Formulation And Evaluation of Herbal Hand Wash

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Abstract- **The hands are the primary roots of the transmission of the infection to the patient henceit bring up the use antiseptic for hand washing purpose the main aim to present the work for formula and the evaluate the polyhed herbal and wash by the using the aloe vera lemon juice introduce to the make the formulation has been less side effect and the better cleaning hand of hand the formula and wash was found to be good in the physicalparameter with the good cleaning**

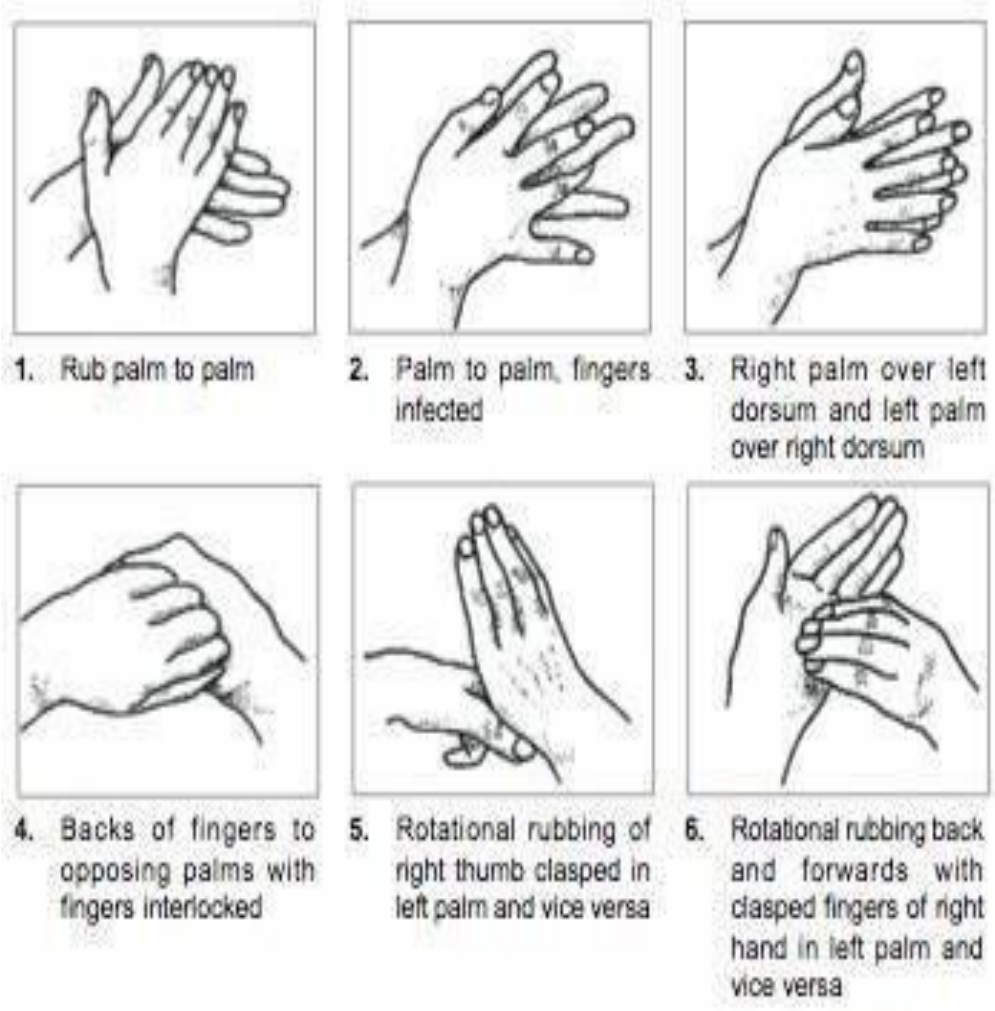
Keywords: **Herbal hand wash, Tulsi, vitamin C, Aleo-vera ,citrus Limon,essential Oil.**

INTRODUCTION:

The herbal medicine is also known as the botanical treatment or the path medicine refersto use of any plant seeds routes leaves bar follower and aerial part of the medicinal purpose herbal medicines have the treatment and care of the numerals disease to different the skin for harmful microorganism to avoid the spreading disease and wash is extremely significant precautions and watch is main purpose of clinic and wash with the removing the soil pathogenic microorganism and avoid the transmitting micro organism the concept highlight the need of the maintaining hygiene and reservation ofthe disease herbal drug treatment gives the healthy life. In healthcare hand cleanliness is best and most effective , simplest and affordable technique to prevent nosocomial infection.\

HOW TO USE

Fig No. 1



●**Advantages of Hand Wash**

1) No side effects.
2) Bacteria on our hands can be minimized.
3) It also helps to clear antiseptic antifungal problem faced by the skin.
4) It also helps to remove dirt and oil effectively from the skin.
5) Hand wash prevent germs from entering into our body.
6) Herbs are readily available in both urban and rural settings, making it simple foreveryone to them
7) Affordable: herbal plants are less expensive than the chemical components foundin synthetic hand wipes.
8) Enhanced effectiveness: Herbal hand soaps work better to encourage good handhygiene
9) Less adverse effect: Compared to other hand washes, herbal hand washes havefewer side effects.

