

A review on herbal soap

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Abstract

Crude papain enzymes that will be safe for the skin; they aim to produce a solid soap formula. It leads to result in negative effect on air quality in high urban area especially due to uncontrolled free radical formation released to air. Consequently, this condition might cause skin diseases that are contacts to those radicals mainly the human skin it causes. To overcome this problem there is one way to keep the skin in health to manufacture a soap ingredient as a radical scavenger it's a formulation that provides a new function. A plant proteolytic enzyme papain which is found naturally in papaya (*Carica papaya*) it is a cysteine protease enzyme is manufactured from the latex of raw papaya fruits. They are known as polypeptides which are made of amino acids and have a functional ability to break down organic molecules it is a proteolytic enzyme. In this research work to enhance the human skin health it can be used as soap, a developed active ingredient which is made of crude papain enzyme is a solid soap formulation with antioxidant origin from fresh papaya. For negative control (with enzyme) has value of percentage dirt removal higher when compared soap with positive control (without enzymes), it is measured about 32% by mass substrate after washed, and measured absorbance of wash.

Keywords: Cosmetic, herbal soappapain, cysteine protease, radicals, solid soap, antioxidant

Introduction

The word cosmetic was derived from the Greek words "kosmtikos" meaning having the power arrange skill in decorating. Herbal soap preparation is a medicine or drugs it contains antibacterial and anti-fungal agents in which mainly uses for parts papaya fruit. Treatment for injury or disease or to achieve good health. The preparation possess antimicrobial property are administered topically and available to apply in various forms like creams, lotion, gel, soap, solvent extract or the variety of creams and soap properties have been used to treat various skin disorders [1]. Mostly skin infections are caused by fungi, staphylococcus aureus and streptococcus species. Ethnomedically, juice and extract from leaves of the plants are topically applied as antimicrobial and anti-inflammatory agents in treatment of skin disease including eczemas, ringworm and pruritus.

The herbal soap containing papaya, tulsi, aloe vera, rosewater, neem. natural plant ingredients and this content gives or shows antibacterial antifungal and antioxidant activity. In this soap papaya is main compound and shows medicinal properties papaya rich in vitamin C and antioxidant that can reduce irregular pigmentation and stimulate collagen production its promote the production of new skin cell and may help reduce dark spot, blemishes, scars, neem like shows medicinal properties.

More than just a delicious fruit, papaya is a source of nutrients with a number of health benefits. According to 2013 paper, the many benefits of papaya can be attributed to the high content of vitamins A, B, C. Its proteolytic enzymes, such as papain and chymopapain also have antibacterial, antifungal, and antiviral properties. Papayas have gained popularity as a natural home treatment, and for their use in skin and hair products. Their benefits vary and are summarized in the table below

Table 1

Skin Benefits	Hair Benefits
Wrinkle reduction	Conditioner
Acne control	Hair growth
Melisma treatment	Dandruff prevention

Papaya soap

Papaya soap is a natural, gentle soap that's safe to use on different parts of the body, including the face. A normal bar of soap also cleans and removes dirt. But it may be too harsh for the skin, stripping it of natural oils. Some soaps contain synthetic detergents and other ingredients that will not only wash away dirt, but also your skin's natural moisture. This can exacerbate skin conditions like acne, psoriasis, and rosacea, increasing dryness and itchiness. Papaya soap on the other hand, is made from natural ingredients. It contains the enzyme papain, which breaks down protein. This enzyme promotes healthy digestion, but it can also act as an anti-inflammatory.



Fig 1: papaya soap

Benefits of papaya soap

Papaya has nutrients to promote healthier skin. Papaya soap is rich in vitamin C, an antioxidant that can reduce irregular

pigmentation and reduce irregular pigmentation and stimulate collagen production. The soap also contains vitamin A, another important nutrient for the skin. It promotes the production of new skin cells, and may help reduce dark spots, blemishes, and scars.

