

Formulation and evaluation of two layered soap containing poly herbal extracts.

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ABSTRACT

This study aims to formulate and assess a two-layered soap that contains polyherbal extracts. The majority of commercial detergents and soaps include ingredients that may be harmful for skin health¹. As an alternative, using natural herbal soap and detergents can be beneficial. They promote calmness and relieve stress. Aloe barbidensis, Citrus sinensis, and Citrus limon extracts were combined with a transparent soap base to create the herbal soap³. This investigation involves the manufacturing of soap with herbal components and performed tests for various physicochemical characteristics.

Keywords: Herbal two layered soap, Citrus sinensis, Citrus Limon, Aloebarbidensis

I. INTRODUCTION

The inclusion of various phyto-chemicals and botanicals in herbal goods serves two purposes: first, they are utilized as cosmetics for body care, and second, for the improvement of biological functions in the human body by phyto-chemicals that eventually leads to naturally healthy skin⁴. The adverse effects of chemical medications might be numerous. This explains the present trend of using more natural products². Skin is the most vulnerable area of body to many foreign objects. Good hygiene and cleanliness are essential for protecting the skin from a variety of illnesses and environmental microorganisms¹. This aids in the prevention of several skin conditions.

Orange trees are generally cultivated in tropical and subtropical region. Orange fruit is the best source of Vitamin C, which is useful for a healthy skin. Orange peel consist of fresh and dried outer part of the pericarp of Citrus aurantium Linn belongsto the family Rutaceae⁽¹⁰⁾. Orange oil can contribute to its properties such as an antispasmodic, antiseptic, anti-inflammatory, antidepressant, narcotic, carminative, tonic, and as a diuretic. Aloe vera is a short stemmed shrub that

occur naturally in North Africa.

Aloe is the dried juice obtained by incision from the bases of the leaves of various species of aloe (Aloe barbadensis) belonging to the family Liliaceae. Aloe vera gel has cooling properties and is anti-inflammatory³. It is rich in anti oxidants and minerals that boost the healing process. It also helps to retain the moisture. Aloe vera is highly beneficial for burns, cuts, and other injuries. It also helps to speed up skin cell reproduction as much as eight times^{5e}. Aloe vera is also known to penetrate the epidermis, the outer layer of skin faster than water.

Aloe vera gel has vitamin C and E, beta carotene in abundance. Therefore it has anti-ageing properties. It also contain antimicrobial properties and is also anti-inflammatory. It also helps to eradicate skin blemishes and diminishes age lines. Additionally it helps to increase the production of collagen in body and skin elasticity. Aloe vera contains power to boost skin cell proliferation, reduce redness, and fight skin inflammation⁽²⁰⁾. It is a natural treatment for stretch marks and acne marks. Lemon (Citrus limon) is a species of small evergreen trees in the flowering plant belongs to the family Rutaceae, native to Asia, primarily Northeast India (Assam), Northern Myanmar or China.

Lemon juice naturally contains Vitamin C, an antioxidant that may help reduce skin damage and premature ageing. Due to its high pH levels, lemon can decrease oil on the skin and reduce inflammation. Lemon juice helps to lighten the skin. It is due to high concentration of vitamin C, which is a powerful antioxidant⁽²⁰⁾. This means a humble lemon can be used to treat acne damage, dark spots, freckles and other forms of hyperpigmentation. The vitamin C in lemon juice lightens the skin by reducing melanin. Lemon juice can cure breakouts on skin and remove pimples⁽¹²⁾.

II. MATERIALS AND METHODS

2.1 Preparation of Orange peel extraction:

Orange peel was cut into small pieces and dried in direct sunlight until completely dry. Dried orange peels were coarsely grinded. Enough ethanol (95%) in the ratio of 1:3 was added to completely cover the orange peels and vigorously shaken the jar for several minutes and left it for few days and filtered through Whatmann No.1. The dried cake obtained is further used as scrubbing agent in one of the layer of soap.

2.2 Method of preparation:

Dried orange peels of Citrus sinensis (100g) is collected and dried in shade and it is powdered by using grinder. For the first layer (40g) of soap base is melted in a beaker using waterbath. Then add (3g) of dried orange peel to the melted soap base and stir well, then it is poured in to a soap mould after the mould is sprayed with alcohol. Again (14g) of soap base is melted and add 2-3 drops of lemon juice. This transparent mixture is poured to first layer in order to separate the two layers. First layer is sprayed with alcohol in order to adhere transparent layer. For the second layer (40g) of soap base is melted and the gel collected from Aloe barbadensis is grinded and collect the juice and it is added to the melted soap base. Then add two drops of green colour and vitamin tablet gel. It is poured to transparent layer. Before pouring, the transparent layer is sprayed with alcohol to adhere to second layer. After the soap was cooled down, the mould was popped out.

