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A Review - Formulation and Evaluation of Polyherbal Hand Wash

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Abstract: *There are a number of disadvantages to using alcohol-based disinfectants for antibacterial hand washing. These include unpleasant side effects that might result from using synthetic hand wash preparations, like itching, dryness, irritation, and even dermatitis. Consumers are increasingly looking for cosmetics with natural ingredients to avoid such negative effects and allergic responses. Before creating a hand wash that not only cleans but also offers extra skin advantages, more study is necessary.*
This is why extracts from Moringaoleifera leaves were recently used to create a liquid-based herbal hand cleanser. After that, the formulation underwent a number of tests to determine how well it cleaned while preserving stability and other pertinent factors.
In addition to measuring foam height, the parameters that were assessed included physical and chemical characteristics such as pH levels, colouration, aroma, appearance, texture, spread ability, and grittiness factor. The findings demonstrated that the herbal hand wash had little to no negative side effects and operated within typical bounds. For people looking for natural hand washing solutions without worrying about the negative side effects of synthetic substances frequently included in traditional hand wash products, this new breakthrough provides hope. More creative ways to satisfy consumer demand for safe and efficient personal care products are probably going to be found as this field of study develops.

Keywords: Herbal Handwash, Herbal extract, Shobhanjana, Hygiene, Cleaning, Foam retention

I. INTRODUCTION

Since the skin is the most exposed area of the body, it needs to be protected from skin infections. Numerous illnesses have been treated and cared for with herbal therapy. Despite being widely accessible on the market to more successfully stop the spread of infectious diseases in hospital environments, a number of chemical antiseptics, including alcohol-based sanitisers and chlorhexidine solutions, have certain disadvantages or adverse effects. These soaps or solutions, which contain many natural herbs that are very powerful against specific bacteria, might irritate the skin and render pathogens resistant if used repeatedly.
Herbal hand soap has both financial and health benefits, and since bacteria enter our bodies through our hands, washing your hands with soap is a crucial first step in keeping bacteria out of your body. As a result, keeping your hands safe is just as important as keeping bacteria out. This herbal hand wash uses natural ingredients to effectively remove oil and dirt from the skin, as well as to help remove antiseptic and fungal skin issues. Its scent not only keeps the skin feeling fresh, but it also gently foams without irritating the skin.
Therefore, frequent hand washing is a simple yet cost-effective way to prevent infection, especially during the current COVID-19 pandemic conditions where prevention is better than cure; it also helps to prevent respiratory infections, eye infections, and diarrhoea while also promoting general health by preventing the spread of pathogenic microorganisms that cause illness; Because it entails washing hands with the deliberate goal of eliminating dirt, grime, and harmful germs while warding off transitory organisms, hand hygiene is crucial in this situation.

Advantages and disadvantages of herbal handwash:
Advantages:

- Decrease in the quantity of bacteria on hands.
- Easier to use than soap and water.

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- prevents dirt and oil out the skin in an effective way.
- There are no negative consequences.
- eliminates fungal and antiseptic issues with the skin.
- protects bacteria outside our bodies.
- simplest method of removal of bacteria.

Disadvantages:

- chronic damage to the skin.
- dermatitis and asthma caused by irritating touch.

Benefits of Herbal Handwash

- Easy accessibility
- Inexpensive
- Fewer adverse effects than with other kinds of hand washes
- Increased effectiveness in encouraging hand hygiene

The Materials Utilized in the Formulation of Our Herbal Handwash:

- Ritha
- Tulsi
- Moringaoleifera
- Pudina
- Clove oil
- Glycerine
- Methyl paraben
- SLS
- Carbopol 940
- Jasmine oil
- Distilled water

These components, which come from a variety of herbal plants, were carefully chosen for their pharmacogenetic qualities.

Pharmacognosy of Herbal Plants:

Ritha:

Family: Sapindaceae
Genus: Sapindus
Common name: Soapberry, soapnut, washnut, aritha, dodan, and dodani.
Hindi name: soap nut, aritha.
Marathi name: soap nut tree, ritha
Sanskrit name: Arishtah.
Synonym: soapberry, soapnut, washnut, aritha, dodan, and Indian soap berry

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Fig: Ritha

Medicinal Use of Ritha:

Ancient Asians and Americans employed the saponins found in the draperies (soapnuts), which have surfactant qualities, to wash their clothes. Numerous other applications for sapindus have also been documented, including the production of ornamental items from the seeds and arrows from the wood. Sapindus leaf and fruit extract has long been used in traditional medicine to treat a variety of ailments.

Tulasi:

Family: Lamiaceae
Genus: Ocimum
Common name: Holy basil, Tulasi, and tamole
Hindi name: Holy basil, pushpsara, Nandini.
Marathi name: Tulasi.
Sanskrit name: Vrinda.
Synonyms: Gauribahumanjari (L.) Merr.