AIM & OBJECTIVE

The aim of this study was to formulate an herbal handwash containing extract of Reethaand Tulsi
The **Objective** of the study:
-To prepare ethanolic extract from Reetha
-To prepare ethanolic extract from Tulsi
-To prepare Aloe vera gel
-To prepare lemon juice
-To formulate the herbal hand wash
-To perfome Physical characteristics, Stability study And antimicrobial activitiesagainst various bacteria and fungi.
- To perform the evaluation test of herbal handwash**.**

PLAN OF WORK
PHASE I

1. COLLECTION AND AUTHENTICATION OF THE PLANT
2. EXTRACTION OF Reetha
3. EXTRACTION OF Tulsi

PHASE II
FORMULATION AND OPTIMIZATION OF HEABAL HANDWASH
PHASE III
EVALUATION OF HERBAL HANDWASH :

1. Physical evaluation

i) Apperance
ii) pH
iii) Colour
iv) Odour

2. Stability study
3. Foam height.
4. Foam retention
5. Washability

PLANT PROFILE:
1) Tulsi

Fig No. 2

Scientific classification of Tulsi:- Synonyms: Sacred basil, Holy basilKingdom : plantae
Division : magnoliophyteClass : Magnoliopsida Order : Lameness
Genus: : Ocimum Species : O.tonuiflorum
Bionomical name : ocimum tenuifloram/Ocimum sanctum

Biological Source
Tulsi consists of fresh and dried leaves of Ocimum sanctumLinn., belonging to family Labiatae.

Geographical Source
It is a herbaceous, much branched annual plant found throughout India, it is considered as sacred by Hindus.
The plant is commonly cultivated in garden and also grownnear temples. It is propagated by seeds. Tulsi, nowadays, iscultivated commercially for its volatile oil.

Chemical constituents
Some of the phytochemical constituents of tulsi are oleanolic acid, ursolic acid, rosmarinic acid, eugenol, carvacrol, linalool, and β-caryophyllene (about 8%).
Tulsi essential oil consists mostly of eugenol (~70%) β-elemene (~11.0%), β- caryophyllene (~8%), and germacrene (~2%), with the balance being madeup of various trace compounds, mostly terpenes.

Use:
Expectorant, febrifuge, immune-modulator , antimicrobial agent.

2) Reetha

Fig No. 3

Scientific classification of Reetha :- Synonyms: Aristha, Dodan, DodaniKingdom : plantae
Clade : Angiosperms Order : sapindales Family : sapindaceae Subfamily : sapindoideaeGenus : sapindus

Biological Source
It consist of dried fruit of Sapindus Trifoliatus (S.I), Sapindus Mukorassi (N.I)

Geographical Source
Sub Himalayan region, S.I & N.I

Chemical constituents
Fruit contains saponin(10-11.5%), sugure(10%) and mucilage.Sppindus saponin is a mixture of sapindosides A,B,C,D & Mukorozi Saponin (EI,YI) like dioscin, protodiscindiosgenin gitogenin Chlorogenin& rusogenin
Seed contain fatty acid B-sitosterol,starch,sugars(10%) ,mucilage Protein Pericrap contain 2 new tritepenoid saponin emerginatoside-B&C

Use:
Mucolytic agent, emetic, contraceptive, tmt of excessive salivation, epilepsy, treat chlorosis.
- Anti- inflammatory, antimicrobial activity, insecticidal activity

- Cosmetic, as a hair tonic
- Foaming agent

3) Aleo vera

Fig No. 4Scientific classification of Aloe-vera:-

Synonyms: Aloe, MusabharKingdom : plantae
Order : Aspargels

Family : XanthorrhoeaceaeGenus : Aloe
Genus:Aloe
Bionomical name : Aloe vera

Biological Source
Aloe is obtained from the dried juice of the leaves of

- Aloe barbadensis Miller, known as Curacao aloes, (Aloe Vera)
- Aloe perryi Baker, known as Socotrine aloes
- Aloe ferox Miller and hybrids of this species with Aloe africana Miller and Aloe spicata Baker , known as Cape aloes, belonging to family Liliaceae.

Geographical Source

- Aloes is the indegeneous to eastern and southern Africa and grown in cape colony Zanzibar and islands of Socotra . it is also cultivated in Caribbean islands, Europe and many parts of india, including North West Himalayanregion.

