

VARIOUS MEDICINAL PLANT USED IN HERBAL HANDWASH**Shital Mahesh Rath^{1*}, Prashant S. Nalinde² and Dr. Swati P. Deshmukh³**¹Shraddha Institute of Pharmacy Kondala Zambre Washim-444505.²Assistant Professor, Shraddha Institute of Pharmacy Kondala Zambre, Washim-444505.³Professor Department of Pharmacology, Shraddha Institute of Pharmacy, Kondala Zambre, Washim-444505.Article Received on
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Washim-444505.**ABSTRACT**

In this review article we study the preparation of polyherbal hand wash gels for germ-free hand market there are many formulations are available such as Hand Sanitizer, Handsoap, Soap paper, Hand wash Gel, Formulation of polyherbal hand wash by using extracts of *Azadirachta indica* (Neem), *Ocimum tenuiflorum* (Tulsi), *Mentha* (Mint), *Syzygium Aromaticum* (Clove oil), *Sapindus mukorossi* (Ritha), Carbapol940, Methyl paraben, Turmeric, Rose oil, Distilled Water. The benefits of Polyherbal hand wash involves they are easily available in both urban and rural areas, they are having less negative impact, it is an sophisticated method of eliminating germs. The

ingredients involves in the preparation are various herbal plants as they are having less side effects or impact on our skin. The herbal plants used are with specific medicinal uses. The polyherbal hand wash can also be prepared at homes using home-made recipe which are involved in this review article. The types of polyherbal hand wash involves social, Antiseptic & Surgical. This hand wash can be prepared by extracting the ingredient which involves Neem, Orange peel & aloe vera pulp. The commercial polyherbal hand wash preparations involves medimix herbal hand wash, aloe vera herbal hand wash. Thus, this review article emphasize that the polyherbal handwash is much beneficial than the others.

KEYWORDS: *Azadirachta indica*, *Ocimum tenuiflorum*, *Mentha*, *Syzygium aromaticum*, *Sapindus mukorossi*.

INTRODUCTION

Pores and skin being the maximum exposed part of our body calls for protection from skin

pathogens the fingers of fitness care people (HCWs) are the primary routes of transmission of multidrug resistant pathogens and contamination to the patients.^[1] hands are the essential route of microbe and contamination. Hand cleanliness is the most efficient way to save you the spread of dangerous germs and disease. Some of the chemical antiseptics are now to be had in market as alcohol - primarily based Sanitizers, chlorhexidine products etc. Handwashing is an critical manner to help fight the spread of sickness. Hand washing eliminates visible dust from arms and reduce the range of dangerous microorganisms. dangerous bacteria and viruses consisting of, E. coli and Salmonella can be carried by humans, animals or gadget transmitted to food.^[2] In healthcare, hand cleanliness is the best and most effective, best, and low approach to save you nosocomial infections. contaminated fingers can feature as vectors for unfold of germs. Antimicrobial residences of certain Indian medicinal vegetation had been suggested based totally on folklore data and only few reviews are to be had on inhibitory activity towards certain pathogenic micro organism and fungi.

Anatomy and Physiology body structure of skin

Skin is the layer of generally tender, flexible outer tissue masking largest organ of the human body that plays a physical barrier the outside and the internal environment. This serves characteristic of safety and homeostatic. PH of pores and skin is four to 5.6. The pores and skin composed of 3 Layers.

A) Dermis.

B) Epidermis.

C) Subcutaneous Tissue.

A) Dermis

The epidermis is a skinny layer of pores and skin. It's miles the outer layer of skin. It is composed of epithelial tissue. Features of the epidermis include contact and safety. This skin is further divided into 5 separate Layers, they're.

(1) Stratum corneum: The stratum corneum is the outermost layer of dermis and is made of 10 to 30 skinny layers of always losing useless Keratinocytes'. The corneum is mentioned 'Horny layer', as its cells are toughened like an animal's horn.

2) Stratum Lucidum: present most effective in skin of fingertip, palms and Soles; includes 4 to 6 rows of clean, flat, clear keratinocytes with large quantities of Keratin.

3) Stratum Granulosum:- The Stratum Granulosum is a thin layer that is located in the

the stratum spinosum and stratum Lucidum.

4) Stratum spinosum:- The stratum spinosum Layer observed in bet the stratum basale andthe Stratum granulosum.

5) Stratum Basale:- 8 of ten rows of many sided Keratinocytes with bundles of Keatin intermediate filaments; includes challenge me lanocytes and intradermal macrophage.

