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Formulation & Evaluation of Poly Herbal Hand Wash

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Abstract: *The aim of the present study is to formulate and evaluate herbal hand wash gel by Using extracts of Azadirachta indica (neem powder), Ocimum tenuiflorum (Tulasi powder), Mentha (mint powder), Syzygium aromaticum (clove oil), Sapindus mukorossi (rithapowder), carbolpol 940 (gelling agent), methyl Paraben (preservative), Glycerin (softening agent), distilled water, (vehicle), Turmeric (colorant),Rose oil (perfume), Saponin Extract. To select the plant materials. To extract powders from plants by air drying method to get particle free extract. To prepare herbal hand was gel by using suitable agents. To evaluate herbal hand wash gel. Like cosmetics and cosmeceuticals (a cosmetic that has claimed medicinal properties) are topically applied but they have ingredients that influences the biological actions of skin. The WHO estimates that most of the population of Asian country presently use herbal medicinefor the purpose of hand hygiene includes preparation of hand wash. the present study was carried out to formulate polyherbal hand wash gel containing herbal extract whichis used not only for the purpose of cleaning hands but also for the prevention of bacterial growth. Its composition was prepared according to skin delicateness so that it cannot cause any type of irritation.Hence it can be concluded that polyherbal hand washgel are much better than the plain soaps or existing marketed hand wash due to their ingredient's and effectiveness on our skin of hands as well a suitable for all type of skin*

Keywords: Azadirachta indica, Ocimum tenuiflorum , Mentha, Syzygium aromaticum, Sapindus mukorossi, carbolpol 940, methyl Paraben

I. INTRODUCTION

Hands are the major route of microbe and illness transfer; hand cleanliness is the most efficient way toprevent the spread of hazardous germs and diseases. In healthcare, hand cleanliness is the best and most effective, simplest, and affordable technique to prevent nosocomial infections. Contaminated hands can function as vectors for the spread of germs.

Outbreaks are conveyed fromone human to another when a foodhandler contaminates his or her hands andthen transfers these bacteria to customers via hand contact with foodor drinks. The user is exposed after ingesting these germs, which might cause gastrointestinal disease. Microorganisms infiltrate the food supply when people handle ready- to-eat foods.

The hands of healthcare providers are the main cause of the spread of multidrug- resistant bacteria andsickness to patients. As an outcome, it presents the issue of hygienic hand cleansing. Various antimicrobial compounds are now accessible as alcohol-based hand wash, detergent, and other items on the market. These soaps or solutions aid in the prevention of health-care- associated microbiological contamination,

although they come with certain disadvantages or adverse reactions. Their usage on a regular basis might promote skin irritation and infection resistance.

Earlier in India liquid hand wash not popular. Though people wash hands but they do not prefer liquid hand wash. The importance of personal care and hygiene brings us to our product which we have chosen for our liquid hand wash project Hand wash pertains to the hygiene practices related to minimizes or prevent disease and the spreading of disease.

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The main purpose of washing hands is to cleanse the hands bacteria or virus and chemicals which can cause personal harm or disease.Hand wash or hand hygiene is the act of cleaning once hand with or without the usage of water or another liquid for the use of liquid handwash.

Hand washing with soap and water has been taken part of personal hygiene for hundreds of years [1], [2] and has Been usually embedded in spiritual and cultural behavior. Although, the linkamong Hand washing and the spread ofdisease changed into set up simplest two centuries in the past, despite the fact that this can be considered asextraordinarily early with admire to the discoveries of Pasteur and Lister that passed off decades later. In themiddle of 19th century, Ignaz Semmelweis in Vienna (Austria), and Oliver Wendell Holmes in Boston (USA), revealed that the hands of health care workrs spread nosocomil infection. In 1847, observations of Semmelweiss conluded that after performing autopsies by physician on their hands had a disagreeable odor despite hand washing with soap and waterbefore entering the clinic. He hypothesized therefore that “cadaverous particles” were transmitted via the hands an caused the childbed fever. After a theory of disease offering developed by Pasteur, Semmelweis's findings goes

worldwide acceptance after his death, when Pasteur developed the scientific theory of disease offering a theoretical explanation for Semmelweis's findings. In 1980s remarkable evolution made in concepts of hand hygiene inhealth care. Simultaneouslyin the same year first national hand hygiene guidelines were published, [3], [4] furthermore several other countries also published the new guidelines in this array. In the year 1995 and 1996, the CDC/HICPAC within the USA recommended that besides antimicrobial soap or alcoholic antiseptic agent be used [5], [6] for washing hands.

