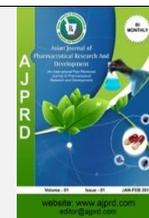


Available online on 15.06.2020 at <http://ajprd.com>

# Asian Journal of Pharmaceutical Research and Development

Open Access to Pharmaceutical and Medical Research

© 2013-20, publisher and licensee AJPRD, This is an Open Access article which permits unrestricted non-commercial use, provided the original work is properly cited



Open Access

Research Article

## Formulation and Evaluation of Vanishing Herbal Cream of Crude Drugs

Shinde Prajakta\*, Khule Shahu

Department of Pharmaceutics, SMBT College of Pharmacy, Nashik

### 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 skin. Method carried out to prepare herbal cream was very simple. Firstly, oil phase was prepared, mixture of stearic acid (17%), potassium hydroxide (0.5%), sodium carbonate (0.5%) were melted at 70°C. Secondly aqueous phase was prepared, mixture of alcoholic extract of crude drugs, including *C. officinalis* and *A.indica*, Turmeric, Nutmeg, Cinnamon, are commercially available as extracts and in 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. Perfume was added at last just before the finished product was transferred to suitable container. The above prepared herbal cream was evaluated. The physical parameters such as pH, homogeneity by visual and by touch, appearance, wash ability, consistency, Patch test, irritancy test accelerated stability studies, type of smear were determined. Further studies are needed to investigate this formulation for its performance.

**KEYWORDS:** Herbal extract, Vanishing cream, Evaluation, Crude drug, *C. officinalis*, *A.indica*

**ARTICLE INFO:** Received 20 March. 2020; Review Completed 30 April 2020; Accepted 12 May 2020; Available online 15 June. 2020



#### Cite this article as:

Prajakta S\*, Shahu K, Formulation and Evaluation of Vanishing Herbal Cream of Crude Drugs, Asian Journal of Pharmaceutical Research and Development. 2020; 8(3):66-69. DOI: <http://dx.doi.org/10.22270/ajprd.v8i3.725>

#### \*Address for Correspondence:

Shinde Prajakta, Department of Pharmaceutics, SMBT College of Pharmacy, Nashik, India

### INTRODUCTION

Now-a-days herbal extracts are used in the 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.<sup>1</sup> 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 behind.<sup>2</sup> Vanishing cream are o/w emulsion based preparations containing aqueous phase and oil phase.<sup>3</sup>

Depending on the proportion of water to grease, 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-friendly.<sup>4</sup> The traditional systems of medicine, evolved over centuries had been responsible for safe guarding healthcare of the world until the advent of 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 the general impression that these products are safe; while the single-molecule based modern drugs used in allopathic system can have severe adverse effects.<sup>5</sup>

The skin is the body's first line of defense for external exposure. The signs of ageing are most visible in the skin. Although, ageing skin is not a threat to a person, it can have a detrimental effect on the psychology of a person.<sup>6</sup> Much of the premature ageing occurs as a direct or indirect result of skin's interaction with the environment. Exposure to sunlight is a recognized as a major factor in the etiology of the progressive unwanted changes in the skin appearance.<sup>7</sup> 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.<sup>8</sup> This herbal vanishing 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).<sup>9</sup>

### 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.<sup>9</sup>

| Sr. No. | Herbal Extract  | Medicinal Importance   | Picture  |
|---------|---|--|--|
| 1       | <b>C.Officinalis</b> ( <i>calendula officinalis</i> family-compositae)        | wound healing activity and used to make oil that protects the skin   |    |
| 2       | <b>A.indica</b> ( <i>Azadirachta indica</i> family-meliaceae)                 | Neem leaves used to treat skin diseases like eczema, psoriasis   |   |
| 3       | <b>Turmeric</b> ( <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       | <b>Nutmeg seed powder</b> ( <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 no-so-fine lines around your mouth fade, curative properties that heal scars caused by everything from acne to sun spots. |  |
| 5       | <b>Cinnamon Bark powder</b> ( <i>Cinnamomum zeylanicum</i> family Lauraceae)  | Cinnamon bark can help enhance nitric oxide function, which causes increased blood flow and lower levels of inflammation.  |  |

### Authentication

The plant material collected was identified and authenticated by Ms. Shinde P.P, Assistant professor, Pharmaceutics, SMBT College of pharmacy, Nashik.

