

# Formulation and evaluation of herbal hand wash using Neem and aloe vera extract

Om K. Pawar, Nikhil R. Murdare, Assit. Prof. Wakchaure Yogita Ashok, Dr. Megha T. Salve

*Department of Bachelor in Pharmacy*

**Shivajirao pawar college of pharmacy, Pachegaon, Ahilyanagar- 413725**

**Corresponding Author-** Om K. Pawar, Nikhil R. Murdare

## **Abstract:-**

Hands are the main transmission route for microorganisms and infectious diseases. Hand washing is very important in food health, home cooking, and day care. Hand washing is used as disinfectant in daily life and has many antibacterial effects ingredients such as cinnamon oil, glycerin, tea, fragrance dye methyl paraben, and purified water are used in the production of hand wash products. Reduces visible hand dirt and reduces the number of harmful microorganisms such as E. coli and salmonella can be transmitted from people, animals, or equipment and transferred to food. Herbal cosmetics are natural and generally do not contain any harmful synthetic chemicals that can be fatal to the skin. Since it uses natural ingredients, there are no side effects and you can use it at any time with confidence. Therefore, herbal cosmetics are recommended over synthetic cosmetics. The aim of the current study is to formulate and evaluate herbal handwash products using natural ingredients to promote personal hygiene. The formulated hand wash was evaluated on various parameters such as pH, color, foaming efficiency, viscosity, and stability.

**Keywords:** Handwash , herbal hand wash, tulsi, vitamin c, Aloe vera

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## **Introduction**

### **Herbal Cosmetic**

Cosmetic oils are made from plants with cosmetic activities. Recently, the use of herbs in cosmetics has increased significantly due to the mild activity and toxicity of Natural ingredients and phyto are used in cosmetics. Natural products include oils, extracts, and others. Phyto Tools contains the best content available for different ingredients.

### **Advantage of Herbal cosmetic**

1. **Natural Products:**  
Natural plant-based cosmetic oils and free of all harmful synthetic chemicals that can naturally transform into skin irritants.
2. **Safety of use:**  
Cosmetic oils are protected against use. They are hypoallergenic and dermatologist-approved to be safe to use anytime, anywhere. Since they are made from natural ingredients, people do not need to worry about skin irritation or irritation.
3. **It is compatible with all skin types:**  
It does not matter whether the skin is dark or light; you will find basic cosmetic products such as foundation, eye shadow and lipstick suitable for every skin type. Women with oily or sensitive skin can also use and do not have to worry about harming their skin
4. **More selection options:**  
The product is cheaper than synthetic is available at a discounted price and will be sold at a lower price like during the sale. WHO estimates that approximately 80% of the world's population is dependent on traditional health products due to the negative effects of the rise of modern medicine.
5. **No Side Effects:**

Synthetic beauty products can irritate the skin and cause acne. They can clog your pores and make your skin dry or oily, so you don't have to worry about that. The natural ingredients you use ensure that there are no side effects that you can use whenever you want.

### Disadvantage of Cosmetic

1. Herbal ointments are less effective than the allopathic forms.
2. Moreover, it requires a long treatment.
3. It is difficult to hide taste and smell.
4. Production processes are time consuming and difficult one

### Neem

**Synonym:** Margosa

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

**Family:** : Meliaceae

**Geographical Source:** Available in India, Pakistan, Bangladesh, Sri Lanka, Thailand, Malaysia, Mauritius, Fiji, South Africa and East Africa.

### Macroscopic characters

1. Leaves: alternate, spreading, indeterminate leaflets 5.0 cm to 10 cm long, lanceolate and narrow towards the tips of the branches. Its leaves have teeth, are green in color and have a hard test.
2. Broad beans: Medium, stable, dark colored, long and dense inside. The white starch it contains is colored with the characteristic odor of neem and tastes bitter.

### Chemical constituents

The best number of compounds isolated from the plant are in the category of diterpenes (sugiol), nibiol (bark), triterpenes: B-sitosterol, stigmasterol (leaf), Limonoids: Maliantriol (seed oil) and mbidin (seed oil), Nimbendiol (seed oil and azadirachtin (seeds), sulfur-containing compound Cyclic acid tri- and tetrasulfur (leaves), flavonol glycoside Nimaton, quercetin, myrecetin, kaempferol



## Uses

Scientific research has been conducted recently and it is said that contains various chemicals including pesticide, insecticide, anti-nutritional, nematicide and antimicrobial. Seed oil has antifungal properties.