History

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Aim & Objective :

Aim : Formulaton & Evaluation of Poly Herbal Handwash

Objective :

• The main objective is to prepare herbal handwash for anti-microbial.

• to provide effective hand hygiene through the combined action of multiple herbal extracts, offering both antimicrobial and skin-friendly benefits.

• Provide effective cleansing while friendly and eco-friendly hygiene

LITERATURE REVIEW :

on the formulation and evaluation of polyherbal handwash explores the use of multiple herbal extracts combined to create a handwash with enhanced antimicrobial and skin-friendly properties. Studies have focused on various aspects,

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including ingredient selection, extraction methods, formulation techniques, and evaluation of antimicrobial activity, physical characteristics, and stability.

Key Aspects of Polyherbal Handwash Formulation:
Herbal Extracts:
Research explores the use of various herbal extracts, including neem, tulsi, lemon, aloe vera, ginger, and others, known for their antimicrobial and skin-soothing properties.

Extraction Methods:
Hydroalcoholic and methanolic extractions are commonly used to extract active compounds from herbal materials.

Gelling Agents:
Carbopol 940 and other gelling agents are used to create a gel-like consistency for the handwash.

Surfactants:
Sodium lauryl sulfate and other surfactants are incorporated to provide foaming and cleaning properties.

Preservatives:
Methyl paraben and other preservatives are used to ensure product stability and prevent microbial contamination.

Evaluation Parameters:
Evaluations include antimicrobial activity testing, pH, viscosity, foaming, and stability studies.

Antimicrobial Activity Evaluation:
Zone of Inhibition Test:
Agar plate tests are used to assess the antimicrobial activity of the handwash against bacteria like Staphylococcus aureus, Bacillus subtilis, and Escherichia coli.

Microbial Growth:
The handwash formulation is tested against various microorganisms to determine its effectiveness in inhibiting microbial growth.

Physical and Chemical Evaluation:
pH:
The pH of the handwash is measured to ensure it is within a safe and effective range for skin.

Viscosity:
Viscosity tests determine the consistency and flow properties of the handwash.

Foaming and Foam Retention:
Evaluations assess the ability of the handwash to produce foam and maintain it over time.

Stability Studies:
The handwash is stored under different conditions to evaluate its stability and resistance to changes in color, odor, and other characteristics.

Benefits of Polyherbal Handwash:
Natural and Safe:

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The use of herbal extracts provides a natural and safer alternative to chemical-based handwashes, potentially reducing skin irritation.

Enhanced Antimicrobial Activity:
The combination of multiple herbal extracts can create a synergistic effect, enhancing antimicrobial activity against a wider range of pathogens.

Plan of Work :

Literature Review
↓
Selection of ingredients
↓
Collection of ingredient
↓
Extraction of ingridients
↓
Prepare herbal hand wash
↓
Result and Discussion
↓
Conclusion

INGREDIENTS

NEEM

Azadirachta indica, commonly known as neem, nimtree or Indian lilac, is atree in the mahogany family Meliaceae. It is oneof two species in the genus Azadirachta, and is native to the Indian subcontinent andmost of the countriesin Africa. It is typically grown in tropical and semi-tropical regions. Neem trees also grow on islands in southern Iran. Its fruits and seeds are the s So Source of neem oil.