III. RESULT AND DISCUSSION

3.1 Physical evaluation:

Physical parameters such as color and appearance were checked and was found to be orange and green in color.

3.2 Measurement of Ph:

The Ph of the 10% formulated product solution in distilled water was determined at room temperature and was found to be 6.5

3.3 Foaming ability and Foam retention:

Cylinder shake method was used to test for the Foaming ability and the volume of foam at 1 min interval was found to be 4ml and it was stable for 5min.

3.4 Determination of total alkali content in the soap:



The total alkali content in the formulated soap was found to be 5% w/w

3.5 Total Fatty Matter in soaps:

The total fatty matter in the formulated soap was found to be 45% w/w.

3.6 Irritancy test : Prepared soap were applied to the specified area and no Irritancy, erythema or edema was observed.



IV. CONCLUSION

In the work the orange peel crude extract possessed anti aging, scrubbing, flavouring and skin whitening property. This work provided to increase the value of orange peel from the waste after juice extract. The active ingredient in orange which may suggest the orange peel extract could be a new source as the active ingredient for anti aging, scrubbing, flavouring and whitening agent in other cosmetic product. Aloe vera is natural product which are used in prevention and treatment

of various skin problems. Many people use for wellness of health and medicinal purposes. It involves the health benefits of wound healing, treating burns, minimizing frostbite damage, protecting skin damage from X-rays etc. Lemon is a natural skin whitening and cleaning agent.

REFERENCES

- [1]. Sandhya L Borse Et al., Formulation and evaluation of two layered soap containing orange peel extract, 2019; Vol. 11(6):2190-2192
- [2]. Jyoti Joshi Et al., Formulation and evaluation of herbal soap, shampoo and face wash gel, 2019; Vol. 7(1):112-117
- [3]. Arti P Pawar Et al., Formulation and evaluation poly herbal soap, 2019; vol. 10(1):23-28
- [4]. NM Wijayawardhana Et al., Development of a herbal soap using selected medicinal plants and evaluation of its antimicrobial activity 2020
- [5]. Namo Jeremiah Akuaden Et al., Formulation, Physicochemical and anti-fungal evaluation of herbal soap of *Azadirachta indica* and *Ziziphus Mauritiana*, 2019; Vol. 12:26-34
- [6]. Rakesh K Sindhu Et al., Formulation, development and antimicrobial evaluation of poly herbal soap, 2019; vol. 19(2):1342-1346
- [7]. Charulata T. Nemade Et al., Formulation and evaluation of a herbal facial scrub, 2014; vol. 3(3) :4367 – 4371
- [8]. Blessy Jacob Et al., Formulation and Evaluation of Herbal Soap, 2019; Vol. 9(2):22-29
- [9]. Myo Min Et al., Phytochemical, Physicochemical and Antioxidant Properties of Orange (*Citrus sinensis* L.) Peel, year ; Vol. 3(5) :1695-1701
- [10]. Varsha M Chaudhari Et al., Studies on antimicrobial activity of antiseptic soaps and herbal soaps against selected human pathogen, 2016; Vol. 5(6):201-204
- [11]. Sang-Suk Kim Et al., Citrus Peel Waste as Functional Material for Cosmeceuticals, 2008; Vol. 51(1):7-12
- [12]. Abid Aslam Maan Et al., The therapeutic properties and applications of Aloe vera, 2018; Vol. 20(5):1-10
- [13]. Gana Manjusha K Et al., Formulation and evaluation of herbal bath soap containing methanolic extract of three ayurvedic varnya herbs, 2013; Vol. 18(4):20-48
- [14]. Maruti J. Dhanavade Et al., Antimicrobial Activity of lemon (*Citrus lemon* L.) Peel Extract, 2011; Vol. 2(3):119-122
- [15]. F Nachbar Et al., The role of vitamin E in normal and damaged skin, 1995; Vol. 73(1):7-17
- [16]. Iman A Hakim Et al., Citrus peel usage is associated with reduced risk of squamous cell carcinoma of the skin, 2011; Vol. 7(4):245-290
- [17]. G Bertuzzi Et al., Limonum essential oil on skin, 2013; Vol. 3(1):1-9
- [18]. Ajay Upadhyay Et al., Formulation and evaluation of Aloe vera containing herbal soap, 2021; Vol. 8(5):2345-2956
- [19]. Mohammed Haneefa K.P Et al., Formulation and evaluation on medicated soap of *Ixora coccinea* root extract for dermal infections, 2019; Vol. 11(8):3094-3097
- [20]. Ji-Hye Kim Et al., Antioxidant and antimicrobial effect of lemon and eucalyptus essential oil against skin flora, 2011; Vol. 37(4):303-308