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FORMULATION AND DEVELOPMENT OF HERBAL HAND WASH

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ABSTRACT

Background: The main aim to present work is to formulate poly-herbal hand wash by using Triphala decoction, neem decoction and also to give information regarding ingredients used in hand wash formulation. The hands are primary sites for the infection. In current era various infections spread through contaminated hands. So, this formulation has ayurvedic herbs having antibacterial activity and modern chemical antimicribial agents.Therefore it brings up the use of antiseptic for hand washing purpose. **Aim:** To study the Formulation and development of herbal Hand Wash. **Material and Methods:** To formulate herbal hand wash with given procedure. To evaluate importance of each ingredients of herbal hand wash. **Conclusion:** The detailed study of formulation procedure and information of each ingredients documentation in logical, sequential manner helps in developing valuable data.

KEYWORDS: Herbal, Handwash, Antibacterial.

INTRODUCTION

Hand wash originated in cosemetology branch of modern science. Hand wash Safely and effectively removes soils, germs and other contaminants, they prevent the spread of infectious diseases and control allergens, such as dust and mold, helping us to stay healthy.

In samhitas for kshalan karma different herbs and there basic formulations were mentioned like triphala kwath for hand, face and hair wash.

Hand wash formulation contains antimicrobial agent, soothiing agent, surfectant etc. In this study efforts taken for incorporation of herbal docoction in maximum amount in hand wash

formula. Herbal drugs used in study has its own proved antimicrobial activity. So, this formulation is more safe, non irritant and has better cleaning ability.

Aim: To study the Formulation and development of Herbal Hand Wash.

Objectives

1. To Formulate Herbal Hand Wash.
2. To Study Importance of ingredients in formulation.

MATERIAL AND METHODS

1. Ingredients and Importance of ingredients used in hand wash formulation

a) Foaming agent[1]: A foaming agent is a chemical compound which facilitates the formation of foam or helps foam maintain its integrity by strengthening individual foam bubbles. A broad spectrum of chemicals can act as foaming agents. Different foaming agents are more effective for different materials, and chemists are often developing new products which can be used to produce foam. Two types surfectant and blowing agent.

b) Surfectant: A surfactant, when present in small amounts, reduces surface tension of a liquid (reduces the work needed to create the foam) or increases its colloidal stability by inhibiting coalescence of bubbles.

Example-nonionic cocamide DEA, Cocamidopropylamine Oxide, zwitterionic cocamidopropyl betaine, cocamidopropyl hydroxysultaine.

c) Blowing Agent: A blowing agent is a gas that forms the gaseous part of the foam. Carbon dioxide, pentane, chlorofluorocarbons, baking powder, azodicarbonamide, titanium hydride, isocyanates.

d) Emulsifier: A substance that is added to mixtures to make the different liquids or substances in them combine to form a smooth mixture.

e) Foam Booster:[2] Foam booster is a high foam additive for acidic and alkaline formulations. Foam booster is suggested for use when extended product contact time is desired.

F) Foam Stabilizer[3]: Liquid foams are sometimes made relatively long lasting by adding some substance called stabilizer that prevents the coalscence of gas bubbles.

g) Moisturizer:[4] A Moisturizer or emollient is a cosmetic preparation used for protecting, moisturizing, and lubricating skin.

h) Antimicrobial agent[5]: An antimicrobial ia any agent that destroys microorganism or supresses their multiplication or growth.

i) Preservatives: Preservatives in cosmetics to reduce the risk of microbial contamination of the product and to ensure the product remains suitable and safe during shelf life and the period of its use by consumers.

j) Colouring agents[6]: These are classified in two groups – colorants and pigments. Colorants are soluble synthetic organic agents. they are used to color cosmetic products.

k) Fragrance[7]: Fragrance are used in a wide variety of products to impart a pleasant odour, mask the inherent smell of some ingredients, and enhance the experience of using product.

2. Formulation of Herbal Hand Wash

a) Ingredients

Sles – 20%

Coco Dimethy Amine – 2%

Cocobetane – 2 %

Glycerine -5%

Propylene Glycol – 5%

Preservative – 1%(P5)

Decoction Of Neem And Triphala – Q.S

Antimicrobial Agent – 25% (Cetrimide)

Sles- Foaming agent

Cocodimethylamine - It is used to emulsify water insoluble pigments. It acts as very good thickening and jelling agent. It is used in cosmetic and shampoo, formulations, germicide, surfactants, dyeing assistant in level dyeing, dye dispersion.

Cocobetaine - CocoBetaine (Cocamidopropyl Betaine) is a, 30% active, aqueous surfactant solution, from Coconut Oil. CocoBetaine (Cocamidopropyl Betaine) is used in shampoos, bubble baths and liquid hand soaps, as a secondary surfactant in cleansing systems where it will help to build viscosity and offers a smooth feel. CocoBetaine (Cocamidopropyl Betaine) provides good foaming, and foam stabilization.

Glycerine-Denaturant, fragrance ingredient, hair conditioning agent, humectant, skin protectant, skin conditioning agent, viscosity-decreasing agent.

Propylene Glycol- Propylene glycol is used as a humectant, a preservative, a solvent, or an emollient. Attracts water, moisturizer, lowers sign of aging, enhances penetration, Prevent water loss, safe for acne prone skin.

Cetrimide - Antimicrobial agent, antiseptic, mixture of three ammonium compounds. Savlon –Cetrimide+ Chlorhexidine.

Triphala:[8] Used in kshalan karma. Act as antimicrobial agent. used in arunshika, vran dhawan etc.

Neem (Azadirecta indica):[9] Neem leaves possessed good antimicrobial activity confirming the great potential of bioactive compounds.

b) Procedure

Triphala Decoction and Neem Decoction preparation:[10]

Triphala and neem churn each 30 gm taken in two different vessals 240 ml of water added in each vessal continuous heating was given 60 ml decoction obtained.

Herbal Hand Wash Procedure

1. Sles was taken in given ammount in a glass vessal.
2. Addition of cocodimethylamine, cocobetaine, glycerine was done.
3. Then addition of propylene glycol, fragrance, color and preservative done in above mentioned amount.
4. Addition of both decoction carried out till obtaining suitable consistency of hand wash
5. Addition of antimicrobial agent was done
6. After mixing all ingredients in vessal in sequential manner stirring was started with the help of electric stirrer.
7. Total weight of mixture – 86 gm
8. Proper consistency not obtained so, mixture devided in two batches
9. In batch A – Acropol solution (1 gm acropol in 10ml water) added. then NaOH added drop by drop till proper consistency obtain.
10. In batch B – Nacl solution (5 gm in 10 ml) added to get proper consistency.

DISCUSSION AND CONCLUSION

Hands are the primary source of disese related to skin, respiration, gastrointestinal tract 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 than bar soap. About 30% decoction get incorporated in hand wash formulation. Batch A has proper consistency like market preparation while batch B Consistency is more watery. In market preparation rather than using decoction they use herbal extract. Extract is more potent than fine powder. There is scope for further evaluation of physical, chemical parameters along with antimicrobial study to test efficacy of formulation.

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