IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 5, Issue 11, May 2025
Impact Factor: 7.67

Formulation and Evaluation of Herbal Neem Soap

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Abstract: *Herbal products have become an item of global importance both medicinally and economically. Althoughusage of these herbal products has increased, their quality, safety and efficiency are serious concerns in industrialized and developing countries. Thepresent 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 contentin the herbs does not have any sideeffect on the human body.Most herbal supplement 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. Numerouschemical toxins microorganism present in the atmosphere may cause chemical infection anddamage to skin cosmetics alone are not sufficient to take care of skin and body parts.*

Keywords: Herbal products

I. INTRODUCTION

Herbal soap preparation is a medicine or drugs it contain Antibacterial C antifungal agents which e mainlyuses of part of plants such as like leaves, stem, roots Cfruits to treatment for a 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 enrich the body with nutrients and other useful minerals. Soap is a solid product made from oil by means of saponificationIn .Neem leaf and its extractexhibi immunomodulatory anti- inflammatory, antiulcer antimalarial, antifungalant ibacterialantioxidant anticarcinogenic property. Tulsi is called the queen of all herbs, it is used widelyin Ayurvedic and naturopathic medicines which helps in the healing of the human body in anatural manner. Not only do Tulsi leaves benefit people, but their flowers too. Tulsi can helpyou get rid of many health problems ranging from fever to kidney stones.The presentscenario, it seems improbable that herbal soaps , although better in performance and saferthan the synthetic ones, will be popular with the consumers .Soaps and detergents have been registering steady growth in demand in the country, in tunewith the industrial and economic growth. Herbal soap has generated considerable interest andenthusiasm amongst the consumers in recent times, due to ecofriendly nature of the product.There is good scope for setting up herbal soap projects in the country. While there is noparticular entry barrier from the point of view of technology, adequate market thrust isnecessary to competitively sell the product in the market. The toilet soap consumption inIndia is estimated at 1200000 tonnes per annum. The soap market isgrowingat the rate ofabout 9% per annum.

II. LITERATURE REVIEW

Ashlesha Ghanwat*, Sachin Wayzod and Vanjire Divya (in year 2020) The plant Azadiricta india, 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 Sharma1* 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

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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 dependenton 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 safehandwash. 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.

Plan Of work:

Literature Review
Selection Of Drug Material
Study Of Monograph And Chemical constituents
Extraction On Crude Drugs
Preparation Of Cream Base
Incorporation Of Essential Oil Into soap base
Formulation Of Soap
Evaluation Test

Aim :-

To study the formulation development and evaluation of herbal antibacterialsoap ofneem (Azadirachta indica) C tulsi (Ocimum tenuiflorum).

Objectives:

The ultimate aim of this study is to formulate and evaluate the herbal antibacterial soapusing extracts of plant having ethnic and dermatological importance in Ayurveda,namely,Neem Azadirachta indica, and

MATERIALS METHOD NEEM

Monograph :-

• Common Name –Neem.
• Scientific Name-AzadirachataIndica.
• BiScientific ological Source- Almost all part of plant AzadirachataIndica.
• Family- Meliaceae, the mahogany family

Importance of NEEM :-

• Some of its health restoring benefits Effective in skin infection, rahes Cpimples.
• Immunity booster, Anti obesity, Blood purifier for beautiful C healthy skin, Anti diabetic, Anti viral, Dispels intestinal worms and parasites, Malaria, Piles, Hair disorderCOral disorders.
• Neem isrich in fatty acids, including oleic,stearic, palmitic, and linoleic acids.
• Neem is used to treat psoriasis and eczema.
• neemhas 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.

