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FORMULATION AND EVALUATION OF HERBAL SOAP OF NEEM & TULSI

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Abstract

Herbal products have become an item of global importance both medicinally and economically. Although usage of these herbal products has increased, their quality, safety and efficiency are serious concerns in industrialized and developing countries. The present research has been undertaken with the aim to formulate and evaluate the pure herbal formulation. A herbal soap was formulated using the leaf and bark extract of *Azadirachta indica*, tulsi. Ayurvedic cosmetics are also known as the herbal cosmetics. The natural content in the herbs does not have any side effect on the human body. Most herbal supplements are based on several botanical ingredients with long histories of traditional or folk medicine usage. Among the numerous botanical ingredients available in the market today, numerous chemical toxins and microorganisms present in the atmosphere may cause chemical infection and damage to skin. Cosmetics alone are not sufficient to take care of skin and body parts. Neem (*Azadirachta indica*) tree has attracted worldwide prominence owing to its wide range of medicinal properties, neem leaves and its constituents have been demonstrated to exhibit anti-inflammatory, antihyperglycemic, antiulcer, antimalarial, antifungal, antibacterial, antimutagenic and anticarcinogenic properties. This study was conducted to evaluate the effect of aqueous, ethanolic and ethyl acetate extract from neem leaves. The physicochemical parameters of formulations (Physical evaluation, pH, Foaming ability and foam stability) were determined. The results showed that formulation has pH level nearly equal to skin pH, foaming index is excellent.

Introduction

Herbal soap preparation is a medicine or drug it contains antibacterial & antifungal agents which mainly use parts of plants such as leaves, stem, roots & fruits to treat an injury or disease or to achieve good health. Herbal cosmetics are also known as natural cosmetics. Herbal cosmetics are products which are used to purify and beautify the skin. The main advantage for using an herbal cosmetic is that it is pure and does not have any side effects on the human body; instead, it enriches the body with nutrients and other useful minerals. Soap is a solid product made from oil by means of saponification. In neem leaf and its extract exhibit immunomodulatory, anti-inflammatory, antiulcer, antimalarial, antifungal, antibacterial, antioxidant, anticarcinogenic property. Tulsi is called the queen of herbs, it is used widely in Ayurvedic and naturopathic medicines which help in the healing of the human body

in a natural manner. Not only do Tulsi leaves benefit people, but their flowers too. Factors that predispose Tulsi can help you get rid of many health problems ranging from fever to kidney stones. The present scenario, it seems improbable that herbal soaps, although better in performance and safer than the synthetic ones, will be popular with the consumers. Soaps and detergents have been registering steady growth in demand in the country, in tune with the industrial and economic growth. Herbal soap has generated considerable interest and enthusiasm amongst the consumers in recent times, due to its ecofriendly nature of the product. There is good scope for setting up herbal soap projects in the country. While there is no particular entry barrier from the point of view of technology, adequate market thrust is necessary to competitively sell the product in the market. The toilet soap consumption in India is estimated at 1200000 tonnes per annum. The soap market is growing at the rate of about 9% per annum.

Literature review

Ashlesha Ghanwat*, Sachin Wayzod and Vanjire Divya (in year 2020) The plant *Azadirachta indica*, *Ocimum tenuiflorum*, *Sapindus mukorossi* and *Acacia concinna* were extracted using water and subjected to various evaluation test according to previous research the antimicrobial activity of Neem 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 pH appearance odour in which the exhibit satisfactory effect. Satish Kumar Sharma* and Suruchi Singh (in year 2020) In the prior studies it was noted that Nosocomial infection has been recognized as a crucial issue in the outcome of hospital care, resulting in significant morbidity and mortality. The primary routes of infection transmission to patients are the hands of health-care workers