(b) The Demis: The dermis is a center Layer of ski beneath ties the epidermis. As there has been presence of blood vessels the skin become noun sh because of oxygen & vitamins and facilitates to cast off waste products.

C) The Subcutaneous Tissue /Hypodermis / Subcutis: It's far the innermost layer of the skin which is made up of fat and connective tissue. The subcutis. acts as a Layer of insulation of shield internal hady organs and muscular tissues from surprise and adjustments in temperature.^[3]

• Handwash

Hand washing is the most efficient way to prevent the transmission of bacteria they could motivediarrhea, influenza and the most usually the commonplace bloodless. It's miles the very best, muchless pricey approach to self hand cleanliness in healthcare and the prevention of infections diseases. The time length range on common as brief as 15 to 30 sec in that including rubbing thebacks of arms, wrists, among fingernails arms are the primary mode of germs and infection transmission.

• Merits of Polyherbal hand wash^[4]

- They're easily use and available each in urban and rural areas.
- They are clearly use for every person.
- The value of herbal flowers is decrease than the cost of the chemical substances in artificial hand wash.
- They may be much less bad impact.
- Herbal hand washes are less in all likelihood to have facet consequences.
- It's far an easy approach of doing away with microorganisms.
- Washing your arms helps hold germs out of your frame.

- **Demerits of Polyherbal hand wash^[4,5]**

- There's confined research to be had at the effectiveness of polyherbal hand wash in comparison to different types of hand Sanitizers or hand washes.
- The effectiveness of polyherbal hand wash is rely on the excellent and attention of the herbal extract used.

Different Medicinal Plants use in formulation of Polyherbal Handwash

Fig 1: Neem.

Azadirachta Indica, generally called Neem, Nimtree or Indian lilac, is a tree inside the mahogany family Meliaceae. it's far typically grown in tropical and semi-tropical regions. Neem trees also grow on islands in Southern Iran. Its fruits and Seeds are the source of Neem oil.

Uses

- Fertilizer: Neem extracts delivered to fertilizers (urea) as a nitrification inhibitor.
- Tree: the Neem tree is of fantastic importance for its anti-desertification properties and likely as an excellent carbon dioxide sink.
- It is also used for preserving soil fertility.
- Animal feed: Neem leaves can be once in a while used as forage for ruminants and rabbits.
- Fertilizer: neem extracts brought to fertilizers (urea) as a nitrification inhibitor.
- Teeth cleaning: Neem has traditionally been used as a type of teeth-cleaning twig.^[6]

Tulsi

Ocimum tenuiflorum, normally called holy basil, tulsi or tulasi, an fragrant perennial plant within the own family Lamiaceae. it's far native to the Indian subcontinent and sizable as a

cultivated plant in the course of the Southeast Asian tropics Tulsi is cultivated for nonsecular aconventional medication functions, and additionally for its critical oil. it's miles broadly used as natural tea, normally used in Ayurveda, and has a place within the Vaishnava subculture of Hinduism, in which devotees carry out worship related to holy basil flowers or leaves.



Fig 2: Tulsi.

Uses

- helps reduce stress.
- Protects from coronary heart sicknesses.
- manipulate headaches, cough and bloodless.
- reduce hazard of cancer and coronary heart illnesses.
- remarkable mouth freshener.
- beneficial in treating allergies.^[7]

Mint



Fig 3: Mint

Mentha (also called mint, from Greek *míntha*, Linear is a genus of plants in the family Lamiaceae (mint own family) the exact distinction between species is doubtful; is predicted that 13 t2exist. Hybridization takes place evidently in which a few species' levels overlap. Many hybrids and cultivars are known.

USES

- Rich in Nutrients.
- May Improve Irritable Bowel Syndrome.
- May Help Relieve Indigestion.
- May Decrease Breastfeeding Pain.^[7]

- **Turmeric**



Fig 4: Turmeric.

- Turmeric is a flowering plant, *Curcuma longa*, of the ginger own family, Zingiberaceae, the rhizomes of which.
- are utilized in cooking. The plant is a perennial, rhizomatous, herbaceous plant local to the Indian.
- subcontinent and Southeast Asia that calls for temperatures between 20 and 30 °C (68 and 86 °F) and.
- large amount of annual rainfall to thrive. flora are gathered every 12 months for his or her rhizomes,
- **Medicinal Uses**
 - Natural anti-inflammatory
 - Anti-cancer Effect Powerful antioxidant

- Protects Heart disease
- Treat or Prevent Diabetes
- Prevent Alzheimer's Disease
- Treats Depression
- Improves skin health
- Prevent Eye Degeneration
- Prevent age-related chronic diseases
- Treating Rheumatoid Arthritis
- Protects your body from free radicals
- Help in Osteoarthritis.^[8]

- **Ritha**



Fig 5: Ritha.