Fig: Tulasi

Medicinal use of Tulasi:

Ringworm and other skin conditions like leukoderma are treated by applying a tulsi leaf paste to the afflicted area. To study the illness, Tulsi and saffron herbs are mixed with chickenpox. The ethanolic extract of Tulsi leaves causes a notable decrease in blood sugar in situations with normal glucose levels.

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Moringaoleifera:
Family: Moringaceae
Genus: Moringa
Common names: Moringa, Drumstick tree, Horseradish tree, and Benzo live tree.
Hindi name: Sainjna, Saguna
Marathi name: Shevga
Synonym: Morning peregrina.
Sanskrit name: Shobhanjana.

Fig: Moringaoleifera

Medicinal use of Moringaoleifera:
In tropical and subtropical regions, moringa (moringaoleiferaLann.) is a species of indigenous Indian herb used for therapeutic purposes. Moringaoléifera is a vegetable that belongs to the Moringaceae family and the Brassica order. The seed extract of Moringaoleifera was recently found to have antifibrotic properties in rats with liver fibrosis.

Pudina:
Family: Lamiaceae
Genus: Mentha
Common name: Spearmint
Hindi name: Ban Pudina, Paudina, Podina, Pudina, pudinah
Marathi name: Pudina
Sanskrit name: Pudina, putiha, podinika, phudino, podina
Synonym: Spearmint

Fig: Pudina

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Medicinal uses of Pudina:
Could Reduce Pain During Breastfeeding
could aid in indigestion relief.
It could help with irritable bowel syndrome

Clove Oil:
Family: Myrtaceae
Genus: Syzygium
Common name: Eugemol
Hindi name: Laung
Marathi name: Lavang
Sanskrit name: Lavanga
Synonym: Eugenia aromatica bud oil.

Fig: Clove oil

Medicinal use of clove oil:
In Asian, African, Mediterranean, and Near and Middle Eastern cuisine, cloves are used to flavor meats, curries, marinades, and fruit (including apples, pears, and rhubarb). Cloves can provide flavor and perfume to hot beverages; they are frequently used with other ingredients like sugar and lemon. They are frequently used as ingredients in spice blends, such as specula and pumpkin pie spice.

Formulation Table:

Sr. No.	Ingredient	Quantity (gm/ml,)	Action
1	Ritha	5	Foaming agent
2	Tulsi	10	Purifying agent
3	Moringaoleifera	10	Antimicrobial agent
4	Pudina	5	Antibacterial agent
5	Clove oil	0.50	Antibacterial agent
6	SLS	3	Foaming agent
7	Carbopol 940	5	Gelling agent
8	Methyl paraben	0.50	Preservative

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9	Glycerine	0.5	Softening agent
10	Jasmine oil	Q.S.	Perfume
11	Distilled water	Upto 100 ml	Vehicle

Method of Preparation:

Carbopol940 was used as the gelling agent in the preparation of the Polyherbal Hand Wash Gel, which is soaked in 15 millilitres of distilled water for the entire night.

Extracts of neem and peppermint, Ritha powder, Tulsi, and clove oil were precisely weighed and dissolved by mild heating.

The solution should be let aside for a while after heating.

The necessary amount of sodium lauryl sulphate was dissolved in 10 millilitres of distilled water, and glycerine was added while stirring constantly in the aforementioned aqueous phase.

The methyl paraben was dissolved in remaining quantity of purified water and dispersed into the extract.

To achieve uniform dispersion, the swollen polymer (Carbopol 940) was agitated with a mechanical stirrer before being added to the liquid above to create a homogenous gel. The necessary amount of rose oil was then added for fragrance.

Finally, it was tagged appropriately for additional analysis and kept in a well-sealed container.

Evaluation parameters:

1) Organoleptic Evaluation Parameters: suchas colour, texture, and fragrance were used. Visual and tactile senses, respectively, were used to assess colour and texture. Sensing the formulation allowed for the inspection of the odour.

2) Appearance and Homogeneity: Appearance and homogeneity were assessed by visual examination.

3) Grittiness: After applying 1 millilitre of Gel to the tips of two fingers and rubbing them together, the formulation was assessed.

4) Skin Irritation Test: The Skin Irritation Test was assessed by putting Polyherbal Hand Wash Gel on the skin and letting it sit for half an hour. Then, using both visual and sensory examination, note any itching, rashes, or redness on the skin.

5) pH: 100ml of distilled water was used to dissolve 1g of the Polyherbal Hand Wash Gel sample. A digital pH meter that was standardised was used to measure the pH solution.

6) Spread ability: After pressing 0.5 grammes of the Polyherbal Hand Wash Gel sample between two slides for around five minutes, no further spreading was anticipated. The spreader circle's diameter, expressed in centimetres, was used to calculate the spread ability comparison values.

7) Viscosity: An Ostwald viscometer was used to measure the viscosity of Polyherbal Hand Wash Gel.

II. CONCLUSION

It was determined that, in comparison to synthetic hand washes made from synthetic compounds, herbal hand washes made from herbal materials exhibit less adverse effects. Several parameters were used to assess the created herbal hand wash, and it was determined to be suitable for usage.

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