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Formulation and Evaluation of Polyherbal Vanishing Cream

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Abstract: ***Herbal vanishing cream has various advantages over existing cosmetic vanishing creams found in the market. Due to zero side effects of herbal vanishing cream, these are formulated. As every individual in today's world need a healthy, flawless, acne free skin and naturally glowing skin hence, herbal vanishing cream are gaining popularity. The most of existing creams which has been prepared from drugs of synthetic origin, such as acyclovir, triamcinolone, calcipotriene, mometason which gives more fairness to the skin but may have various side effects such as itching or kinds of allergic reactions. The creams are oil in water emulsion. Vanishing cream containing natural base was pleasant, effective, easily washable and completely safe for human use. In contrast with ointments, which are greasy and messy in nature and may cause staining of clothes, the prepared Natural palm oil based vanishing cream was pleasant, easily washable thereby increasing patient compliance. The prepared formulations were evaluated for physical evaluation tests like color, odor and evaluated for different evaluation parameters like pH, homogeneity viscosity, type of smear, after feel test, dye test, spreadability test, patch test and skin irritation study. The vanishing cream can also be prepared from the seeds and peels of plant Turmeric, Honey, Brassica nigra, Almond musturd seed powder extract.***

Keywords: Turmeric, Honey, *Brassica nigra*, Almond, Gram flour, Musturd seed powder, vanishing cream

1. 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 likecream, 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 behind[(2).] Vanishing cream are o/w emulsion based preparations containing aqueous phase and oil phase[(3).] 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[(4).] The traditional systems of medicine, evolved over centuries had been responsible for safeguarding 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[(5).] 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[(6)]. 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[(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).]

World Health Organization (WHO) as well our country has been promoting traditional medicine because they are less expensive, easily available and comprehensive, especially in developing countries. It is also true that eight percent of the world's population relies on medicinal plants for their primary health care. Whole world including the developed country recognized the importance of traditional medicine and has treatment strategies, guidelines and standard for ethnomedicine. Although various types of cream is considered for wound healing but these are still appears to be limited in rate of tissue regeneration. Hence after a depth review regarding pathogenesis as well as different traditional and alternative therapy for wound healing, we have taken up the project to develop and formulate an herbal cream which will be effective and has better rate of tissue regeneration. The herbal cream that is planned to be formulated for wound healing will be oil/water (O/W)emulsion type which will be less oily, less greasy and less sticky in nature so that patient compliance is more and will be beneficial for all kind of people in our society[(9).]

Despite the fact that vanishing creams were advertised as beauty creams, they were also used as a base for face powders. Early loose powders did not adhere well, particularly if the skin had been cleansed with soap and water[(10).] Adhesion of the powder was improved if the skin was coated with a surface cream. A cold cream could have been used but it had a greasy feel so was unsuitable for most women unless their skin was very low in oil. Vanishing creams had a non-oily feel and were generally considered to be a better solution.

As vanishing creams were non-greasy they were suitable women with oily skin. They were generally used during the day which is why the Pomeroy Company advertised its vanishing cream as a day cream. Pond's referred to their vanishing cream as a finishing cream, and may have slightly

elevated the amount of oil in the cream to help powder adhere to the face. Max Factor went one step further and sold coloured vanishing cream in his Society Make-up range in White, Flesh, Rachelle and Natural shades advertising it as Makeup Foundation Cream.[11]

2. Need of Present Investigation

1) Herbs are important for their disease prevention and health promotion properties.
2) Herbal cosmetics are natural and free from all the harmful synthetic chemicals which generally may turns out to be lethal to skin.
3) Prevent and heal dry skin treat skin conditions such as eczema and acne also blackheads.
4) The cream also act as fairness expert in day to day life removing aging sings.

3. Drug and Excipient

1) Turmeric

Biological Source -Turmeric is a flowering plant of the ginger family, Zingiberaceae.

Chemical Constituent -turmeric include diarylheptanoids, a class including numerous curcuminoids, such as curcumin, demethoxycurcumin, and bisdemethoxycurcumin.

2) Honey

Biological source
Honey is the saccharine liquid prepared from the nectar of the flowers by the hive-bee Apis mellifica and bees of other species of Apis. Family Apidae.

Chemical constituents:

1) Honey consists chiefly a mixture of dextrose and laevulose (70-80%) and water (14-20%). contains sucrose (1.2-4.5),
2) Dextrin (0.06-1.25%), volatile oil, pollen grains enzymes
3) Vitamins
4) Amino acids
5) Proteins
6) Colouring matters, etc.

3) Black Mustard

Biological Source
These are dried ripe seeds of *Brassica nigra* Linn., Koch or *Brassica juncea* Linn, Czern & Coss, belonging to family *Cruciferae*.

