

## FORMULATION AND EVALUATION OF ANTI-ACNE FOAMING FACEWASH

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### ABSTRACT

Acne can be treated using cosmetics made for skin care products, exfoliation, and deep pore cleansing agents, as buildup causes the growth of black and white heads, cysts, and other skin-damaging growths. Better cleansing power is obtained by using a foam cleansing composition since bubbles are actively produced without the use of additional physical force. Your daily existence requires less work as a result. Natural components including aloe vera, turmeric, neem oil, rosehip oil, and glycerine are chosen based on their chemical properties. According to published data, the aforementioned plants have potent anti-bacterial, anti-inflammatory, antioxidant, and anti-microbial capabilities. These substances are regarded as the active ones that can effectively eliminate the addressed issue in our lives. The face wash was made with the idea that it should be used in an appropriate manner. Due to its transparency, it doesn't disrupt the skin or leave scars. Formulations are made utilizing various constituent concentrations and then analyzed. Our research revealed that our product is stable at room temperature, exhibits good spreadability with a pH range of 5-7, and exhibits good efficacy without inducing allergies or irritability.

**KEYWORDS:** Acne, Exfoliation, Face Wash, Dermis, Epidermis, Hypodermis.

### INTRODUCTION<sup>[1][5][3]</sup>

Face washes are designed to clean dirt-prone face because exposure to the sun, pollution, and dirt causes the skin to oxidize and develop blackheads, whiteheads, pimples, acne, and other facial imperfections. As it helps prepare the skin for topical application and eliminates pollution, oil, and makeup, cleansing the skin is a crucial part of keeping good skin. However, by removing natural moisturizing agents and impairing skin barrier function, it can potentially harm skin. A common skin ailment known as acne vulgaris is described as "happening when hair follicles under the skin become clogged." Acne is also known as a chronic inflammatory condition of the pilosebaceous unit, which is characterized by an abnormal desquamation of the hair and excessive sebum production by the sebaceous glands of hair follicles causes follicles leads to follicular distention, which is frequently accompanied by bacterial growth. An inflammatory reaction is brought on by Propionibacterium acnes.

### FACE WASH<sup>[2]</sup>

A facial wash is a skin care solution used to remove make-up, dead skin cells, oil, filth, and other types of pollutants from the skin on the face. It helps to clear the pores and prevent skin issues like acne. A face wash can be used as a component of a skincare program in addition to a toner and moisturizer.

### Advantages of Face wash

- It makes the skin radiant.
- The blending of dead skin cells and excessive oil can clog pores, resulting in acne, white heads, black heads, and a fatigued appearance.
- All of the skin issues mentioned above are avoided with regular pore exfoliation.
- Removes dead skin cells, which means your skin wrinkles less quickly.
- Encourages skin regeneration and rejuvenation.

### Disadvantages of Face wash

- Body wash is safer than facial wash because it only cleans the face.
- Only wash your face twice a day. Use more than twice at your own risk for dry skin.
- By removing dead skin cells, your skin ages more subtly.
- Its limited utility is its main flaw.

### OBJECTIVES

- a) Deep pore cleansing is the primary condition that an optimal foamy face cleanser should meet.
- b) Foaming face wash aids in clearing away dirt that has built up in the skin's deep pores and caused blackheads, whiteheads, pimples, plugged pores, active acne, etc.
- c) Face washing aids in clearing the filth that has built up on the skin.

- c) It also aids with makeup removal.  
 e) Face wash aids in the controlled release of skin's natural oil, or sebum.  
 f) Face wash products are necessary to eliminate dead skin.  
 g) It also aids in the elimination of flaws.  
 h) Very few face cleansers also offer anti-aging capabilities.

#### MATERIAL AND METHODOLOGY<sup>[5][6]</sup>

PLANT MATERIALS: all the ingredients used in the preparation i.e. aloe vera, turmeric, neem oil and rosehip oil. We extract them from following processes.

