



FORMULATION AND EVALUATION ALOE VERA MULTIPURPOSE HERBAL CREAM

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ABSTRACT

To formulate and evaluate herbal cream using Aloe Vera gel, dimethyl sulphoxide extracts of Neem (*Azadirachta indica*) and Tulsi (*Ocimumtenuiflorum*) to give multipurpose effect. The cream was prepared by using the cream base that is bee's wax, liquid paraffin, borax, methylparaben, distilled water, rose oil, Aloe Vera gel, dimethyl sulphoxide extracts of Neem and Tulsi. The cream was prepared by using the slab technique/extemporaneous method for geometric and homogenous mixing of all the excipients and the herbal extracts. By using slab technique, we have developed three batches of our herbal cream, namely F1, F2, F3, F4, All three batches were evaluated for different parameters like appearance, PH, viscosity, phase separation. All the three formulations F1, F2, F3, F4 showed good appearance, PH, adequate viscosity and no phase separation was observed. Also, the formulations F1, F2, F3, F4 showed no redness, erythema and irritation during irritancy study and they were easily washable. All the three All three herbal ingredients showed significant different activities. Based on the results, we can suggest that all the three formulations F1, F2, F3, F4, were stable and can be safely used on the skin.

KEYWORDS: Aloe barbadensis (gel), *Azadirachta indica* (Neem), *Ocimum tenuiflorum*/*Ocimum sanctum* (Tulsi), Herbal cosmetic, Multipurpose crea.

INTRODUCTION

Herbal cosmetic is defined as are the preparation containing phytochemical from a variety of botanical sources which affect the function of skin.

Cream is defined as semisolid emulsions which are oil in water (o/w) or water in oil (w/o) type and these semisolid emulsions are intended for external application oil emulsion.

It is applied on outer part or superficial part of the skin and its main ability is to remain for a longer period of time at the site of application.

The function of a skin cream is to protect the skin against different environmental condition, weather and gives soothing effect to the skin.

There are different types of creams like cleansing, cold, foundation, vanishing, night, massage, hand and body creams.

The main aim of our work is to develop a herbal cream which can give multipurpose effect, like moisturizer, reduce acne and skin irritation, reduce skin diseases like

eczema, psoriasis, dry skin, wrinkles, rashes etc. and also adding glow to the face.

We have used three herbal ingredients in our preparation which are Aloe Vera gel, Neem, Tulsi. Aloe Vera gel is used as a moisturizer, to reduce pimples and acne and also used for treatment of burn wounds.

Neem is used as an antifungal and anti-inflammatory and it is also used to reduce scar, Herbal Cosmetics Herbs are important for their disease prevention and health promotion properties having following advantages which are described below:

pigmentation, redness and itching of the skin.

Tulsi is use to add glow to the skin and promote wound healing.

Herbal Cosmetics Herbs are important for their disease prevention and health promotion properties having following advantages which are described below:

Natural products Herbal cosmetics are natural and free from all the harmful synthetic chemicals which generally may turn out to be lethal to the skin.

MATERIAL AND METHODS

Aleo Vera was received from Botanical Garden solapur. Tulsi, Neem also received from botanical garden.

Beeswax, liquid paraffin, borax, methyl paraben, Almond oil were received from Jinendra scientist, Jalgaon.

Table No: 1

Sr.no.	Ingredients	F1	F2	F3	F4
1	Aloe vera gel	-	1.5ml	1.5ml	1.5ml
2	Neem extract	0.5ml	-	0.5ml	0.5ml
3	Tulsi extract	1.5ml	1.5ml	-	1.5ml
4	Beeswax	3gm	3gm	3gm	3gm
5	Liquid paraffin	10ml	10ml	10ml	10ml
6	Borax	0.2gm	0.2gm	0.2gm	0.2gm
7	Methyl paraben	0.02gm	0.02gm	0.02gm	0.02gm
8	Distilled water	Q.S.	Q.S.	Q.S.	Q.S.
9	Oil	Q.S.	Q.S.	Q.S.	Q.S.

Method of preparation

- Liquid paraffin + beeswax heat in beaker at 75 °c in (oil phase)
- In another beaker borax + methyl paraben in distilled water heat at 75°C to dissolve in borax and paraben (aqueous phase).
- Slowly add aqueous phase to heated oily phase.
- Add measured aloe vera gel + neem + tulsi extract stirr continually to form smooth cream.
- Add few drop soil in this prepared cream.
- Mix this cream on slab and add few drops distilled water to give smooth texture and mix ingredient Properly.

Evaluation of herbal cream**• Irritancy**

Mark the area (1 cm²) on the left-hand dorsal surface. Then the cream was applied to that area and the time was noted. Then it is checked for irritancy, erythema, and any for an inter valup to 24 h and reported.

• Wash ability

A small amount of cream was applied on the hand and it is then washed with tap water. Ph0.5 g cream was taken and dispersed in 50 ml distilled water and then PH was measured by using digital PH meter.

• Phase separation

Prepared cream was kept in a closed container at a temperature of 25-100 °C away from light. Then phase separation was checked for 24 h for 30 d. Any phase separation was checked.