Chemical Constituents

- Anthracene glycosides (11 to 40%).
- Barbaloin or Aloin ,a C glycoside (not easily hydrolysable with dil.

Acids and linkage between the sugar and the aglycone is through C-C)

- Isobarbaloin, aloe-emodin and aloesone
- Aloinosides A and B (only in Cape aloes)
- Resins (resinotannol+cinnamic acid or coumaric acid).
- Also contains Aloetic acid, homonataloin etc.

Use :

- Aloe vera gel is used as an ingredients in commercially available lotion, yogurt, beverages and some desserts .
- It is used to heal skin wounds, burn and helps in speedings recovery timeafter surgery
- It helps to fight frostbite and shingles, reduce psoriasis, reduce rosacea, reduce warts and reduce ageing, reduce wrinkles and also it reduce the eczema.

- It improves joint flexibility and helps in the regeneration of body cells
- Healing agent

4) Lemon

Fig No. 5

Scintific classification of lemon:-Synonyms: Fructus Limonis Kingdom : plantae
Family : RutaceaeOrder : sapindalesGenus : citrus Species : lemon

Biological Source
Lemon peel is obtained from the fresh ripe fruit of Citrus lemon (L.) Burm. f. (C medico var. lemon Linn.), belonging to family Rutaceae.

Geographical Source
It is cultivated in California. West Indies, Italy, Spain, Sicily, Portugal, Florida, California, Jamaica, and Australia; grown all over India, particularly in home gardensand small-sized orchards.

Chemical Constituents
-Lemon peel contains volatile oil (2.5%), vitamin C, hesperidin and other flavone glycosides, mucilage, pectin and calcium oxalate. The important constituents of the volatile oil are limonene (90%), citronellal, geranyl acetate, α-pinene, camphene, linalool, terpineol, methyl heptenone, octyl and nonyl aldehydes, γ-terpinene, β-pinene, neral, and geranial.
-The peels also contain flavonoids eriocitrin, epigenin, luteolin, chrysoeriol, quercetin, isorhamnetin, limocitrin, limocitrol, isolimocitrol, hesperidin; coumarins scopoletin and umbelliferone; sinapic acid and β-coumaric acid

Uses
Lemon peel is used as a flavouring agent, perfumery, stomachic, and carminative. The oil, externally, is a strong rubefacient and if taken internally in small doses has stimulating and carminative properties, Antiseptic.

Material & Method
Material
Ingredients of Formulation

Sr.No.	Name of ingredients	Role of ingredients
1	Tulsi extract	Antimicrobial agent

2	Citrus lemon/juice	Antiseptic
3	Aleo-vera gel	Healing agent
4	Sapindus mukorosis	Foaming agent
5	Eucalyptus oil	Cooling agent/ foaming agent
6	Glycerin	Moisturizing agent
7	Methyl paraben	Preservative

Table No. 1

Fig No. 6

Ingredients of formulation :

Sr. No	Ingredients	Quantity
1	Tulsi extract	8 ml
2	Citrus Lemon/ juice	4 ml
3	Aloe-vera gel	6 ml
4	Reetha extract	7 ml
5	Eucalyptus oil	0.5 ml
6	Glycerin	12 ml
7	Methyl paraben	0.3 ml
8	Rose water	q. s
9	water	q. s

Table No. 2

METHODS:

Procurement of plant material

The fresh leaves of tulsi were collected from medicinal plant of S.P.C.O.Pharmacy pachegaon District-Ahmednagar and the fruit of Reetha were collected from the local market of pachegaon. The fruit of lemon were collected from the local market of pachegaon,. The Aloe vera were collected from the medicinal garden of S.P.C.O.P. Pachegaon.

Extraction procedure :