### Method of Preparation

Steps carried out in the preparation of vanishing herbal cream were as follows.<sup>6</sup>

**Preparation of alcoholic extract of crude drugs:** All above mentioned powdered crude drugs of 5gms were taken into the conical flask and then 100ml. of ethanol was added to it, then the conical flask was capped with aluminum foil. Then this mixture was placed for maceration for 5 days.

**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<sup>o</sup>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<sup>o</sup>c.

**Addition of aqueous phase to oil phase:** The aqueous phase was added to the oil phase with continuous stirring at 70<sup>o</sup>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 suitable container. Then cream was evaluated for various physical parameters.

### EVALUATION OF CREAM

**Determination of organoleptic properties:** The appearance of the cream was judged by its color, pearlscence and roughness and graded.<sup>18</sup>

**pH:** The pH meter was calibrated and measured the pH by placing in the beaker containing 20mg of the cream.<sup>10</sup>

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

**Spreadability test:** 500mg of the cream was sandwiched between 2 slides. A weight of 100gm was placed on upper slide. The weight was removed and extra formulation was scrapped off. The lower slide was fixed on board of apparatus and upper slide was fixed with non-flexible string on which 20g load was applied. Time taken by upper slide to slip off was noted down.<sup>11</sup>

$$S = m \times l / t$$

Where,

S – Spread ability

m- Weight tied to 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 cover slip, observed under 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 type.<sup>11</sup>

**Homogeneity:** The test was done by physical touch with hands.<sup>12</sup>

**Patch Test:** About 1-3gm 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 ears. The cosmetic to be tested was applied to an area of 1sq.m. of the skin. Control patches (of similar cosmetic of known brand) were also applied. The site of patch is inspected after 24 hrs. As there was no reaction the test was repeated three times. As no reaction was observed on third application, the person may be taken as not hypersensitive.<sup>12</sup>

**Appearance:** The appearance of the cream was found by observing its color, opacity, etc.<sup>12</sup>

**Smear type:**The test was conducted after the application of cream on the skin the smear formed was oily or aqueous in nature.<sup>13</sup>

**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 25oC. The determinations were carried out in triplicate and the average of three readings was recorded.<sup>14</sup>

**Wash ability:** The removal of the cream applied on skin was done by washing under tap water with minimal force to remove the cream.<sup>15</sup>

**Irritancy test:** The cream was applied on left hand dorsal side surface of 1sq.cm and observed in equal intervals up to 24hrs for irritancy, redness and edema.<sup>16</sup>

**Accelerated stability studies:** Accelerated stability studies were performed on all the formulations by maintaining at room temperature for 20 days with constant time interval. During the stability studies the parameters like homogeneity, viscosity, physical changes, pH and type of smear were studied.<sup>17</sup>

### RESULTS AND DISCUSSIONS

The herbal vanishing cream was prepared by using o/w emulsion method using mixture of alcoholic extract of crude drugs, including C. officinal is 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.

| Sr. 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.

| Sr. No | Parameter                                | Observation  |
|--------|--|--|
| 1      | Appearance                               | Yellowish green  |
| 2      | Odor                                     | Slightly aromatic  |
| 3      | pH                                       | 6.8  |
| 4      | Spredability                             | Uniform with a value of 42 g.cm/sec<br>Easily spreadable |
| 5      | Dye Test with Scarlet red                | O/W type   |
| 6      | Homogeneity<br>• By visual<br>• By Touch | Homogenous<br>Smooth and Consistent                      |
| 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 are 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 synergistic effect of the other. Further studies can be carried out on stability and skin irritancy test of the cream.

