



A Review on Herbal Handwash

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ABSTRACT

Alcohol-based sanitizers make up many of the antiseptic hand washes on the market, and they can cause some problems. To avoid these negative effects like dermatitis, itching, drying, irritation, One attempt has been made to create a polyherbal hand wash using extracts from the synthetic handwashes. The Cup Plate Method was used to test the effectiveness of the prepared poly-herbal hand wash against skin pathogens collected from volunteers. Due to the combined activity of phytoconstituents present in extracts, the Cup Plate Method revealed that hand wash prepared from alcoholic extract and aqueous extract of ginger rhizomes is effective. The outcomes from the current work support the fuse and use of spices in definitions to give an improved impact. Herbal hand wash was evaluated using tested parameters like color, fragrance, and chemical parameters like pH, viscosity, foam height, foam retention, antimicrobial activity, and skin irritation test, among other things. and the results that were obtained were within the acceptable limits and had little or no side effects. The appearance, pH, and viscosity of two handwash formulations were examined for their physical characteristics. The agar diffusion method was used to test the antimicrobial activity of prepared hand wash formulations against skin pathogens such as Staphylococcus, Pseudomonas aeruginosa, and Escherichia coli.

Keywords: polyherbal hand wash, hand hygiene, evaluation test, ingredients

1. INTRODUCTION

The herbal medicine is also known as phytomedicine or botanical treatment. The use of any plant's seeds, roots, leaves, bark, flowers, or aerial parts for medicinal purposes is known as herbal medicine. Since the skin is the most exposed part of the body, it needs to be protected from skin pathogens. Herbal medicine has been used to treat and care for many diseases.(1) Numerous chemical antiseptics, such as alcohol-based sanitizers and chlorhexidine products, are now available on the market. These soaps or solutions help prevent contagious disease transmission in healthcare settings more effectively, but they have some drawbacks or side effects. They can irritate the skin and make pathogens resistant if used frequently(2). This herbal hand wash contains many natural herbs that are very effective against certain microorganisms. Herbal hand soap is beneficial for both economic and medical purposes. Microbes enter our bodies through our hands, which are the primary source. Using hand soap to wash your hands can stop some bacteria from getting in. Protecting one's hands is just as important as stopping bacteria from getting in.(3) The scent of the herbal hand wash keeps the skin looking and feeling fresh. The gentle frothing activity causes no aggravation while utilizing natural hand wash. Additionally, it aids in the effective removal of oil and dirt from the skin. Additionally, it aids in the removal of antiseptic and fungal skin issues. Thus, hand washing aids in the prevention of diarrhea, respiratory infections, and even skin and eye infections.(4) Tulsi extract has antimicrobial properties in vitro. Taking this ultimatum into consideration, a literature review of herbs with antimicrobial properties revealed that Osmium sanctum (Tulsi) extract possesses this property. As a result, the goal of this study was to create and assess a herbal hand wash made from alcoholic extracts and other suitable excipients that can be used as herbal hand washes. (5)

2. Hand Hygiene for Workers In Laboratory

The Greek goddess of healing Hygeia is the source of the word "hygiene." In modern usage, the term "hygiene" typically refers to cleanliness, and in particular to any practice that reduces or eliminates harmful infectious agents. In the medical literature, the various spellings of terms like "handwashing," "hand washing," and "hand-washing" demonstrate the wide range in terminology used in hand hygiene. Article archiving may become inconsistent as a result of such variations. Because valid comparisons between studies depend on the standardization of definitions, the terms' definitions are crucial. Hand washing is the single most important procedure for infection prevention, and there is evidence that precise definitions of the terms are important for facilitating the effective use of hand hygiene guidelines.(6) Use soap and water to thoroughly wash your hand. The contaminants will be washed away by this. Hand washing reduces the number of organisms that can cause infections by a significant amount. Additionally, it should be used when diarrheal patients come into contact with other patients; Alcohol-based hand rubs will not work here. Standard operating procedure should be followed when washing one's hands with soap and water. (7)