Figure 1.Neem (Azadirachta indica)

DESCRIPTION:

Neem is a fast-growing tree that can reach a height of 15–20 metres (49–66 ft), and rarely 35–40 m (115– 131 ft). It is deciduous, shedding many of its leaves during the dry winter months. The branches are wideand spreading. The fairly

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dense crown is roundish and may reach a diameter of 20–25 m (66– 82 ft). The neem tree is similar. The fruit is a smooth (glabrous), olive-like drupe which varies in shape from elongate oval to nearly roundish, and when ripe is 14–28 mm (1⁄2–1 1⁄8 in) by 10–15 mm (3⁄8–5⁄8 in). The fruit skin (exocarp) is thin and the bitter-sweet pulp(mesocarp) is yellowish-white and very fibrous. The mesocarp is 3–5 mm (1⁄8–1⁄4 in)thick. The white, hard inner shell (endocarp) of the fruit encloses one, rarely two, or three, elongated seeds (kernels) having abrown seed coat.
The neem tree is often confused with a similar looking tree called bakain. Bakain also has toothed leaflets and similarlooking fruit. One difference is that neem leaves are pinnate but bakain leaves are twice-and thrice-pinnate.

ECOLOGY:
The neem tree is noted for its drought resistance. Normally it thrives in areas with sub-arid to sub-humid conditions, with an annual rainfall of 400–1,200 mm (16–47 in). It can grow in regions with an annual rainfall below 400 mm,but in such casesit depends largely on ground water levels. Neem can grow in many different types of soil, but it thrives best on well drained deep and sandy soils. It is a typical tropical to subtropical tree and exists at annual meantemperatures of 21–32 °C (70–90 °F).It can tolerate high to very high temperatures and does not tolerate temperature below 5 °C (41 °F). Neem is one of a very few shade- giving trees that thrive in drought-prone areas e.g. thedry coastal, southern districts of India and Pakistan. The trees are not at all delicate about water quality and thrive on the meresttrickle of water, whatever the quality. In India and tropical countries where the Indian diaspora has reached, it is very common to see neem trees used for shade lining streets, around
temples, schools and other such public buildings or in most people's back yards. In very dry areas the trees are planted on large tracts of land.

WEED STATUS:
Neem is considered as a weed in many areas, including some parts of the Middle East, most of Sub- Saharan Africa including West Africa and IndianOcean states, and some parts of Australia. Ecologically, it survives well in similar environments to its own, but its weed potential has not been fully assessed.
In April 2015, A. indica was declared a class B and C weed in the NorthernTerritory, Australia, meaning its growth and spread must be controlled and plants or propagules are not allowed to be brought into the NT. It is illegal to buy, sell, or transport the plants or seeds. Its declaration as a weed came in response toits invasion of waterways in the "Top End" of the territory.
After being introduced into Australia, possibly in the 1940s, A. indica was originally planted in the Northern Territory to provide shade for cattle. Trial plantations were established between the 1960s and 1980s in Darwin, Queensland, and Western Australia, but the Australian neem industry did notprove viable. The tree has now spread into the savanna, particularly around waterways, and naturalised populations exist in several areas.

PHYTOCHEMICALS:
Neem fruit, seeds, leaves, stems, and bark contain diverse phytochemicals, some of which were first discovered in Azadirachta seed extracts, such as azadirachtin established in the 1960s as an insect antifeedant, growth disruptor, and insecticide. The yield of azadirachtin from crushing 2 kg of seeds is about 5 g.
In addition to azadirachtin and related limonoids, the seed oil contains glycerides, diverse polyphenols, nimbolide, triterpenes, and beta-sitosterol. The yellow, bitter oil has a garlic-like odor and contains about 2% of limonoids compounds. The leaves contain quercetin, catechins, carotenes, andvitamin C.

USES:
Neem leaves are dried in India and placed in cupboards to prevent insects eating the clothes, and also in tins where rice isstored. The flowers are also used in many Indian festivals like Ugadi.

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TRADITIONAL MEDICINE:

Products made from trees have been used in the traditional medicine ofIndia for centuries, but there is insufficient clinical evidence to indicate any benefits of using neem for medicinal purposes. In adults, no specific doses have been established, and short-term use of neem appears to be safe, while long-term use may harm the kidneys or liver; in small children, neem oil is toxic and can lead to death.[11] Neem may also cause miscarriages, infertility,and low blood sugar.

