

# “Preparation and Evaluation of Herbal Body Lotion”

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## CERTIFICATE

This is to certify that, the work presented in this is submitted in the Partial fulfillment for the Eighth Semester of “Bachelor of pharmacy” In the faculty of pharmacy, Dr. Babasaheb Ambedkar Marathwada University, has been carried out at Aditya pharmacy college, Beed by Mr **SALUNKE SAURABH PANDIT** under the guidance of **Mr. Hingane L.D** The project is ready for submission.

## DECLARATION

I undersigned, **Mr. SALUNKE SAURABH PANDIT**, B. Pharm Eighth semester, Aditya Pharmacy College, Beed, hereby declare that the thesis entitled “**PREPARATION AND EVALUATION OF HERBAL BODY LOTION**” is based on original research work and has not been submitted previously for the award of any Degree or diploma by me to any other university. The thesis work was carried out and submitted in the partial fulfillment of requirement of the degree of pharmacy, in the faculty of pharmacy of **Dr. Babasaheb Ambedkar Marathwada University Aurangabad**, under guidance of **Dr. Hingane.L.D**. I hereby declare that information given in the thesis is true as per my effort to accomplish this research work.

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There are many other whose name flashed across my mind when I enlist those who have given grateful to me. It would rather impracticable to mention each of them separately but I am conscious my obligation and thanks them collectively.

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## ABSTRACT

### Objective:

To formulate and evaluate herbal body lotion using borax, beeswax, neem extract, tulsi extract, rosemary oil and Aloe Vera gel to give multipurpose effect.

Lotions maintain skin's hydration levels by locking in the moisture, keeping the skin healthy, soft, and supple. Unlike a cream, the lotions are less greasy and have more water content.

The cream was prepared by using the cream base that is bee's wax, borax, distilled water, rosemary oil and Aloe Vera gel extracts of Neem and Tulsi. Beeswax exfoliates, conditions, soothes, and calms the skin, Borax eradicate skin bacteria and remove dead skin cells and excess oil, Neem extract fight skin infections, promote wound healing, and combat signs of skin aging, tulsi extract fights acne

supports healthy skin aging and reduces pigmentation, Rosemary oil Fight Acne. With its potent antibacterial qualities and Aloe Vera antifungal and anti-inflammatory and it is also used to reduce scar, pigmentation, redness and itching of the skin.

This body lotion was formulated and evaluated by different evaluation parameters such as pH, viscosity, spreadability, physical appearance and Irritancytest

Stability testing for prepared formulation was performed by storing it at different temperature condition for time period of 24h for 1 week. To know the parameters like odour, pH and smoothness of lotion.

All the three formulations A, B, andC showed good appearance, P<sup>H</sup>, adequate viscosity and no phase separation was observed. Also, the formulations A, B, andC showed no redness, erythema and irritation during irritancy study and they were easily washable.

## I. INTRODUCTION

The cosmetics are the utility product used extensively throughout the world for maintaining and improving general appearance of face and other part of body e.g. skin, eye, hair, hand, etc. herbal cosmetics are the preparation which represent cosmetics associated with active bio-ingredients, neutraceuticals and pharmaceuticals.

Cosmetics are products that are used to cleanse and beautify the skin. The first recorded use of cosmetics is attributed to Egyptians in 4000 B.C. Pharmaceuticals are essentially drug products and are defined as products that prevent, mitigate, treat or cure disease and affect the structure or function of the body.

By the European directive (European commission).The cosmetic products are defined as “any substance or preparation intended to be placed in contact with the various external parts of human body (epidermis, hair system, nails, lips, etc.) or with the teeth and the mucous membranes of the oral cavity with a view exclusively or mainly to cleaning them perfuming them changing their appearance or correcting body odours and the protecting them or keeping them and good conditions.

The cosmetics, according to the Drugs and Cosmetics Act is defined as articles intended to be rubbed, poured, sprinkled or sprayed on, introduced into or otherwise applied to the human body or any part thereof for cleansing, beautifying, promoting attractiveness or altering the appearance.

