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FORMULATION AND EVALUATION OF HERBAL ORANGE PEEL EXTRACT SOAP

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ABSTRACT
The purpose of this study was to look into the antioxidant and antibacterial qualities of soap made from herbal orange peel extract. Through solvent extraction, orange peel extract was produced and used to a soap recipe. The antibacterial activity of the soap against Candida albicans, Escherichia coli, and Staphylococcus aureus was assessed. DPPH radical scavenging assay was used to measure antioxidant activity. According to the results, the orange peel extract soap shown strong antioxidant and antibacterial properties, indicating that it might be used as a safe and efficient cleaning solution.

KEYWORD:-*Herbal soap, Antioxidant, Antibacterial, Orange peel, Skin cleansor, Formulation, Evaluation Test, Properties.*

INTRODUCTION

Herbal soaps are solutions that both cleanse and beautify the skin. The main advantage of using herbal cosmetics is their purity, which leaves the body full of healthy minerals and nutrients without having any adverse effects. People's environment, upkeep, regular occupation, lifestyle choices, and health all affect how beautiful their skin and hair seem. Dehydration brought on by extended exposure to heat throughout the summer causes sunburns, wrinkles, freckles, pimples, and pigmentation. Flavonoids, limonoids, and carotenoids are among the many bioactive substances found in orange peel, a by-product of the citrus industry. According to reports, these substances have antioxidant and antibacterial qualities. Oils and fats are saponified to provide a cleansing agent in the age-old craft of soapmaking. The use of plant extracts in soap recipes has became more well-known in recent years as a result of the rising demand for organic and natural products

- **Orange**



Fig. Orange Fruit

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• Synonyms:- Citrus sinesis
• Biological source:- The orange peel is the fresh or dried outer part of the pericarp of Citrus Aurantium Linn.
• Family:-Rutaceae
• Part use:- Orange peel
• Chemical constituent- Rich in pectin, cellulose, and hemicellulose
• Application:- Vitamin C in the peels helps cleanse your skin deeply and unclogs poresby Removing excess oil and grime.

Herbal soap uses

Herbal soap preparation is a medicine or drugs it contain Antibacterial & antifungal agents Which e mainly uses of part of plants such as like leaves, stem, roots & fruits to treatment for a Injury or disease or to achieve good health.

This preparation possess antimicrobial property are administered topically and available to Antimicrobial and anti-inflammatory agents in treatment of skin disease



Fig. 1 Orange Peel Soap

#Materials and Methods

Orange Peel Extract Preparation

Orange peels wash and grinding, and the extract was obtained in the form off slurry.

Soap Formulation

The orange peel extract was incorporated into a soap formulation at different concentrations (5%, 10%, and 15%).

Antimicrobial Activity

The antimicrobial activity of the soap was evaluated against Staphylococcus aureus, Escherichia coli, and Candida albicans using the agar well diffusion method.

Antioxidant Activity

The antioxidant activity of the soap was assessed using the DPPH radical scavenging assay.

#Procedure

1. The Soap base (Glycerine) was taken in a beaker and was melted in a hot water bath.
2. Along with the glycerine, the extract/powder of orange peel added with Aloevera gel.
3. Then Vitamin E, Rose water added and stirred continuously to mix the herbal soap ingredients as mentioned above.
4. It was poured in a soap base and cooled for 12 hrs.

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#Formulated Herbal Soap



Fig. Formulated Orange Peel Soap

#Evaluation test

A. Organoleptic **e**valuation:-
i. Colour:- Light brown
ii. Odour:- Fragrant
iii. Appearance:- Good
B. Physical evaluation
i. pH.test
ii. Foam retention test
iii. Foam Hight test
iv. Skin irritation test

 Evaluation Test for Herbal Soap

1. PH test:- Take 1gm of soap sample and dissolve it in 10 ml of water and take the pH paper and test the pH range of sample.

Fig. pH determination



Result:- After the dipping the pH paper in the sample pH occurs at range 7 which is neutral.

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ii] Foam height test: 0.5 gm of sample in 25 ml distilled water and transfer to 100 ml measuring cylinder and make the volume to 50 ml with water and shakes 25 strokes. keep it aside for few min. the foam minute and foam height above the aqueous volume was measure

Fig. Foam hight test

•**Result**:- foam hight occurs:-20cm.



3.Foam retention: 1% of soap solution i.e. 25 ml taken in 100 ml measuring cylinder now cover with hand and shake for 10 min. The volume of foam at 1 min and intervals for 4 min was recorded.



Fig.Foam retention test

Result:-Foam retention time is 10min.

4.Skin irritation test- Wash your skin properly then apply the soap sample on skin and observe the any irritation or burning, itching.

Result:- No irritation on skin.

 Observation table

Test Observation:-

Test	Observation
1.Colour	Light brown
2.Odour	Fragrant
3.Appearance	Good
4.pH	7
5.Foam retention test	10 min
6.Skin irritation	No irrigation on skin

Benefits Of Herbal Soap

•**Cleansing:** Herbal soap is an effective cleanser that helps remove dirt, excess oil, and other impurities from the skin. It assists in clearing out pores and reducing the likelihood of breakouts.

•**Nourishing**: Packed with natural oils and hydrating ingredients, herbal soap deeply moisturizes and nourishes the skin, helping to prevent dryness and maintain a soft, smooth texture.

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•**Exfoliation**: Certain herbal soaps include natural exfoliating elements like oatmeal or ground herbs, which aid in sloughing off dead skin cells and encouraging healthy cell turnover.

•**Aromatherapy**: Herbal soap often contains essential oils, delivering various aromatherapeutic benefits that can enhance relaxation and well-being.

•**Skin Conditioning**: With its blend of soothing natural ingredients, herbal soap helps to calm and condition the skin. Overall, it is a versatile, nature-based product that supports healthy, revitalized skin.

•Conclusions

The orange peel crude extract used in this study had skin-whitening, flavouring, cleansing, and anti-aging properties. The goal of this study was to raise the orange peel's worth from the leftovers after the juice was extracted. However, more research is required to determine the active compound in oranges, which may indicate that orange peel extract could be a novel source for the active ingredient in other cosmetic products that work as whitening, cleaning, flavouring, and anti-aging agents.

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