PEST AND DISESASE CONTROL:

Neem is a key ingredient in non-pesticide management (NPM), providing a natural alternative to syntheticpesticides. Neem seeds are ground into powder that is soaked overnight in water and sprayed on the crop. To be effective, it must be applied repeatedly, at least every ten days. Neem does not directly kill insects. It acts as an anti- feedant, repellent, and egg- laying deterrent and thus protects the crop from damage.

The insects starve and die within a few days. Neem also suppresses the subsequent hatching of their eggs. Neem- based fertilizers have been effective against southern armyworm. Neem cake may be used as a fertilizer. Tree the neem tree is of great importance for its anti- desertification properties and possibly as a good carbon dioxide sink. It is also used for maintaining soil fertility.

OTHER USES:

Fertilizer: neem extract is added to fertilizers (urea) as a nitrification inhibitor.

Tree: the neem tree is of great importance for its anti-desertification propertiesand possibly as a good carbon dioxide sink. It is also used for maintaining soilfertility.

Animal feed: neem leaves can be occasionally used as forage for ruminants and rabbits. Fertilizer: neem extract is added to fertilizers (urea) as a nitrification inhibitor. Teeth cleaning: neem has traditionally been used as a type of teeth-cleaning twig[1].

TULSI :

Ocimum tenuliforem, commonly known as holy basil, tulsi or tulasi, is an aromatic perennial plant in the family Lamiaceae. It is native to the Indian subcontinent and widespread as a cultivated plant throughout the Southeast Asian tropicsTulsi is cultivated for religious and traditional medicine purposes, and also forits essential oil. It is widely used as herbal tea, commonly used in Ayurveda, and has a place within the Vaishnava traditionof Hinduism, in which devotees perform worship involving holy basil plants or leaves.

The variety of Ocimum tenuiflorum used in Thai cuisine is referred to asThai holy basil.

MORPHOLOGY:

Holy basil is an erect, many-branched subshrub, 30–60 cm (12–24 in) tall withhairy stems. Leaves are green or purple; they are simple, petiole, with an ovateblade up to 5 cm (2 in) long, which usually has a slightly toothed margin; theyare strongly scented and have a decussate phyllotaxy.

The purplish flowers are placed in close whorls on elongated racemes.

The three main morphotypes cultivated in India and Nepal are Ram tulsi (the most common type, with broad bright green leaves that are slightly sweet), the less common purplish green- leaved (Krishna or

Shyam tulsi) and the common wild vana tulsi (e.g., Ocimum gratissimum).

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Figure 2.Tulasi (Ocimum tenuliforem)

CHEMICAL COMPOSITION:

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%), andgermacrene (~2%), with the balance being madeup of various trace compounds, mostly terpenes.

USES:

Tulsi (Sanskrit: Surasa) has been used in Ayurveda and Siddha practices for its supposed treatment ofdisease[2].

RITHA :

Sapindus mukorossi, commonly known as Indian soapberry, washnut, or ritha, is a species of tree in the family Sapindaceae. It is a deciduous tree thatgrows in the lower foothills and midhills of the Himalayas at altitudes of up to 1,200 metres (4,000 ft). It is also native to western coastal Karnataka, Maharashtra, and Goa in India. It is tolerant to reasonably poor soil, can be planted aroundfarmers' home, and one tree can produce 30 to 35 kilograms (66 to 77 lb) of fruit per year.

SURFACTANT:

Methods of extracting the maximum amount of oil from existing oil reserveshas become a scientific focus in a world that has become dependent on fossilfuels. Researchers have found that the Ritha fruit can be used in an enhancedoil recovery technique.[8] More specifically, Chhetri, Watts, Rahman, and Islam (2009) found that extracts from the soapnut can be used as an organic surfactant to increase the mobility ofoil from the fields.

Figure 3.Ritha (Sapindius mukorossi)

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In addition, researchers have demonstrated the potential for the soapnut to be used as a natural surfactant for washing arsenic from soils that are rich in iron.

USES:

The value of the tree mostly comes from its fruit, which can be usedformany pharmacological andcleansing purposes.