## REFERENCES

- Akhtar N, Shahiq-uz-zaman, Barkat AK, Haji M, Khan S, Mahmood Ahmad, Rasool F, Tariq Mahmood and Akhtar R. Evaluation of various functional skin parameters using a topical cream of *Calendula officinalis* extract. *African Journal of Pharmacy and Pharmacology*. 2011; 5(2):199-206.
- Pawar A, Gaud RS. *Modern Dispensing Pharmacy*. Career publication, Second edition, April 2005; 227.
- Das K, Dang R, Machale MU, Ugandar RE, Lalitha BR. Evaluation for safety assessment of formulated vanishing cream containing aqueous Stevia extract for topical application. *Indian Journal of Novel Drug Delivery*. 2012; 4(1):43-51.
- KM Ho. Proper Choice of Base of Topical Medicaments. *Medical Bulletin*. 2006; 11(9): 7-8.
- Ravindra RP, Muslim PK. Comparison of physical characteristics of vanishing Cream base, cow ghee and shata-dhauta-ghrita as per pharmacopoeial standards. *International Journal of Pharma and Bio Sciences*. 2013; 4(4):14- 21.
- Ugandar RE and Deivi KS. Formulation and evaluation of natural palm oil based vanishing cream. *International Journal of Pharmaceutical Science and Research*. 2013; 4(9):3375-3380.
- More BH, Sakharwade SN, Tembhum SV, Sakarkar DM, Evaluation of Sunscreen activity of Cream containing Leaves Extract of *Butea monosperma* for Topical application. *International Journal of Research in Cosmetic Science*. 2013; 3(1):1-6.
- Saraf S, Chhabra SK, Kaur CD, Saraf S. Development of photochemoprotective herbs containing cosmetic formulations for improving skin properties. *Journal of cosmetic science*, 2012; 6(3):119-131.
- Kokate, CK, Purohit AP, Gokhale SB. *Pharmacognosy Text Book*, Nirali Publication.
- Sujith SN, Molly M, Sreena K. Formulation and Evaluation of Herbal Cream containing *Curcuma longa*. *International Journal of Pharmaceutical and Chemical Sciences*, 2012; 1(4).
- A. Vijayalakshmi, A. Tripura, V. Ravichandiran. Development and Evaluation of Anti- Acne Products from *Terminalia arjuna* Bark. *IJCRGG* 3(1):320-327.
- Debjit B, Harish G, Kumar B.P, Duraivel S, Aravind. G, Sampath Kumar K. P, Medicinal Uses of *Punicagranatum* and Its Health Benefits. *Journal of Pharmacognosy and Phytochemistry*, 2013; 1(5).
- A. Premkumar, T. Muthukumar, V. Ganesan, Shanmugam R, Priyanka DL. Formulation And Evaluation Of Cream Containing Antifungal Agents, Antibacterial Agents And Corticosteroids. *Hygeia. J.D. Med*, 2014; 6(2):5-16.
- Ravindra RP, Muslim PK. Comparison of physical characteristics of vanishing Cream base, cow ghee and shata-dhautaghrita as per pharmacopoeial standards. *International Journal of Pharma and Bio Sciences*, 2013; 4(4):14 – 21.
- Kotta KK, Sasikanth .K, M. Sabareesh. Formulation And Evaluation Of Diacerein Cream. *Asian J Pharm Clin Res*, 2011; 4(2):9398.
- Ashish A, Mohini K, Abhiram R. Preparation and evaluation of polyherbal cosmetic cream. *Der Pharmacia Lettre*, 2013; 5(1):83-88.
- Vinod KR, Santhosha D, Anbazhagan. S. Formulation and Evaluation of Piperine Cream. A New Herbal Dimensional Approach for Vitiligo Patients. *Int J Pharm Pharm Sci*, 2011; 3(2):293.
- Sahu AN, Jha SB, Dubey SD. Formulation & Evaluation of Curcuminoid Based Herbal Face Cream. *Indo-Global Journal of Pharmaceutical Sciences*, 2011; 1(1):77-84.
- Ashwini SD, Somishwar SK, Shweta SS. Formulation and Evaluation of Vanishing Herbal Cream of Crude Drugs. *American Journal of Ethnomedicine*, 2014; 1(5):313-318.