



# FORMULATION AND EVALUATION OF HERBAL BODY LOTION FROM NEEM AND ALOE VERA

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**Abstract :** The herbal lotion formulation had no harmful effects. Which is used in the production of herbal lotions made from aloe vera gel and neem, is beneficial to the skin and acts as an anti-inflammatory, antibacterial, and antioxidant. The manufactured lotion is typically evaluated for irritancy, acidity, and PH. Aloe vera gel contains moisturization, which is used to prevent skin dryness in the winter and summer, as well as to prevent acne and sunburn. The herbal lotion passes all assessment tests and has no negative effects, so it is safe to use on the skin.

**IndexTerms** - Herbal medications, Herbal lotions, Neem Extract, Alovera , Coconut oil, Herbal formulation

## I. INTRODUCTION

An herbal lotion that provides good skin protection while remaining free of toxins. They are natural and have been shown to be safer to use than chemical-based formulations.

Lotions are semi-liquids that are applied directly to the body. A lotion is a topical substance that is applied to the skin using bare hands or cotton wool with the intention of moisturising and/or treating it. Most body lotions are designed to maintain the skin soft, smooth, and healthy, but they may also contain anti-aging ingredients and perfumes.

The possible benefits of herbal lotions include hydration, inflammation reduction, and antioxidant protection. Herbal therapies are the ideal answer for reestablishing equilibrium in the skin barrier and restoring your skin's smooth, moisturised.[1][2][3][4]



**Figure-1: Leaves of aloe vera**

#### **Lotion Benefits:**

- Re-hydrate dried skin.
- Replenish extra dry or rough spots on the skin.
- Feel and smell good.
- Help yourself relax.
- Soften the roughest parts of your body.
- Make your skin glow.

#### **Lotion Advantage:**

- Easy to manufacture
- Easy to available and found in large of variety of plants
- They do not provoke allergic reactions and do not have any negative side effects.
- They are easily incorporated with skin and hair.
  - Extract form of the plants decreases the bulk properties of the cosmetics and gives appropriate pharmacological effects.

#### **Lotion Disadvantage**

- ✿ Poor permeability of drug to deeper skin layer
- ✿ Less stable than solid dosage form
- ✿ Need to shake container before use in case of emulsion / suspension type of lotion
- ✿ Babies can swallow if applied to hand

#### **Excipients**

Sr.No:	Ingredient:	Uses:
1.	Borax	Cleaner
2.	Beeswax	Moisturizer , preservative
3.	Aloe vera gel	Moisturizer
4.	Rose Water	Perfume
5.	Distilled water	Diluent
6.	Neem Extract	For treating skin rashes
7.	Coconut oil	Improve skin texture

#### **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 [5]

**Beeswax:**

- ▶ Beeswax is used in lip balm, lip gloss, hand creams, salves, and moisturizers; and in cosmetics such as eye shadow, blush, and eye liner. Beeswax is also an important ingredient in moustache wax and hair pomades, which make hair look sleek and shiny.
- ▶ Moisturizes Skin. Protects the Liver. Lowers Cholesterol Levels. Relieves Pain [6]

**Figure1.1: Bees wax****Aloe vera gel:**

Aloe Vera gel has cooling properties and is anti-inflammatory. Hence, it is one of the most natural remedies for sunburn or burnt skin.

**Uses:**

- Anti-aging
- Heal wounds
- Lightens scars and blemishes
- Treat acne
- Treat dry skin
- Treat stretch Marks

**Figure1.3: Aloe vera gel**



**Rose Water:**

Rose water is an antibacterial. This means that it fights off bacteria that could lead to infections. Using rose water for face and body care can prevent wounds such as burns and cuts becoming infected and it can also be used to reduce the appearance of scars when used in high concentrations...[7]

**Figure1.4:Rose Water****Uses:**

- Hydrates the skin and controls excess oil.
- Eliminates impurities and removing makeup . Tones up the skin by stimulating skin cell , while balancing pH levels

**Coconut oil:**

Coconut oil for face is popular as it is highly moisturising and can also reduce inflammation, counteract free radical damage and prevent infection