### Aloes

**Synonyms:** Aloe, Musabbar, Kumari.

### Biological source:

Aloe is the dried sap of the leaves of *Aloe barbadensis* Miller, known as Curacao, *Aloe perryi* Baker, known as Socotrine aloe; or *Aloe ferox* Miller and a hybrid species of *Aloe africana* Miller and *Aloe spicata* Baker, known as Cape aloe, belonging to the Liliacea family.

### Geographical source:

Aloes are native to Eastern and Southern Africa, and of them grow in the Cape Colony of Socotra on the Zanzibar Islands. It is also grown in many regions, including the Caribbean, Europe and the Northern Himalayan region.



## History

The word aloe comes from the Arabic word meaning. aloch means something bitter. Of the different types, 'vera' means true, 'ferox' means forest, 'spicata' refers to the flowers on the trees, and 'barbadensis' and 'africana' refer to the plant's habitat. According to folklore, local people in the Congo region of Africa used the leaves to protect them from wild animals by leaving a paste to reduce sweat and disguise human odor. It is also known that *Aloe barbadensis* was used in combination with burnt alum to heal sick eyes.

### Cultivation and collection:

The Aloe genus consists of approximately 200 species, of which are used as sources of Aloe. This plant has rosettes of large, beautiful leaves (Figure 9.1). The leaves are sessile and have a strong spine at the top and spines on the sides. The lower part is round and the upper part is flat. 8, Root plants are used for propagation in crops. Plants grow in poor soil and dry conditions. Root suckers are planted in rows about 50 cm apart. Watering near the plant should be avoided. Roots do not penetrate deep into the soil. uses a mixture of nitrogen, potassium and phosphorus for fertilization purposes. In the second year of cultivation, the leaves are cut at level, and after twelve years, chemicals are found in the leaves. Twelve years later, crops were harvested and hectares of land were planted. During the collection of the leaves, cuts are made near the base of the leaves and the sap in the pericycle cells is released as a result of % of the pressure created by the cells. A portion of is sufficient to remove all the water from the system consisting of pericyclic cells. A compilation of different aloe species is listed here.

**Chemical constituents:**

All aloe species are the main source of anthraquinone glycosides. The main component of aloe is aloin, which is a mixture of glycosides, including barbaloin. It is a chemical aloe-emodin anthrone is a C-10 glucoside and is water soluble Barbaloin is a C-glycoside and is not hydrolyzed Using heat from acid or alkali f chloride decomposes barbaloin and hydrolysis of the alide emodin-anthrone to little emodin and glucose.

**Uses:**

Aloe is used as a purifying agent. The effect is mainly on the large intestine. It has strong activity to clear all drug series and anthracene glycosides. It is given with carminatives against the effects of gpp activity.

Aloe gel made from the cells of leaves is a clear and transparent drink should not be contaminated with aloe juice during collection. Such gels are used in topical treatments and many cosmetic products, but their oral therapeutic value is controversial. The gel has the best properties of an has the oil-in-water formula of (approved by USF.D.A.). Salicylates exhibit anti-inflammatory properties thanks to chemicals such as carboxypeptidase (inactivates bradykinin) and active magnesium (impairs the conversion of histidine and histamine in mast cells). Polysaccharides and sugars () play a role in hydrocolloid degradation and are also osmotic acid killers. Aloe gel also eliminates dead skin cells thanks to its Aloctin-content, which stimulates macrophage production. It is believed that only the new gel can play a role in the healing, inflammation and injury of.