Nutritional value of 100 g of papaya fruit

The constituents of ripe papaya contain: Energy (163 kj), Protein (0.6 g), Fat (0.1 g), Minerals (0.5 g), Fibre (0.8 g), Carbohydrates (7.2 g), Beta-carotene (888 µm), total carotene (2 740 µm), sodium (3 mg), iron (0.10 g), Vitamin A (1 094 IU), Vitamin E (0.73 mg), Niacin (3 mg) and water (89%). These nutritional values of papaya help to prevent the oxidation of cholesterol. Papaya is rich in iron and calcium; a good source of vitamin A, B and G and an excellent source of vitamin C (ascorbic acid). The extract and fruit juice of C. Papaya contain alkaloids, glycosides, flavonoids, carbohydrates, saponins, terpenoids, steroids and tannins.

Preparation of solid soap

Papaya fruit contain crude papain enzyme, raw materials like coconut oil, NaOH, Citric acid, glycerine, water are used for solid soap, and to the lye solution oil mixed gently in a stainless steel pot in warm ambient temperature it was kept, frequently stirred for about 5 to 10 minutes. Until solution change into solid for 24 hours it is kept in ambient temperature in which added other ingredients while stirring the mixture and later the solution into moulds it was poured.

Uses for papaya soap

Over-the-counter cleansing bars don't also improve the skin, but a natural skin-friendly product like papaya soap might. Different uses for papaya soap include:

Exfoliation

The papain enzyme in papaya soap can exfoliate the skin and give it a healthier appearance. Exfoliation removes deceased dermis from the exterior part of your skin. While it is true that the skin naturally renews itself, exfoliating with

papaya soap on a regular basis can leave the skin brighter and smoother. It can also even out skin tone. Pawpaw castile act as the latex at slow speed it desquamate the upper layer of dermis, excluding deceased part and impede pigment. Following continual, it brought smooth skin and brighter complexion. Pawpaw related castile has exfoliation property which are necessary in do away with deceased epidermal cells and revitalize flaking and deceased skin. Already stated that it is due to pawpaw castile, papain enzyme whatever it speed up breaking down of skin protein with water. Unlike other whiten castile (soaps), pawpaw castile (soap) does not depart residues on surface of the skin.

Acne treatment

Apart from epidermis whiten, pawpaw castile could be utilized to cure black heads. It is effectual in curing blackheads. For the face or further black heads susceptible body parts. One of main affect of blackheads is propensity for deceased epidermal cells to clog the vesicles opening. Surfeit sebum oil for deceased epidermal cells which amass in the hair (hair follicles) and can affects spots(pimple) to form. In-dephthalchemical desquamate issue will have a solution.

Skin lightener






Papaya soap can help smooth out your skin complexion. Hyperpigmentation is darkening or discoloration of the skin. Since papaya soap promotes the removal of dead skin cells, the soap may gradually reduce the appearance of dark patches, lightening your skin. It's also believed that papaya soap helps curb excessive melanin production.

Side effects and precautions

Even though papaya soap is natural, it may not be safe for everyone. Before using papaya soap for the first time, test the soap on a small patch of skin. Discontinue use if you have signs of an allergic reaction, such as bumps, swelling, itching, or redness.

Various herbal soap product available in market

Table 1

Brand name	Active ingredient	Mfg company	Image of soap
Himalya herbal soap	Neem and turmeric	Himalya wellness company	
Aloevera kanti	Aloevera	Patanjali pvt limited	
Life boy nature protect	Neem and aloevera	Life buoy pvt limited	
Khadi natural	Sandalwood	Khadi natural healthcare	
Godrege	lemon	Godreg consumer product limited	

Evaluation Test

The herbal soap formulated was evaluated for the following:

1. Organoleptic evaluation

- a. Color: brown.
- b. Odor: orange
- c. Appearance: Good

2. Physical Evaluation

The herbal soap formulated was evaluated for the following properties:

