

**POLYHERBAL NEEM FACEWASH****Mukul Sharma***

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INTRODUCTION

Skin is the major part of the body, which indicates the health of an individual. It is a composite of materials such as carbohydrates, amino acids, lipids etc. A balanced nutrition is required for the skin to keep it healthy, clear and glossy. Apart from the balanced nutrition, hormonal changes especially during the puberty in both sexes cause many changes in the body.^[1]

Acne is the common disorder occurring due to the changes in the hormones such as androgens, corticosteroids. It is mainly caused by the oil glands. Face and neck are the areas more prone to the acne. Acne is a result of clogged oil glands.^[7]

Acne is the inflammation of the oil glands just under the skin. Acne occurs when the pores of the skin clog up with too much oil and dead skin cells and become infected.^[1]

Pimples, whiteheads or blackheads, the reason is always the same. Pores of the skin have become clogged. Propionibacterium acnes is the relatively slow-growing, typically anaerobic, Gram-positive bacterium (rod) linked to the skin condition of acne.^[1]

Face wash prepared by herbal ingredients are better than the synthetic ingredients to avoid side effects. The present work was intended to prepare a face wash containing antioxidant, antibacterial and antiseptic properties which are necessary to keep the skin, smooth and attractive.^[2]

Oil causes irritation and redness, and bacteria can multiply rapidly. The bacteria cause infection. In bad cases this can lead to infected cysts (the big lumps under the skin) and even scarring.^[2]

The main underlying reason for acne is hormonal imbalance. Hormones make the oil glands

produce too much oil.^[1] This hormonal imbalance is the reason that so many teenagers develop acne. Puberty is a time where the hormone metabolism undergoes major changes.^[2]

Acne can be successfully treated with neem. Neem kills bacteria that cause Acne / Pimples and prevents it from coming back.^[2]

- Neem is a mild treatment that does not upset your skin further.
- Neem does not only kill the acne causing bacteria, it also soothes redness and inflammation.
- Neem is totally free from any side effect.

Neem is an excellent antibacterial herb and it can indeed be very helpful with acne. People do report great results when using it.^[2]

Neem^[3]



Biological Source: It consists of all aerial parts of plant known as *Azadirachta indica*.

Family: Meliaceae.

There are many active compounds found in the neem. The most common ones are.

Azadirachtin: Provides repellent, anti-hormonal and anti-feedant properties.

Nimbin: Provides anti-inflammatory, anti-pyretic, antihistamine and antifungal properties

Nimbidin: Provides antibacterial, anti-ulcer, analgesic, anti-arrhythmic and antifungal

properties.

Nimbidol: Provides anti-tubercular, anti-protozoan and antipyretic properties

Quercetin: Provides anti-protozoal, antioxidant, anti-inflammatory and antibacterial properties.

Aloe^[6]



Biological Source: Aloe is the dried latex of leaves of various species of Aloes, namely: Aloe barbadensis Miller (or Curacao Aloe).

All these species belong to the family Liliaceae.

Active components with its properties: Aloe vera contains 75 potentially active constituents: vitamins, enzymes, minerals, sugars, lignin, saponins, salicylic acids and amino acids.

Tulsi^[3]



Biological Source: Tulsi consists of the fresh and dried leaves of Ocimum species like Ocimum sanctum L. and Ocimum basilicum L. Family: Labiatae.

Some of the main chemical constituents of tulsi are: oleanolic acid, ursolic acid, rosmarinic

acid, eugenol, carvacrol, linalool, β -caryophyllene (about 8%), β -elemene (c.11.0%), and germacrene D (about 2%).Tulsi kills bacteria and infections, therefore it's a great natural home remedy for acne and other skin irritations.The primary compound of holy basil oil is eugenolwhich is widely believed to treat many skin disorders.

Cucumber^[4]



Biological Source: Cucumber (*Cucumis sativus*) is a widely cultivated plant belonging to family Cucurbitaceae.

Uses: Natural toner, lightens the skin, anti wrinkle, cooling effect on skin.

Lemon^[5]



Biological Source: Fruit of *Citrus limon* belonging to family Rutaceae.

Property: Antibacterial and Antioxidant.

