation tests.

TABLE 2: FORMULATION OF HERBAL CREAM

S. no.	Ingredients	Quantity (%)
1	Steric acid	17%
2	Potassium hydroxide	0.5%
3	Sodium carbonate	0.5%
4	Alcoholic extract	4.5%
5	Glycerin	6 %
6	Perfume	0.5%
7	Water	71%

TABLE 3: EVALUATION PARAMETER

S. no.	Parameter	Observation
1	Appearance	Yellowish green
2	Odor	Slightly aromatic
3	pH	6.8
4	Spreadability	Uniform with a value of 42 g.cm/sec easily spreadable
5	Dye Test with Scarlet red	O/W type
6	Homogeneity	Homogenous
	a) By visual	Smooth and Consistent
	b) By Touch	
7	Patch Test	Not hypersensitiveness
8	Type of Smear	Non-greasy
9	Emolliency	No residue left
10	Viscosity	26024cps.
11	Consistency	Good
12	Washability	Washable
13	Irritancy test	No redness and edema
14	Accelerated stability study	Stable
15	Grittiness	No gritty particles

CONCLUSION: The vanishing cream of crude drugs with the best properties and having nutritional value was to be prepared by simple methods, and less equipment is required. The prepared herbal cream also has antioxidant and antibacterial activity; due to this, it retards aging signs and pimple formation on the face. Further, studies are required for this vanishing herbal cream. It was found that this type of formulation of the vanishing herbal cream was not prepared earlier. Oil in water emulsion-based cream was formulated using natural ingredients and was evaluated. By combining all these ingredients, it can be concluded that this cream can be used as a multipurpose

cream, and the ingredients mixed can produce a synergistic effect of the other. Further, studies can be carried out on the stability and skin irritancy test of the cream.

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