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FORMULATION AND EVALUATION OF HERBAL FACE CREAM

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ABSTRACT

Creams from natural sources are considered as safer as compared to synthetic preparations. They are mainly formulated by using natural ingredients with less side effects and with more skin glowing and skin whitening properties. The primary aim was to formulate and evaluate herbal face cream. The Face cream was developed with cold cream principle. It was formulated with Rice powder, aloe vera powder and turmeric powder in different concentrations. The various quality control parameters like physical evaluation, acid value, saponification value, pH, spreadability, washability were evaluated to arrive at the ideal formulation. The results showed that the ingredients give more stable product with good characteristics. As compared with different batches of the developed formulations, the formulation F5 met all the parameters and thus selected as the ideal formulation. Thus the development may be acceptable by the cosmetic lovers.

KEYWORDS: Herbal face cream, rice powder, aloe vera, Spreadability.

INTRODUCTION

Face is the central part of the world of cosmetics, as it is the canvas on which different beauty treatments and products work together to enhance one's appearance. Face cosmetics.[1] include a large variety of products for cleansing, hydrating, protecting, and beautifying the skin. The products helps to enhance the skin tone, texture, and luminosity as they address various skin problems or issues such as acne, wrinkling, and uneven tone. Application of cosmetics on the face has since developed quite a lot; there is innovation not just in beautification but even in protection for skincare, moisturizing, protection from UV, and even anti-aging benefits. Whether for everyday use or special occasions, face cosmetics help one express oneself, feel more confident, and keep one's skin healthy and radiant. Creams are semi-solid emulsions constituted by mixtures of water with oils, among other ingredients, for topical use on the skin. Cosmetic, pharmaceutical, and personal care industries mainly make use of them because of their moisturizing, soothing, and healing properties.[2] Normally, creams are designed in such a way that they deliver active ingredients effectively and also provide a smooth and pleasant texture for the user. Herbal face creams are generally made from natural, plant-based ingredients and are gentle but effective at nourishing, protecting, and treating the skin .Herbal facial creams, more so, a safer option to artificial cosmetics by using natural components with less side effects. Rice powder and aloe vera have been proven to possess desirable properties such as hydration, anti-aging, and soothing properties.

BENEFITS OF HERBAL FACE CREAMS OVER CHEMICAL FACE CREAMS[3,4]

Herbal face creams are derived from plants, which are less likely to irritate or cause allergies compared to synthetic chemicals .Herbal creams are normally gentle and can be used for sensitive skin, while some chemical-based creams can cause dryness, redness, or even inflammation. Some of the benefits are,

- Herbal creams are generally more environmental friendly, with natural ingredients that are biodegradable and from sustainable sources. Nourishing: Herbal face creams give your skin the necessary vitamins, antioxidants, and nutrients from plant extracts to make your skin healthier and glowing.
- Safer for All Skin Types: Herbal face creams are usually safe for all skin types, including sensitive, acne-prone, or oily skin, while chemical creams could be quite harsh on these skin conditions.
- It is Suitable for sensitive skin.
- It moisturizes the face and avoids dryness.

- It provides a soothing effect..
- It whitens the complexion and reduces dark spots.
- Absence of chemical or artificial fragrances it is safe
- It Supplies necessary vitamins and nutrients for healthy skin.
- Anti-aging benefits: Most of the herbal ingredients, such as green tea and turmeric, have antioxidants that protect the skin from free radical damage and combat signs of aging, while chemical creams may not be able to provide the same protective benefits.

This work aims at formulating and assessing a natural face cream using rice powder and aloe vera[14] powders as the principle ingredients. The formulation developed with the cold cream principles. Different ratios of active ingredients incorporated to get a series of batches and evaluated to identify the ideal formulation.

MATERIALS AND METHODS

In formulating natural face cream, ingredients were selected as of cosmetic grade. For a perfect and clear preparation, selection of chemicals also very important. Here the key ingredients rice powder and aloevera powder were purchased from Khadi naturals, Newdelhi. Coldcream ingredients were purchased from Isochem Laboratories, Kochi. All other ingredients are of analytical grade. Brookfield viscomenter, digital balance and other equipments, instruments utilized here are of laboratory grade.