- a. **Foam Retention:** 25ml of the one percent soap solution was taken into a 100ml graduated measuring cylinder the cylinder was covered with hand and shaken 10 times. The volume of foam at 1 minute's interval for 4 minutes was recorded. It was found to be 5 minutes.
- b. **pH:** the pH was determined by using pH paper, the pH was found to be basic in nature
- c. **Foam height:** 10cm
- d. **Antimicrobial test:** there was various study conducted on antimicrobial activity of neem and hence according to research paper by antimicrobial activity of *Azadirachta indica* leaf, bark and seed extract.

Conclusion

The plant of papaya, *Tulsa* constituent's extraction was studied. The prepared formulation when tested for different test gave good results. It does not give any irritancy to skin it was determined by using these soap by few volunteer hence it is proved that soap does not give any irritancy to skin. Furthermore, the prepared soap were standardized by evaluating various physico chemical properties such as P^H appearance odour in which the exhibit satisfactory effect.

Reference

1. Akula Srujana, N. Navya Priya And Anis Mirza. *Int. J. Curr. Microbiol. App. Sci.*,2020;9(11):368-373.
2. Hughes GR. *J Soc Cosmet Chem*,1959;10:159.
3. *Encyclopaedia Britannica*,14th ed,1929.
4. Marotta F, Weksler M, Yasuhiro N, Yoshida C, Yashioka M, Marandola P. Nutraceutical supplementation: effects of a fermented papaya preparation on redox status and DNA damage in healthy elderly individuals and relationship with GSTMI genotype. A randomized, placebo-controlled, crossover study. *Ann NY Acad Sci*,2006;1067:400-407.
5. Marotta F, Pavasuthipaisit K, Yashida C, Albergati F, Marandola P. Relationship between aging and susceptibility of nutraceutical interventions. *Rejuvenation Res*,2006;9(2):227-230.
6. Kapoor VP. Herbal cosmetics for skin and hair care,2005;4(4):306-315.
7. Maria AAR Fonseca, Aakanksha NK, Keerthi PS, Mendes RM. Fruit Peel soap and its Antibacterial Properties in Skin Care,2019;11(3):17-20.
8. Oloyede O, Franco J, Roos DI, Rocha J, Athayde M, Boligon A. Antioxidative Properties of Ethyl Acetate Fraction of Unripe Pulp of *Carica Papaya* In Mice,2011;1(3):40-425.
9. Ozkan A. Antioxidant Capacity of Juice from Different Papaya (*Carica papaya* L.) Cultivars Grown Under Greenhouse Conditions in Turkey. *Turk J Biol*, 2011, 619-625.
10. Okeke SUN. Home economics for schools and colleges. Onitsha: Africana First Publishers Plc Nigeria: 2009.

11. Adaku U, Melody M. Soap Production Using Waste Materials of Cassava Peel and Plantain Peel Ash as Alternative Active Ingredient, Implication for Entrepreneurship. *IOSR J VLSI Signal Process*,2013;3(3):2319-4197.
12. Phanseil ON, Dueno E, Xianghong WQ. Synthesis of exotic soaps in the chemistry laboratory. *J Chem Educ*,1998;75(5):612.
13. Kuntom A, Siew WL, Tan VA. Characterization of Palm acid oil. *J Am Oil Chem Soc*,1994;71:525-528.
14. Bryan CP. *The Papyrus Ebers*. London,1930:12:139.
15. Partington JR. *Origine and Development of Applied Chemistry*. London, 1933, 198.
16. Thompson RC. *Assyrian Herbal*. London,1924:191, 270.
17. Afsar Z, Khanam S, Aamir S. Formulation and comparative evaluation of polyherbal preparations for their Disinfectant Effects,2018;1(1):54-65.
18. Dhanasekaran M. *International Research Journal of Pharmacy*,2016;7(2):31-35.