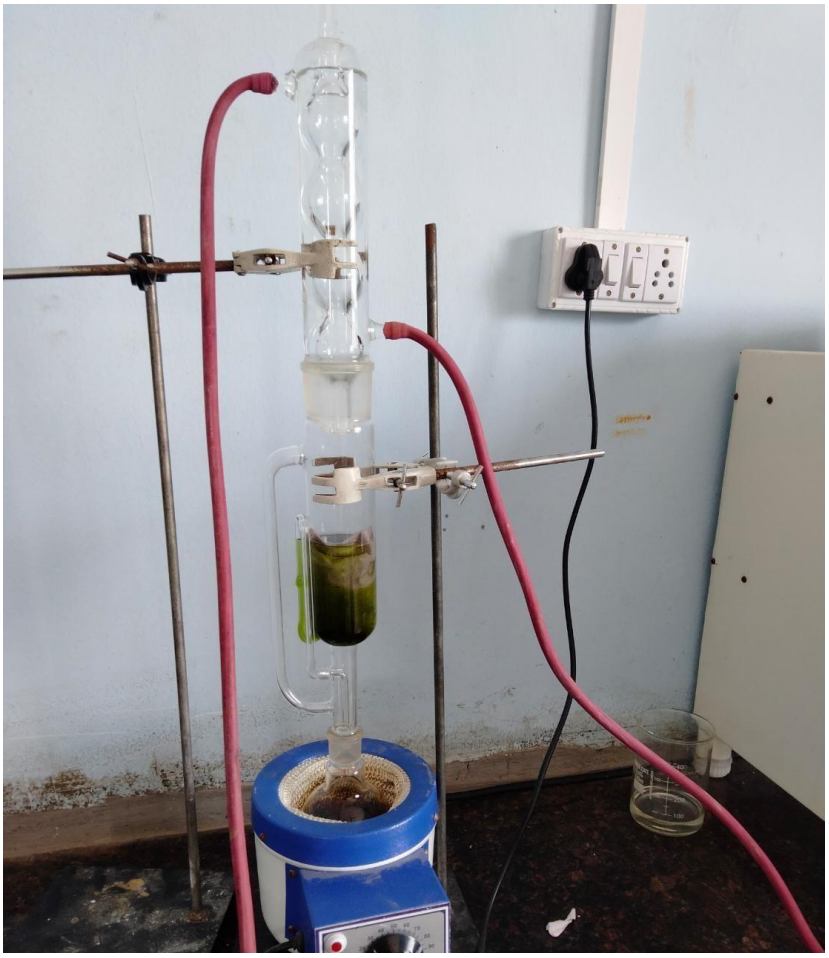


Fig No. 7

-Weight accurately the quantity of Tulsi and Reetha powder

- Place each powder in the separate chamber of the soxhlet apparatus.
- This soxhlet extractor placed into RBF containing the extraction solvent i.e. ethanol (80 ml)
- Take the extraction solvent i.e. ethanol (80 ml) and

pass at least the three cycles from thimble containing the drug.

- Place the reflux condenser on top of the soxhlet apparatus which closedwith cotton plug from the top and allow to pass water from top to the bottom of the condenser.
- Then switch ON the assembly and pass the 5-6 cycles into the apparatus.
- After complete,the extraction removes the soxhlet apparatus and collectthe extract from RBF.
- After collecting the extract it allows to evaporate on the water bath to getthe concentrated extract.

Fig No. 8

METHOD OF PREPARATION:

1) ethonolic extract of tulsi leaves is mixed with 4ml citrus Limon juice in 20ml.ofwater.
2) Then add aloe-vera twice and add extract of sapindus mukorosis to producesufficient foaming capacity
3) Then add desired quantity of glycerine and eucalyptus 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 forscreening of the activity.

EVALUATION OF HAND WASH

A) physical evaluation:-

i) Appearance:-

It was determined visually.

ii) Colour:-

It was determined visually.

iii) Odour :-

It was determined manually.

iv) pH :-

The pH was determined using digital pH meter and the pH of herbal washwas found to be 5.2

B) Stability studies:-

The stability of herbal hand wash gel was carried out by storing measured amount of gel at different temperature I.e.25'c,37'c,40'c.for one weekduring stability studies no change in colour and no phase separation were observed in the formulated hand wash

C) Foam height:-

1) 1ml of sample of herbal hand wash taken and dispersed in 50ml distilledwater.
2) then transfered it into 500ml stoppers measuring cylinder,volume make upto 100ml with water.
3) 25 stroke was given and stand till aqueous volume measured upto 100ml and measured the foam height.

Fig No. 10

D) Foam Retention:-

50ml of herbal hand wash was taken into a 250ml graduated cylinder and shaken ten times.The volume of foam at 1minute interval for minute was recorded foamRetention should be stable at least 5 min

RESULT & DISCUSSION

Evaluation parameters	**Result obtained**
Colour	**Brown orange**
Odour	**Aromatic**
pH	**5.2**
Stability	**Stable**
Washability	**Easily washable**
Foam Retension	**Stable**
Foam height	**3 cm**

Table No. 3

CONCLUSION:

Hands are the primary source of disease related to skin, respiration, gastrointestinal tractetc. due to various disease and germs, the bar soap get contaminated which may lead tospread of germs.in this sophisticated world liquid hand washes are used much more frequently then the bar soap ,the additional Advantages is the soap in the liquid hand wash is untouched leading uncontaminated. hand wash with every new pump.in market,there are various type of hand washes are available, claiming that they kill the harmfulgerms at considerable rate at minimum time. To determine this, it is necessary to determine the efficiency of hand wash. average percentage reduction and log reductionof the organisms determined for hand wash performing viable count.

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