• Spread ability

The spread ability was expressed in terms of time in seconds taken by two slides to slip off from the cream, placed in between the slides, under certain load. Lesser the time taken for separation of the two slides better the spread ability. Two sets of glass slides of standard dimension were taken. Then one slide suitable dimension was taken and the cream formulation was placed on that slide. Then other slide was placed on the top of the formulation. Then a weight or certain load was placed on

the upper slide so the cream between the two slides was pressed uniformly to form a thin layer. Then the weight was removed and excess of formulation adhering to the slides was scrapped off. The upper slide was allowed to slip off freely by the force of weight tied to it. The time taken by the upper slide to slip off was noted. Here the cream was applied on the skin surface in the form of smear and checked if the smear was oily grease-like.

• Viscosity

By Parallel sliding method firstly take the two slide and wight, pour the one drop of formulation at corner of slide. While hold the lower slide fixed by Applying to it an equal and opposite force per unit area. tapped the upper slide to table and attach the wight to thread. Upper slide move slightly and measure these distance and wight attach to slide. divide the distance of sliding move to attach weight.

Formula =displacements/Force

• pH

0.5 g cream was taken and dispersed in 50 ml distilled water and deeped the check electrode into formulation then ph. by using digital ph. Meter.

• stability testing

Stability testing is an integral part of formulation development. Stability testing ensures that drug substance will be safe and effective throughout the shelf-life Stability testing is an integral part of formulation development. Stability testing of the product stability study of the formulated batches of herbal cream were conducted as per ICH guidelines. The accelerated stability study was conducted at temperature of 40±2° C. The aloe vera herbal cream were stored at the temperature 40±2° C for 30 days at RH 75±5%. The aloe vera herbal cream were withdrawn on the 15th and 30th days and evaluated for their physical appearance, viscosity, stability, greasiness, spread ability irritancy.

RESULT AND DISCUSSION

Physical evaluation: this test color, odor texture, and state of the three formulation were checked.

Table 2: In this test color, odor texture and state of three formulation was checked.

Sr.no.	Parameter	F1	F2	F3	F4
1	Color	Faint green	Faint green	Faint green	Faint green
2	odor	Less pleasant	Pleasant	pleasant	pleasant
3	texture	smooth	Smooth	Very smooth	Very smooth
4	state	Semi solid	Semi solid	Semi solid	Semi solid

Irritancy study

Mark the area (1 cm²) on the left-hand dorsal surface. Then the cream was applied to that area and the time was

noted. Then it is checked for irritancy erythema, and edema if any for an interval up to 24 h and reported.

Table no. 3: Irritancy study observation.

Sr.no.	Formulation	Irritant effect	Erythema
1	F1	Nil	Nil
2	F2	Nil	Nil
3	F3	Nil	Nil
4	F4	Nil	Nil

Wash ability

A small amount of cream was applied on the hand and it is the washed with tap water.

Table no. 4: Wash ability observation.

Formulation	Sr.no.	Wash ability
F1	1	Poorly washable
F2	2	Easily washable
F3	3	Easily washable
F4	4	Easily washable

pH Observation table

According to result the pH of all the three formulation that is F1, F2, F3 and F4 were found to nearer to skin Ph so it can be safely used on the skin.

Table no 5: pH observation table.

Sr.no.	Formulation	Observation
1	F1	7
2	F2	6.7
3	F3	6.2
4	F4	6.7

Viscosity

By Parallel sliding method firstly take the two slide and Wight, pour the one drop of formulation at corner of slide. While hold the lower slide fixed by Applying to it an equal and opposite force per unit area. tapped the

upper slide to table and attach the Wight to thread. Upper slide move slightly and measure these distance and Wight attach to slide. divide the distance of sliding move to attach weight. check the result.

Table no. 6: Viscosity observation table.

Sr.no	Formulation	Viscosity(cps)
1	F1	22020
2	F2	12810
3	F3	19820
4	F4	17702

Spread ability

The spread ability of the three formulations that is F1, F2, F3, F4 was carried out and out of that for F2 the time taken by the 2 slides to separate is less so as said in the

description of evaluation test lesser the time taken for separation of the two slides better the spread ability so according to this statement F2 showed better spread ability.

Table no. 7: Spread ability observation table.

Sr.no.	Formulation	Time(gm)	Spread ability(gm ×cm/sec)
1	F1	9	23
2	F2	14	15
3	F3	7	32
4	F4	15	15

Greasiness

Here the cream was applied on the skin surface in the form of smear and checked if the smear was oily or

grease-like. According to the results, we can say that all three formulations were non-greasy.

Table no. 8

Sr.no.	Formulation	Greasiness
1	F1	Poor greasy
2	F2	Greasy
3	F3	Non greasy
4	F4	Non greasy

CONCLUSION

By using Aloe Vera gel, Neem and Tulsi the cream showed a multipurpose effect and all these herbal ingredients show designificant different activities. Based on results and discussion, In formulations F4 formulation were more stable at room temperature and can be safely used on the skin It is concluded that on combining the extracts of aloe Vera and in different compositions to get multipurpose effect on skin such as whitening, anti-wrinkle, ant-aging, We know that it is not possible to get efficiency effect with single herb but by taking combinations of different extract scan be possible to increase the efficiency of extracts.

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