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DESIGN AND EVALUATION OF POLY HERBALCREAM

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ABSTRACT

Cosmetics crafted from either natural or synthetic additives are almost in ordinary use universally in many one of kind forms for enhancing the splendor. *Azadirachta indica, Tridox procumbens, Ocimum sanctum, Curcuma longa, Aloe vera and Glycyrrhiza glabra* are medicinal plants; those flora are used traditionally from historic years in diverse herbal medicinal systems including Ayurvedic, Homeopathic and Siddha. The dried leaves of Azadirachta indica and dried leaves of Tridox and Curcuma have antibacterial, anti inflammatory analgesic pastime. The existing studies are targeted at the method of polyherbal cream and their assessment with the aid of the use of diverse evaluation parameters.

KEYWORDS: Herbal extracts, Poly herbal formulation, *Aloe vera, Tridox procumbens, Curcuma longa.*

INTRODUCTION

Cream formulation was semisolid formulations intended for topical application. The cream formulations were prepared by using various herbal extracts, herbal oils, and various excipients. Cosmetic products are used for the protection of skin from various endogenous and exogenous harmful agents along with enhancing the beauty and making skin attractive. (Saraf S, Kaur CD., 2010). The only use of cosmetic is not developing an attractive external appearance but also achieving longevity of good health by reducing skin disorders. (Akhtar N et al., 2010). The cosmetics which are meant for skin care nourishes the health texture and moisturizes the skin. [(Ashawat MS et al., 2009). Polyherbal cream is a semisolid formulation intended for topical application. The cream formulation is prepared by using various herbal extracts, almond oil and various excipients. (Ashwini S et al.,20140. *Tridax procumbens* showed rapid regeneration of skin along with collagen turnover. (Talekar Y.P et al., 2012). The secondary metabolites which are present in the plants taken will support the strength, texture and integrity to skin along with the moisturizing of skin and maintaining its elasticity. (Kumar, D et al., 2016a)Thus, the presence of herbal ingredients in skincare formulation helps reduce the production of free radicals in the skin and maintain for a long time. Active ingredients delays skin aging by reducing the wrinkles, protect against UV radiation by antioxidant property. [7]Several studies have shown the medicinal plants as the valuable alternative herbs for cosmetic purposes due to therapeutic properties complied with Ayurveda. The secondary metabolites of plant present in the skincare products support the strength, integrity and texture of the skin, while moisturize and maintain the elasticity of the skin by providing photo protection and reducing collagen degradation. (Rousseaux, C.G., et al., 2003) Thus, the presence of herbal ingredients in skincare formulation helps reduce the production of free radicals in the skin and maintain for a long time. Active ingredients delay skin aging by reducing the wrinkles, protect against UV radiation by antioxidant property. A plethora of research have claimed that, skincare products get therapeutic benefit by the addition of plant-based active ingredients such as alphahydroxy acid, retinoic acid, ascorbic acid, and coenzyme Q10. This approach was designed to develop a novel herbal formulation with the basic composition of antioxidant-rich herbal extract for skincare products.

MATERIAL AND METHODS

Table 01: Materials and Source.

S. No.	Material	source
1.	Azadirachta indica	VCPS Campus
2.	Curcuma	VCPS Campus
3.	Aloe vera	VCPS Campus
4.	Ocimum sanctum	VCPS Campus
5.	Tridox procumbens	VCPS Campus

6.	Glycyrrhiza glabra	VCPS Campus
7.	Stearic acid	VCPS Campus
8.	White bees wax	VCPS Campus
9.	Cetyl alcohol	VCPS Campus
10.	Propylene glycol	VCPS Campus
11.	Glycerin	VCPS Campus
12.	Methyl paraben	VCPS Campus
13.	Propyl paraben	VCPS Campus
14.	Water	VCPS Campus

All chemicals and solvents used were of analytical grade

Extraction of the selected plants:

Soxhlet extraction or hot continuous extraction: In this method, finely ground sample was placed in a porous bag or "thimble" made from a strong filter paper or cellulose. Extraction solvent i.e. methanol was heated in the bottom flask, vaporizes into the sample thimble, condenses in the condenser and drip back. When the liquid content reaches the siphon arm, the liquid contents emptied into the bottom flask again and the process was continued. The final methanolic extract is collected.

Method for preparation of Polyherbal Cream (Prashant C., Mallinath K., et al., 2020.)