Sapindus mukorossi, commonly known as Indian soapberry, washnut, or ritha, is a species of tree within the circle of relatives Sapindaceae. it is a deciduous tree that grows inside the decrease foothills and midhills of the Himalayas at altitudes of up to at least one, two hundred meters (4, 000 feet). it's also local to western coastal Karnataka, Maharashtra, and Goa in India. it's milestolerant to fairly negative soil, may be planted round farmers' domestic, and one tree can produce 30 to 35 kilograms (66 to seventy seven lb.) of fruit in line with 12 month

- **Uses**
- helps reduce stress.
- Protects from coronary heart sicknesses.
- manipulate headaches, cough and bloodless.
- reduce hazard of cancer and coronary heart illnesses.
- remarkable mouth freshener.
- beneficial in treating allergies.

The cost of the tree primarily comes from its fruit, which may be used for many pharmacological and cleaning purposes.^[9]

- **Clove oil**

Cloves are the aromatic flower buds of a tree in the family Myrtaceae, *Syzygium aromaticum*. They are native to the Maluku Islands (or Moluccas) in Indonesia, and are commonly used as a spice, flavoring or fragrance in consumer products, such as toothpaste, soaps, or cosmetics.

Cloves are available throughout the year owing to different harvest seasons across various countries.

- **Medicinal uses of Clove oil**

- Helps with cough and cold symptoms
- Natural mouth freshener
- Fights Nausea
- Helps gastric upsets
- Avoids bloating
- Reduces mouth ulcers
- Fights tooth pain & bleeding gums
- Helps control high cholesterol levels
- Increases blood circulation
- Antiseptic

- **Rose Oil**



Fig 6: Rose Oil.

Rose oil (rose Otto, attar of rose, attar of roses or rose essence) is the essential oil extracted from the petals of various forms of rose. Rose Otto's are extracted through steam distillation, even as rose absolutes are received via solvent extraction, absolutely the being used greater

typically in perfumery. The manufacturing approach originated in Persia. regardless of their high fee and the appearance of organic synthesis, rose oils are nevertheless perhaps the maximum broadly used vital oil in perfumery.

- Medicinal uses of Rose Oil.
- Health Benefits of Rose.
- Helps soothe skin irritation.
- Heals cuts, scars, and burns.
- Relieves headaches.
- Has anti-aging properties.
- Strong antidepressant and anti anxiety properties.
- **Homemade natural Hand wash recipe Ingredients**
- Hand wash base concentrate, 100 Grams
- Aloe Vera Gel, 50 Grams
- Distilled water, 150 Grams
- Fragrance oil, up to 6 Grams
- A pinch of salt (if required)
- **Recipes**

Time needed: 15 minutes.

1. Weigh and pour the Hand wash base concentrate

In a clean and dry container, weigh and pour 100 grams Hand wash concentrate.

2. Add Aloe Vera gel

Weigh 50 grams of Aloe Vera gel, add it to the Hand wash concentrate and mix well.

3. Add the Distilled water

Pour in 150 grams of distilled water to the Hand wash concentrate & aloe Vera mix and subsequently stir it well.

4. Stabilize the hand wash by adding a pinch of salt

If you find your hand wash a little watery, add some table salt one pinch at a time to your concentrate solution and mix well till you get the desired thickness in your hand wash.

5. Add the fragrance

Stir in up to 6 grams of fragrance oil, you may also use a blend of fragrance oils or a blend of essential oils in equal proportion up to 6 grams.

6. Put in a container

Stir it well and pour the Herbal Hand wash in a clean, sanitized container. Your personally customized Herbal Hand wash is ready for use!!

Always use Isopropyl Alcohol (99% rubbing alcohol) to sanitize your equipment, container, and workspace.

CONCLUSION

In recent times there is a lot of demand for herbal formulations inside the marketplace because of their cost effectivity and shortage of any side effects. From the above experimental information it is clear that a polyherbal hand wash components with herbal ingredients including Glycyrrhiza glabra, Mimosa pudica and Azadirachta indica has correct characteristics and additionally possesses a terrific antimicrobial interest against Bacillus subtilus, Staphylococcus aureus, Psuedomonas aeruginosa and Escherichia coli.

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