1) EXTRACTION OF ALOE VERA JELLY (manual method).

- Take 2 medium slices of raw aloe vera leaves are taken.
- Scope out the jelly.
- Gel is transferred into the mixer grinder.
- Filter out the juice to avoid large particles.

2) EXTRACTION OF NEEM OIL (boiling method)

- 20 grams of dried neem leaves are taken and crushed in a mixer grinder.
- Powder is taken and 100ml of olive oil is added.
- Boil the mixture in a water bath for 30 minutes.
- Filter out solid residue by using cheese cloth.

3) EXTRACTION OF ROSEHIP OIL (Supercritical Extraction)

- Weigh out 30 grams of ground rosehip seeds. Place a plug of wool into a 24 ml extraction vessel.
- Pour the prepared sample into the vessel using a funnel. Place a plug of wool on top.
- Compress the sample with a tamping rod. Fill the void volume and seal the vessel.
- Extract sample according to the specified extraction condition. Remove collection vial and dry residual

moisture from oil to constant weight using a drying oven at 105°C.

#### 4) EXTRACTION OF TURMERIC

- Raw turmeric is taken, and skin is peeled out and grated by using stainless steel grater.
- 20gm of grated turmeric are taken developed into a mixture of 30 ml of water and 70ml of glycerin in a glass jar.
- Close the lid and keep it aside for 2 weeks.
- Filter out the solid residue by using cheese cloth.

CHEMICAL MATERIALS: Chemical material we are using in our formulation are Sodium lauryl ether sulphate, Glycerin, Sodium benzoate, Sorbic acid.

#### METHOD OF FORMULATION<sup>[6]</sup>

The process of preparation of the formulation can be well illustrated by dividing the ingredients various stages as follows.

Stage A – consists of the base ingredients.

Stage B – consists of the main ingredients of the formulation.

Stage C- consists of excipients of the formulation.

Stage D – consists of the preservatives of the formulation.

- Phase A ingredients (base ingredient) are weighed and transferred into a small beaker.
- Then phase B ingredients (main ingredient) are weighed accurately as per the formulation table and heated on the water bath until uniformity is attained.
- Blend together phase A and B, stir gently to avoid foaming.
- Apparently weigh out phase C (sulphates) and add to the mixture.
- Further phase D (preservatives) are added to enhance the shelf life of the formulation

#### FORMULATION

SLNO.	STAGE	INGREDIENTS	PERCENTAGE	WEIGHT
1	A	Glycerine	42%	28ml
2	A	Distilled water	q.s	q. s
3	B	Aloe vera	37.5%	25gm
4	B	Turmeric	3%	2gm
5	B	Neem oil	4.5%	3ml
6	B	Rosehip oil	50%	10ml
7	C	Sodium lauryl ether sulphate	45%	30ml
8	D	Sodium benzoate	0.75%	0.5gm
9	D	Sorbic acid	0.37%	0.25gm
10	E	Rose essence	0.01%	0.01ml

#### EVALUATION TESTS<sup>[4][6]</sup>

1) **Physical evaluation:** Physical characteristics like color, look, and uniformity were visually assessed.

2) **Determination of pH:** A calibrated digital pH meter was used to measure the pH of the formulation's 1% aqueous solution at a fixed temperature.

3) **Grittiness:** The product was checked for the presence of any gritty particles by applying it on the skin.

4) **Spreadability:** On the wooden block a ground glass slide was mounted. On this ground slide, 2 gram of the prepared gel was put. Thereafter, a second glass slide with the same dimensions as the fixed ground slide was sandwiched between this slide and the gel preparation.

The hook is provided on the second glass slide. For five minutes, a weight of 500 mg was placed on top of the two slides to remove air and produce a homogenous gel film between them. A specified amount of weight was added to the pan, which was connected to the pulley. The top slide's time (in sec) needed to travel 5 cm was

recorded. Spreadability was calculated by using the following formula,  $S=M \times L / T$  Where, S- Spreadability M- Weight tied to the upper slide (20gm). L- Length of the glass (6.5cm). T- Time in sec.

