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Prepration and Evaluationof Polyherbal Handwash ofDifferent Herbal Sources

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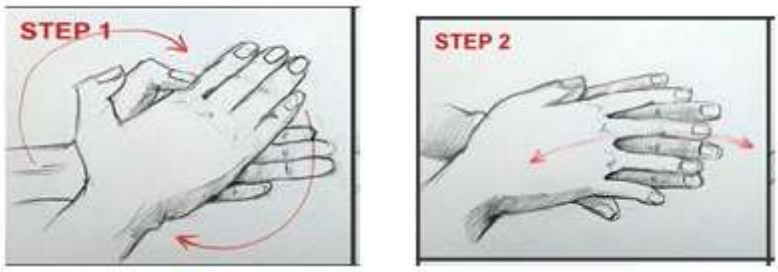
ABSTRACT :
The present investigation aims to design antimicrobial polyherbal Handwash by using different type of herbal plant's like Azadirachta indica (Neem), Ocimum tenuiflorum (Tulsi), Mentha arvensis (Pudina), syzygium aromaticum (clove) , Foniculam vulgare (Fennel), Coriandrum sativum (coriander) and Psidium guajava (Guava). Six formulation of polyherbal Handwash were prepared and the formulation were evaluated for the formulation were evaluated like appearance color,odor, pH, viscosity, foam height and foam retention time. The antimicrobial activity of the six hand wah formulation was tested using the using the agar plate method against staphylococcus aureus and Escherichia coil. The herbal hand washes hand significant antibacterial action, according to the zone of inhibitions results. In the culture plates, the activity of polyherbal Hand wash formulation revealed significant inhibition of bacterial growth. It was non-irritating to the skin. As a result, this plant ingredients can be used to make herbal hand wash on a commercial basis.

Keyword: Polyherbal Hand wash, Antimicrobial activity, Azadirachta indica (Neem), Ocimum tenuiflorum (Tulsi), Mentha arvensis (Pudina), syzygium aromaticum (clove) , Foniculam vulgare (Fennel), Coriandrum sativum (coriander) and Psidium guajava (Guava).

I. INTRODUCTION:

Hand washing is the most eifficient way to prevent the trasmisson of bacteria that cause diarrhoea, influenza, and the common cold. It is the easiest, most significant, and least expensive technique to promote hand cleanliness in health care and aid in the prevention of infectious diseases. The WHO standard requires people to wash their hands with no antimicrobial soap and water. The time duration ranged on average as short as 15 to 30 second, including rubbing the backs of hands, wrists,between fingers, and under fingernails Hands are the primary mode of germ and infection transmission. Hand hygiene is thus the most important measure to avoid the spread of harmful germs and the spread of healthcare-associated infection. It is also used to treat skin disease, blood detoxification asthma, ulcer.

Fig.1 There are six steps in Hand Wash



Apply herbal hand wash to wet hands20 seconds of rubbing hand together

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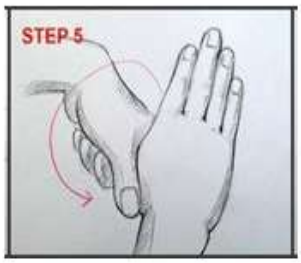
Palm to palm

Rub your fingers together on both hand

Rub your together with your fingers



Rub each of your thumbs together.

Rub your palms incircles, Then, using running water, properly wash your hands.

Plant Summary

Sr.No.	Common Name	Scientific Name	Category	images
1.	Neem	Azadirachtaindica	Antibactrical, Antimalerial Anti-viral	
2.	Tulsi	Ocimun tenuiflorum	Antinflamatory and Antioxidant	
3.	Pudina	Menthaarvensis	Anti cancer activity against Variouscancer sales	
4.	Clove	Syzgium aromaticum	Antifungal	

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5.	Fennel	Foeniculumvlugare	Antilinflamatory anti-stress cytotoxicity	
6.	Coriandar	Coriandrumsativum	Antimutagenic Antioxidant freeradical	
7.	Guava	Psidiumguajava	High anti microblalActivity	

II. MATERIAL AND METHODS:

Collection of plant materials:

Collected leaves of Azadirachta indica (Neem), Ocimum tenuiflorum (Tulsi), Mentha arvensis (Pudina), syzygium aromaticum (clove) , Collected from Aditya Institute ofpharmacy college campus Beed. To remove sand particles from sample, wash it throughly with fresh water. Tha plant material dried under sunlight for 4 to 5 days. Then the dried plant material where crushed, sieved to get nearly fine amorphous powder. Power material extract with suitable solvent. Foniculam vulgare (Fennel), Coriandrum sativum (coriander) and Psidium guajava (Guava).Were collected from the local market of Beed.

