

**DEVELOPMENT AND ASSESSMENT OF MULTIPURPOSE CREAM FOR
DERMATOLOGICAL APPLICATIONS**

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ABSTRACT

Herbal cosmetics is the preparation is used to enhance the appearance. The primary goal of this endeavor is to create a herbal cream that has multiple uses, such as moisturizing, reducing acne, and aiding in wound healing. (Navindikar et al 2024) Neem (*Azadirachta indica*), Tulsi (*Ocimum sanctum*), Turmeric (*Curcuma longa*), Papaya (*Carica papaya*), and Aloe Vera (*Aloe barbadensis*) were among the components employed in these formulations. The cream is ready made using a cream base consisting of bees wax, borax, guggul, liquid paraffin, rose oil, distilled water, dimethyl sulfoxide, neem extract, tulsi, aloe vera, and turmeric. We have created five batches of our herbal cream utilizing the slab method. F1, F2, F3, F4, F5. A variety of factors, including appearance, pH, washability, spreadability, and irritancy, were assessed for each of the five batches. All the five formulations show the good appearance. These formulations F1, F2, F3, F4, and F5 showed no redness and irritation during irritation study and they were easily washable.


KEYWORDS: Neem, Tulsi, Aloe Vera, Papaya oil, Herbal cream, Guggul.








INTRODUCTION

The cream are semi-solid dosage forms and it's intended for topical application on skin. The primary goal of these creams was to research, create, and assess a multipurpose herbal cream. There are also other semi-solid forms of herbal creams available. There are two varieties of the cream. Water in oil comes in second, followed by oil in water. Both w/o and o/w cream are distributed in oil and water, respectively. These substances were selected based on their unique qualities (Bhosale et al 2024). Herbal components like papaya, aloe vera, tulsi, neem, and turmeric are utilized in herbal creams. Some

components exhibit positive effects, such as the anti-inflammatory and anti-wrinkle properties of turmeric, the moisturizing and anti-acne properties of aloe vera, and the anti-inflammatory properties of tulsi. Neem relieves dry skin and aids in wound healing; papaya has anti-aging, cleansing enzyme action, and anti-inflammatory properties. A variety of physical characteristics, including color, odor, texture, state, spreadability, and irritancy test, are used to assess the multipurpose herbal cream. Tests for irritability, washability, phase separation, pH, etc.(Mane et al 2024 and Hanan et al 2024).

Table 1: Excipients and herbal ingredients used with their roles.

Sr. No	Ingredients	Botanical Name	Uses	Image
1	Turmeric	Kingdom: Plantae Genus: <i>Curcuma</i> Species: <i>C. Longa</i> Family: Zingiberaceae Synonym: <i>Curcuma domestica</i>	Glow your skin and antiseptic, anti-inflammatory	

2	Ripe papaya	Kingdom: Plantae Genus: <i>Carica</i> Species: <i>Carica papaya</i> Family: Caricaceae Synonym: cantaloupe	Anti-wrinkle, cleansing, anti-inflammatory	
3	Aloe Vera	Kingdom: Plantae Genus: <i>Aloe</i> Species: <i>Aloe vera</i> Family: Liliaceae Synonym: <i>Aloe barbadensis</i>	Reduce acne and pimples	
4	Tulsi	Kingdom: Plantae Genus: <i>Ocimum</i> Species: <i>Ocimum tenuiflorum</i> Family: Labiatae Synonym: Holy basil	Antibacterial, add glow to the face	
5	Neem	Kingdom: Plantae Genus: <i>Azadirachta</i> Species: <i>Azadirachta indica</i> Family: Meliaceae Synonym: Margosa	Relieve skin dryness promote Wound healing	
6	Bees wax	Genus: <i>Apis</i> Species: <i>Apis mellifera</i> Family: Apidae	Emulsifying agent	
7	Liquid paraffin	-	Lubricating agent	
8	Borax	-	Alkaline agent	

MATERIAL AND METHOD

Collection of plant material Turmeric, Papaya, Aloe-Vera, Tulsi, and Neem was collected from local botanical garden. Liquid paraffin and bees wax are collected from laboratory.

Method of preparation

Slab Method: The ingredients are combined until a homogenous combination is formed. The cream is then applied to the slab, where it is properly blended by slicing in a few drops of distilled water as needed. This technique is known as the slab method for making cream.

Preparation of extract**Preparation of Turmeric extract**

Take 2 g turmeric powder in 20ml distilled water and shaken in 250ml volumetric flask heated in water bath at 80°C to 100°C for 10 to 15 min. Then filtered it and turmeric extract is obtained. Preparation of Neem extract: Collect fresh neem leaves and wash it distilled water and dried in hot air oven and then take 5gm neem powder in 20ml Dimethyl sulfoxide at 100°C for 5 to 10 minutes. Then filtered it and clear solution is obtained.

Preparation of Tulsi extract

Collect the Tulsi leaves and washed it with distilled water and dried hot air oven. Then after proper drying, the leaves are powder. Then take 1gm tulsi leaf powder and 10ml Dimethyl sulfoxide was taken in volumetric flask. Then the solution was heated on water bath at 80°C

to 100°C for 5 to 10 min then filtered the solution by using filter paper and clear extract is form.

Preparation of Aloe Vera extract

Collect the fresh aloe Vera leaf from plant and washed it with distilled water properly, dried it hot air oven. Leaf dissected longitudinally by sterile knife. The semi-solid aloe-vera is form. Grind in mixer and filtered it and extract is obtained.

