

POLYHERBAL HAND SANITIZER - FORMULATION AND EVALUATION

X Fatima Grace^{1*}, Sowmya K.V.², Darsika C.³, Arul Jothy⁴, S. Shanmuganathan⁵

¹Assistant Professor, ^{2,3,4}Student, ⁵HOD, Dept. of Pharmaceutics, Sri Ramachandra University, Tamil Nadu

***Corresponding Author:**

E-mail: santagracek@gmail.com

ABSTRACT

The main aim for the preparation of a poly herbal hand sanitizer is for "hand hygiene". It is a vital principle in the prevention, control, and reduction of any acquired infection. Mainly hand sanitizer can stop the chain of transmission of micro organisms and other bacteria from hand to different parts of our body. Hand hygiene is important and one of the most critical steps in food production, food service as well as in homes and other day care preparations. Hand sanitizer avoids adverse effects like itching, irritation, dermatitis etc.

So, maintaining hand hygiene as the prime criteria-instead of some synthetic formulation, an attempt has been made to formulate an herbal hand wash by using some extracts of commonly available plants like *Andrographis paniculata*, ginger, lemon juice. The formulation was evaluated for its physical parameters. It is sure that these ingredients on combination behave as an effective hand sanitizer.

Key Words: Herbal extracts, hand hygiene, anti microbial agents.

INTRODUCTION

Skin is the most exposed part of the body to the sunlight, environmental pollution and also to some protection against the pathogens. The most common skin disorders are eczema (atopic dermatitis), warts, acne, rashes, psoriasis, allergy etc. To protect the skin from harmful micro organisms and to prevent spreading of many skin infection. Hand washing is absolutely an important precaution. The aim of the present work is to prepare and physically evaluate a poly herbal hand wash from commonly available plants, instead of adopting synthetic preparation. Hand sanitizer is an antiseptic and supplement to the hand washing with soap and water. There are different preparations in hand sanitizer like gel, foam, liquid solution etc.

The commonly used ingredient in hand sanitizer is alcohol and inactive ingredients include a thickening agent, humectants etc. Alcohol based hand sanitizer are very effective in killing micro organisms than compared to soaps. All hand sanitizer products require a designation called "national drug code" in the United States.

USES OF A HAND SANITIZER

These are antiseptic products used to avoid the transmission of skin infections/pathogens.

Alcoholic hand sanitizer kills 99% of the bacteria on hands for seconds after application.

Drying of the skin is less and leaves more moisture.

WHEN SHOULD HAND SANITIZER BE USED

Before preparing food, and treating wounds.

Before inserting or removing the contact lenses from the eye.

After using toilet, changing a diaper.

After handling garbage.

Micro organism as well as the resistant to bacterial flora.

Water is used as a solvent and alcohol-antiseptic.

Glycerine- humectants.

Perfume –imparts flavour.

Preservative-prevents micro organisms.

Carbopol 940-as thickening agent.

Triethanolamine-emulsifier and surfactant.

Poylsorbate 20-detergent and emulsifier.

Lemon extract- strong antibacterial, antiviral.

FORMULATION OF POLYHERBAL HAND SANITIZER

Table 1: Formulation of Polyherbal Hand Sanitizer

S.No	Ingredients	Quantity (%)
1	Ginger 	10
2	Lemon 	10
3	<i>Andrographis paniculata</i> 	10
4	Carbapol-940.	1
5	Triethanolamine	1
6	Glycerine	5
7	Polysorbate-20	1
8	Perfume	1
9	Preservative	1
10	Alcohol	40
11	Water	20

METHOD OF PREPARATION

Ethanol extract of *Andrographis Paniculata*, ginger, lemon was prepared by Maceration process. Other ingredients except triethanolamine were added in water and stirred well using a mechanical stirrer. To this the extracts were added and stirred. Then triethanolamine and perfume was added and the volume was made up using alcohol.

EVALUATION PARAMETERS

Colour: It was determined visually.

Odour: It was determined manually.

pH: It was determined by using pH meter.

RESULT AND DISCUSSION

Table 2: Evaluation Parameters

S.no	Parameters	Observations
1	Colour	Light Green
2	Odour	Characteristic
3	pH	6.5

CONCLUSION

The above preparation can be used as a good hand sanitizer. Further studies are required to screen the antibacterial affect and compare with other available hand sanitizer.

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REFERENCES

1. PalakVyaset al. Antimicrobial Activity of Ayurvedic Hand Sanitizers. International Journal of Pharmaceutical & Biological Archives. 2011; 2(2):762-766.
2. Larson E. Skin hygiene and infection prevention: More of the same or different approaches? Clin. Infect. Dis. 1999; 29: 1287-1294
3. Burke JP. Patient safety: infection control-a problem for patient safety. N Engl. J. Med. 2003; 348: 651-656.
4. Cowan M. M., Plant Products as Antimicrobial Agents. Clinical Micro. Reviews. 1999;12(4): 564-82.
5. WHO Guidelines on Hand Hygiene in Health Care (Advanced Draft).
6. MondalSunanda, Kolhapure S.A., Evaluation of the antimicrobial efficacy and safety of Pure Hands herbal hand sanitizer in hand hygiene and on in animate objects. The Antiseptic. 2004;101(3): 112-120.
7. Widmer AF, Replace hand washing with use of a waterless alcohol hand rub. Clin Infect Dis 2000;31:136-43.
8. Berman RE, Knight RA. Evaluation of hand antisepsis. Arch Environ Health 1969;18:781-3.
9. Mackintosh CA, Hoffman PN. An extended model for transfer of micro-organisms via the hands: Differences between organisms and the effect of alcohol disinfection. J Hyg (Lond) 1984;92:345-55.