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Formulation and evaluation of herbal face cream with Neem, Turmeric and aloe vera extract

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ABSTRACT
The semi-solid face cream is a product used to lighten skin. The current research work's objectives were to create and assess a herbal face cream that contains neem extract, turmeric, and aloe vera gel as a skin toner. In comparison to synthetic creams, herbal creams have a number of benefits. The majority of creams currently on the market are made from medications with a synthetic origin and increase facial fairness, but they also have a number of undesirable side effects, including itching and allergic reactions. These adverse effects are not present in herbal creams, which nourish the skin without them. Herbal cream was made using the disappearing cream formulation technique. First, the oil phase and then the aqueous phase was made ready. Then, while stirring continuously at 700 c, the aqueous phase was added to the oil phase. As soon as the transformation was over, it was permitted to cool to room temperature while being stirred. Just before the finished product was transported to the appropriate container, perfume was added last. The aforementioned herbal cream was assessed based on factors like pH, homogeneity by sight and touch, appearance (colour), rub out (ability to spread, wetness), washability, consistency, and emollience. According to the study, the extract and cream F1's base has a more stable and secure composition.

Keywords: Neem extract, aloe vera gel, turmeric, vanishing cream

I. INTRODUCTION

Creams are semisolid emulsions that are intended to be applied to the skin or mucous membranes. A low-fat moisturizer that absorbs into the skin is a disappearing cream. It softens and moisturizes the skin without leaving a greasy behind. [1]. Emulsion-based o/w treatments having an aqueous and an oil phase are known as disappearing creams. [2] Herbal extracts are now frequently used in cosmetic products to improve attractiveness and appearance. Based on the dosage form (cream, powder, soaps, solutions, etc.) and the body part or organ to which they will be applied, there are many kinds of herbal cosmetics (cosmetics for skin, hair, nail, teeth, and mouth, for example). [3]

Depending on the ratio of water to grease, the cream can either be water-miscible and easily removed or thick and sticky. It's definitely the topical drug that is suggested the most. Due to the fact that it is less greasy, dirty, and sticky, most patients prefer it. [4] Prior to the birth of the allopathic medical system, traditional medical systems that had developed over centuries were in charge of the world's healthcare. The latter strategy was swiftly embraced by consumers and presently has a dominant position in the healthcare industry because it depended on contemporary biology and chemistry for both research and therapy. [5]

Despite this, traditional medicines—typically polyherbal—are becoming more and more popular because people believe they are safe in contrast to single-molecule-based modern pharmaceuticals used in the allopathic system, which can have serious negative effects. [6] Sunlight exposure has been identified as a key factor in the aetiology of the skin's progressive unfavourable appearance changes. [7] The skin can be shielded against the damaging effects of UV radiation brought on by an excessive generation of reactive oxygen species by the use of photo chemoprotective chemicals. [8]

II.MATERIALS AND METHODS

Collection of Herbs and Chemicals

Herbs

All the herbs were collected from plant nurseries in the region of Perinthalmanna and dried.

Chemicals

Stearic acid (Nice chemicals Pvt. Ltd Kochi)- an emulsifier, Cetyl alcohol (Ultra pure lab chem industries LLP Maharashtra)- an emulsifier, Potassium hydroxide (Nice chemicals Pvt. Ltd Kochi)- Modulate pH, Sodium carbonate (Nice chemicals Pvt. Ltd Kochi).

Preparation of Herbal Extracts[7-10]

Ethanolic Extract ofleaves of Azadirachta indica (neem), Curcuma longa (turmeric) and whole plant

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of Aloe berbadandis (Aloe Vera) was prepared by soxhlet Extraction Method using a water condenser.

Preparation of oil phase:

Stearic acid, cetyl alcohol, potassium hydroxide, and sodium carbonate was taken into one porcelain dish and this mixture was melted at 70^0 C.

Preparation of aqueous phase:

Alcoholic extract of crude drugs and add glycerine and triethanolamine were taken into another porcelain dish and heated this mixture at 70^0 C.

Aqueous phase to oil phase addition:

At 70^0 C, the aqueous phase was continuously stirred into the oil phase. Now that the transfer was finished, it was allowed to arrive at room temperature while being swirled the entire time. Just before the finished product was transported to the appropriate container, perfume was added last. Then, several physical characteristics of cream were evaluated.

Formulation of Face cream

Table 1: Formulation of herbal face cream

SL NO.	INGREDIENTS	F1	F2	F3	F4	F5
1.	Stearic acid (gm)	12	14	16	18	20
2.	Cetyl alcohol (gm)	0.1	0.2	0.3	0.4	0.5
3.	Potassium hydroxide (gm)	0.1	0.2	0.3	0.4	0.5
4.	Sodium carbonate (gm)	0.1	0.2	0.3	0.4	0.5
5.	Neem extract (gm)	1	1	1	1	1
6.	Turmeric (gm)	1	1	1	1	1
7.	Aloe vera gel (ml)	2	2	2	2	2
8.	Glycerine (ml)	6	6	6	6	6
9.	Triethanolamine (ml)	0.2	0.2	0.2	0.2	0.2
10.	Water (ml)	Qs	qs	qs	qs	qs
11.	Lavender oil (ml)	0.5	0.5	0.5	0.5	0.5

III. EVALUATION OF CREAMS

pH: After being calibrated, the pH meter was used to take the pH reading in the beaker containing the 20 mg of cream. [9]

Spreadability test: A sandwich of two slides and 500mg of the cream was made. On the upper slide, a 100g weight was put. Both the weight and additional formulation were scraped off. The lower slide was attached to the apparatus's board, and the upper slide was fastened with stiff string to which a 20 g load was given. It was recorded how long it took the upper slide to slip off. [10]

Homogeneity: The test was carried out through hand-to-hand contact. [11]

Appearance: The appearance of the cream was found by observing its colour, opacity, etc.

Viscosity: The viscosity of the cream was tested by brook field viscometer at 60 rpm.

IV. RESULTS AND DISCUSSIONS

The herbal face cream was made utilizing the o/w emulsion method, a combination of alcoholic extracts from crude pharmaceuticals, including neem extract, aloe gel, and turmeric, and produced formulations. It successfully meets all evaluation criteria for colour, odour, pH, spreadability, and viscosity. All of the formulation was puffy yellow in colour, and it smells good. The formulation's pH was in the range of 6.5 to 6.8. The formulas' viscosities vary, ranging from 27030 cp to 28034 cp. From 5 cm/s to 3.3 cm/s, the formulation's spreadability was maintained. Additional research can be done on the cream's stability, dye test, patch test, and skin irritancy test.

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Table 2: Evaluation parameters

SL NO.	PARAMETERS	F1	F2	F3	F4	F5
1.	Colour	Puffy yellow	Puffy yellow	Puffy yellow	Puffy yellow	Puffy yellow
2.	Odour	Pleasant	Pleasant	Pleasant	Pleasant	Pleasant
3.	pH	6.5	6.6	6.74	6.78	6.8
4.	Viscosity	27030cp	27087cp	28019cp	28022cp	28034cp
5.	Spreadability	5 cm/s	4.6 cm/s	4.2 cm/s	3.7 cm/s	3.3 cm/s
6.	Homogeneity	Good	Good	Good	Good	Good
7.	Consistency	Excellent	Excellent	Excellent	Excellent	Excellent

V. CONCLUSION

It has been determined that the current work involved creating a herbal face lotion. The face cream formulation was then analysed using a number of factors, and it was discovered that, in comparison to other formulations, formulation F1 is satisfied. Additional research can be done on the cream's stability, dye test, patch test, and skin irritancy test.

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