Formulation of Antiscabies Liquid Handwash

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Abstract-
The herbal medicine is also known as botanical treatment or phyto-medicine.herbal medication refers to the uses of any plant seeds,root,leaves,bark,flower and aerial part for medicinal purpose.herbal medicine have been the treatment and care of numerous disease.skin being the most exposed part of our body requires protection fromskin pathogen.To defend the skin from harmful micro-organism to avoid spreading disease. Hand washing is extremely significant precautions. Hand hygiene is the single most important simplest and least expensive mean of preventing nasocomial infection.hand washing is main purpose of cleaning hands with removing soil,dirt,pathogenic microorganisms and avoid transmitting of transient microorganisms.

Keywords: Handwash, Tulshi , Alovera, Neem , Turmeric.

INTRODUCTION

Hygiene is basically defined as the branch of science which is involved in knowledge and practice related to promotion of health.the concept highlights the need of maintaining Hygiene in prevention of disease. Spread of infection (bacterial or viral)can be prevented hygiene practices.an herbal drug treatment gives healthy life.it was general used fournish first line and common health provider.since ancient time in India herbal medicine have been the basis of treatment and cure for various diseases. Herbal medicine having various therapeutic uses like healing, wound,treating inflammation due to infection,skin lesion,leprosy,diarrhea,scabies venereal disease like,snake bite and ulcer. Plant have provided good source of antimicrobial activity and plant extract have potential as antimicrobial compound against several pathogenic microorganisms which cuase infections disease and resistance toward synthetic drug.

ADVANTAGES OF HERBAL COSMETIC:-

Herbal cosmetic have been using for beauty from the ancient times.it is considered best for the skin and hair care because of their lack of side effects. It is gaining the popular day by day in the world.

Following are the some advantages of using Natural cosmetics.

1)safe to use:-

Compared to the beauty products Natural cosmetic are safe to use.yhey are hypoallergenic, and tested and proven by dermatologist to be safe to use anytime.

2) No side effects:-

The synthetic beauty product cab irritate skin and cuaes pimples they might block skin pores and make skin dry or oily.the natural ingredients are used assure to no side effects.

3) Animal testing not required:-

Some cosmetic are initially tested on animal to ensures that they are safe and effective to use for human.however,natural cosmetic need not be tested on animal. These natural formulation are tested by experts in laboratories using are equipment with no animal involved

4) Natural products:-

The name itself suggests that herbal cosmetic are natural and free from synthetic chemicals,which otherwise may prove to be toxic to the skin.instead of traditional synthetic products,diffrent plants extract are used in

these products.
Eg. Aloe-vera gel and haldi
2) Inexpensive:-
Natural cosmetic are not that expensive.in fact,some of these products are more affordable than synthetic ones.an estimates of demonstrated about 80% of world population depends upon natural products for their health care.
3) compatible with skin type:-
Natural products are suitable for all skin type,whether it be dark or fair .natural cosmetic like foundation,eye shadow and lipstick can be safely used irrespective of the skin tone.

- Advantages of Herbal Hand wash:-

1)No side effects.
2) Bacteria on our hands can be minimized.
3) It also helps to clear antiseptic ans 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.
Drug And Expient Profile
1) Tulsi

SCIENTIFIC CLASSIFICATION OF TULSI:
Kingdom : plantae Division : magnoliophytaClass : Magnoliopsida
Order : Lameness Genus: : Ocimum Species : O.tonuiflorum
Bionomical name : ocimum tenuifloram/Ocimum sanctumNepali name : Tulsi

Ocimum sanctum commonly known as holy basil or Tulsi. Tulsi consist of fresh and dried leaves of ocimum sanctum belonging to family Lamiaceae. Tulsi is an aromatic perennial plant.tulsi known for its detoxifying purifying and antimicrobial properties.

Chemical constituents:-
It contains approximately 70%Eugenia,carvacrol 3% and Eugene methyl ether(20).It also contains caryophyllin,seeds contain fixed oil with good drying properties.