Preparation of papaya oil

Take tablespoon of every fine cut, ripe firm organic papaya piece in bowl. Add 5-6 tablespoon of any unrefined oil of your choice now take the bowl and place it over the pan and stir it. Continue cooking like this for 20 min. After 20min take the oil phase in sieves and pass through the sieves. Then papaya oil is obtained.

Method

Take the liquid paraffin and bees wax in a borosilicate glass beaker and maintain that temperature at 75 °C (oil phase)

In other beaker, dissolve baking soda and Guggul in distilled water by maintaining temperature 75°C with water bath

Stir the solution with glass rod until all solid particles dissolve (Aqueous phase)

Then gently add aqueous phase in oil phase with continue stirring

After mixing both phase, immediately add the all extracts with continues mixing by glass rod until it forms a smooth cream

When cream is formed, then add rose water as fragrance

Put this cream on the slab and add few drops of distilled water if necessary

Mix the cream to give smooth texture to the cream and to mix all ingredients properly.

Table 2: Formulation Table.

Sr. No.	Ingredients	Formulations				
		F1	F2	F3	F4	F5
1	Turmeric extract	2.7ml	1.42ml	1.67ml	1.44ml	1.43ml
2	Ripe Papaya Extract	2.7ml	1.67ml	1.42ml	1.65ml	1.70ml
3	Aloe vera extract	2.8ml	1.47ml	1.67ml	1.45ml	1.50ml
4	Neem extract	0.9ml	0.28ml	0.67ml	0.10ml	0.30ml
5	Tulsi extract	1.7ml	1ml	1ml	1ml	1ml
6	Bees wax	5.45gm	4.97gm	5.36gm	4.98gm	5gm
7	Liquid paraffin	18.1ml	21.32ml	20.1ml	21.25ml	22.32ml
8	Guggul	0.40gm	0.59gm	0.50gm	0.30gm	0.32gm
9	Borax	0.30	0.35	0.30	0.35	0.30
10	Distilled water	q.s.	q.s.	q.s.	q.s.	q.s.
11	Rose oil	q.s.	q.s.	q.s.	q.s.	q.s.



Fig. 1: Extract of ingredients.



Fig. 2: Formulated cream.

EVALUATION OF CREAM: (Mane et al 2024).

Physical Evaluations: Formulated herbal creams was further evaluated by using the following physical parameter colour, odour, consistency and state of the formulation.

1. Colour: The colour of the cream was by visual examination.

2. Odour: The odour of cream was found to be Pleasant.

3. State: The state of cream was examined visually by naked eyes.

4. Consistency: The formulation was examined by rubbing cream on hand manually. The cream having smooth consistency.

5. State of the Formulation: The state of the formulation is semi-solid and homogeneous in nature.

6. pH: pH of prepared herbal cream was measured by using digital pH meter. pH was determined and value was calculated.

7. Spreadability: Cream should spread easily on the skin without too much effort and they do not produce greater

friction in the rubbing process. The result show it is easily spread on hand surface.

8. Washability: formulation was applied on the hand and then washed with tap water.

9. Homogeneity: The homogeneity of the preparation was tested by visual appearance and touch. It was found that the cream was homogeneous and smooth consistent in nature.

10. Type of smear (Greasiness): It was found that the cream produced non-greasy film on the skin surface.

11. Stability: All formulations F1, F2, F3 were stable at room temperature and can be a safely used on the skin.

Physical Parameters**Table 3: Evaluation parameters for all formulated batches.**

Sr. No.	Test	F1	F2	F3	F4	F5
1	Color	Light green	Light green	Light brown	Light green	Light green
2	Odor	Pleasant	Pleasant	Pleasant	Pleasant	Pleasant
3	Texture	Smooth	Smooth	Smooth	Smooth	Smooth
4	Spreadability	Easily spreadable	Easily spreadable	Easily spreadable	Easily spreadable	Easily spreadable
5	State	Semi-solid	Semi-solid	Semi-solid	Semi-solid	Semi-solid
6	Irritancy	No irritation	No irritation	No irritation	No irritation	No irritation
7	Washability	Easily washable	Easily washable	Easily washable	Easily washable	Easily washable
8	pH	7.35	7.36	6.34	7.75	7.73
9	Phase Separation	No phase separation	No phase separation	No phase separation	No phase separation	No phase separation
10	Greasiness	Non- greasy	Non- greasy	Non- greasy	Non- greasy	Non- greasy
11	Stability	Stable	Stable	Stable	Stable	Stable

RESULT AND DISCUSSION

We prepare F1 to F5 formulations, among which the F3 formulation shows good color, pH, Viscosity and consistency as compared to other formulations. Also, all formulation shows no itching, no redness and irritation to the skin and they were easily washable. The formulation was stable at room temperature. The extracts of *Azadirachta indica* promote wound healing, relieves skin dryness, itching and redness. The extract of *Ocimum santum* has antibacterial activity. Aloe vera gel also given smoothing effects, viscosity modifier reduces acne and pimples.

CONCLUSION

Skin care problems are painstaking the major trouble these days. There are numerous products that are available in the market among which the majority are synthetic products. Synthetic products are extra harmful than the natural products. It is necessary to change some herbal formulation which has good results and which reduces damage in the skin. The main aim of our work is to develop an Herbal cream which can gives effect as moisturizer, reduce pimple and reduce acne, dry skin, wrinkle, improve glow on skin, give good appearance to the customer. All three herbal formulations contained natural ingredients like Aloe vera, neem leaves, turmeric, papaya oil, tulsi and guggul showed significant different activities. Based on the results, we can suggest that all the three formulations F1, F2, F3, F4 and F5 were stable at room temperature and can be safely used on the skin.

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