CLOVE OIL

Cloves are the aromatic flower buds of a tree in the family Myrtaceous, Syzygium aromaticum. They arenative to the Maluku Islands (or Moluccas) in Indonesia, and are commonly used as a spice, flavouring or fragrance in consumer products, such as toothpaste, soaps, orcosmetics.

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

BOTANICAL FEATURES:

The clove tree is an evergreen that grows up to 8–12 metres (26–39 ft) tall,with large leaves and crimsonflowers grouped in terminal clusters. The flower buds initially have a pale hue, gradually turn green, then transition to a bright red when ready for harvest. Cloves are harvested at 1.5–2 centimetres (0.59–0.79 in) long, and consist of a long calyx that terminates in four spreading sepals, and four unopened petals thatform a small central ball.

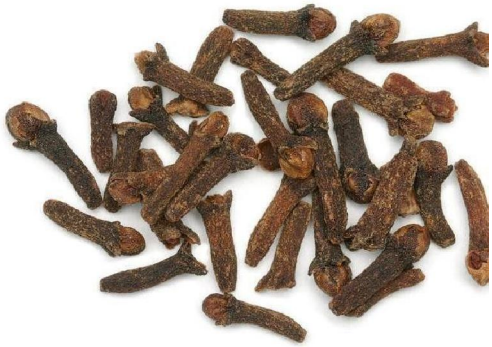

Figure .Clove

USES:

Cloves are used in the cuisine of Asian, African, Mediterranean, and the near and Middle East countries, lending flavour to meats, curries, and marinades, as well as fruit (such as apples, pears, and rhubarb). Cloves may be used to give aromatic and flavour qualities to hot beverages, often combined with other ingredients such as lemon and sugar. They are a common element in spice blends, including pumpkin pie spice and specula as spices.

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In Mexican cuisine, cloves are best known as clavos de color, and often accompany cumin and cinnamon. They are also used in Peruvian cuisine, in awide variety of dishes such as carapulcra and arroz con leche.A majorcomponent of clove taste is imparted by the chemical eugenol, and the quantity of the spice requiredis typically small. It pairs well with cinnamon, allspice, vanilla, red wine, basil, onion, citrus peel, star anise, and peppercorns

ROSE OIL:

Rose oil (rose Otto, attar of rose, attar of roses or rose essence) is the essentialoil extracted from the petals of various types of rose. Rose Otto's are extractedthrough steam distillation, while rose absolutes are obtained through solvent extraction, the absolute being used more commonly in perfumery. The production technique originated in Persia. Even with their high price and the advent of organic synthesis, rose oils are still perhaps the most widely used essential oil in perfumery.

DISTILLATION:

In the first part of the two-stage process of distillation, large stills - traditionally of copper - are filled with roses and water. The still is fired for 60–105 minutes. The vaporized water and rose oil exit the still and enter a condensing apparatus and are then collected in a flask. This distillation yieldsa very concentrated oil, direct oil, which makes up about 20% of the final product of the whole process. The water which condenses along with the oil is drained off and redistilled, cohobating, in order to obtain the water-solublefractions of the rose oil such as phenethyl alcohol which are a vital componentofthe aroma and which make up the large bulk, 80%, of the oil. The two oilsare combined and make the final rose attar.

Rose attar is mobile in room temperature and is usually clear, light yellow in color. It will form white crystals at normal room temperature which disappearwhen the oil is gently warmed. It will tend to become
more viscous at lower temperatures due to this crystallization of some of its components.

The essence has a very strong odour, but is pleasant when diluted and used forperfume. Attar of roses was once made in India, Persia, Syria, and the Ottoman Empire. The Rose Valleyin Bulgaria, near the town of Kazanlak, is among the major producers of attar of roses in the world.In India, Kanauji is an important city of fabrication of rose attar,
and Kanauji is nicknamed "TheGrasse of the East or The Grasse of the Orient". Grasse (in France) is an important city of fabrication of rose fragrance. Due to the heat required for distillation, some of the compounds extracted from the rose denature or breakdown chemicallyportion of the distillate is known as rosewater. This inexpensive by-product is used widely as a food flavouring as well as in skincare.