METHODOLOGY

The formulation of natural face cream was done with the help of cold cream principle.[5] The emulsion was prepared by incorporating the fatty phase and aqueous phase. The active ingredients were made in a solution and the two phases were mixed thoroughly until attaining the room temperature from 70^{o}C. Preliminary formulation was attempted to optimize the cold cream base and tried for incorporation of active ingredients. Two methods were adopted for the preparation of the face cream.[61] one is, powder were uniformly dispersed in the oily phase and the other is, powder were uniformly dispersed in the aqueous phase. To this added the preservative, perfume and packed in a wide mouth well closed container. The formulations were done as per the quantities specified in the formulation chart and given the identity for each formulation.

The same manner was repeated for other formulations as described in Table No: 1

Table No:-1 Formulation Chart of Natural Face Cream.

Sl.NO	INGREDIENTS	FORMULATION IDENTITY (In Percentage)					
		F0	F1	F2	F3	F4	F5
1	RICE POWDER	0	1	1.5	2	2.5	3
2	ALOE VERA POWDER	0	1	1.5	2	2.5	0.5
3	TURMERIC POWDER	0	1	1.5	2	2.5	0.5
4	BEESWAX	6	6	6	6	6	6
5	LIQUID PARAFFIN	10	10	10	10	10	10
6	ALMOND OIL	30	30	30	30	30	30
7	BORAX	4	4	4	4	4	4
8	ROSE WATER	40	40	40	40	40	40
9	METHYL PARABEN	0.05	0.05	0.05	0.05	0.05	0.05
10	VITAMIN E	10	10	10	10	10	10
11	LAVENDER OIL	qs	qs	qs	qs	qs	qs

Evaluation Parameters

1. Physical Characteristics:

Physicochemical characteristics[6] of the formulated creams were done with the help of the different organoleptic characteristics of the formulations. It includes uniformity in color, its fragrance and texture of the cream.

2. Determination of pH

The digital pH meter was calibrated with the help of standard buffer solution.[7] 0.5 gm of cream was dissolved it in 50 ml of distilled water and its pH was measured with the help of digital pH meter. The average values were recorded.

3. Viscosity

Viscosity[8] of the cream was determined with the help of Brookfield viscometer at 20 rpm with the spindle no. LV-4(64). All the formulations were undergone for this test and the values were tabulated. It is represented in Fig No.1

Fig No:1 Viscosity determination by Brookfield viscometer.

5. Spreadability[9]

The cream was applied between the two glass slides and was compressed between the two-glass slide for a uniform thickness by placing 100 gm of weight for 5 minutes. The time in which the upper glass slide moved over the lower slide was taken as a measure of spread ability. It is represented in Fig.No.2

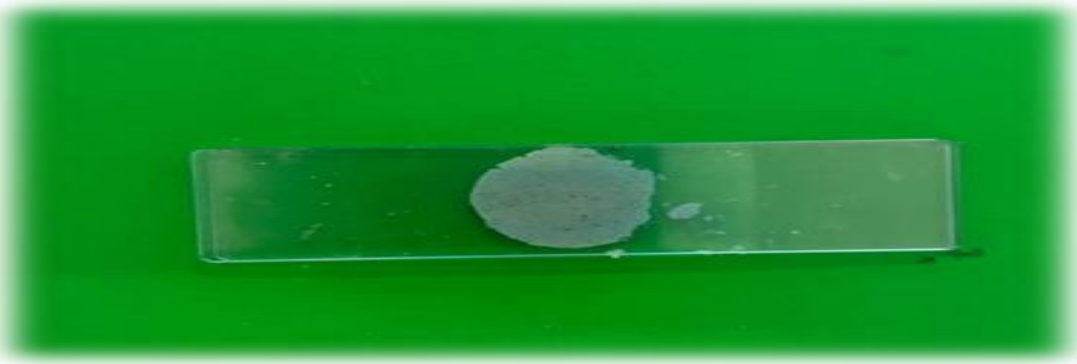

Fig No:2 Spreadability test of the formulated cream.