Uses of Tulsi:-
The leaves are used as stimulants, aromatic, spasmolytic, diaphoretic The juice is used as an antiperiodic and act as constituents of several preparation for skin disease and also to cure earache.it acts as a natural Immunitybooster,it also acts as antifungal, antiviral agent.

2)ALOE-VERA:-

Scientific classification of aloe-vera:-Kingdom : plantae
Order : Aspargels
Family : XanthorrhoeaceaeGenus : Aloe
Species : A.Vera Bionomical name : Aloe vera
Aloevera is a succulent plant Species that probably originated in northern Africa. The species does not have any naturally occurring population, although closely related Aloe does not occur in northern Africa.The Species is frequently cited as being used in herbal medicine since the beginning of the first century. Extract from the Aloe vera widely used in cosmetic and alternative medicine industries, being marketed as variously having regenerating, healing ,or smoothing properties.
Aloe is the dried juice collected by incision from the basis of the leaves of various Speciesof aloe.Aloe perry Baker,aloevera linn,or Aloe barbandesis belonging to family liliaceae,Aloe perry Baker is found in socotra and zanzibar Islands and in their neighbouring areas and so the obtain from these Species is known as soothing and zanzibar.Aloevera linn also known as vulgaris or Aloe barbendesis.aloe is an perennial growing to 0.8by 1ml ata slow rate. The plant prefers light (sandy)and medium soil. Can grow nutritionally poor soil. The plant prefer acid basic and neutral soil. It cannot grow in shade it requires dry or moist soil and can tolerate drought.They are xenophobic plant .it can be propagated by seeds.seeds are shown in the spring in warm green house.
Chemical constituents:-
The most important constituents of aloevera are three isomers of Aloins ,barbaloins and isobarbaloins which constitute so called crystalline along.present in drug at from 10-30% other constituents are amorphous aloin,resin,eroding and Aloe emodin.

Barbaloins is present in all the varieties.it is slightly yellow colour,bitter water soluble isobarbaloin is a crystalline substance present in curaco Aloe and in trace amounts in capeAloe and in absent in socotrine and zanzibar Aloe.The chief constituents of socotrine Aloeand zanzibar Aloe is barbaloin.
Aloevera has been Recommended for skin care in number of ways:-a)Relieves the burned skin caused by skin.

b) Smooth and glowing skin can be achieved with the help of Aloe.
c) It is an outstanding skin moisturizer.
d) Helps in restoring skin natural beauty.it provide oxygen to the cells which strengthenthe skin tissues and help to keep the skin healthy.
e) It is beneficial for dry skin when the aim is get normal,Smooth and shiny skin with the oilextract of the plant.
f) aloevera extracts have antibacterial and antifungal activities,which may help in thetreatment of minor skin infections.
g) It is helpful in the curing blister,insects bites and any allergicreactions, eczema, burns, inflammation, wounds, psoriasis.
A large number of aloevera based cosmetics products are available commercial that claim for natural skin care based on the healing and soothing properties of aloevera and also are useful for natural skin care based on the healing and soothing properties of aloevera and also used for eczema,psoriasis, dermalities ,acne and pigmentation.aloeverais a rich source of antioxidants and vitamins that helps to protect skin.

3)Turmeric (haldi)

- Scientific classification of turmeric:
- Kingdom : plantae
- Division : mangnoliophyta
- Class : liliopsida
- Order : zingiberales
- Genus : curcuma
- Species : c .longa
- Bionomical name : curcuma longa

Certainly! "Turmeric" is a bright yellow spice commonly used in cooking, especially in South Asian cuisine. It comes from the root of the Curcuma longa plant and has a warm, bitter taste.

Turmeric contains a compound called curcumin, which is known for its anti-inflammatory and antioxidant properties.

It's also used in traditional medicine for various health benefits, including reducing inflammation, improving digestion, and supporting liver function.