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COLLECTION OF PLANT MATERIAL:

The plants Neem [Azadirachta indica] & Peppermint [Mentha piperita] leaves werecollected from Bharat Institute of Technology Herbal Garden, IBP. To remove sandparticles from sample, wash it thoroughly with fresh water. The plant material driedunder sunlight for 4 to five days. Then the dried plant material where crushed, sieve to get nearly fine amorphous powder. Powdered material was extracted with a suitable solvent. [10], [11]. Ritha powder, turmeric powder, Clove oil and Tulsi oil were collected from the local market of Hyderabad. Soil extract were chosen for antibacterial activity.

Method of Preparation :

Polyherbal Hand wash Gel was prepared using gum acacia as Gelling agent whichis socked in 30 ml distilled water overnight. Neem and Peppermint extracts, Ritha Powder along withTulsi and Clove oil weremeasured accurately and dissolved by gentle heating. After heating, keep the solution aside for sometimes. The required quantity of Sodium lauryl Sulphate dissolved in 10ml distilled water along with Glycerine were mixed in above aqueous phase with continuous stirring. The methyl paraben was dissolved in remaining quantity of purified water anddispersed into the extract. The swelled polymer was stirred using amechanical stirrer to ensure the uniformdispersion of polymer and finally added into the above mixture to form a Homogenous Gel and then the required quantity of Jasmine oil was added for Fragrance.

Lastly, it was stored in well closed container and labelled suitably for furtheranalysis.

Ingredients	Quantity (gm/ml)	Uses
Neem	10	Antimicrobial Agent
Tulsi	10	Purifying Agent
Rita	5	Foaming Agent
Clove Oil	0.50	Antibacterial Agent
SLS	3	Foaming Agent
Gum Acacia	20	Gelling Agent
Glycerine &Rose Water	0.25	Softening Agent
Methyl Paraben	0.50	Preservative
Distilled water	Up to 100 ml	Vehicle

Evaluation Parameters of Polyherbal Hand wash Gel

- Organoleptic Evaluation
- Appearance and Homogenicity
- Grittiness
- Skin Irritation Test
- PH
- Spread ability
- Viscosity
- Foam height
- Foam Retention
- Stability

Prepared formulation of Polyherbal Hand wash Gel was subjected to following evaluation parameters:

Organoleptic Evaluation :

Parameters like colour, odour, texture was carried out Colour and texture were evaluated by visual and touch sensation respectively. TheOdour was inspected by sensing the formulation. Appearance and Homogenicity:

Appearance and Homogenicity was evaluated by visual inspection.

Grittiness:

1ml of Gel was taken on finger tips and rubbed between twofingertips, then the formulation was evaluated .

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Skin Irritation Test:

Skin Irritation Test was evaluated by applying Polyherbal Hand wash Gel on skin and left for 30 min, after 30 minutes of washing observe any itching, rashes or redness on skin by sensory and visual inspection.

PH:

1gm of Sample of Polyherbal Hand wash Gel was taken and dissolvedit into 100ml distilled water. The pH solution was measured by standardized digital pH meter.

Spread ability:

0.5gm of Sample of Polyherbal Hand wash Gel was pressed betweentwo slides and left for about 5 minutes where no more spreading was expected. Diameter of spreaded circlewas measured in cm and was taken as comparative values for spread ability.

Viscosity:

The viscosity of hand wash was determined by using Brookfield viscometer. 50ml of herbal hand wash is taken into 100ml of beaker and the tip of viscometer was dipped into the beaker containing handwash formulation and its viscosity was measured.

Foam Height:

One gram of sample of Polyherbal Hand wash Gel was taken anddispersed in 50ml distilled water. Dispersion was transferred into measuring cylinder. Volume was made up to 100ml with water. This solution is taken in 10 test tubes in aseriesof successive portion of 1, 2, 3 10ml and remaining volume is made up with water to 10ml. Then the test tubes were shaken for 15 seconds.Then the test tube is allowed to stand for 5 minutes. And the Height offoam was measured.

