

# Formulation and Evaluation of Herbal Face Gel by Using Aloe Vera and Rice Water

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## ABSTRACT

The herbal face gel contains natural ingredients such as aloe vera and rice water. It can reduce the side effects when compared to synthetic products. A gel is a semi-solid system. Cost effective, skin and eco-friendly handmade gel has been developed by a Fusion method using natural ingredients with methanol and tween 80. Aloe vera gel is a gelatinous substance especially used in cosmetics to soften the skin. Aloe vera leaf juice is used for dyspepsia, amenorrhoea, burns, skin disease. Rice water (*Oryza longistaminata*) contains starch. Starch is used in the gel formulation to reduce the pores, pimples, acne, wrinkle. The gel is applied in face it can reduce the pimple, acne, wrinkle, pore reduction, marks, scars and pigments are known as "mocha leap" in Ayurveda. Honey is a sticky yellowish fluid made by bees it helps to relieve sunburn, reduce excess oil production, scars in face, balance oily skin. Methanol is used as a preservative and makes product easier to apply. Tween 80 is a non ionic surfactant used in cosmetics. It allows dissolve the ingredients in skin.

**Key Words:** Face gel, Formulation, Moisturizer, Aloe vera, Rice water, Anti-ageing, Honey, Acne, Evaluation.

## I. INTRODUCTION

Gels are defined as semi rigid system in which the movement of the dispersing medium is restricted by an interlocking three dimensional network of particles or solvated macromolecules of the dispersed phase. The clarity range is from clear to a whitish translucent. The polymers are used between 0.5-15% and in most of the cases they are usually at the concentration between 0.5-2%. Gels are usually, clear, transparent, semisolids containing the solubilised active substances.<sup>[1]</sup> The face gel is

the powerful anti aging formula rich in herbal extracts that helps in skin lifting, wrinkle reduction, pore minimization and mopping up of free radicals. The herbal gel which is applied on the face to treat acne, pimples, scars, marks, and pigments are known as 'mocha leap' in ayurveda.<sup>[2]</sup>

Gels that contain water are called as 'Hydrogels', while those that contain an organic liquid are called as 'Organogels'. Aloe vera plant used for health, beauty, medicinal and skin care properties. Aloe used for the treatment of constipation and suppressed menstruation. Rice water has antioxidants and contains vit A, B1, B3 and iron, zinc, magnesium that helps to keep your skin and hair healthy and treatment of Diarrhoea such as that arising in cholera or gastroenteritis.<sup>[3]</sup>

## BENEFITS

- ❖ Moisturizer
- ❖ Prevent wrinkles
- ❖ Anti-oxidant
- ❖ Anti-bacterial
- ❖ Reduce dark spots
- ❖ Relieves sunburn<sup>[4]</sup>

## METHODOLOGY

### INGREDIENTS

- ❖ Aloe vera
- ❖ Rice water
- ❖ Honey
- ❖ Tween 80
- ❖ Methanol

## ALOE VERA

Aloe vera is a succulent plant used in alternative medicine. The plant has gained immense popularity for its beauty, health, skincare and

medicinal properties such as anti-oxidants that protect the skin from premature aging<sup>[5]</sup>

- **BOTANICALNAME:** Aloe barbadensis miller
- **FAMILY :** Aloaceae
- **PLANT TYPICALLYUSED :** Leaf



#### RICE WATER

Rice water is a suspension of starch obtained by draining boiled rice or boiling rice until it completely dissolves into the water. Effective in the treatment of diarrhoea. Matta rice is also a great source of dietary fiber, which helps to lower cholesterol levels.<sup>[6]</sup>

- **BOTANICAL NAME:** Oryza longistaminata
- **FAMILY:** Poaceae
- **PART TYPICALLY USED :** seed



#### FORMULATION

Formulation of herbal face gel by using Aloe vera, Rice water and Honey.

##### Preparation of Gel

- ❖ Required amount of Gelling agent was weighed and dispensed in a small quantity of Aloe vera juice.
- ❖ Homogeneous dispersion.
- ❖ Required amount of Honey and Tween 80 weighed and dispersed in above solution.