Additionally, turmeric has been studied for its potential role in preventing or treating conditions like arthritis, heart disease, and even certain types of cancer.
Chemical constituents:-

1)Curcuminoids: Curcumin is the most abundant curcuminoid in turmeric, but it also contains demethoxycurcumin and bisdemethoxycurcumin.

2)Essential oils: Turmeric contains aromatic compounds such as turmerone, atlantone, and zingiberene, which contribute to its flavor and aroma.

3)Polysaccharides: Turmeric contains carbohydrates in the form of polysaccharides, which have been studied for their potential health benefits.

4)Proteins and amino acids: Turmeric contains proteins and various amino acids, which are the building blocks of proteins.

5)Vitamins and minerals: Turmeric contains small amounts of vitamins and minerals, including vitamin C, vitamin E, vitamin K, potassium, iron, and manganese.

6)These constituents work together to give turmeric its characteristic flavor, color, and potential health benefits.

4) Neem

Scientific classification of neem:-
Kingdom : plantae
Division : magnoliophyta
Class : magnoliopsida
Order : sapindales
Genus : azadirachta
Species : a. indica
Family :meliaceae

1)Neem, also known as Azadirachta indica, is a tree native to the Indian subcontinent. It has been used for centuries in traditional medicine, particularly in Ayurveda. Neem is valued for its medicinal properties and is used in various forms such as neem oil, neem leaves, and neem bark.

2)Medicinal Uses: Neem is known for its antibacterial, antifungal, antiviral, and anti-inflammatory properties. It is used to treat various skin conditions such as acne, eczema, and psoriasis. Neem also has properties that support oral health and can be found in toothpaste and mouthwash.

3)Insecticidal Properties: Neem oil is a popular natural insecticide. It is effective against a wide range of pests, including aphids, mites, and caterpillars, while being relatively safe for beneficial insects.

4)Agricultural Use: Neem-based products are used in agriculture as biopesticides and organic fertilizers. They help control pests and improve soil health.

5)Cosmetic Applications: Neem is found in various cosmetic products such as soaps, shampoos, and lotions due to its skin-nourishing properties.

6)Environmental Benefits: Neem trees are drought-resistant and can thrive in arid regions, making them valuable for reforestation and combating desertification. Additionally, neem products are biodegradable and have minimal environmental impact compared to synthetic chemicals.

1) 7)Traditional Practices: In traditional Indian culture, neem has symbolic significance and is often associated with purification and protection**:-**
Neem leaves are used in religious ceremonies and rit.

2) ***Citrus Limon***

Scintific classification of Citrus limon:-Kingdom : plantae
Family : Rutaceae Order : sapindalesGenus : citrus Species : c.limon
The Limon citrus Limon is a species of small evergreen tree in the flowering plant Family Rutaceae native to South Asia.primarly eastern India.

The tree ellipsoidal yellow fruit is used for colinary and non-culinary purposes throughout the world primarily for its juice,which has both colinary and cleaning uses.thepulp and hind are also used in cooking and baking.The juice of the lemon is about 5% to 6%.citric acid with a ph of around 2.2 giving it a sour taste.the distinctive sour taste of lemon juice makes it a key ingredient in drink and foods such as lemon meriangue pie.

It is obtained from the ripe or nearly ripe fruit of citrus Limon belonging to the family rutaceae.The main raw material of citrus Limon is the fruit particularly essential oil and juice is obtained from it . Citrus Limon fruit juice has traditionally been used as a remedy for survey before the discovery of vitamin c

Characteristics:-
Citrus Limon is a tree reaching 2.5-3m in height. It has evergreen lanceolate leaves. Bisexual flower are white with purple color at the axils. The fruit is elongated oral,pointed green berry that turns yellow during ripening.inside the berry is filled with a juicy pulp divided into segment.

