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Research Article

Formualtion and Evaluation of Polyherbal Vanishing Cream of Ethanolic Extract of Crude Drugs

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ABSTRACT

In the present study, Polyherbal oil-in-water vanishing cream was formulated based on the anti- fungal potential of turmeric, aloe vera, kachora plant, linseed, long pepper, nagarmotha, nutmeg, and wheat grain. All herbs were extracted by using the maceration method with ethanol as solvent.The prepared vanishing cream was then evaluated for various parameters, and results were obtained within acceptable values. The prepared vanishing cream was found stable & firm duringthe stability studies performed as per the ICH guidelines. Results have shown that the prepared cream showed good stability. It can be concluded that the prepared polyherbal vanishing cream was pleasing, simply washable without side effects, and can be utilized to protect the skin.

Keywords: Crude Drugs, Emulsion, Ethanolic Extract, Polyherbal, Stability, Vanishing Cream

INTRODUCTION

Now-a-days herbal extracts are used in the cosmetic preparations for augmenting beautyand attractiveness. Herbal cosmetics areclassified 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] Cream is a semisolid emulsion intended for application to the skinor mucous membrane. They are divided into two types: Oil-in-water (O/W) and Water-in-oil (W/O). Oil in water creams which are composed of small droplets of oil in water phase, whereas the Water in oil creams is composed of water dispersed in a continuousoily phase. Oil in water cream is more comfortable and cosmetically acceptable as they are less greasy and more easily washed off using water. Water-in-oil creams are moredifficult to handle but many drugs which are incorporated into creams are hydrophobic and will be released more readily from a water-in-oil cream than an oil-in-water cream. Water-in-oil creams are also moremoisturizing as they provide an oily barrier which reduces water loss from the stratum corneum, the outermost layer of the skin. Some examples of oil-in-water creams are: vanishing creams, lotions, milk, etc. Some examples of water-in-oil creams are: cold cream, cod liver oil, butter, etc. [6]

A low-fat moisturizer that disappearsinto the skin is called as a vanishing cream. It softens skin, leaving nothingbehind Vanishing cream are o/w emulsion-based preparations containing aqueous phase and oil phase. These preparations are stearic acid based and part of the stearic acidis emulsified with an alkali and rest ofthe stearic acid is emulsified with thissoap in large quantity of water. [11]

The main advantage of applying topical emulsions (creams) is that they increase the solubility as well as the ability to favour the topical transport of hydrophilic solute. Exposure to UV radiations result in skin damage through several mechanisms such as dimer formation and enhancing inflammatoryreactions.[8]

The cosmetic products are the best choice to reduce skin disorders such as skin aging, skin wrinkling, hyper pigmentation and rough skin texture etc. The usage of synthetic products becomes very harmful from long time for the youth as well as our environment. Various synthetic compounds, chemicals, dye and their derivative proved to cause various skin diseases having numerous side effects. The value of herbs in the cosmeceutical making has been extensively improved in personal care system and there is a great demand for the herbal cosmetics. Thus, we are using herbal cosmetics as muchas possible [14]. The basic idea of skin care cosmetic lies deep in the Rigveda, Yajurveda, Ayurveda, Unani and Homeopathic system of medicine. These are the products in which herbs are used in crude or extract form. These herbs should have varieties of properties like antioxidant, anti-inflammatory, antiseptic,emollient, antiseborrhatic, antikerolytic activity and antibacterial etc [7]. The wordherbal is a symbol of safety in contrast to thesynthetic one which has adverse effects on human health.

This vanishing herbal cream consists of various crude drugs such as Aloe (*Aloe vera)*, Kachora plant (*curcuma caesia)*, Linseed (*linum*

usitatissimum), Long pepper (*Piper longum)* Nagarmotha plant (*Cyperus scariosus)*, Nutmeg (*Myristica fragrance)*, Turmeric (*Curcuma longa)*, Wheat grain (*Triticum aestivum)*.

These creams are generally o/w type emulsion consisting of stearic acid, an alkali (form soap), a polyol (skin softening agent), and water. Glycerine is a non-toxic polyol compound widely used in giving smoothnessand lubrication to pharmaceutical formulation. Stearic acid is a fatty acid(saturated) utilised in the manufacture of detergents, soaps and cosmetics. Potassium hydroxide is an inorganic compound used to prepare the corresponding the potassium soaps. Methyl paraben is used as the preservative. [12]

MATERIALS AND METHODS

Materials Used

The crude drugs utilized in the preparation of polyherbal vanishing cream are listed in theTable No.1. They were obtained from the local sources. They were crushed, powdered, and sieved toget a uniform powdered mixture. Other excipients used are Stearic acid, Glycerine, Potassium hydroxide, and Methylparaben obtained from respective suppliers. [11,5]

Method of Preparation

The formulation of the vanishing cream is given in Table No. 2

Preparation of Alcoholic Extract ofCrude Drugs

Each powdered crude drug, weighing 5 gm was taken into an Iodine flask, 100 mL of Ethanol was added to it and sealed. The mixture was subjected to maceration for 5 days. After 5 days, the above mixture was filtered and the filtrate was concentrated at 60ºC for an hour and kept in a tight container.

