

Formulation and Evaluation of Antibacterial Polyherbal Soap

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Abstract: *Most of the commercial soaps contains chemicals that can be harmful to the skin. Use of nature herbal soap can be a good alternative. Herbal products have become an item of global importance both medicinally and economically and usage of herbal products has increased, their safety and efficacy. Bacterial skin infections are most prevalent among people, requiring to have a significant attention for treatment, better skin preservation as well as to maintain good looking healthy skin. Some herbal plant extracts have antibacterial activity. The aim and objective of the present study is to formulate antibacterial poly herbal bath soap using Tamarind Leaves and Marigold flower. The antibacterial activity of the prepared formulation was tested using agar well 'polyherbal formulations exhibited a good antibacterial effect. The prepared Polyherbal soap were evaluated for various physicochemical parameters such as pH, foaming index for which good results were observed. The easy availability of plant and their effectiveness skin helps manufacturers with cost-effective benefits, easy availability and with less or no side effects. Because some herbal Plant extracts have antibacterial properties, the goal of this research is to make an Antibacterial poly herbal bath soap using, Tamarind Leaves and Marigold flower. The polyherbal formulation was prepared then evaluation for the analysis of pH, foaming index, soluble matter and antimicrobial activity using different concentration of soap solution comparing with standard was done. Also the evaluation tests showed that the herbal soap has satisfactory antimicrobial results.*

Keywords: Polyherbal, Tamarind, Antibacterial, Formulation, Saponification, Organism

I. INTRODUCTION

Soap is a salt of a fatty acid used in a variety of cleansing and lubricating products. In a domestic setting, soaps are surfactants usually used for washing, bathing, and other types of housekeeping. In industrial settings, soaps are used as thickeners, components of some lubricants, and precursors to catalysts.

A Cleansing and emulsifying agent made usually by action of alkali on fatty or fatty acid and consisting essentially of sodium or potassium salt such as acid.

Polyherbal soap

Polyherbal soap are a soap that contain more than one herbal ingredient.

Herbal soap preparation is a medicine or drug it contain Antibacterial and Antifungal Agent which mainly uses of part of plant such as like leaves, stem, flower, root, and fruits to treatment for a injury or disease or to achieve good health. this preparation possess antimicrobial property are administered topically and available to apply in various forms like lotion, cream, suspension, soap etc. Soap is an important personal hygiene product that is used for cleaning the skin.

Polyherbal soaps are soaps that contain more than one herbal ingredient.

There are basically four different types of methods that are used to make soaps are

The melt and pour process: In this process simply a glycerin base is used, there is not usage of lye. Its easy, not dangerous you may add essential oils or fragrance to your mixture, as well as some coloring.

Cold process soap:-These processes involve addition of lye or sodium hydroxide and water.



TAMARIND LEAVES



TAMARIND LEAVES POWDER



MARIGOLD FLOWER

Application polyherbal soap

- It is safe and effective alternative to conventional soap.
- Herbal soap treating several epidermal dysfunction .
- eczema ,psoriasis and acne and help to boost immune response in tissue affected skin area.
- Cleansing agent to remove dirt ,oil from the skin.

Excipient Profile :-

- 1) Soap Base
- 2) Tamarind Leaves powder
- 3) Marigold Flower powder
- 4) Honey
- 5) Lemon oil

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- 6)Olive Oil
- 7)Coconut oil
- 8)Palm oil
- 9)Vitmin E Capsule .

Ingredient And Their Role

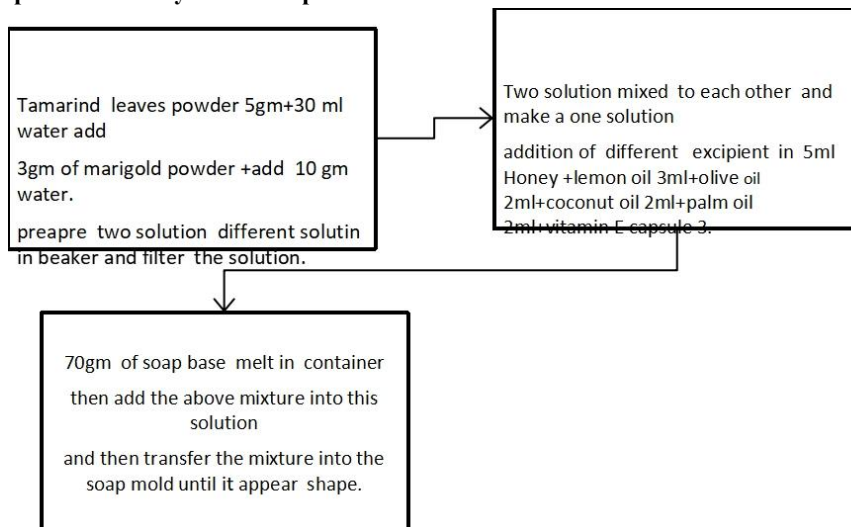
Sr. no	Ingredient	Chemical constituent	Role / uses
1	Tamarind Leaves	β Amyrin B Sitasterol Alkaloid	Anti -Inflamation Antibacterial
2	Marigold Flower powder	Alkaloid Anthocyanins Tannins Steroids Betacyanin	Reduce Inflammation Burns , Rash It can be promote healthy skin
3	Honey	Maltose Fructose Glucose	1)Prevent acne Remove dirt form pores
4	Lemon oil	Terpenes Aldehydes	Perfuming Agent Flavouring Agent
5	Olive oil	Triacylglycerols Glycerol Phosphatides	Emollient Soothing agent Soften the skin
6)	Coconut oil	1)Capric acid 2)caprylic acid 3)Palmitic acid	1)Protect skin 2)Relive Skin Irritation 3)Moisturize skin
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7)	Palm oil	Fatty acid Palmitic acid Steric acid	Moisturizer Skin Smoother Skin
8)	Vitamin E	Tocopherols Tocotrienols	Maintaning the health of your blood cell,eye,and skin
9)	Soap Base	Sodium Potassium Glycerin	Making prepration of hard soap