Foam Retention:

25ml of Polyherbal Hand wash Gel was taken into 100ml measuringcylinder and shaken 10 times. The volume of foam at 1 - minute intervals for 4 minutes was recorded. Foam retention should remain stable for at least 2minutes.

Stability:

The Stability studies were carried out for Polyherbal Hand wash Gelformulation by storing at different temperature conditions like 40°C, 25°C, and 37°C for 1 week. During the stability studies no change in colour and no phase separation were observed in the formulated hand wash.

Spread ability of formulated polyherbal hand wash :

Sr.no	Test tube	Samde	Marketed herbal handwash (pantanjali)
1	Colour	Light green	Light orange
2	Odour	Rose like	Pleasant
3	Texture	Smooth	Smooth
4	Grittiness	Non-gritty	Non giritty
5	Skin irritation test	Non irritation	No irritation
6	pH	7.5	8.1
7	Cleaning action	29%	29%

HOW TO USE POLYHERBAL HANDWASH

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 infections. Hand washing is the act of cleaning one'shands to remove dirt and pathogenic microorganisms and to prevent the transmission of transientmicroorganisms .

Plants, on the other hand, have complicated compositions and their therapeutic activities are dependent on their major active chemical constituents. In addition, improper herb authentication, microorganism adulteration, and pesticide residue have made herbal drug standardization critical. As a result, before using these (Neem, Tulsi, and Pudina) herbs

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in any formulation, their confirmation is required. Traditional medicine has long used plants to prevent infectious diseases. Secondary metabolites found in plants include tannins, alkaloids, and flavonoids
Stage 1 : Apply herbal hand wash to wet hands. 20 seconds of rubbing hands together
Stage 2: Palm to palm
Stage 3 : Rub your fingers together on both hands.
Stage 4 : Rub your hands together with your fingers. Stage 5 : Rub each of your thumbs together.
Stage 6 : Rub your palms in circles. Then, using running water, properly wash your hands.

Future Scope

Many of the chemical Hand washes are now available in the market as alcohol based sanitizers consisting of other synthetic detergents.
Alcohols and Detergents do reduce health care related transmission of harmful diseases but they do also have some short comings and adverseeffects on human tissues and environment. Frequent use of such synthetic chemical based formulations can lead to skin irritation and also resistant among pathogens.
Production cost of such synthetic formulations are also high, due to addition of synthetic chemicals & alcohols.
To overcome these. problems it's necessary to replace synthetic chemicals with natural ingredients.
As natural ingredients don't have any adverse effects on human skin and environment. Hence Herbal Hand Wash can be a new way developed to combat antibiotic resistant of pathogenic organism and provide safe, healthy, natural living through germ free hands.
Furthermore such Herbal formulations can also reduce themanufacturing cost and proven to be more economical than synthetic chemicals as these herbs are easily available in the environment in abundant and also can be cultivated easily.

RESULT & DISCUSSION:

Literature reveals that leaves of Neem (Azadirachta indica) possess Antimicrobial property, leaves of Pudina possess Antibacterial activity, and extract of clove possess Antibacterial activity. Hence the present study was designed to formulate polyherbal hand wash having Antimicrobial and antibacterial properties the poly herbal hand wash was found to be light green colour non greasy smooth in texture and easily washable with a good PH near to normal skin PH range .No skin irritationwash observed while using it for few days .From all the studies we can finally statesthat polyherbal hand wash has shown cleansing action with no skin irritation and easy to use as it is polyherbal hand wash ,so decreases the chances of side effects.

II. CONCLUSION

Like Cosmetics, Cosmeceuticals (A cosmetic that has or isclaimed to have medicinal properties) are topically applied but they contain ingredients that influence the biological functions of skin.
The WHO estimates that 80% of the population of Asian country presently use herbal medicin proof primary aspect of primary health care and for the purpose hand hygiene includes preparation of Hand wash.
The present study was carried out to formulate Polyherbal Handwash Gel containing herbal extract which is used not onlyfor the purpose of cleaning hands but also for the preventionof bacterial growth.
Its composition was prepared accordingto delicateness of skin so that it cannot cause any type ofirritation. Hence, it can be concluded that the PolyherbalHand wa…

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