EXTRACTION PROCESS

Preparation of Vanishing Cream Preparation of vanishing cream involves three steps,

1. *Preparation of Oil Phase:* 17% stearic acid, 0.5% Potassium hydroxide, 0.5% sodium caronate was mixed thoroughly into porcelain dish vigorously by melting at 70°C.
2. *Preparation of Aqueous phase*: 4.5% of Ethanolic extract of crude drugs, 6% Glycerine and 71% of water were taken into another porcelain dish and heated at 70°C.
3. *Addition of Aqueous to Oil phase:* The aqueous phase was mixed with the oil phase with constant stirring at 70°C. Once the transfer was done, it was cooled down to room temperature followed by the addition of 0.5% perfume. The final product was then transferred to a suitable air tight container. [10]

Evaluation of Polyherbal Vanishing Creams

Vanishing creams after formulation, may experience physical and chemical changes that may alter their stability. Therefore, the vanishing creams ought to be assessed for their stability before dispensing to ensure their stability all through their shelf-life.Evaluation of vanishing creams can be done by the following tests. [2,3,12]

Organoleptic Evaluation

The properties of formulation used in the polyherbal vanishing cream were deliberated by quality, visual appearance, and characteristics. The cream was observed for colour, odour, and appearance**.**

Presence of Unwanted Substances

A small quantity of cream was spreadon a grease-free glass slide andobserved against diffused light to make sure the presence of foreign particles.

Strength of pH

The cream was weighed accurately 5± 0.01g and dispersed with 45ml of water taken in a 100 ml beaker. The pH of the formulation was determined using a digital pH meter at 27°C temperature.

Spreadability Study

Spreadability is an important criterionfor semisolid dosage form as the therapeutic effectiveness of these formulation depends on their spreading value. It is defined as the area on the skin to which on the application of the cream is readily spreadable. Spreadability is expressedin terms of seconds. It is performed bytaking the cream in between two slides to slip off from each other, under the influence of a definite load. A good cream formulation will take less time for the separation.

Two glass slides of standard dimensions were taken, and a small amount of prepared cream was placedon one of the slides. The other slide was sandwiched between the two slides by inserting it on the top of theformulation across the length of 5 cmalong with the slide. A weight of 100g was exerted on the upper slide so that the prepared cream was pressed consistently to form a thin layer. The weight was then removed, and the remaining cream remained to attach to the slides were eradicated. One of slides was fixed on which the cream was placed, and subsequent portable slide was placed over it, with one endattached to a string to which burden could be applied by the assistance of a straightforward pulley and a pan. A 30 g weight was put on the pan and the time taken for the upper slide to venture to travel the distance of 5 cm and separate away from the lower slide under the direction of the weightwas noted. The spreadability was determined by using the formula as follows:

$$\text{Spreadability (S)} = \frac{M \times L}{T}$$

Where, M = weight (gm) tied to upperglass slide

L = length (cm) moved on a glassslide

T = time taken (sec)

Determination of Type of Emulsion (Dilution Test)

In the dilution test, a prepared emulsion cream was diluted with oil and water. The cream was diluted first with water, and if the formulation cream remains stable, it is regarded as o/w emulsion cream. Next, the creamwas diluted with oil; if the emulsion breaks, it is w/o emulsion as oil is not miscible with water. The prepared polyherbal vanishing cream was found to be o/w type.

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 asthe water is in the external phase and the dye will dissolve in it to givecolour. If the scattered globules appear red and continuous phase colourless, 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.

Accelerated Stability Studies

Accelerated stability studies were performed on based on the ICH guidelines on the prepared formulation by maintaining the room temperature for 30 days. During the stability studies the parameters like Appearance, Colour, Odour, Strength of pH, Skin Irritation Test and Unwanted Substances were studied.

RESULTS AND DISCUSSION

The prepared polyherbal vanishing cream was evaluated for the different parameters and the results are tabulated in Table 3. The prepared polyherbal vanishing cream produces uniform distribution, which was established by visual detection and touch. The pH of the prepared polyherbal vanishingcream was found to be 6.10, which is superiorfor every type of skin.

The spreadability of the prepared polyherbal vanishing cream was found to be 13.63g cm/sec S = 30×5 = 13.63g cm/sec 11. The prepared polyherbal vanishing cream was found to be oil in water (o/w) type of emulsion. The prepared polyherbal vanishing cream was found to be Oil in Water (o/w) type of emulsion.