3. Ingredients

3.1 *Tulsi Leveas (8)*

- Kingdom: Plantea
- Division -Magnoliophyta
- Class - :Magnoliopsida
- Order: - Lamiales
- Family: - Lamiaceae
- Genus: - Ocimum
- Species - O.Tenuiflorum
- Binomial name: - Osmium tenuiflorumOsimum



Figure No. 1 : Tulsi leaves

Medicinal use of tulsi-

To treat ring worm and other skin diseases like leucoderma, a paste made from tulsi leaves is applied to the affected area. Saffron and tulsi leaves are combined with chickenpox to investigate the condition. In cases of normal glucose, the ethanolic extract of tulsi leaves results in a significant drop in blood sugar. (9)

3.2 *Rose oil (10)*

- Kingdom – Plantae
- Division – Magnoliophyta
- Class – Magnoliopsida
- Order – Rosales
- Family – Rosaceae
- Genus - Rosa
- Species - Centifoli



Figure No. 2 : Rose oil

Medicinal uses of rose-

Rose oil may be used effectively to reduce anxiety, stress, depression and pain. It has healing property , Moisturizes the skin. ,It improves skin tone and brightens , It helps to reduce blemishes, acne scars and dark spot.(11)

3.3 Aloe vera (12)

- Kingdom : Plantae
- Order : Asparagales
- Division : Spermatophyta
- Subdivision : Angiospermae
- Class : Monocotyledoneae
- Family : Liliaceae
- Genus : Aloe
- Species : barbadesis Mill



Figure No. 3: Aloe vera

Medicinal use of alovera-

Aloe vera gel's anti-inflammatory properties help wounds heal faster due to its antibacterial properties. Aloe gel inhibits *Streptococcus pyogenes* and *Streptococcus faecalis*, two types of bacteria. It kills *Pseudomonas aeruginosa* by killing bacteria. Aloe vera's liquid and leaf pulp combat pathogenic fungi in plants. Additionally, the preparation of aloe gel inhibits *Candida albicans*. By interfering with the synthesis of proteins, the lectin-rich fraction of aloe gel directly inhibits the growth of cytomegalovirus. Aloe leaf anthraquinone derivatives have been shown to kill enveloped viruses. The majority of viruses, including *Varicella zoster*, influenza, the pseudorabies virus, and herpes simplex viruses, are inactivated by aloe emodin. (13)

3.4 Neem (14)

- Kingdom: Plantae
- Subkingdom: Tracheobionta
- Division: Magnoliophyta
- Class: Eudicot
- Subclass: Rosidae
- Order : Sapindales
- Family: Meliaceae
- Genus: Azadirachta
- Species : A . indica



Figure No.:4: Neem

Medicinal use of neem-

Azadirachta indica is a member of the meliaceae family of plants. Neem is its common name. It is a source of many therapeutic agents in traditional medicine. It is known that the leaves of neem have antimicrobial and antifungal properties against a variety of pathogenic bacteria, including *E. coli*, *Staphylococcus aureus*, and *Pseudomonas aeruginosa*. Neem is a versatile tree that has numerous health benefits. It was demonstrated that various parts of the tree had antimicrobial properties against a wide range of microorganisms. Moreover, Neem leaves might be utilized for the therapy of different sicknesses including dermatitis, ringworm, skin break out, irritation, constant injury contamination, hyperglycemia, diabetic foot and gas gangrene.(15)

3.5 Turmeric

- Kingdom: Plantae
- Subkingdom : Tracheobionta
- Superdivision : Spermatophyta
- Division: Magnoliophyta
- Subclass : Zingiberidae
- Order: Zingiberales
- Family: Zingiberaceae
- Genus: Curcuma
- Species : longa
- Scientific name: Curcuma longa(16)



Figure No. . 5 : Turmeric

Medicinal use of turmeric –

It is strongly associated with Indian social customs and is regarded as an effective medicine for wound healing. Only turmeric powder is used to heal wounds that occur as part of rituals. Numerous skin conditions may benefit from the anti-parasitic properties of fresh turmeric juice. In cases of prurigo and eczema, turmeric powder containing cow's urine is also taken internally. To prevent skin eruptions, turmeric mixed with gingili oil is applied to the body. Patients with chickenpox and smallpox are given a thin paste or coating of turmeric powder to make the scabbing process easier (Nadkarni, 1976).