### ➤ Role of ingredients ➤ Borax-



Borax is used in the cosmetic industry to prevent or slow bacterial growth in moisturising products like creams, shampoos, gels, lotions, bath bombs, scrubs and bath salts. Manufacturers of cosmetics use borax as a buffering agent or an emulsifier to keep product ingredients from separating

Borax as an ingredient is used to eradicate skin bacteria and remove dead skin cells and excess oil. It does not penetrate deep into the skin and makes it relatively safe to use in limited quantities. Borax is used in the cosmetic industry to prevent or slow bacterial growth in moisturising products like creams, shampoos, gels, lotions, bath bombs, scrubs and bath salts. Manufacturers of cosmetics use borax as a buffering agent or an emulsifier to keep product ingredients from separating.

### ➤ Beeswax



Used cosmetically, Beeswax hydrates, conditions, soothes, and calms the skin.

It exfoliates repairs damage, promotes the skin's regeneration, diminishes the appearance of the signs of aging, soothes itchiness and irritation, and

creates a hydrating, long-lasting protective barrier against environmental pollutants.

Beeswax is also a natural exfoliator, ideal for sloughing away dead skin cells. By making beeswax into a lotion bar, it will work double-duty to keep your skin soft and hydrated.

Treats Diaper Dermatitis, Psoriasis and Eczema. Beeswax is a great choice for many skin conditions. ...

- Moisturizes Skin.
- Protects the Liver.
- Lowers Cholesterol Levels.
- Relieves Pain and Is Anti-Inflammatory.
- Clears Acne.
- Heals Dry, Cracked Lips.
- Reduces Stretch Marks.

#### ➤ **Neem Extract**



#### **Benefits of Neem extract-**

Neem oil contains fatty acids, antioxidants, and antimicrobial compounds, and these can benefit the skin in a range of ways. Research shows that these compounds may help fight skin infections, promote wound healing, and combat signs of skin aging.

The stem, root bark, and fruit are used as a tonic and astringent. Some people apply neem directly to the skin to treat head lice, skin diseases, wounds, and skin ulcers; as a mosquito repellent; and as a skin softener

#### ➤ **Tulsi extract –**



- Fights acne.
- Supports healthy skin aging.
- Reduces pigmentation.
- Soothes skin conditions like eczema.
- Prevents hair loss or thinning.
- Prevents dandruff.

Tulsi has anti-inflammatory, antibacterial and antifungal properties and is super effective when it comes to acne. It kills the acne-causing bacteria and disinfects the pores

It also contains essential vitamins that help lighten acne scars and dark spots.

#### ➤ **Rosemary oil**



- May Improve Brain Function.
- Stimulates Hair Growth.
- May Help Relieve Pain.
- Repels Certain Bugs.
- May Eases Stress
- May Increase Circulation.
- May Help Perk You Up.
- May Reduce Joint Inflammation.
- Fight Acne. With its potent antibacterial qualities, rosemary essential oil helps fight the acne bacteria from getting into your pores.
- Tighten Skin Tone.
- Smooth Out Fine Lines.
- Deodorize Naturally.
- Remove Under-Eye Bags.

- Get Rid of Cellulite.
- Reduce Inflammation.

➤ **Aloe Vera**



Is used as a moisturizer, to reduce pimples and acne and also used for treatment of Burn wounds. Is used as an antifungal and anti-inflammatory and it is also used to reduce scar, pigmentation, redness and itching of the skin. In addition to moisturizing the skin, aloe Vera gel can ease or soothe conditions like. Frostbite. Aloe Vera gel can help your skin in hot and frigid weather. If your skin is damaged from a mild case of frostbite, aloe Vera gel may help your tissues regrow more quickly and boost healing.

➤ **Method of preparation**

**Extraction processes**

**i] Aloe Vera gel**

Mature, healthy and fresh aloe Vera leaves were collected and washed with distilled water. Then after proper drying of leaves, the outer part of the leaf was dissected using a sterile knife. Then the aloe Vera gel that is the colourless parenchymatous tissue was removed using the sterile knife. Then it is filtered to remove the fibres and impurities. Then the filtrate or the filter product which is a clear aloe Vera gel was used in the preparation.