The accelerated stability studies were carriedout for the prepared polyherbal vanishingcream and the results are tabulated in table no.4. Cream was evaluated for the parameters like Appearance, Colour, Odour, and Strength of pH, Skin Irritation Test and Unwanted substances.

Common name	**Biological source**	**Family**	**Part used**	**Chemical constituents**	**Primary use**	**Other uses**
Aloe	Aloe vera	Xanthorrho-eaceae	Leaves	Acetylated mannans, Anthraquinone, Anthrones, Emodin, Lectins, Protein, Calcium, Magnesium, Zinc, Vitamins A, E & C	Anti-aging	Burns, eczema immune system, hay fever, maintain the tone of blood vessels, rejuvenate old tissues, support healthy skin
Kachora plant	*Curcuma caesia*	Zinziberaceae	Rhizome	Camphor, Turmerone Curcumene, 1,8-Cineole, Elemene, Borneol, Curcumene, Terpenoids, Flavonoids, Steroids	Rubifacie-nt	Aromatic, anthelmintic, antipyretic, alexiteric, leucoderm, bronchitis, tumors, skin diseases, sprains, bruises, dermatitis, ulcer, and wounds
Linseed	*Linum Usitatissimum*	Liliaceae	Seeds	Acyanogenet-ic glycosides (linamarin), fixed oil, mucilage, enzyme (linase)	Fatty Material	Liniments, lotions, curing scabies, skin disease,in manufacturer of soap, grease, polymer, plasticizer, polish and linoleum
Long pepper	*Piper longum*	Piperaceae	Dried fruiting spikes	Alkaloids piperine, piplartine and piplasterol, essential oil, pungent resin	Antioxidant	Diseases of respiratory tract & spleen, bronchitis, tumors

Nagarmotha Plant	*Cyperus scariosus*	Cyperaceae	Tuber	Cypriol, cyperene, α-copaene, caryophyllene oxide	Antioxidant	Nausea, fever, inflammation, pain reduction, muscle relaxation, soap making
Nutmeg	*Myristica fragrance*	Myristicaceae	Dried kernelsof the seeds	Volatile oil, fat Myristicin, elimicin, safrole, palmitic acid, oleic acid, lauric acid	Antioxidant	Aromatic, stimulant, carminative
WheatGrain	*Triticum aestivum*	Gramineae	Fully grown grains	Starch	Nutrients	Absorbent, demulcent, disintegrating agent, Binder, lubricant, Diluents
Turmeric	*Curcuma longa*	Zinziberaceae	Rhizomes	Curcuminoid Curcumin Volatile oil Fixed oil Acids	Anti-Bacterial	Anti-Inflammatory, Anti-microbial, Stimulant, Pains, in Cosmetics

Table No 1: Herbal Ingredients details

Aloe Vera

Kachora

Linseed

Long pepper

Nutmeg

Nagarmotha

Wheat grain

Turmeric

Figure 1: showing herbs used in formulation of polyherbal vanishing cream

Ingredients	Quantity (%)	Uses
Polyherbal extract	4.5	Anti-fungal
Stearic acid	17	Emulsifying agent
Glycerine	6	Humectant
Potassium hydroxide	0.5	Alkali
Water	71	Vehicle
Perfume	0.5	Flavouring agent

Table No.2 Ingredients Details

Formulation Sample

Preparation of Internal phase

Preparation of Aqueous phase

Polyherbal oil Vanishing cream

S. No	Parameters	Observation
1	Colour	Pale yellow
2	Odour	Characteristic
3	Appearance By visualBy touch	Homogeneous Smooth and Consistent
4	Unwanted substanceS	Absent
5	Strength of Ph	6.10
6	Spreadability	13.63g.cm/sec
7	Type of Emulsion	o/w type
8	Dye Solubility Test	o/w type of Emulsion

Table No. 3: Evaluation of Vanishing Cream

S. No	Parameter	Observation
1	AppearanceBy Touch By Visual	Smooth and Consistent Homogenous
2	Colour	Pale Yellow
3	Odour	Characteristic
4	Strength of Ph	6.10
5	Unwanted Substances	Absent

Table 4: Accelerated Stability Study

CONCLUSION

The present work focuses on the potential of combining various herbalcomponents to get a multipurpose effect on the skin for cosmetic purposes. The uses of cosmetics have been increased in the personal care system, and the bioactive ingredients in it influence the biological functions of skins. The prepared formulation is devoid ofany phase separation activity, showed good spreadability and consistency during the entire study period. The prepared formulation is devoid ofany phase separation activity, showed good spreadability and consistency during the entire study period. Various parameters, such as visualappearance, nature, and fragrance of the formulations further elaborated that there was no significant variationduring the study period. These studies suggest that thepolyherbal composition of extract andbase of vanishing cream are stable and safe without side effects due to the presence of many natural compounds. Further studies are required for verifying the synergistic potential of selected scientifically Polyherbal vanishing cream formulation.

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