Chemical Constituents- The **black mustard** seed contains a thioglycoside *i.e.*, a β-**glucopyranoside** termed as **sinigrin**. It is also known as myronate potassium or allyl glucosinolate

Uses
- Paste Or Sauce Made from Mustard Seeds Used As A Condiment
- Mustard plant, one of several plants, having seeds that are used for the condiment
- Mustard seed, seeds of the mustard plant used in cooking

4) Almond

Biological Source
Comprises of the dried ripe kernels of Prunus amygdalus Batsch. Var amara (DC) Focke; Prunus communis Arcang.,

P. amygdalus Bail; and Amygdalus communis Linn., belonging to family Rosaceae.

Chemical Constituents
Contains 32% monounsaturated oleic acid (an omega-9 fatty acid), 13% linoleic acid (a polyunsaturated omega-6 essential fatty acid), and 10% saturated fatty acid (mainly as palmitic acid, USDA link in table). Linolenic acid, a polyunsaturated omega-3 fat, is not present (table). Almond oil is a rich source of vitamin E.

Uses
1) Bitter almonds are employed as sedative due to HCN content.
2) The fixed oil of bitter almond finds its use as demulscent in skin-lotion.
3) It is also employed in the preparation of amygdalin and bitter almond water.

5) Gram flour

Biological source- is a pulse flour made from a variety of ground chickpea known as Bengal gram.

Chemical constituent- Gram flour contains a high proportion of carbohydrates [higher fiber relative to other flours, no gluten, [2] and a higher proportion of protein than other flours.

S. No	Herbal Extract	Medicinal Importance
1	Turmeric	Prevent and heal dry skin, treat skin condition such as eczema and acne.
2	Honey	Light humectant and nutrient used as thickening agent to give body to facial mask.
3	Almond seed	Almond oil is brilliant moisturizer. It works to prevent acne blackheads. It also provides vit. E for healthy skin.
4	Musturd seed powder	Exfoliate dead skin.
5	Gram flour	Helps treat acne the zink in gram flour can fight infections that cause acne.

4. Materials

Stearic acid (17%), potassium hydroxide (0.5%), sodium carbonate (0.5%), Alcoholic, Ethanol. (4.5%), Glycerin (6%), Water (71%), Turmeric, Honey, Almond seed, Musturd seed powder, Gram flour.

1) Preparation of Polyherbal Vanishing Cream –
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.

2) 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 70Oc.

3) 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 70Oc.

4) Addition Of Aqueous Phase To Oil Phase
The aqueous phase was added to the oil Phase with continuous stirring at 70Oc. 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.

4.1 Evaluation Test

1) pH
The pH meter was calibrated and measured the pH by placing in the beaker containing 20mg of the cream.

2) 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.

4.2 Determination of type of emulsion

1) Dilution test-
In this test the emulsion is diluted either with oil or water. If the emulsion is o/w type and it is diluted with water, it will remain stable as water is the dispersion medium" but if it is diluted with oil, the emulsion will break as oil and water are not miscible with each other. Oil in water emulsion can easily be diluted with an aqueous solvent, whereas water in oil emulsion can be diluted with an oily liquid.

2) Dye solubility test
In this test an emulsion is mixed with a water soluble dye (amaranth) and observed under the microscope. If the continuous phase appears red, it means that the emulsion is o/w type as the water is in the external phase and the dye will dissolve in it to give color. If the scattered globules appear red and continuous phase colorless, then it is w/o type. Similarly, if an oil soluble dye (Scarlet red C or Sudan III) is added to an emulsion and the continuous phase appears red, then it is w/o emulsion.

3) Homogeneity
The test was done by physical touch with hands.

4) 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.

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

6) After Feel
After applying the herbal cream on skin the properties like emollient nature, slipperiness and the amount of cream left after applying to the skin was checked

7) Smear Type
The test was conducted after the application of cream on the skin the smear formed was oily or aqueous in nature.

8) Removal
The removal of the cream applied on skin was done by washing under tap water with minimal force to remove the cream.

9) Irritancy test
The cream was applied on left hand dorsal side surface of 1sq.cm and observed in equal intervals upto 24hrs for irritancy, redness and edema.

10) 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 recorded.

11) 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.

5. Results and Discussions

The herbal vanishing cream was prepared by using o/w emulsion method using mixture of alcoholic extract of a crude drug including turmeric powder, almond, Gram flour, Honey, mustard powder. The extract were used and formulated and pass the evaluation test and all result were mentioned in following table.

1) Appearance
The cream prepared was found to be of a yellowish green color and had pleasant odor.

2) pH
The pH of cream was found to be 6.1, which is acidic value.

3) Homogeneity-
It was found that the cream was homogeneous and smooth and consistent in nature.

4) Type of smear
It was found that the cream produced non-greasy film on the skin surface.

5) Emolliency
After observation, it was found that cream not left residue on skin surface after application.