**Uses:**

- Moisturizing dry skin, including in people with conditions such as eczema.
- Reducing inflammation, which may result from UVB rays?
- Promoting wound healing.
- Antibacterial, antifungal, and antiviral properties

**Figure 1.5: Coconut oil**

Ingredient	Quantity	Quantity	Quantity
Borax	1 gm	1.5 gm	2 gm
Beeswax	20 gm	25 gm	30 gm
Aloe vera gel	4 gm	4.5 gm	5 gm
Rose Water	q.s	q.s	q.s
Distilled water	q.s	q.s	q.s
Neem Extract	1 gm	1.5 gm	2 gm
Coconut oil	10 ml	10 ml	10 ml

### Formulation Table:

#### Procedure

- ▶ In a borosilicate glass beaker, combine rose water and beeswax and heat to 75 °C. (Oil phase).
- ▶ In another beaker, dissolve borax in distilled water and heat to 75 °C to get a transparent solution. (aqueous phase).
- ▶ Then gradually add this aqueous phase to the heated oily phase.
- ▶ Then, add a measured amount of aloe vera gel, neem extract, and aggressively stir until the mixture is smooth.
- ▶ Add a few drops of rose Water as a scent.
- ▶ Put this cream on the slab and add a few drops of distilled water if necessary.
- ▶ Mix the cream in a geometric style on the slab to give it a smooth texture and to mix everything. [8][9][10][11][12]



**Figure 1.6:: aloe vera body lotion**

#### Evaluation Test:

1. Appearance: The lotion's appearance was determined through visual examination.
2. Colour: The colour of the cream was determined by eye observation.
3. Odour: The odour of the lotion was assessed by smell
4. Removal Test: The cream's ease of removal was assessed by washing the applied area with water.

5. PH: PH of prepared herbal lotion was measured by using both PH paper & digital PH meter

6. Spreadability: Spread ability of formulated lotion was measured by placing sample in between two slides then compressed to uniform thickness by placing a definite weight for defined time

7. Viscosity: The viscosity of the formulation was measured using a Brookfield or Ostwald viscometer at 100 RPM and spindle no. 7 at 25°C. The determinations were done in triplicate and the average of three readings was taken.

8. Stability Test: To check the microbial growth, the formulation was placed in the center of the petri dish, and then the plates were incubated at 37°C for 72hrs.[13][14][15][16]

#### EVALUTATION TABLE :-

Sr.no	Test	F1	F2	F3
1.	Appearance	Lotion type	Lotion type	Lotion type
2.	Colour	Greenish	Faint Greenish	Faint Greenish
3.	Odour	Aromatic	Aromatic	Aromatic
4.	Ph Management	5.5	5	5.9
5.	Spreadability	Easily spreadable	Easily spreadable	Easily spreadable
6.	Removal test	Easily removed from the skin by using water	Easily removed from the skin by using water	Easily removed from the skin by using water
7.	Stability test	No microbial growth is observed After 3 month's	No microbial growth is observed After 3 month's	No microbial growth is observed After 3 month's

#### Result and Discussion:

- The herbal body lotion was made and evaluated using a variety of metrics. The herbal formulation was green in colour.
- Throughout the trial, the pH ranged between 5 and 6, which is typical for the skin, and the lotion did not cause any irritation when applied to the skin.
- After conducting assessment tests, I developed three formulations of herbal lotion, F1, F2, and F3. F2 was found to be the best formulation.
- The stability test was conducted for six months, and the results showed that all lotions had better stability. The preparation remained stable under typical storage conditions.
- These findings demonstrated that the herbal lotion had no negative effects on the topical region.

It has been demonstrated that this herbal concoction is effective in anti-aging. Conclusion

- A herbal lotion formulation was created for this study, and its organoleptic qualities (look, colour, and odour) as well as physiological parameters (pH, spreadability, ease of removal, and irritancy test) were assessed. [17]
- The current study focuses on extracts from herbs. Give your skin the nourishment it needs to be healthy.
- Many naturally occurring herbs have a variety of applications in skincare cosmetic preparations as antioxidants.
- In comparison to commercially available cosmetics, the results of this study show that herbal cosmetics are extremely safe and do not cause any harmful or unfavourable effects.[18][19][20][21][22][23]

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