Chemical constituents:-

The chemical constituents of citrus fruit is well known. It has nat only determined for the whole fruit but also separately from the whole fruit but also separately from the pericarp,juice and essential oils

Uses of citrus Limon:-
The antioxidants activities of flavonoids from citrus Limon-heseperidin and hesepertinwas not only limited to their radical scavenging activity but also arguments the antioxidants cellular defence .Limon fruit have shown inhibitory activity against the gram positive bacteria entrrococus feacalis and bacillus substitute and gram negative shigella
sonnei. The oil used in pharmacy and cosmetic formulation as,a flavour or aroma Corriganas,well as natural

Material and methodloy

Methodology

1.	Tulsi	Nature
2.	Neem	Nature
3.	turmeric	nature
4.	Clove oil	Vyas pharmaceuticals
5.	Citrus juice	Nature
6.	sls	Unicorn Petroleum Industries Pvt. Ltd.
7.	Glycerin	Emami Agrotech Ltd
8.	Methyl paraben	Akhil Healthcare (p) Ltd.
9.	carbpol	Lubrizol

Selection of plant:
In the present study, I have selected the plant Azadirachta indica (neem), Ocimum tenuiflorum (Tulsi) curcuma longa (turmeric)

Collection of plant :
, Ocimum tenuiflorum (Tulsi), Azadirachta indica (neem), curcuma longa (turmeric) leaves from Saikrupa Institute Of Pharmacy Campus situsted in village of Ghargaon, Ahamadnagar.

Preparation of Herbarium:

After that we have prepared herbarium of,Ocimum tenuiflorum (Tulsi), Azadirachta indica (neem), curcuma longa (turmeric) for the herbarium the plant specimens are properly dried, pressed & mounted on sheets.

Authentication of herbal plant:
The ,Ocimum tenuiflorum (Tulsi), Azadirachta indica (neem), curcuma longa (turmeric) Ocimum tenuiflorum (Tulsi) these both herbs was identified and authentified M.J.S collage, shrigonda Dist. Ahemadnagar. (Head of department of botany)

Preparation of powder:
The leaves were dried under shade for about 2 weeks and then madr into powdered from using morter and pestle then sieved.

EXPERIMENTAL WORK

Procedure of extraction:-

A)Tulsi

- Take fresh tulsi leaves and dry it under shade
- Then take the dried leaves and grind in the mixer / grinder
- The scem this powder with scem this powder with scem a fine grade powder is obtaind
- Store this tulsi powder in air tilgt contenar

B) Neem

- Take fresh neem leaves and dry it under shade
- Then take the dried leaves and grind in the mixer / grinder
- The scem this powder with scem this powder with scem a fine grade powder is obtaind
- Store this tulsi powder in air tilgt contenar

C) Turmeric

- Take dried turmeric and soak it into the water.
- Dry the soaked turmeric in the sun.
- Grind the dried turmeric.
- After grinding fine turmeric powder is obtained.
- Store it in container.

Formulation table:-

Ingredient	Quantity	Activity
Tulsi extract	12ml	Antimicrobial agent
Citrus limon/juice	2ml	Antiseptic
Aloe-vera gel	4ml	Healing agent
Clove oil	4ml	Antibacterial,antifungal
Haldi	8ml	Antiviral,antiseptic
Glycerin	4ml	Moisturizing agent

Carbapol	2gm	Gelling agent

Procedure:

1) Methonolic extract of tulsi leaves is mixed with 2ml citrus Limon juice in 50ml.ofwater.
2) Then add aloevera twice and add extract of sapindus mukorosis to produce sufficient foaming capacity.
3) Then add desired quantity of glycerin 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 parameters:-A)physical evaluation:- i)Appearance:-
It was determined visually.

ii) PH :-
The ph was determined using digital ph meter and the ph of herbal wash was foundto be 5.4

iii) Colour:-
Brown

IV) Odour :-
Aromatic

V) 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 week during stability studies no change in colour and no phase separation were observed in the formulated hand wash. Stable [homogenous]

Foam height:-

- 1ml of sample of herbal hand wash taken and dispersed in 50ml distilled water.
- Shake it well,and hold it still and measured the foam.
- Then foam is stable then foam height is 5.9.