6) Viscosity
The viscosity of cream was found to be 27025cps.

Type of emulsion
The cream was found to be of the O/W type emulsion by dilution and dye solubility test.

Physical parameters	*Observations*
Appearance	Yellowish green color
pH	6.1
Homogeneity [A] By visual [B] By Touch	Homogeneous Smooth and Consistent
Type of Smear	Non-greasy
Emolliency	No residue left
Viscosity	27025cps.
Dilution test	O/W type emulsion
Dye solubility Test	O/W type emulsion
Iritancy Test	Not irritant
Removal	Easily remove by water

Result obtained for the evaluation tests are under the specified limits. colour is yellowish green odour is pleasant, homogeneous, emollient. Also result obtained for the physical parameters like pH, viscosity etc. are according to the standard value In biological evaluation, it is tested on human skin and it did not produce any inflammation, allergy or erythemic reactions.

6. 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

[1] Akhtar N, Shahiq-uz-zaman, Barkat Ali Khan, Haji M, Khan S, Mahmood Ahmad, Rasool F, Tariq Mahmood

and Akhtar Rasul, 'Evaluation of various functional skin parameters using a topical cream of Calendula officinalis extract, African Journal of Pharmacy and Pharmacology, February 2011; 5(2): 199-206.
[2] Pawar A, Gaud RS, 'Modern Dispensing Pharmacy', Career publication, Second edition, April 2005; 227.
[3] 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, Jan-Mar, 2012; 4(1): 43-51.
[4] Dr. KM Ho, 'Proper Choice of Base of Topical Medicaments', Medical Bulletin, Vol.11 No.5 May 2006 Medical Bulletin, September 2006; 11(9): 7, 8.
[5] Ravindra RP and 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 Oct; 4(4): 14 – 21.
[6] R.E. 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.
[7] More BH, Sakharwade SN, Tembhurne 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.
[8] Saraf S, Chhabra SK, Kaur CD, and Saraf S, 'Development of photochemoprotective herbs containing cosmetic formulations for improving skin properties', Journal of cosmetic science, March/April 2012; 63; 119–131.
[9] Sujith S Nair, Molly Mathew and Sreena K; Formulation and Evaluation of Herbal Cream containing Curcuma longa; International Journal of Pharmaceutical And Chemical Sciences; Oct-Dec 2012; 1(4).
[10] A.Vijayalakshmi, A. Tripura and V. Ravichandiran; Development and Evaluation of Anti- Acne Products from Terminaliaarjuna Bark; IJCRGG 3(1): 320-327.
[11] Debjit Bhowmik, Harish Gopinath, B. Pragati Kumar, S.Duraivel, Aravind. G, K. P. Sampath Kumar; Medicinal Uses of Punicagranatumand Its Health Benefits; Journal of Pharmacognosy and Phytochemistry; 2013; 1(5).
[12] A. Premkumar, T. Muthukumaran, V. Ganesan, Shanmugam R, Priyanka D.L; Formulation And Evaluation Of Cream Containing Antifungal Agents, Antibacterial Agents And Corticosteroids; Hygeia.J.D.Med., October 2014; ; 6(2): 5-16.
[13] Kotta Kranthi Kumar, K.Sasikanth, M.Sabareesh, N.Dorababu; Formulation and Evaluation Of Diacerein Cream; Asian J Pharm Clin Res, 2011; 4(2): 9398.
[14] Ashish Aswal, Mohini Kalra and Abhiram Rout; Preparation and evaluation of polyherbal cosmetic cream; Der Pharmacia Lettre, 2013; 5(1): 83-88.
[15] Vinod K.R, Santhosha D, Anbazhagan. S; Formulation and Evaluation of PiperineCreama New Herbal Dimensional Approach for Vitiligo Patients; Int J Pharm Pharm Sci, 2011; 3(2): 293.
[16] Dr. C. K. Kokate, A. P. Purohit, S. B. Gokhale, Pharmacognosy Text Book, Nirali Publication. S
[17] Rasheed SA, Shama N, Mohanlakshmi S, Ravichandran V. Formulation, characterization and in vitro evaluation of herbal sunscreen lotion. Orient Pharm Exp Med 2012; 12:241-246.
[18] Kale S, Kavade E, Uadav AV. Formulation and in-vitro evaluation for sun protection factor of Crinum asiaticum linn flower Extract Sunscreen Creams. Indian Journal of Pharmaceutical Education and Research 2012;46(2):112119.
[19] Hardik SK, Gandhi VJ, Bhatt SB, Shah UD, Shah VN. Evaluation of safety and efficacy of polyherbal fairness cream. International Research Journal of Pharmacy 2011; 2(1):99- 103. 21.Reddy AKG, Saranya SC, Kumar ACK. "Wound healing potential of Indian medicinal plants". Int J Pharm Rev Res. 2012; 2(2):7587.