Many of the antiseptics are sanitizers that dependent on alcohol and can have deleterious effects. Their regular use can cause irritation of the skin. Therefore, herbal hand-wash was prepared using herbal extract *T. catappa*, *C. longa* and *G. indica*. The present results indicate that the ingredients of *T. catappa*, *C. longa* and *G. indica* extracts and their combinatorial compositions are capable of developing better antiseptic hand-wash against skin pathogens than the commercially available preparations. Therefore, a new way, of combating antibiotic drug resistance of pathogenic organisms and healthier living by germ-free aseptic hands can be found. A significant number of microbial load can be reduced by natural, economic and safe handwash. This may serve as the reasonable basis for the preparation of the herbal hand-wash. This has opened new avenues in the production of 'antiseptic hand-wash' replacing the use of chemical substances. Rakesh K. Sindhu*¹, Mansi Chitkara², Gagandeep Kaur¹, Arashmeet Kaur¹, Sandeep Arora¹ and I.S. Sandhu (in year 2019) The evaluation parameters carried for standardizing the herbal soap by color determination, pH, TFM, ethanol soluble content, Saponification value were carried out. This led to an outcome of the formulation of stable Polyherbal soap possessing potent antimicrobial activity against various micro-organisms such as *E. coli* and *S. aureus*. In addition this formulation was found to be used for daily use and did not cause any skin irritation. The blends of various oils in this soap formulation helped in providing specific activity to the formulation possessing potent medicinal

Aim and Objectives

Aim :- To study the formulation development and evaluation of herbal antibacterial soap of neem (*Azadirachta indica*) & tulsi (*Ocimum tenuiflorum*).

Objectives:- The ultimate aim of this study is to formulate and evaluate the herbal antibacterial soap using extracts of plant having ethnic and dermatological importance in Ayurveda, namely, *Neem Azadirachta indica*, and *Tulsi Ocimum tenuiflorum*

To study the evaluative parameters such as :- 1) pH 4) Moisture Content 2) Foam retention 5) Cleansing Ability 3) Foam height 6) Skin Irritation

Material & method

NEEM

Monograph :-

- Common Name – Neem.
- Scientific Name- *AzadirachataIndica*.
- Biological Source- Almost all part of plant *AzadirachataIndica*.
- Family- *Meliaceae*, the mahogany family
- Kingdom- plant

Neem is an omnipotent tree and a sacred gift of nature. Neem tree is mainly cultivated in the Indian subcontinent. Neem is a member of the mahogany family, *Meliaceae*. Today it is known by the botanical name *Azadirachta indica* (*A. indica*) *SarvaRogaNivarini* – the curer of all ailments| Role of *AzadirachataIndica* is as a wonder drug is stressed as far back as 4500 years ago. Importance of NEEM :-

- Some of its health restoring benefits Effective in skin infection, rashes & pimples.
- Immunity booster,
- Anti obesity, Blood purifier for beautiful & healthy skin,
- Anti diabetic, Anti viral, Disperses intestinal worms and parasites, Malaria, Piles, Hair disorder & Oral disorders.
- Neem is rich in fatty acids, including oleic, stearic, palmitic, and linoleic acids.
- Neem is used to treat psoriasis and eczema.
- neem has been used to treat acne, reduce blemishes, and improve skin elasticity neem
- leaf extract accelerates wound healing through an increased inflammatory response and the formation of new blood vessels.

Constituents:- a) Flavonoids, b) Alkaloids, c) Azadirone, d) Nimbin, e) Nimbidin, f) Terpenoids g) Steroids, h) Margosic acid, i) Vanilic acid, j) Glycosides, k) B-sitosterol, l) Nimbecin, m) Kaempeol, n) Quercusertith committees.

Benefits of neem and tulsi

- ✓ Natural Soap is Highly Moisturising.
- Better

Ingredients Used. • Cruelty-Free and Animal-Friendly. • Wider Choice. • Better for the Environment. • Rich in Antioxidants. • Fights Against FreeRadicals • Acts as an antibacterial clearing up skin irritations and acne. . It is smooth, soft and gentle without leaving a residue or sticky film Rejuvenates the skin, reviving the youthful glow. A Herbal soap should have the following characteristics: • It should remove dirt and sweat from your body . • It should leave your skin feeling clean and refreshed . • It should nourish and soften your skin . • It should purify and protect skin from environmental damage • It should moisturize your skin . • It should have a pleasant odourreporting

- ✓ To monitor benefit-risk profile of medicines
- ✓ Generate independent, evidence-based recommendations on the safety of medicines
- ✓ Support the CDSCO for formulating safety related regulatory decisions for medicines
- ✓ Communicate findings with all key stakeholders
- ✓ Create a national centre of excellence as par with global drug safety monitoring standards.^{R8}

Plant Material

Neem :-

- The Neem leaves were collected from different matured plant.
- Cracked and dry skin can be moisturised and made smooth by using neem.
- It acts as an Antibacterial, Antifungal, Antioxidant agent.
- Neem has been used to treat acne, reduce blemishes, and improve skin elasticity.
- Neem is rich in fatty acids, including oleic, stearic, palmitic, and linoleic acids.