**ii] Extraction of neem leaves**

Neem leaves were collected and washed with distilled water and dried in hot air oven. After proper drying, leaves were powdered. Then 5g Neem leaves powder, 80 to 100 degree Celsius then the solution was heated on a water bath at 80-100 °C and concentrated up to 20 ml and then filtered using muslin cloth to remove impurities. Then the filtrate or filter product obtained, which is a clear solution or clear extract of Neem leaves, was used in the preparation.

**iii] Extraction of tulsi leaves**

Tulsi leaves were collected and washed with distilled water and dried in hot air oven. Then after proper drying, the leaves were powdered. Then 1g Tulsi leaf powder+10 ml dimethyl sulfoxide was taken in a volumetric flask and then shaken, and then the solution was heated on water bath at 80 to 100 degree Celsius. For few minutes and then concentrated up to 5 ml and filtered using a muslin cloth to remove impurities. Then the filtrate or the filter product in which a clear solution or clear extract of Tulsi leaves was used in the preparation.

➤ **Formulation of cream**

Heat Rose water and beeswax in a borosilicate glass beaker at 75 °C and maintain that heating temperature. (Oil phase). In another beaker, dissolve borax, in distilled water and heat this beaker to 75 °C to dissolve borax and to get a clear solution. (Aqueous phase). Then slowly add this aqueous phase to heated oily phase Then add a measured amount of aloe Vera gel, Neem extract, and Tulsi extract and stir vigorously until it forms a smooth cream. Then add few drops of rose oil as a fragrance. Put this cream on the slab and add few drops of distilled water if necessary and mix the cream in a geometric manner on the slab to give a smooth texture to the cream and to mix all the ingredients properly. This method is called as slab technique or extemporaneous method of preparation of cream.

**Evaluation of body lotion**

➤ **Physical evaluation**

In this test, the cream was observed for colour, odour, texture, state.

➤ **Irritancy**

Mark the area (2 cm<sup>2</sup>) 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 any for an interval up to 24 h and reported

Sr.no	Formulation	Irritant effect	Erythema	Edema
1	A	Nil	Nil	Nil
2	B	Nil	Nil	Nil
3	C	Nil	Nil	Nil

Sr. no	Formulation	Time(sec)	Spread ability (g×cm/sec)
1	A	11	22.9
2	B	8	32.7
3	C	14	15

➤ **Washability**

Washability test was carried out by applying a small amount of cream on the hand and then

washing it with tap water. All three formulations were easily washable.

➤ **pH**

pH of formulations A, B and C was found to be 6.5, 6.7 and 7.2 respectively.

➤ **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 .

Sr. no	Formulation	Phase separation
1	A	No phase separation
2	B	No phase separation
3	C	No phase separation

➤ **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 of 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 that 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.

$$\text{Spread ability} = m \times l/t$$

Where,

m= Standard weight which is tied to or placed over the upper slide (30g)

l= length of a glass slide (5 cm)

t= time taken in seconds.

➤ **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

➤ **Spread ability observation table**

➤ **Greasiness observation table**

Sr.no	Formulation	Greasiness
1	A	Non-greasy
2	B	Non-greasy
3	C	Non-greasy

➤ **Formulation table of body lotion**

Sr.no	Ingredients	Formulation A	Formulation B	Formulation
1	Borax	2g	1.5g	3g
2	Beeswax	10g	12.5g	8g
3	Neem extract	2ml	1.5ml	2ml
4	Tulsi extract	2ml	1.5ml	2ml
5	Rosemary oil	2ml	1.5ml	2ml
6	Aloe Vera	2g	1.5g	3g

➤ **Directions for use**

### Your daily skincare routine!



- For external use only
- Add a dollop (around a 10p coin size) to your hand (more if your skin is particularly dry or on rougher areas such as elbows and knees)
- Rub your palms together to warm up the lotion.
- Use your hands to massage the lotion into your body in small circular motions.

## II. RESULT AND DISCUSSION

### Result

All the three formulations A, B, and C showed good appearance,  $P^H$ , adequate viscosity and no phase separation was observed. Also, the formulations A, B, and C showed no redness, erythema and irritation during irritancy study and they were easily washable

## III. CONCLUSION

By using Aloe Vera gel, Neem and Tulsi the cream showed a multipurpose effect and all these herbal ingredients showed significant different activities. Based on results and discussion, the formulations A, B and C were stable at room temperature and can be safely used on the skin.

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