**Materials and Methods****Material**

**Neem Leaves, Aloe vera leaves, sodium luryl sulphate, glycerine, rose oil and Methyl Paraben.**

**Method:****Extraction of neem**

1. Fresh neem leaves are collected and dried for 15 days
2. The dried leaves are then used in a mortar and pestle
3. Neem leaves weighing 25 grams are used and are made in a beaker containing 100 ml of methanol.
4. The prepared mixture is stored with aluminum and infused in the middle of left to process for 3 days and then the mixture is filtered using filter paper.
5. Excess solution is evaporated using a rotary evaporator and the remaining mixture is dried in hot water.
6. The dried extract is collected and stored
7. The product has been designed and tested 15

**Formulation of herbal hand wash**

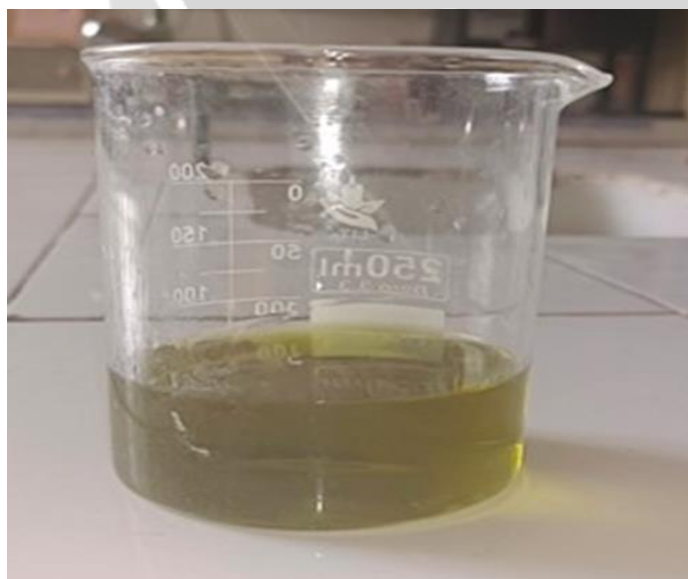
Hand wash was prepared by was adding 15 ml filtrate of ethanolic neem extract, in this filtrate 5 gm of sodium luryl sulphate was added, 1 gm of carbopol 934, 35 ml glycerin, 0.2 gm methyl paraben, 4 ml rose oil was added and volume was made up to 100 ml distilled water.

Ingredient	Quantity	Use
Methanolic neem extract	15 ml	Antibacterial

		Antiinflammatory properties
Aloevera juice	15 ml	Soothing properties
Sodium luryl sulphate	5 gm	Foaming Agent
Carbopol 934	1 gm	Gelling agent
Glycerin	35 ml	Moisturizing Agent
Rose oil	4 ml	Fragrance
Methyl paraben	0.2 gm	Preservative
Distilled water	q.s	

#### Evaluation of herbal hand wash Physical Parametrs

1. Visibility: Visible.
2. Color: is seen as
3. Smell: Hand marked.
4. Homosexuality: openly visible
5. Fragrance: Approved based on personal observation. 5 people were asked to approve and pick up scents. And scents were evaluated according to criteria explained below



**Fig.** Preparedherbal handwash

### Chemical parameters

#### 1. pH determination:

pH is determined using a digital pH meter. Take 1 gram of hand washing detergent, take and dissolve it in 100% distilled water. The pH of hand washes was adjusted using a 40% NaOH solution.

#### 2. Viscosity: **Viscosity** was determined using a **Brookfield** digital **meter**

3. Foam thickness: 0.5 g of hand washing sample was taken and dispersed in 25 ml of distilled water. Then transfer to 500 ml graduated cylinder with stopper; The dose consisted of 50 ml and water. Including 25 sticks and stop for measuring the volume of water up to 50 ml and the height of foam; above water level

4. Foam retention: 50 ml of hand wash was placed in the 200 ml graduated cylinder and shaken 10 times. The amount of foam was recorded at 1 minute intervals between and 4 minutes.

### Result

#### Conclusion

The neem extract herbal handwash was successfully developed with antibacterial properties and enhanced quality with aloe vera juice as soothing agent, carbopol 934 as gelling agent. Sodium lauryl sulphate as surfactant, glycerine as moisturizing agent, Rose oil for fragrance. The formulated hand wash was evaluated for different parameters like pH, color, foaming efficiency, viscosity and stability. The hand wash was found to be stable in terms of physical parameters with good cleansing property

Results of all evaluation parameter

Sr. no.	Evaluation Parameters	Result
1.	Appearance	Opaque
2.	Color	Light green
3.	Odor	Aromatic
4.	Homogeneity	Homogenous
5.	Fragrance	Rosy
6.	PH determination	6.0
7.	Viscosity	28 c pascle
8.	Foam Height	5 cm
9.	Foam Retention	20 min

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