- ❖ Required amount of Methanol was then added to the above solution.
- ❖ Methyl paraben and propyl paraben were small quantity of water are added to above mixture.<sup>[7]</sup>

Table(01)

S.NO	INGREDIENTS	QUANTITY
1.	Aloe vera gel	1gm
2.	Herbal extract	2.5ml
3.	Honey	1gm
4.	Tween 80	1ml
5.	Methanol	5ml
6.	Distilled water	Upto 25ml

#### EVALUATION

The herbal gel formulated was evaluated for the following:

##### 1.Organoleptic properties:

- i. Colour : White
- ii. Odour : Pleasant
- iii. Appearance : Good

##### 2.Physical Evaluation:

a) **pH:** The pH was calibrated and measured the pH by placing in the beaker containing 20mg of the gel(Range 5-7).

b) **Irritancy test:** The gel was applied on the left hand dorsal side surface 1sq.cm and observed in equal interval up to 24hrs for irritancy, odema, redness.<sup>[8]</sup>

c) **Stability:** Stability studies were performed on all the formulation by maintaining at room temperature for 20 days with constant time interval .During the parameters like homogeneity, pH, physical changes were studied.

d) **Homogeneity:** This test for the gel was done by physical touch with hands.

e) **Extrudability:** The formulation was filled in collapsible tubes after the gel set on the container .the extrudability of formulation was determined in terms of weight in gram required to extrude 0.5cm of gel in 10 sec.<sup>[9]</sup>

f) **Spreadability:** Spreadability is measured by spreading 0.5g of gel on circle of 2cm diameter on a glass plate .Then a second glass plate is placed ½ kg weight placed on upper glass plate for 5mins .Finally diameter of circle spreading is measured .S=ML/T

M= Weight

L=Length of circle/diameter

T= Time in mins

S=Spreadability<sup>[10]</sup>

**g) Patch test:** About 1-3gm of material to be tested was placed on a piece of fabric and applied to the sensitive part of the skin .Eg: Skin behind ears.The cosmetic to be tested was applied to an area of 1sq.m of the skin .The site of patch is inspected after 24hrs .As there was no reaction the test was repeated 3 times.As no reaction was observed on third application ,the person may be taken as non hypertensive.<sup>[11]</sup>

## II. RESULT

Table( 02)

S.NO	PARAMETERS	RESULTS
01	Colour	White
02	Odour	Pleasant
03	PH	5-7
04	Irritancy test	Non Irritable
05	Stability	Stable After 2 Months
06	Appreance	Good
07	Spreadability	Uniform
08	Homogenicity By Visual	Smooth
	By Touch	Consistent
09	Patch Test	Not-Hyper tensive
10	Extrudability	Easily Extrudable

The result of show that the gel was prepared from aloe vera gel and rice water .The physio-chemical properties such as Colour, odour, appearance, pH was tested. The pH of the gel was found to be 5-7with pH meter. The PH of the gel was optimum for its utilization on the skin. Remaining parameters such as spreadability, irritability, extrudability, homogenicity patch test also determined and the result are found in table (02). An Evaluation of face gel was non-irritant and non-toxic to skin.<sup>[12]</sup> All of this ingredient are cheap and readily available in market. As a result of this face gel is having invaluable, amazing properties and act as best natural anti- acne properties with minimum side effect.<sup>[13]</sup>

## III. CONCLUSION

Thus in present work ,an attempt has been made an evaluation of herbal face gel was suitable for all skin types. According to Ayurveda, Skin problems normally arises due to stimulate blood

circulation, rejuvate the skin, reduce pores, minimize wrinkle, act as ant- acne.

The gel shows the best resulting of highest percentage of anti acne and smoothig effect. This gives best result likes,

- ❖ Skin whitening,
- ❖ Pore minimization,
- ❖ Anti-ageing,
- ❖ Reduction of wrinkle.

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