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Formulation and Evaluation of Polyherbal Hand Wash (Gel)

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***Abstract*—** The main aim for the Preparation of Polyherbal Hand wash Gel is for Hand Hygiene. Herbal medicines are significant part of healthcare throughout the world. Herbal medicines have been extensively utilized as effectual remedies for prevention and multiple health conditions. Hence, Herbal Medication is additionally known as Botanical treatment or Phyto - medicine. There are numerous hand wash are available in the market which have some adverse effects, to avoid these adverse effects like itching, dermatitis, irritation etc. the synthetic hand wash formulation an attempt has been made to formulate a polyherbal hand wash using Kambarmodi extract (gives antimicrobial activity) and Tulsi (gives purifying activity) against the microbes or disease - causing bacteria and safeguards your skin. In the polyherbal hand wash formulation, along with this Kambarmodi and Tulsi, also added some other herbal drugs or herbs which plays subsequently important role.

Keywords:
Polyherbal Hand Wash, Adverse Effect, Hygiene, Cleaning, Foam

INTRODUCTION

Most health problems are directly or indirectly associated with environmental sanitation. Most illnesses could be associated with personalhygiene and sanitation of the pupils

(1). One of the things that has become a health problem in almost all places is infectious diseases, high population density, inadequate environment, low public awareness of hygiene and sanitation measures, one of which is the habit of washing hands

(2). Hands are primary mode of transmission of microbes and infections. To prevent the spreading of contagious diseases hand washing is absolutely important precaution. Hand washing is critical in food service and food production operations. It is also important in homes and day care operations

(3). Many marketed hand washes are chemical based so their frequent use can lead to skin irritation and also resistant among pathogen

(4). Plant extracts and products have been used for centuries in traditional medicine, functional food etc., The main advantage of using natural source is that they are easilyavailable, cheap and harmless compared to chemical products. Tglucose (sugar). Human body has **Importance**:

1. Hand wash important in homes and day care operations.
2. Hand washing is a simple act that saves lives from many life-threatening diseases.
3. Hand wash prevent germs from entering into our body.
4. Hand wash prevents us from diseases like diarrhea and influenza.
5. Hand wash prevents from communicable diseases and bacterial infections.
6. It also reduces infant mortality rate around 50% in developing country.

Materials and method

Collection of plant material: The plants Kambarmodi [Tridax procumbens] & Peppermint [Mentha piperita] leaves were collected from Aditya Institute of Pharmacy College Campus, Beed. To remove sand particles from sample, wash it thoroughly with fresh water. The plant material dried under sunlight for 4 to five days. Then the dried plant material where crushed, sieved to get nearly fine amorphous powder. Powdered material was extracted with a suitable solvent. [8], [9]. Ritha powder, turmeric powder, Eucalyptus oil and Tulsi oil were collected from the local market of Beed. Soil extract were chosen for antibacterial activity.

Method of Preparation

1) Polyherbal Hand wash Gel was prepared using Carbopol 940 as Gelling agent which is socked in 15ml distilled water overnight.

2) Kambarmodi and Peppermint extracts, Ritha Powder along with Tulsi and Eucalyptus oil were measured accurately and dissolved by gentle heating.

3) After heating, keep the solution aside for sometimes.

4) The required quantity of Sodium lauryl Sulphate dissolved in 10ml distilled water along with Glycerine were mixed in above aqueous phase with continuous stirring.

5) The methyl paraben was dissolved in remaining quantity of purified water and dispersed into the extract.

6) The swelled polymer (Carbopol 940) was stirred using a mechanical stirrer to ensure the uniform dispersion of polymer and finally added into the above mixture to form a Homogenous Gel and then the required quantity of Rose oil was added for Fragrance.

Organoleptic Evaluation Test

Parameters like colour, odour, texture was carried out Colour and texture were evaluated by visual and touch sensation respectively. The Odour 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 two fingertips, then the formulation was evaluated**.**

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 dissolved it 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 between two slides and left for about 5 minutes where no more spreading was expected. Diameter of spreaded circle was measured in cm and was taken as comparative values for spread ability.

Antimicrobial Study of Polyherbal Hand wash Gel: The Screening of anti - microbial efficacy of the formulated Polyherbal Hand wash Gel was performed on Soil Microbes by using agar plate method as per standard procedure. The plates were filled with nutrient agar solution and allowed for solidification. After solidification the soil extract from the subculture were poured into the nutrient agar media by Pour Plate Method and inoculated for 24 hours. After 24 hours of inoculation, two cavities were made in it by Cup Plate Method. The First cavity is filled with Marketed Herbal Hand wash Second one with Formulated Polyherbal Hand wash Gel.

Foam Height: One gram of sample of Polyherbal Hand wash Gel was taken and dispersed 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 a series of 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 of foam was measured. [9], [13], [15]

Foam Retention: 25ml of Polyherbal Hand wash Gel was taken into 100ml measuring cylinder 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 5 minutes. [9], [13], [15] Stability: The Stability studies were carried out for Polyherbal Hand wash Gel formulation 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. [15]

Cleaning Action: 5gm wool was taken and placed in grease; the same was then placed in a 200ml of water containing 1gm of Polyherbal Hand wash Gel in a beaker and was shaken for 4 minutes.

Conclusion:

Like Cosmetics, Cosmeceuticals (A cosmetic that has or is claimed 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 medicine foof primaries of primary health care and for 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 which is used not only for the purpose of cleaning hands but also for the prevention of bacterial growth. Its composition was prepared according to delicateness of skin so that it cannot cause any type of irritation. Hence, it can be concluded that the Polyherbal Hand wash Gel are much better than plain soaps or existing marketed synthetic hand wash due to their ingredients and effectiveness on our skin of hands and as well as suitable for all type of skin**.**

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