1. Add the required quantity of Borax in sufficient amount of water and prepare a solution by heating on water bath.
2. In the above solution, add required quantity of selected plant extracts. [Solution 1]
3. Weigh accurately almond oil and add into beeswax contained in a china dish, melt to prepare a proper solution. [Solution 2]
4. Add Solution1 drop wise into Solution2. When both the phases get mixed properly, add methyl paraben as preservative.
5. The formulated Polyherbal Cream was kept aside for about an hour in cool and dry place indirect to sunlight till it sets completely and was used after 48 hours after keeping at room temperature for stability and analytical testing.

Table 02: Composition of poly herbal cream.

Sr. No.	Ingredients	Quantity taken	Role
1.	Curcuma	10gm	Anti-inflammatory
2.	Aloe vera gel	1mL	Emollient
3.	Neem leaves extract	2gm	Antibacterial
4.	Ocimum sanctum	1gm	Anti microbial
5	Tridox procumbens	2gm	Wound healing property
6.	Bees wax	3.2gm	Humectant
7.	Borax	0.16gm	Emulsifier
8.	Methyl Paraben	0.02gm	Preservative
9.	Water	6mL	Vehicle
10.	Perfume (Rose water)	q.s.	Fragrance

Evaluation of Polyherbal Cream The evaluation of herbal cream was following.

1. Physical evaluation (Ruhil P et al.,2018)

Formulated herbal cream was further evaluated by using the following physical parameters: Color, Odour, Consistency, and state of the formulation.

a) Colour: The colour of the cream was observed by visual examination.
b) Odour: The odour of cream was found to be characteristics.
c) Consistency: The formulation was examined by rubbing cream on hand manually. The cream having smooth consistency. Cream did not leave greasy substances on skin surface after application.
d) State: The state of cream was examined visually. The cream having a semisolid state.
e) PH-The pH of prepared herbal cream was measured by using digital pH meter. The solution of cream was prepared by using 100 ml of distilled water and set aside for 2 h.

2. Spreadability (SK Uddandu Saheb., 2018)

Spreadability of formulated cream was measured by placing sample in between two slides then compressed to uniform thickness by placing a definite weight for a definite time. The specified time required to separate the two slides was measured as Spreadability.

Spreadability was calculated by the following formula:

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

Where, S= Spreadability M= Weight tide to the upper slide L= Length of glass slide T= Time taken to separate the slides.

3. **Wash ability:** Formulation was applied on the skin and then ease extends of washing with water was checked.

4. **Non-irritancy test:** Herbal cream formulation was evaluated for the non-irritancy test. Observation of the sites was done for 24 h. (Shukla R, Kashaw V., 2019)

5. **Viscosity:** Viscosity of cream was done by using Brooke field viscometer at the temperature of 25°C using spindle no. 63 at 5rpm.

6. **Phase separation:** The prepared cream was transferred in a suitable wide mouth container. Set aside for storage, the oil phase and aqueous phase separation were visualizing after 24h. (Miller, J.N., & Rice-Evans, R.C., 1997)

RESULTS

Table 03: Evaluation of polyherbal cream.

Sr. no.	Evaluation	Result
1.	Physical evaluation	-
	Colour	Creamy White
	Odour	Pleasant
	Consistency	Smooth
	State	Semisolid
	pH	6.8
2.	Spreadability	7.8g.cm/sec
3.	Wash ability	Easily washable
4.	Non-irritancy test	Non-irritant
5.	Viscosity	11040cp
6.	Phase separation	No phase separation

DISCUSSION

The main focus of this study was to formulate and evaluate polyherbal creams using different evaluation parameters. This cream formulation is o/w emulsion; therefore it was easy to wash with ordinary water after application This prepared formulation has good Spreadability Its viscosity and pH are in range It is not greasy It is easy to remove after application It is non irritant It does not harm your skin The prepared cream does not show phase separation while stored.

CONCLUSION

We have successfully formulated Herbal skin cream for wound healing that meets the relevant pharmaceutical properties. Good Spreadability, No phase separation, and good consistency were observed in the prepared formulations. Stability parameters (Visual appearance, Nature, Viscosity, and pH) showed that there were no significant variations during study period. Correct pH range (approximately pH 6) was observed in prepared formulations confirming compatibility with skin secretion. Creams were stable during ICH stability study for 3 months according to the ICH guidelines. From this study, we can conclude that herbal extracts can be developed to be used as barrier to protect the skin and plants are more effective healers as they stimulate the repair mechanism naturally. We have yet to experiment with the wound healing properties of formulated herbal skin creams and will do so in the future.

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Conflict of Interest

We, the authors, declare that we do not have any known conflicts of interest or any personal relationships that may have had an effect on the work presented in this paper.

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