Tulsi :-

• Tulsi is well known for its myriad medicinal properties — antibacterial, antifungal, antipyretic, antioxidant, antiseptic and anticancer. Helps beat stress. Tulsi is a natural herb with anti-stress qualities

. Tulsi is rich in Vitamin C and zinc , Rich in vitamin K and antioxidants.

- Tulsi benefits the skin by preventing blackheads, acne and relieves skin infections.
- It contains camphene which works as a natural toner to remove excess oil in the skin.
- Tulsi neutralizes free radicals and rejuvenates the skin, reviving the youthful

glow

- Chemicals :-
- Glycerine :-
- Glycerine is a nontoxic, odorless, and colorless liquid.
- Glycerine is used as a humectant in soap products.
- Glycerine will make sure that your skin will maintain its own moisture in order to protect it from damage caused by dryness .
- It can increase skin hydration, relieve dryness, and refresh the skin's surface..

Ethanol :- • Ethanol is most often used when making glycerin soap. • Ethanol has the ability to dissolve on a partial level in water and oil. • It helps in making soap transparent . • Ethanol can be used as Antiseptic , Antidote and as Medicinal solventrelated serious adverse effects have been the d

Procedure

The Azadirictaindica powder, and Tulsi leaves was extracted with water by decoction process. • 9 gm of above stated powder of neem and Tulsi leaves were taken in separate conical flask and extracted with water for 40-60 min with occasional agitation. • Then filtered.

Preparation of lye :-

- Lye solution was prepared by mixing 0.8g NaOH and 1.5ml DI H₂O in 125ml beaker.
- Measure 9.3ml Propylene glycol, 3.2ml Vegetable glycerine
- Add 9.5ml 95% Ethanol solution, 7.5g Sodium lauryl sulfate into 250ml beaker on hot plate with stir bar

• Heat mixture to 60°C. Preparation of Soap:-

- 6.5g Stearic acid and heat mixture to 68°C.
- When at temperature slowly add the 50:50 lye solution and mix for 20 minutes while continuously stopping and starting stirring until mixture becomes transparent.
- Further required quantity of Azadirachta indica and Tulsi extract was mixed to the above mixture and volume made up to 100 ml by adding remaining distilled water.
- Let solution sit for 1 hour at 68°C.
- Few crystals of menthol were also added to impart aroma to the prepared soap.
- Let soap solution cool to 62-64°C and pour into soap molde, let cool and harden.

FORMULATION AND

Evaluation Of Herbal Soap

The herbal soap formulated was evaluated for the following:

1. Physical evaluation:-
2. pH :-
3. Foam retention :-
4. Foam height :-
5. Moisture content :-
6. Cleansing ability :-
7. Skin irritation test :-

Physical evaluation:-

Physssical characteristics such as colour and Appearance where checked by naked eye odour was identified by Smelling .

1. Colour-Green
2. Odour-pleasant
3. Appearance good

Resut and Discussion

Result :-

Among all the formulations the formulation f2 in both table 1 and 2 exhibited good result . The physicochemical parameters such as color, odor, appearance, and pH were tested. The pH of the soap was found to be 6.5 with pH strip . Remaining parameters such as foam height, foam retention moisture content, and were also determined . Foam

Height was found to be:- 2.5 Foam Retention was found to be:- 5min Moisture Content in soap is:- 6.66%

Discussion:-

The present work is concerned with the formulation of soap using extract of neem andTulsi.The formulated soap was a dry, stable solid showing no colour change and goodappearance and is foamy in nature. It showed good skin compatibility and causes no irritation when tested on 5 volunteers.

