

# Formulation and Evaluation of Herbal Lotion

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**Abstract:** Lotions are liquid preparations meant for external application without friction. They are applied directly to skin with the help of some absorbent material, such as, cotton wool or gauze soaked in it. The herbal cosmetics are those when natural herbs and their products used for their aromatic value in cosmetic preparation among consumers for herbal products triggered the demand for natural products and natural extracts in cosmetics preparations. Aloe vera is oldest medicinal plant ever known and the most applied medicinal plant worldwide. Several steps used in formulation of lotion such as cutting of tip and base of the leaf, extract mucilage part in mixing jar grind it well, add vitamin E, pasteurized the mixture and cool it after that gel was prepared further take the measured quantity of the gel for lotion formulation mix the measured quantity of ingredient including gel after some time lotion was prepared.

**Keywords:** Aloe vera, Herbal lotion, Herbal cosmetic, pH, Skin

## I. INTRODUCTION

Herbal Cosmetics, here referred as Products, are formulated, using various permissible cosmetic ingredients to form the base in which one or more herbal ingredients are used to provide defined cosmetic advantages only, shall be called as "Herbal Cosmetics". The herbal cosmetics are those when natural herbs and their products used for their aromatic value in cosmetic preparation among consumers for herbal products triggered the demand for natural products and natural extracts in cosmetics preparations. Lotions are liquid preparations meant for external application without friction. They are applied directly to skin with the help of some absorbent material, such as, cotton wool or gauze soaked in it. Lotions may be used for local action as cooling, soothing or protective purposes<sup>[1]</sup>. Body lotion has a higher water content than body butter. It is an oil-in-water emulsion, meaning manufacturers distribute oil into the water. This method makes body lotions lighter than body butter, which makes them easier to apply. Body lotions can vary slightly depending on what manufacturers have designed them for. Some types specifically target the face, while others are for more widespread use on the body<sup>[2]</sup>.

### Advantages of Lotion

- Also can apply to broken skin
- No first pass metabolism
- Local therapeutic effect
- Easy to use and portable
- Self-medication is possible
- Better for those having swallowing problem

### Disadvantages of Lotion :-

- 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

### Applications

Skin softening, smoothing, cooling, moisturizing, Anti-allergic, Antiseptic, Humectant, Astringent, Antiacne, Anti-inflammatory, Cleaning, Protective, Antipyretic, Scabicide, Local anaesthetic, Paraciticide, Germicide, Antifungal, Fairness, Anti aging, Anti wrinkle<sup>[3]</sup>.

**Aloe vera**

Aloe is also common in both traditional Chinese and Ayurvedic medicine. The name Aloe vera is derived from the Arabic word “Alloeh” meaning “shining bitter substance,” while “vera” in Latin means “true”. The plant Aloe vera has a history dating back to biblical times<sup>[4]</sup>. There are over 250 species of Aloe grown around the world. Only two species are grown commercially: Aloe barbadensis Miller and Aloe arborescens. This plant has been known by a number of names such as “the wand of heaven”, “heaven’s blessing,” and “the silent healer”. Aloe was previously considered in family Liliaceae, but now it has been placed in its own family Aloaceae. Aloe vera has a beneficial effect on human health and can cure many diseases<sup>[5]</sup>.

**II. MATERIAL AND METHOD**

**Experimental Work**

Equipment:- Digital balance, pH meter , Measuring cylinder, glass bowl, spoon, Brooke filed Viscometer.

**Required Material**

**Table 1: Materials of formulation**

S. No.	Ingredients	Quantity
1.	Aloe vera gel	150ml
2.	Almond oil	120ml
3.	Rose water	240ml
4.	Vitamin E	14 capsule
5.	Glycerin	150ml
6.	Lavender oil	4Drop
7.	Arrowroot powder	39gm

**Preparation before the formulation:-** Clean and sanitize your work area and all You packaging materials. It is suggested that you wear gloves, protective clothing and a hair net While preparing this recipe.

**2.1 Methods of Formulation**

**Steps Used In Formulation of Gel**

- **Reception of raw materials:-** The Aloe vera leaves after harvesting were preferably Transported to the processing place. The leaves should be sound, undamaged, mold/rot free and Matured (3-4 years) in order to keep all the active ingredients in full concentration.
- **Filleting operation:-** It was shown that the aloe gel, once extracted from the leaf, had Greater stability than the gel left in the leaf. In order to avoid the decomposition of the biological Activity, the filleting operation must be completed within 36 hrs. Of harvesting the leaves.
- **Grinding/Homogenization:-** The major steps in this process include crushing or grinding. The aloe gel fillets should be crushed and homogenized using a commercial high speed tissue crusher at room temperature (25°C). And add agar agar into the mixture.
- **Addition of vitamin E:-** The unpasteurized aloe gel juice was fortified with vitamin E to improve the flavor of Aloe vera gel juice and to stabilize the juice. It is used for its antioxidant activity.
- **Pasteurization:-** Treatment (at 85-95°C for 1-2 min) is an effective method to avoid the Bad flavor and the loss of biological activity of the Aloe vera gel.
- **Flash Cooling:-** After pasteurization, the juice is flash cooled to 5°C or below within 10-15 sec. This is a crucial step to preserve biological activity of the Aloe vera gel.
- **Storage:-** Relative humidity and temperature are two most important environmental Parameters that affect product quality.