6. Saponification value[10]

Accurately weighed 2 gm of the cream was taken and reflux it with the 25 ml of 0.5 N alcoholic KOH for 30 minutes. Then add 0.1 ml of phenolphthalein as an indicator and titrate it with the 0.5 N HCl to identify the saponification value.

7. Determination of Acid Value[11]

Weighed 10 gm of the cream was dissolved in 50 ml mixture of the equal volume of alcohol and solvent ether. Then attached the flask with the condenser and reflux it with the slow heating until the sample gets completely dissolve then add 1 ml of phenolphthalein and titrated with 0.1 N NaOH until it gets faint pink color appears after shaking in 20 seconds.

8. Dye test[12]

The scarlet red dye was mixed with the face cream and a drop was placed on a microscopic slide then covers it with a cover slip and examined with the help of a microscope. The dispersed globules appeared as colorless and the background was found as red in color.[13] It proved that the cream is w/o type.

The tabulated evaluation parameters presented in Table No: 2

Table No: 2: Tabulated evaluation parameters of the formulated face cream.

Sl. NO	EVALUATION PARAMETERS *				
	FORMULATION IDENTITY	pH	Viscosity (mPA)	Saponification value (mgKOH/gm)	Acid Value (mgKOH/gm)
1	F0	6.02 ±0.75	32094 ±0.21	30.23 ±0.05	3.34 ±0.69
2	F1	5.4 ±0.22	28086 ±0.19	25.25 ±0.93	4.31 ±0.28
3	F2	5.9 ±0.17	28086 ±0.19	25.22 ±0.96	4.47 ±0.44
4	F3	5.11 ±0.15	30524 ±0.05	24.16 ±0.02	5.14 ±0.11
5	F4	5.17 ±0.09	30580 ±0.02	25.13 ±0.05	3.52 ±0.51
6	F5	5.14 ±0.12	30566 ±0.03	27.11 ±0.93	3.45 ±0.48

*Average of three observation ± SD

RESULTS AND DISCUSSION

The aim of this work was to formulate a natural face cream using natural ingredients. The formulation was proceeded with cold cream principle and different batches (F0 to F5) were formulated with varying the ratios of key ingredients. The formulations were evaluated against different parameters to identify the ideal formulation. All the formulations were tested for its organoleptic properties, pH, Viscosity, Spreadability and dye tests. The results were tabulated to identify the ideal formulation.

Organoleptic properties of the formulations were done and all the formulations have acceptable colour, pleasant fragrance. This enhances the customer acceptance. The pH of the formulations were evaluated and ranged from 5.11 to 5.9, this indicates that all the cream have the compatible pH of skin. The acid value of the creams were done and the value ranges from 3.45 to 5.14 mgKOH/gm, this indicates that the used fatty base have adequate quality and there was no occurrence of rancidity. The saponification value was found to be between 24.16 and 27.11 mgKOH/gm, this indicates that all the formulated cream have acceptable range of saponification value. Viscosities of the formulations were determined with the help of Brookfield's viscometer. The viscosities of the formulations were found between 28086 and 32094 mPA, indicates that the creams have adequate viscosity.

From all the evaluation parameters, all the formulations have adequate quality and met all the evaluation parameters. From these formulations,F0 stands as control and F1 to F5 are the

creams incorporated with natural ingredients. From the tabulated results, the formulation F5 met all the standard evaluation criteria and was selected as the ideal formulation. This formulation may be a good one for the cosmetic lovers.

CONCLUSION

The primary aim of the work was to formulate a natural face cream with varying amounts of key ingredients. Cold cream principle was adopted for the formulation. The successful development of natural face cream using rice powder and aloe vera powder with good organoleptic characteristics and met all the evaluation parameters. The ideal formulation (F5) satisfied all the evaluation tests, acceptable for cosmetic lovers. Future research can advance with prolonged stability tests and clinical trials to confirm long-term effects of the formulation.

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