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Constituents:-
a) Flavonoids, b) Alkaloids, c) Azadirone, d) Nimbin, e) Nimbidin,
f) Terpenoids g) Steroids, h) Margosicacid,
i) Vanilic acid,
j) Glycosides,
k) B-sitosterol,
l) Nimbectin,
m) Kaempeerol,
n) Quercurserti are present in Neem Leaf. Tulsi :

MONOGRAPH :-
• Common Name – Tulsi
• ScientificName- Ocimumtenuiflorum
• Biological Source- leaves Of Tulsi • Family- Lamiaceae
• Kingdom- plant

Importance of TULSI :-
• Owing to its healing, antibacterial, antifungal anti-inflammatory properties
• Tulsi benefitsthe skin by preventing blackheads, acne and relieves skin infections, toname a few.
• Rich in vitamin K and antioxidants
• Tulsi benefits hair by stimulating blood circulation and promoting hair growthamongst others. .
• Tulsi has skin and hair benefits. It contains camphene which works as a
natural tonerto remove excess Oil in the skin.
• Tulsi neutralizes free radicals and rejuvenates the skin, reviving the youthful glow.

Chemical Constituents Of Tulsi Are:
1) Oleanolic acid
2) Ursolic acid
3) Rosmarinic acid

DOI: 10.48175/IJARSCT-27274

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4) Eugenol,
5) Carvacrol
6) Linalool
7) β-caryophyllene
8) vitamin A

Benefits of Neem and Tulsi Soap :-

• Natural Soap is Highly Moisturising.
• Better IngredientsUsed.
• Cruelty-Free and Animal-Friendly.
• Wider Choice.
• Better for theEnvironment.
• Rich inAntioxidants.
• 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.

Plant Materials :-

Ingredients :
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.
• Neemhas been used to treat acne,reduce blemishes, and improve skin elasticity.
• Neem is rich in fatty acids, including oleic,stearic, palmatic and linolic a

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 benefitsthe 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 Glycerin :-

.• Glycerine is a nontoxic, odorless, and colorlessliquid.
• Glycerine is used as a humectant in soap products.
• Glycerine will make sure that your skin will maintain its own moisture inorder toprotect it from Damage caused by dryness.
• It can increase skin hydration, relieve dryness, and refresh the skin'ssurface.

Ethanol :-

• Ethanol is most often used when making glycerin soap.
• Ethanol hasthe ability to dissolve on a partial level in water and oil.
• It helpsin making soap transparent .
• Ethanol can be used as Antiseptic , Antidote and as Medicinalsolvent

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Steric Acid :-

• Stearic Acid helpsto harden products,such as candles and soap bars.
• It's usually used as a thickening agent .
• Stearic acid is an emulsifier, emollient, and lubricant
• Stearic acid is used mostly in the manufacture of soaps, detergents, and severalother cosmetics such as shaving creams and shampoos.

Sodium lauryl sulphate :-

• Sodium laurylsulfate (SLS) is a surfactant
• sodium lauryl sulfate helps to stabilize and thicken solutions with ingredients ofdiffering solubility.
• It allows products to achieve a more uniform texture for easier, and smootherapplication.

FORMULATION :

Formulations of Lye-:

Ingredients	F1	F2	F3	Use
NAOH	0.8gm	1.6 gm	3gm	Saponify oils
Propylene glycol	0.8gm	18.7 ml	15ml	Penetration enhancer
Glycerine	9.3ml	6.25 ml	8ml	Humectant
Ethanol	9.5ml	19 ml	12ml	Solvent
Sodium lauryl sulphate	7.5gm	15 gm	10gm	Surfactant

Table :1

Formulation of Soap :Table 2

Ingredients	F1	F2	F3	Use
Steric acid	6.5gm	8gm	10gm	Hardening
Neem extract	3ml	6ml	8ml	Antimicrobial
Tulsi extract	2ml	4ml	6ml	Antioxidant
Menthol	2gm	3.4gm	5gm	Perfume/cooling agent

Material:-

Material :-	Source
Neem	Plant
Tulsi	Plant

Procedure:

Extraction :-

• The Azadirictaindica powder, and Tulsi leaves was extracted with water bydecoction 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 occasionalagitation

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Preparation of lye :-

• Lye solution was prepared by mixing 0.8g NaOH and 1.5ml DI H2O in125ml beaker.
• Measure 9.3ml Propylene glycol, 3.2ml Vegetableglycerine
• Add 9.5ml 95% Ethanol solution, 7.5g Sodium lauryl sulfate into250mlbeaker 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 mixedto the above mixture and volume made up to 100 ml by adding remaining distilled water. 1Of the 1% formulated products solution was placed into a 250 ml graduated cylinder, covered with one Hand and shaken for 10 times. After 1 min of shaking, the total volume of the foam content was recorded. Foam stability was valuedby recording the foam volume after 1 min and 4 min of shake test.