CONCLUSION:

The formulated soap showed considerable antibacterial activity as the commercial standard and all the other parameters were good. The plant Neem and Tulsi were extracted using water and subjected to variousevaluation test according to previous research the antimicrobial activity of Neem 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 . Furthermorethe prepared soap were standardized by evaluating various physico chemical properties such as pH appearance odour in which the exhibit satisfactory effect. The soap was free from harsh chemicals which are used in commercial soaps .Herbal soapcan be used as a promising alternative to commercial chemical containing skin whitening soaps

Reference

1. Cosmetics.(n.d), Retrieved from: <http://en.wikipedia.org/wiki/Cosmetics>.
2. pCosmetics. (n.d). Retrieved from www.cosmetics.co.in/cosmetic-products.html
3. Saxton K., Crosby B., & Dunn k.(2013). Formulation of Transparent Melt and Pour Soaps Without Petroleum Derivatives.H-SC Journal of Sciences
4. Kole, P.L. Jadhav, H.R., Thakur , D.P., &Nagappa, A.N. (2005). Cosmetics Potential of Herbal Extracts. Indian Journal of Natural Products and Resources (IJNPR) Formerly Natural Product Radiance (NPR), 4(4), 315-321 5 Sharma, P.P.(2002). Cosmetic Formulation Manufacturing and Quality Control (3rded., pp. 644-647). Delhi: Bandanas

Publication

5. Sudipta, D, Pallab, K.H. and Goutam, P. (2011). International Journal of PharmTechResearch, 3, 140-143
6. Reddy, Y. R. R., Kumari, C. K., Lokanatha, O., Mamatha, S., & Reddy, C. D. (2013). Antimicrobial activity of AzadirachtaIndica (neem) leaf, bark and seed extracts. Int. J. Res. Phytochem. Pharmacol, 3(1), 1-4
7. Afsar, Z., Khanam, S., &Aamir, S. (2018) Formulation and comparative evaluation of polyherbal preparations for their disinfectant effects, 1 (1), 54-65
8. Joshi, M. G., Kamat, D. V., &Kamat, S. D. (2008). Evaluation of herbal handwash formulation.7 (5), 413-15
9. Dhanasekaran, M. (2016) International research journal of pharmacy. 7(2), 31-35.
10. . Shivanand, P., Nilam, M., & Viral, D. (2010). Herbs play an important role in the field of cosmetics. International Journal of PharmTech Research, 2(1), 632-639
11. . Amit, J., Subodh, D., Alka, G., Pushpendra, K., &Vivek, T. (2010). Potential of herbsas cosmaceuticals. International Journal of Research in Ayurveda and Pharmacy (IJRAP), 1(1), 71- 77
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Kishori CollegeOf PharmacyBeed 29
12. Kapoor, V. P. (2005). Herbal cosmetics for skin and hair care.4(4). 306-315.
13. Niharika, A., Aquicio, J. M., &Anand, A. (2010). Antifungal properties of neem (Azadirachtaindica) leaves extract to treat hair dandruff. E-ISRJ, 2, 244-52.
14. Kumar, K. P., Bhowmik, D., Tripathi, K. K., &Chandira, M. (2010). Traditional Indian Herbal Plants Tulsi and Its Medicinal Importance. Research Journal of Pharmacognosy and Phytochemistry, 2(2), 93-101.
15. Panda, H. (2011). Herbal soaps & detergents handbook. NIIR Project Consultancy Services.
16. Bandyopadhyay, U., Biswas, K., Sengupta, A., Moitra, P., Dutta, P., Sarkar, D., ...& Banerjee, R. K. (2004). Clinical studies on the effect of Neem (Azadirachtaindica) bark extract on gastric secretion and gastroduodenal ulcer. Life sciences, 75(24), 2867-2878.
17. Sharma, J., Gairola, S., Sharma, Y. P., & Gaur, R. D. (2014). Ethnomedicinal plants used to treat skin diseases by Tharu community of district Udham Singh Nagar, Uttarakhand, India. Journal of ethnopharmacology, 158, 140- 206.
18. Holetz, F. B., Ueda-Nakamura, T., Dias-Filho, B. P., Cortez, D. A. G., Mello, J. C. P., &Nakamura, C. V. (2002). Effect of plant extracts used in folk medicine on cell growth and differentiation of Herpetomonassamuelpessoai (Kinetoplastida, Trypanosomatidae) cultivated in defined medium. Actascientiarum, 24(3), 657- 662.
19. Proksch E, Brandner JM, Jensen JM. The skin: An indispensable barrier. ExpDermatol 2008;17:1063-72.
20. Sharma K, Joshi N, Goyal C. Critical review of ayurvedicvarnya herbs and their tyrosinase inhibition effect. AncSci Life 2015;35:18-25. 21. Pulok M, Rajarshi B, Akanksha S, Subhadip B, Sayan B, Chandra K. Validation of medicinal herbs for anti-tyrosinase potential. J Herb Med 2018;14:1-16.