FORMULATION TABLE

Sr. no	Ingredient	Formulation 1	Formulation 2
1)	Tamarind Leaves Powder	5gm	6 gm
2)	Marigold flower Powder	3gm	4gm
3)	Soap Base	70 gm	50 gm
4)	Honey	5ml	3ml
5)	Lemon Oil	3ml	2ml
6)	Olive Oil	2ml	3ml
7)	Coconut Oil	2ml	2ml

8)	Palm Oil	2ml	3ml
9)	Vitamin E Capsule	3 Capsule	2 Capsule

Method and Preparation of Polyherbal Soap



Evaluation Parameter

Sr. No	Parameter	Observation
1)	Colour	Brownish Yellow Colour
2)	odour	Pleasant smell
3)	Texture	Smooth and solid
4)	PH	6.75
5)	Foaming Height	1.8
6)	Skin Irritation test	No Irritation
7)	Shape	Oval





DETERMINE PH BY USING PH METER



DETERMINE FOAMING INDEX

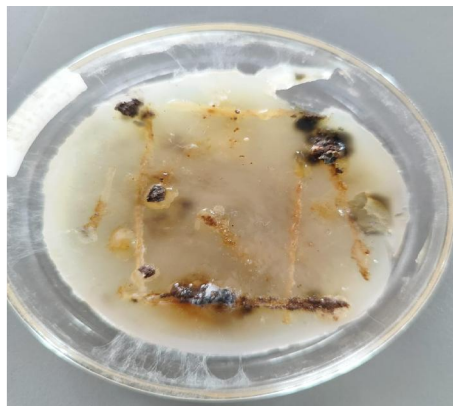


Skin irritation Test

Antimicrobial test

IN-Vitro Antimicrobial Activity of Polyherbal Soap:

Antimicrobial screening was performed on the produced herbal soap using the agar well diffusion Technique. *Staphylococcus aureus*, and *Bacillus subtilis* were the organisms used. The antibacterial Properties of 1 gm of soap combined with 5 ml of DMSO were studied. The plates were incubated at 37°C For 24 hours to evaluate the inhibition zone.



II. CONCLUSION

Tamarind Leaves has been Extensively used in Ayurveda, Unani and Homoeopathic medicine and has become a admiration of Modern medicine. Tamarind leaves laborates a vast biologically active compounds that are structurally complex and Chemically diverse. Poly herbal soap were prepared by using cold process technique. The prepared formulation showing good physical characteristic. Formulation provide excellent foaming property, free from alkali components on the basis of it's evaluation parameters. The microbiological study results gives the formulation having antimicrobial property by conducting antimicrobial activity. Therefore based on the study research it can be concluded that polyherbal can be effectively formulated as in the form of soap which having excellent antibacterial property on the skin.

III. RESULT

Preparation and evaluation of polyherbal soap was done .The physicochemical parameters of the prepared soap were determined. The formulations exhibited good as appearance characteristic as well as the pH was found in the range 6.75 which is the desired pH. Other parameters such as percentage Free Alkalie, Foam height, Foam retention, Alcohol insoluble matter, and high temperature stability were determined. The various parameters results are tabulated.. The table depicts that the pH of the herbal formation was 6-8 which was optimum for its utilization on the skin. Higher as well as lower skin pH refers to the harmful effects on the skin. The foaming index of the given herbal formulation was found to be 1.8 while the foam retention time was found to be 7minutes. This means the lather producing ability of the soap was satisfactory and stable. Antimicrobial screening was performed on the produced herbal soap using the agar well diffusion Technique. Staphylococcus aureus, and Bacillus subtilis were the organisms used.

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