Preparation of herbal leaf extract:

Extraction of plant material :

Collected leaves of Azadirachta indica (Neem), Ocimum tenuiflorum (Tulsi), Mentha arvensis (Pudina), syzygium aromaticum (clove) , Foniculam vulgare (Fennel), Coriandrum sativum (coriander) and Psidium guajava (Guava).

- were air dried and powdered using a mixer
- 10gm powdered material were saoked in 120 ml of ethanol solution.
- (9 parts of ethanol, 1 part of distilled water) and kept for maceration for about2-5 days.
- This mixture was then heated in a water bath at 65°C for 60 minutes.
- The extract was then filtered via filter paper to remove any particles.

Preparation of herbal hand wash formulation:

Steps of herbal hand wash formulation

Azadirachta indica (Neem), Ocimum tenuiflorum (Tulsi), Mentha arvensis (Pudina), syzygium aromaticum (clove) , Foniculam vulgar email (Fennel), Coriandrum sativum (coriander) and Psidium guajava (Guava). extract were measured accurately and dissolved.

- The solution is set a part for sometimes.
- The appreciate quantity of sodium lauryl sulphate (SLS) dissolved in 10 ml distilled water.
- After that glycerin was mixed in the above prepared aqueous phase with continues stirring.
- The methylparaben was then dissolved in the remaining distilled water and mixed into the extract.
- The above mixture is then added to form a homogenous gel.
- Finally, for fragrance the appreciate amount of rose merry oil was added.

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Table 1 :- Formulation Table

Ingredients	**Quantity**					
	F1	F2	F3	F4	F5	F6
Methanolic extract of mimosa pudica L	----	----	----	----	4 Ml	4 Ml
Azadirachta Indica	1 Ml	----	-----	----	----	----
Syzygiumaromaticum	5 Ml	2 Ml	6 Ml	5 Ml	4 Ml	5 Ml
Foeniculum vulgare	1 Ml	1 Ml	2 Ml	2 Ml	3 Ml	3 Ml
Coriandrum sativum	6 Ml	----	----	6 Ml	5 Ml	4 Ml
Psidium guajava	1 Ml	----	----	----	----	----
Ocimum tenuiflorum	----	----	----	----	4 Ml	4 Ml
Lemon Water	20 ml	----	----	----	20 Ml	----
Orange Water	----	20 Ml	20 Ml	----	----	20 Ml
Sodium Lauryl sulphate (SLS)	6 Gms	6.5 Gms	7.5 Gms	6 Gms	6 Gms	6.5 Gms
Glycerin	42 Ml	40 Ml	40 Ml	41 Ml	42 Ml	41 Ml
Propyl paraben	0.2 gms	0.3 Gms	0.3 Gms	0.3 Gms	0.2 Gms	0.3 Gms
Rose Oil	4 Ml	----	----	2 Ml	4 Ml	----
Eucalyptus oil	----	4 Ml	4Ml	----	----	4Ml
Purified water q.s.	Up to 100 Ml	Up to100 Ml	Up to100 Ml	Up to100 Ml	Up to100 Ml	Up to100 Ml

Antimicrobial activity

Using casen soyabean digest broth as a diluent make 1 in 10 dilution of more than 1gm of the product as mentioned under total aerobic viable count microbialcontamination in non-srerile

After incubation shakes the broth and transfer 1 ml to 100 ml of MacConkey broth. Incubate at 42° to 44° for 24 to 48 hrs. Subculture on a plate of MacConkey agar and incubate at 30° to 35° for 18-72 hrs. The growth of pink, non-mucoid colonies indicate the possible presence of E.Coli. This should be confirmed by the identification test. Products and use 10 ml or the quantity corresponding to 1g Or 1ml of the product to inoculate a suitable amount of casein soyabean digest broth,incubate at 30° to 35° for 18-24 hrs.

if there is no growth of such a type of colonies, or the Identifications tests are negative it indicate the absence of E. Coli and the product passes the test. The result showed that the hand washes prepared form ethanolic extract of combined plant material showed significant antimicrobial activity. And there was no sign of any pathogen.