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 foam Retention should be stable at least 5 min.

Antimicrobial activity and Antifungal study
Method- Zone of Inhibition
Materials and methods:
Media: Nutrient Agar for Bacterial cultures, Yeast Glucose Agar
Cultures used:
Bacterial cultures: Bacillus subtilis NCIM 2063, Escherichia coli NCIM 2065
Fungal Culture: Aspergillus niger NCIM 501
Incubation temperature: 37°C
Incubation time: 24 Hrs.
Std.:Amoxicillin and Fluconazole

Procedure
Zone of Inhibition Method was used to determine the antibacterial activity of the test substance. Bacillus subtilis NCIM 2063, Staphylococcus aureus NCIM 2079, Escherichia coli NCIM 2065, Proteus vulgaris NCIM 2813, Aspergillus niger NCIM 501, and Candida albicans NCIM 3471 were each cultured individually for 24 hours. We created sterile Nutrient agar plates for bacterial cultures and sterile Chloramphenicol Yeast Glucose Agar plates for fungus cultures. A 0.2 ml culture of each type of microorganism was dispersed on various plates using sterile swabs. Four or five wells in the agar were created using an 8.0 mm cork borer on each plate. As a stock solution, a 10 mg/ml suspension of the test

substance was produced in Dimethyl Sulfoxide (DMSO). Each well received 50µg/ml of the stock solution.

Sample ID	**Conc. of Stock solution**	**Zone of inhibition in mm**					
		Bacillus subtilis NCIM 2063	*Staphylococcus aureus* NCIM 2079	*Escherichia coli* NCIM 2065	*Proteus vulgaris* NCIM 2813	*Aspergillus niger* NCIM 501	*Candida albicans* NCIM 3471
R4	**0.5mg/ ml**	7	20	13	6	22	8
Amoxicillin		19	33	14	11	N.D.	N.D.
Fluconazole		N.D.	N.D.	N.D.	N.D.	34	29

