

ANTIMICROBIAL HERBAL HAND WASH

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INTRODUCTION

- Microbes are the contributing factor to many diseases.
- Proper hand washing practices are critical in prevention of infection and spread of disease through direct contact.
- However, frequent hand washing has a link with the occurrence of contact dermatitis because hand wash available in the market consist of harsh chemicals which makes the skin prone to dryness, cracks and irritation.
- Antimicrobial agent like triclosan is banned due to its harmful adverse effects and safety issues. Hence, the demand of a new antimicrobial agent from natural source has increased.
- Therefore, the goal of this study is to formulate antimicrobial herbal foaming hand wash along with other mild ingredients.

METHODOLOGY

Extraction of medicinal plant by Soxhlet and maceration technique using water and ethanol as solvent.

Quantification of Tannic acid from herbal extract by HPLC.

Formulation of antimicrobial foaming hand wash from medicinal plant extract

Physicochemical, antimicrobial and stability evaluation of foaming hand wash.



BENEFIT



NOVELTY

- First foaming hand wash with antimicrobial & antifungal properties from this medicinal plant.
- New source of antimicrobial agent.

COST ANALYSIS

Product	Cost per 250mL
Our Product	RM15.16
Hibiscrub Skin Cleanser	RM28.49
Microshield Hand Wash	≈ RM45.80

STATUS OF INNOVATION

- Successfully granted with precommercialized grant for pilot production. (UIC200301: Antimicrobial Herbal Foaming Hand Wash)

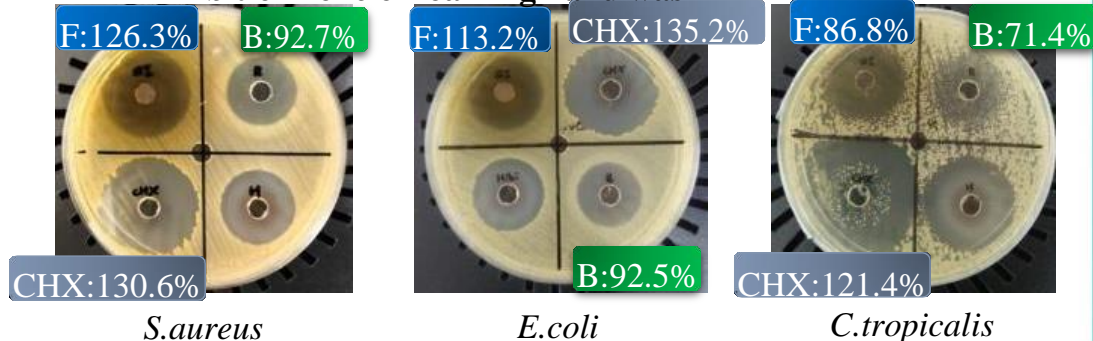
PRODUCT CHARACTERISTIC/RESULT

(A) Physicochemical Evaluation

Hand wash	Organoleptic study	pH	Viscosity (cP)	Foam height (cm)	Emolliency test	Cleansing efficiency
Formulation	Dark brown Minty odour Smooth and foamy	5.72	10-11	20.4	Moderate translucency	73.62%
Brand X	Red Medicine-like Smooth	5.04	116-117	15.6	Moderate translucency	29.42%

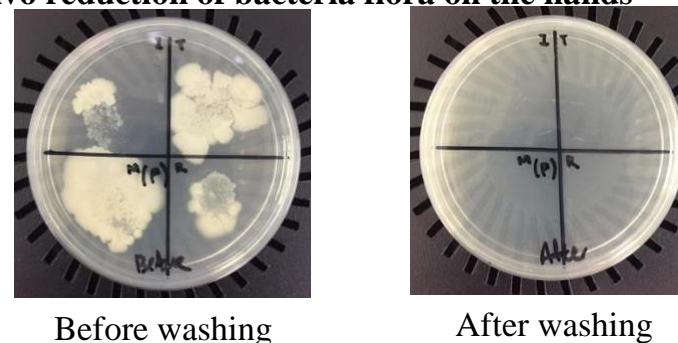
(B) Antimicrobial Evaluation

• Inhibition zone of foaming hand wash



Although formulation with chlorhexidine gluconate(CHX) has higher percentage of inhibition, the ring formed inside the zone indicate emergence of resistance fungus.

• In vivo reduction of bacteria flora on the hands



Before washing

After washing

(C) Stability Evaluation Accelerated Study

Hand wash	Organoleptic study	pH		Viscosity (cP)		Foam height (cm)	
		Before	After	Before	After	Before	After
Formulation	Dark brown Minty odour Smooth and foamy	5.72	4.85	10-11	17-19	20.4	22.1
Brand X	Red Medicine-like Smooth	5.04	5.06	116-117	103-104	15.6	15.3

MARKETABILITY & COMMERCIALISATION

- Global Liquid Hand Soap Market size exceeded USD 2.3 billion, in 2019 and is estimated to grow at over 10% CAGR between 2020 and 2026.
- Due to increasing cases of bacterial & viral outbreaks, growing demand for effective liquid hand wash solution and rising awareness on safety & hygiene practices.

COLLABORATION

UMP TECHNOLOGY SDN.NHD (27TH MAY 2020)