**5) Washability:** The product will be painted by hand and was observed under running water.

### TEST RESULT

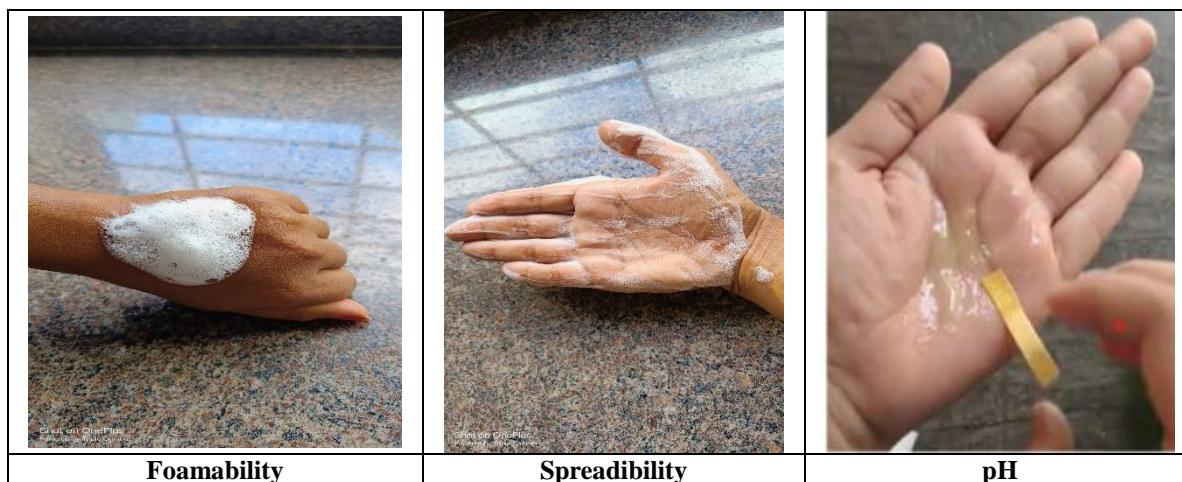
Test	pH	Irritancy test	spreadability	Foamability	Washability	Colour	Odour	Consistency
Result	5.9	P	G	P	P	Yellowish green	Pleasant	Viscous

G: -good

B: bad

P: pass

F: -fail



**Foamability**

**Spreadability**

**pH**

### CONCLUSION

We may draw the conclusion that the formulation created is both safe and effective at its therapeutic action from the study on the formulation and evaluation of anti-acne foaming face wash. All illnesses that affect a person's internal organs can be treated with natural ingredients.

Like any other drug, natural therapies are favored to synthetic ones. Consumers choose Ayurvedic herbal or semi-synthetic facewashes and other skin care products, according to a survey of natural skin care products. All skin types can use herbal face washes. Herbal face washes include vital ingredients that totally nourish the skin and support its continued health. Both the outside and the inside of the skin benefit from its upkeep and feeding.

Traditional formulas have consistently prevailed over synthetic cosmetics because its adverse reaction.

Herbal ingredients opened the way to formulate cosmetics without harmful effects which can impart the required properties to heal the skin diseases and the expense will be less when compared with the synthetic products.

For the treatment of acne, herbal medications are considered safer than allopathic medicines as allopathic medicines are associated with side effects, such as

contact allergy, local irritation, scaling, photosensitivity, itching, and redness of the skin, etc.

Lastly it can be concluded that the formulation prepared by using ingredients such as aloe vera, neem oil, turmeric rose hip oil, glycerine, sodium lauryl ether sulphate etc will show a prominent and effective therapeutic effect on the skin related conditions\ diseases such as acne.

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