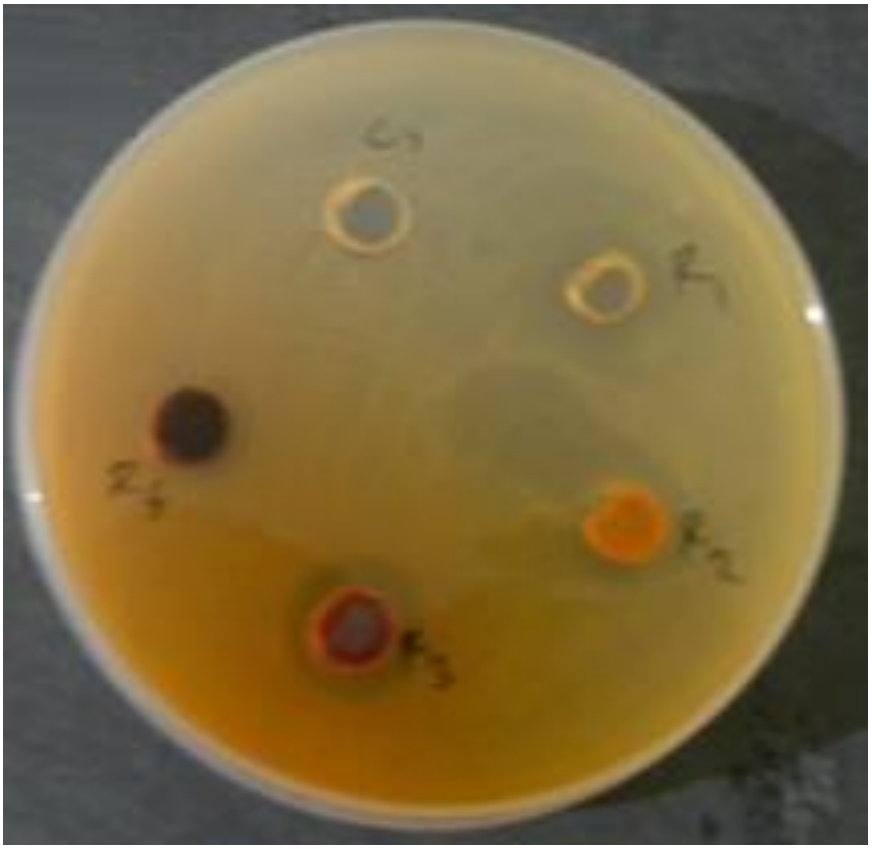

Figure 1. Zone of Inhibition against Bacillus substilis

Figure 2. Zone of Inhibition against Staphylococcus aureus

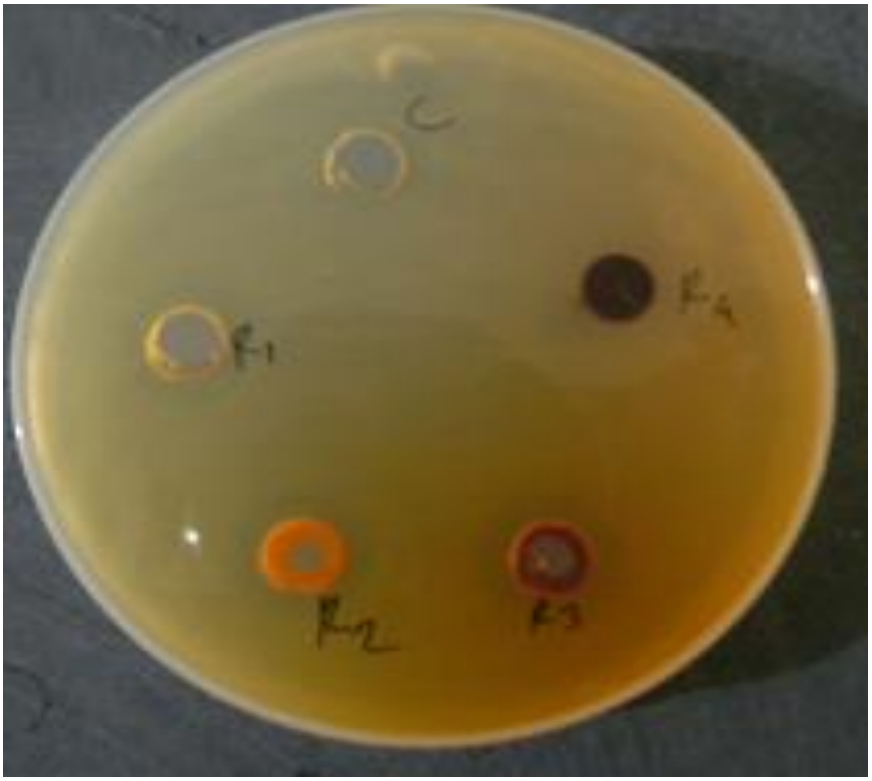

Figure 3. Zone of Inhibition against Escherichia coli

Figure 4. Zone of Inhibition against Proteus vulgaris

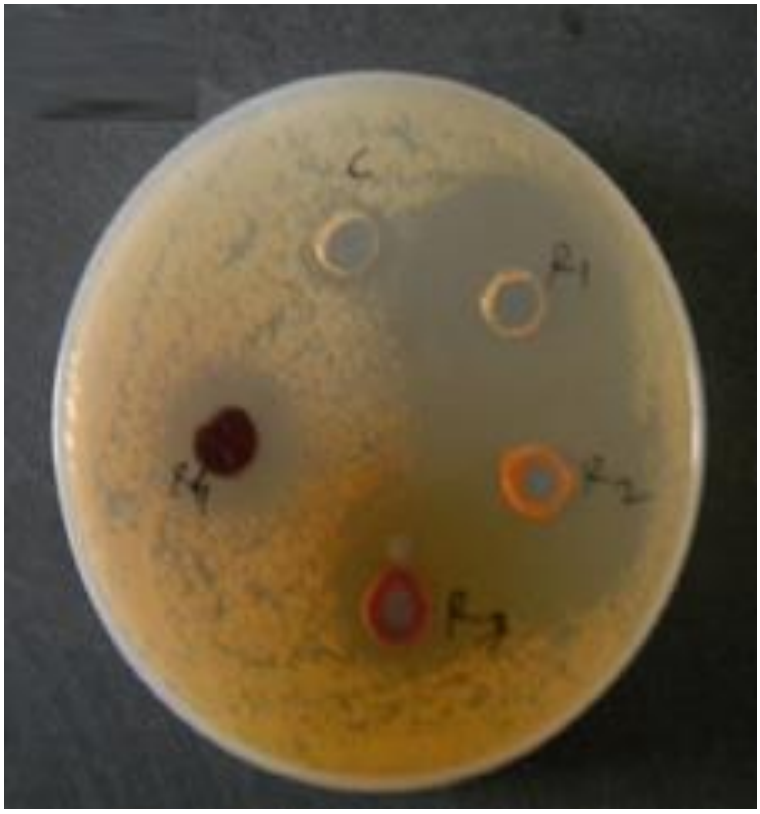

Figure 5. Zone of Inhibition against Aspergillus niger

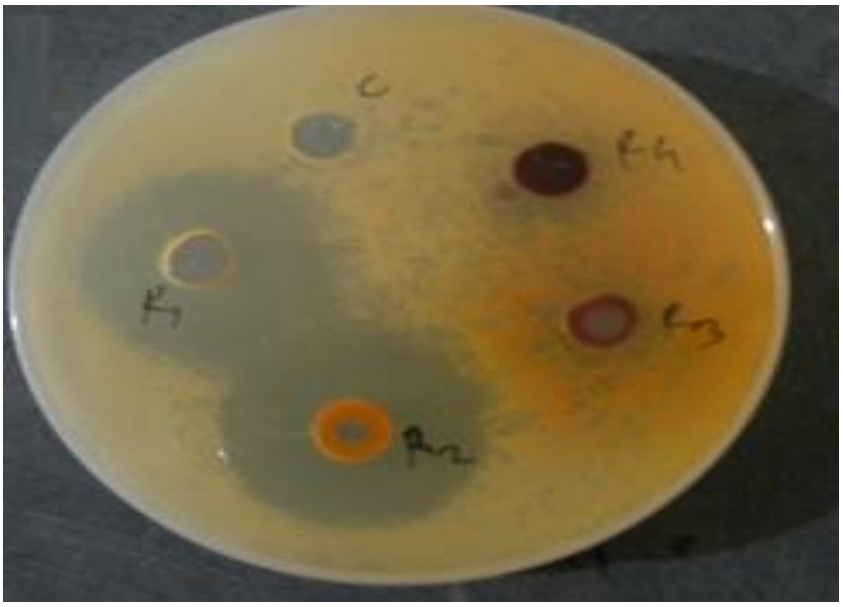

Figure 5. Zone of Inhibition against Candida albicans

Results:

1. R4 showing very moderate activity against Bacillus subtilis.
2. R4 showing Good activity against Staphylococcus aureus.
3. R4 showing moderate activity against Escherichia coli.
4. R4 showing very less activity against Proteus vulgaris.
5. R4 showing good activity against Aspergillus niger.
6. R4 showing very less activity against Candida albicans.

CONCLUSION:

Hands are the primary source of disease related to skin,respiration,gastrointestinattract etc.due to various disease and germs,the bar soap get contaminated which may lead to spread 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 harmful germs at considerable rate at minimum time.To determine this,it is necessary to determine the efficiency of handwash.average percentage reduction and log reduction of the organisms determined for hand wash performing viable count.

RESULT

Evaluation parameters	***Result obtained***
PH	***5.4***
Colour	***Brown***
Odour	***Aromatic***
Stability	***Stable***
Washability	***Easily washable***
Foam Retention	***Stable***
Foam height	***5.9 cm***

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