Foam height:

0.5 g of sample of soap was dispersed in 5 ml distilled water. Then, transferred it into10 ml measuring Cylinder. Five-eight strokes were given and allowed to stand still and the foam height above the aqueous Volume was measured.

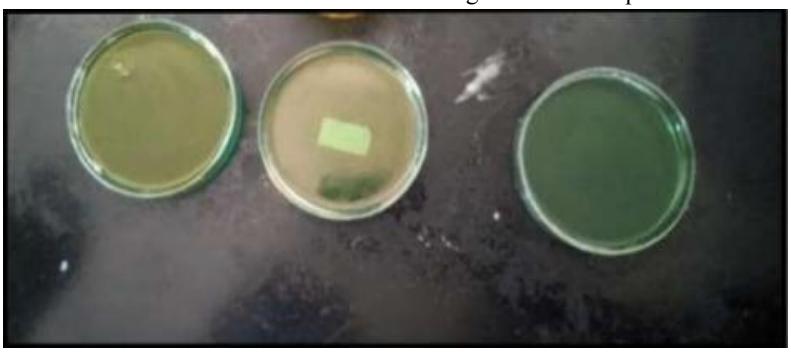

Fig : - Foam Height

1. Foam retention:-

Foaming ability and foam stability: Cylinder shake method was used to test for the foaming ability. 50 ml of the 1% formulated products solution was placed into a 250 ml graduated cylinder, covered with one hand and shaken for 10

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times. After 1 min of shaking, the total volume of the foam content was recorded. Foam stability was valuedby recording the foam volume after 1 min and 4 min of shake test.

2. Foam height:

0.5 g of sample of soap was dispersed in 5 ml distilled water. Then, transferred it into10 ml measuring cylinder. Five-eight strokes were given and allowed to stand still and the foam height above the aqueous valum was measured

Moisture content

The moisture content was used to estimate the percentage of water in the soap by dryingthe soap to a constant weight. The soap was weighed and recorded as ―wet weight of sample and was dried from 100 to 115°C using a dryer [21]. The sample was cooled and weighed to find the―dry weight of sample. The moisture content was determined usingthe formula.

Cleansing ability :-

A dirty cloth was soaked In a bucket containing soap solution and rinsed slowly and the dirt removed From the cloth was observed .

Skin Irritation Test:-

Soap was applied on skin of hands and legs of 5 volunteers and observed .

Physical Ability:-

When soap is placed in a hot temperature for more than 10-15 min it enters into gelphaseand the colour

RESULT and discussion

Result :-

Among all the formulations the formulation f2 in both table 1 and 2 exhibited good result . ThePhysicochemical parameters such as color, odor, appearance, and pHwere 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:- 2.7 Foam Retention was found to be:- 5.4 min Moisture Content in soap Is:- 6.83%

II. 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 various evaluation test according to previous research the antimicrobial activity of Neem was studied . the prepared formulation when tested for different

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test gave good results . It does not give any irritancy to skin it was determined byusing 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. The soap was free from harsh chemicals which are used in commercial soaps .Herbal soap can be used as a prom"sing'alternative to commercial chemical containing skin whitening soaps.

AKNOWLEDGEMENT :

We would like to express our gratitudeTo Faculty of Pharmacy, Faculty of Pharmacy, Dr Babasaheb Ambedkar Technological University Lonere,Maharashtra, for offering the Opportunity to conduct project work
onA herbal neem soap Wealso want to expressOurgratitude to thefacultymembersWho helped us along the way

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