INGREDIENTS^[1]**Table:1.**

INGREDIENTS	PARTS USED	PROPERTY
Aqueous extract of Neem	Leaves	Kills acne causing bacteria
Aqueous extract of aloe vera	Whole plant	Coolant, soothing, and moisturiser
Aqueous extract of Tulsi	Leaves	Antimicrobial & anti acne
Aqueous extract of Cucumber	Fruit	Cooling & Soothing
Lemon Juice	Fruit	Antibacterial and Antioxidant
Carbopol 940	-	Gelling agent
Methyl paraben	-	Preservative
Triethanolamine	-	Neutraliser
Sodium lauryl sulphate	-	Foaming agent
Propylene glycol	-	Humectant
DYE	-	Coloring
Distilled water	-	Vehicle

MATERIALS AND METHOD^[8]

Extract of lemon will be obtained from the fruit which possess the antibacterial and antioxidant property. Whole part of aloe vera will be used to prepare the extract which imparts cooling and soothing effect. Aqueous extract of Neem, Tulsi, Cucumber were taken. Other ingredients such as gelling agent (carbopol 940), preservatives (methyl paraben), neutralizer (triethanolamine), foaming agent(Sodium lauryl sulphate),humectants(propylene glycol), Dye, vehicle(water) were taken.

Preparation of Extract^[8]**Neem Extract**

Leaves of neem will be cut into small pieces and were boiled in water for 2-3hrs using a heating mantle and vessel ,the temperature should be optimum so that active constituents do not get affected ,the aqueous extract obtained filtered so that if there any impurity will be filtered off .

Other Extracts

Extracts of lemon, whole plant of aloe vera, Cucumber were prepared by Maceration Process.In maceration plant part is placed with the the whole of the menstruum in a closed vessel for 2-7 days. Water is used as menstruum. TULSI Extract was also prepared as of Neem.

Preparation of Gel^[8]

A little quantity of water will be added with preservatives, propylene glycol and sodium

lauryl sulphate were dissolved well. To the above solution carbopol was added little by little and stirred well until a gel like dispersion will be obtained. To this the extracts were added one by one to get a complete gel like consistency. Then triethanolamine will be added finally.

Evaluation of Formulation^[9,10,11]

Physical evaluation

Physical parameters such as colour, appearance and homogeneity were checked visually.

Colour: The colour of the face wash gel was checked visually.

Odour: The formulation was evaluated for its odour by smelling it.

Washability: Formulation was applied on the skin and then ease and extent of washing with water was checked manually.

pH: pH of 1% aqueous solution of the formulation was measured by using a calibrated digital pH meter at constant temperature.

Irritation: It was carried out by applying product on the skin for 10 minutes. If no irritation occurs then it is considered as a non irritating product.

Sensitivity: It was tested by "Patch Test". Apply product on 1cm³ patch of skin, if there was no inflammation or rashes then it was considered as free from sensitivity.

Viscosity: Viscosity of the gel was determined using Brookfield viscometer. The values obtained for the sample and for water will be noted.

Spreadability: The spreadability of the formulated gel will be measured on the basis of 'Slip and Drag' characteristics of gel. An excess of gel (about 2g) under study will be placed on this ground slide. The gel will be then sandwiched between two slides. One kg weight will be placed on the top of the two slides for 5 min to expel air and to provide a uniform film of the gel between the slides. Excess of the gel will be scrapped off from the edges. The spread ability of the gel was found manually by applying the gel on the skin with gentle rub.

Foamability: Small amount of gel was taken in a beaker containing water. Initial volume was noted, beaker was shaken for 10 times and the final volume was noted.

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

Anti-Acne Activity^[10]

Anti Acne activity of facewash using *Staphylococcus aureus*.

Procedure

- 1) Preparation of agar medium: 2gm agar and 1gm nutrient broth and dissolve up to 60ml of water in volumetric flask, after preparing it keep it in incubator along with 2 petriplate for 20 min.
- 2) Preparation of sterile place: A sterile place will be prepared so that no another dust particle will enter.
- 3) Antiacne procedure: After incubation take the prepared medium into sterile place and pour that medium into 2 petriplate and after solidification of medium into petriplate with the help of glass spreader, spread the prepared facewash which will be soluble in water in 1 petriplate and in another petriplate spread facewash and pimple together, after that the culture *sthyphalococcus aureus* with the help of platinum wire loop will be spread into 2 petriplates and kept in sterile place for 24 hours.

RESULTS AND DISCUSSION

Table: 2: Evaluation of Herbal Face wash Gel.^[9]

S.No	Parameters	Observations
1.	Colour	Reddish Brown
2.	Odour	Rose
3.	Consistency	Good
4.	pH	7.0
5.	Spread ability	Easily spreadable
6.	Wash ability	Easily washable
7.	Grittiness	No gritty particles
8.	Foam ability	Foam volume 100ml at 5 minutes
9.	Anti acne activity	Excellent

CONCLUSION

Skin disease is very common and the need to prevent or treat the disease is in great demand. In the present scenario, people need remedy for skin disease without side effects. Herbal ingredients opened the way to formulate cosmetics without harmful effect, which can impart the required properties to heal the skin disease and the expense will be less when compared with the synthetic products. This formulation can be used as an effective face wash gel.

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