Curcumin increased granulation tissue formation and the biosynthesis of extracellular matrix proteins in rats and guinea pigs, according to experimental studies. In cases of local muscle injury, a systemic curcumin treatment resulted in faster recovery(17).

4. Advantages of Herbal Hand wash:-

- 1) No side effects.
- 2) Bacteria on our hands can be minimized.
- 3) It also helps to clear antiseptic and fungal problem faced by the skin.
- 4) It also helps to remove dirt and oil effectively from the skin.
- 5) Easier access compared to using soap and water.
- 6) The easiest way to get rid of microorganism.
- 7) Hand wash prevent germs from entering into our body.(18)

5. Preparation of herbal hand wash

Extraction method of Tulsi:-

- 1) Sample of tulsi leaves were separated and washed with water and dried properly dried leaves were separated.
- 2) Methanolic extract was prepared from the tulsi powder. A total 20gm of finely powder of tulsi was diluted with 80ml of methanol for 4 to 6 days. the alcoholic decoction was subjected to filtration to obtain a clear filtrate.(19)

Procedure (20)

- 1) Methanolic extract of tulsi leaves is mixed with 4ml citrus neem juice in 20ml of water.
- 2) Then add aloe vera twice and add extract of sodium lauryl sulphate to produce sufficient foaming capacity.
- 3) Then add desired quantity of glycerin and rose oil with moderate stirring.
- 4) At the end add preservative in sufficient quantity .
- 5) The solution is mixed, made homogeneous under room and further utilized for screening activity.(20)

6. Evaluation test for herbal hand wash

6.1 Foam Height

One gram of sample of hand wash gel was taken and dispersed in 50ml distilled water. Dispersion was transferred to 500ml measuring cylinder. Volume was made up to 100ml with water. 25 strokes were given and kept it aside. The foam height above the aqueous volume was noted.(21)

6.2 PH test

In 100 millilitres of distilled water, 1 gm of gel-based herbal hand wash was mixed. The pH of the mixture was examined using a previously standardised digital pH meter.(22)

6.3 Stability Test

The Stability studies were carried out for Polyherbal Hand wash Gel formulation by storing at different temperature conditions like 40°C, 25°C, and 37°C for 1 week. During the stability studies no change in colour and no phase separation were observed in the formulated hand wash.(23)

6.4 Spreadability test

A sample of 0.5 g of each formula was pressed between two slides and left for about 5 minutes where no more spreading was expected. Diameters of spreaded circles were measured in cm and were taken as comparative values for spread ability. The results obtained are average of three determinations.(24)

6.5 Viscosity

The viscosity of hand wash was determined by using digital Brookfield viscometer. Measured quantity of herbal hand wash was taken into a beaker and the tip of viscometer was immersed into the hand wash gel and the viscosity was measured in triplicate. (25)

Conclusion

Due to various diseases and germs, bar soap can become contaminated, which may lead to the spread of germs. In today's sophisticated world, liquid hand washes are used much more frequently than bar soap. The additional advantages of liquid hand washes include the fact that the soap in the liquid hand wash is uncontaminated and hand wash with each new pump. In the market, various types of hand washes are available, claiming to kill harmful germs at a significant rate in a short amount of time. In order to ascertain this, it is necessary to ascertain the handwash's efficiency—the average percentage reduction and log reduction of the organisms found during the viable count performed by hand.

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