- **Formulation method of lotion:-** Measure the quantity of above formulated gel. Prepare All other ingredient used in formulation. Take a large glass or plastic mixing bowl. Add measured Out gel of the aloe vera into the mixing bowl. Then add other ingredients of the formulation one By one like almond oil, rosewater, vitamin E, glycerin, essential oil & arrowroot powder with Measured quantity. Mix all the ingredient of the bowl in vigorously manner. Herbal lotion was Prepared.

## 2.2 Evaluation Parameters

**Spreadability:-** It is the term expressed to denote the extent of area to which formulation Readily spreads on application to skin or affected part. The therapeutic efficacy of a formulation Also depends upon its spreading value.

It is calculated by using the formula:

$$S = M. L / T$$

Where, M = weight tied to upper slide

L = length of glass slides

T = time taken to separate the slides

**Determination of pH:-** pH of 1% aqueous solution of the formulation was measured by Using a calibrated digital pH meter at constant temperature. pH value of the formulation is 5.5.

**Homogeneity:-** All developed gels were tested for homogeneity by visual inspection after The gels have been set in the container. They were tested for their appearance and presence of any Aggregates.

**Viscosity:-** The measurement of viscosity of the prepared gel was done with a Brookfieldviscometer spindle no.7 and speed 60rpm at 25. C.

**Smoothness:-**The smoothness of the lotion formulation was tested by rubbing between the fingers and observes whether the gel is smooth, clumped, homogenous or rough.

**Absorbency:-** Rated at which product is perceived to be absorbed into skin. Evaluated by noting changes in skin surface. Rated slow-moderated-fast.

**Consistency and Gressiness:** They both was checked by applying on skin.

**Appearance:-** All the formulations of aloe vera lotion were light green.

**Washability:-** The product was applied on hand was observed under running water.

**Irritancy test:-** The lotion was applied on left hand dorsal side surface of 1sq.cm and Observed in equal intervals up to 24hrs for irritancy, redness and edema. The did not produce any Irritation or redness on skin.

## III. RESULT

### Formulation of Herbal Lotion

The herbal lotion was prepared by using aloe vera geland subjected to evaluation of various parameters.The herbal Gel and body lotion was prepared and subjected to evaluation of various parameters. The herbal Formulation was white in color. The pH was constant throughout the study to about 5.5which lies in the normal pH range of the skin and the gel did not produce any irritation upon application to the skin. Viscosity is the most important parameter in the evaluation as it governs the many properties of the formulation such as, spreadability, pourability of the product. The values of Spreadability indicate that the gel is easily spreadable by small amount of shear.

**Table 2 Evaluation of herbal lotion**

S. No.	Physical parameters	Observations
1.	Appearance	White
2.	pH	5.5
3.	Homogeneity	Homogenous
4.	Viscosity	0.8199
5.	Absorbency	Easily absorbed on skin
6.	Consistency	Thin
7.	Washability	Easily remove by water
8.	Irritancy test	Not irritant

#### IV. CONCLUSION

Herbal ingredient are not only efficacious treat skin dryness as compare to synthetic one but also Capable to substitute synthetic base to some extent. It is upto the cosmetologist to motivate and Encourage the development and use to truly herbal cosmetic. It is use very easy to our body surface Area and very smoothly absorbe.It has less amount of side effects [ depend upon nature of skin]in Body surface area. As a herbal formulation are great demand to meet the needs to the developing Global market and the main thing is the herbal ingredients showed significant different activities. Aloe vera plant has potential in pharmaceutical, nutritional and cosmetic industries. The Processing of Aloe vera requires critical attention in time, temperature and sanitation. The herbal Gel and body lotion was prepared and subjected to evaluation of various parameters. The herbal Formulation was greenish in color. The pH was constant throughout the study to about 5.5which Lies in the normal pH range of the skin and the gel did not produce any irritation upon application To the skin. Viscosity is the most important parameter in the evaluation as it governs the many Properties of the formulation such as, spreadability, pourability of the product. The values of Spreadability indicate that the gel is easily spreadable by small amount of shear. The measurement Of extrudability becomes an important criterion. All Gel formulations had an excellent Extrudability. The stability test was carried out for three months and results revealed that the all Gels showed better stability. During stability study, there was not much variation in viscosity after Testing at different temperature conditions.

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