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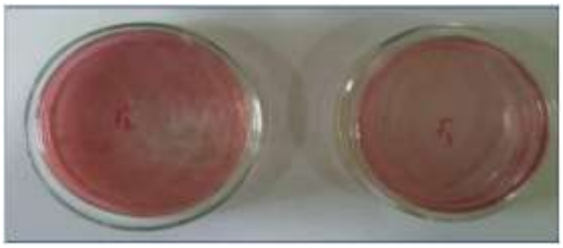

Fig.1 E.Coli Free

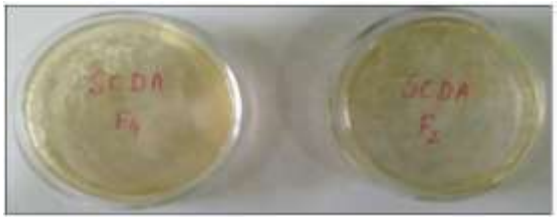

Fig.2 Soyabean Casein Digest Agar (SCDA)

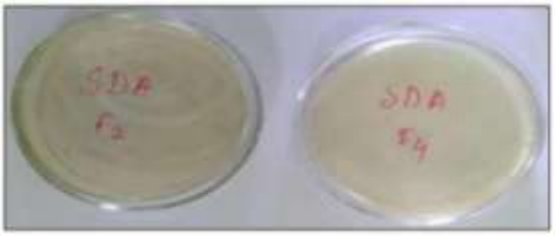

Fig.3 Sabouraud Dextrose Agar(SDA)

EVALUATION OF POLYHERBAL HAND WASH

Sr.No.	**Parameters**	**Observations**					
		F1	F2	F3	F4	F5	F6
1.	Odour	Lamon like	Lemon Like	Rose Like	Lemon Like	Rose Like	Lemon Like
2.	Colour	Light Yellow	Green	Light Green	Yellowwish Green	Light Yellow	Light Green
3.	PH	6.5	6.4	6.6	6.7	6.5	6.6
4.	Viscosity	50cP	51cP	52cP	50cP	51cP	52cP
5.	Foam Hight	350 ml	340 ml	360 ml	350 ml	25.2ml	25.4ml
6	Foam Retention at 4 min	25.2ml	25.1 ml	25.3 ml	25.1 ml	25.4 ml	

Table No.2 Evaluation Parameter Test

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Physical Evaluation Test :

Odor: The odor of polyherbal Hand wash was found to be characterized. Color: The polyherbal Hand wash color was observed by visual inspection.

pH: A digital pH meter was used to determine the pH of the prepared polyherbalHand wash.

Viscosity: The viscosity of polyherbal Hand wash was tested using a Brooke fieldviscometer at 35°c can 63 RPM spindle no.

Stability:

Stability tests were performed on all formulation by subjecting the product to temperature of 5°c for 24 hrs, 20°c for 24 hrs, 37°c for 24 hrs and 45°c for 24 hrs. During the stability tests, there was no color change or phase separation in the prepared hand wash.

Foam Height :

5 g of polyherbal Hand wash were taken and dispersed in 50 ml of filtered water. The dispersion was poured into a 500 ml measuring cylinder. Purified water was used to make a volume of up to 100 ml. It was given 20 strokes and set aside. The height of the foam above the aqueous volume was measured.

Fig.7. Foam Hight

Foam retention:

A 100 ml measuring cylinder was filled with 25 ml of the 1% poly herbal Hand wash. Hands were placed the cylinder and it was shaken five times. For 4 minutes, the volume of foam was measured at 1 minute intervals.

Fig.8. Foam Retention

III. RESULT AND DISCUSSION

Odour : characterized

Colour: light green and greenish yellow pH: 6.5 - 6.9

Viscosity: 50 - 52 centipoises Pascal second (CPS)

Stability: no colour change or phase separation . The result is good and ready for human use.

The antimicrobial efficacy evaluation, in this formulation of Azadirachta indica (Neem), Ocimum tenuiflorum (Tulsi), Mentha arvensis (Pudina), syzygium aromaticum (clove) , Foniculam vulgare (Fennel), Coriandrum sativum (coriander) and Psidium guajava (Guava). were used for extraction.

IV. CONCLUSION :

In the pharmaceutical industry, there are numerous marketed liquid formulation such as poly herbal hand wash. Out of them, we found mostly chemical based preparation.

V. ACKNOWLEDGEMENT

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