Project Work

Report on

Formulation And Evaluation of Anti Fungal Soap

In the Faculty of Pharmacy,
Dr.Babasaheb Ambedkar Technological University, Lonere

BACHELOROFPHARMACY

Submitted by

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Under the supervision of

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CERTIFICATE

This is to certify that **PATHAN ABULKALAM LUKMAN** PRN **2126021813070** has carried out the required project work prescribed by Dr. Babasaheb Ambedkar Technological University, Lonere for the VIIthsemester of B. Pharm. course during academic year 2024-2025 & this report represents his/her work done under my supervision.

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like to express my special thanks of gratitude to my guidance Teacher "PROF **MISS.P.S. NAGAEGOJE**" fwouldor their able guidance and support in Completing my project. I would also like to extend my gratitude to the principal Sir "**MR.DESHMUKH.S.B**" for providing me with all the facility that was required.

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Place: BEED

Date:

PATHAN ABULKALAM LUKMAN

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ABSTRACT :

Our study's objectives included creating a polyherbal hygienic soap using the cold process technique and assessing its antimicrobial potential using the agar well diffusion method. Coconut oil, , neem shikakai, ritha, rose petals extract, and NaOH (lye) were used to make soap, and the various extracts were added to the fundamental saponification reaction. Following the preparation of the herbal mixture, the using various concentrations of soap solution in comparison to the standard, analyse pH, Moisture content, foaming index, foam retention time, saponification, TFM measurement, ethanol soluble matter, and antimicrobial activity. The findings showed that the herbal soap had the following properties: pH 6.5-7, moisture content 3.5%, foam index 16.5, foam holding time 10.0 minutes, saponification value 161.287 mg/ml, 72% TFM, and ethanol soluble matter 63.80%. Additionally, the evaluation experiments revealed that the herbal soap performs satisfactorily against microbes when compared to conventional antibiotics. Additionally, oils are used both everyday and to treat a variety of skin infections.

KEYWORDS: Neem, Tulsi, Ritha, Shikakai, KOH, Perfume, coconut Oil, PLP ethenol

INTRODUCTION:

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 apply in various forms like creams ,lotion ,gel ,soap, solvent extract or ointment. the variety of creams & soap properties have been used to treat various skin disorders Mostly skin infection are caused by fungi, staphylococcus aureus and streptococcus speciesEthnomedically, juice& 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 succulent gel form is used to disorders of psoriasis. Crude preparation of soapy plant are able to soften the skin epidermis enhance greater penetration and cleaning acne and also promote healing and resolution in quickly in time. In this review article herbal soap conataining neem, tulsi, shikekai and reetha as natural plant ingredients and this content gives or shows antibacterial antifungal & anti-inflammatory activity. In this soap, neem is main compound, and shows medicinal properties.

Neem leaf and its extract exhibit immunomodulatory anti-inflammatory, antiulcer antimalarial,antifungal antibacterial antioxidant anticarcinogenic property. Tulsi has got the greatest medicinal value. tulsi to be effective for diabetis they reducing blood glucose level tulsi also used in severe acute respiratory syndrome. Juice of its leaves gives relief in cold fever bronchitis and cough. Tulsi reduce stress, enhance stamina relief inflammation and alsoshows antifungal activity so tulsi is also used as main compound in this herbal soap.

The main antifungal activity of Tulsi serves to be beneficial in soap formulation Reetha is an exceptional cleanser. Hence the skin it has conditioning properties therefore, it keeps skin moisturized and cool. Reetha prevents the skin from drying and keeps it soft and supple it alsohelps to treat eczema and psoriasis. Shikekai is quit effective in treating various skin infectioncool. Reetha prevents the skin from drying and keeps it soft and supple it also helps to treat eczema and psoriasis. Shikekai is quit effective in treating various skin infection

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 ntimicrobial 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.

morbidity and mortality. The primary routes of infection transmission to patients are the ands of health-care workers. Many of the antiseptics are sanitizers that dependent on alcohol and an have deleterious effects. Their regular use can cause irritation of the skin. Therefore, erbal 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 ombinatorial 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 properties (Ameh et al., 2013)

AIM AND OBJECTIVE

Aim :-

To study the formulation development and evaluation of herbal soap.

Objectives:

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

RITHA Sapindus mukorossiPart

- The primary goal of making herbal soap maintain the tonicity of skin.
- To balancing skin pH.
- It also help to tightening skin pore (anti-aging).
- Relieving irritation.
- It is used to stimulate blood circulation.
- The herbal cosmetics is non-toxic in nature, reduce allergic condition.
- It give no side effect as compared to chemical toners.
- The main objective of herbal soap is rehydrating the skin.

PLAN OF WORK

- Litrature survey
- Selection of Herb
- Procurement of Herb
- Materials And Methods
- Formulation of Herbal herbal soap
- Evalution parameter Physical Evaluation
- pH
- Skin Irritation
- Stickiness
- Temperature Variation
- Light Exposer

- Result & Discusion
- Conclusion
- Reference

To study the evaluative parameters such as :-

1) pH
2) Foam retention
3) Foam height
4) Moisture Content
5) Cleansing Ability
6) Skin Irritation

MATERIALS & METHOD

NEEM

Monograph :-

Common Name – Neem.

Scientific Name- AzadirachataIndica.

Biological Source- Almost all part of plant AzadirachataIndica.

Family- Meliaceae, the mahogany family

Kingdom- plant.

p

Fig.1 Neem

NEEM ;

Neem Leaf Botanical name: AzadiractaindicaPart typically used: Leaves

Colour: Green

Description:- Compound alternate, rachis15-25cm long, .1cm thick, leaflet with oblique, serrate, 7-8.5 cm long and 1-1.7 cmwide slightly yellowish green in color.

Constituents: Flavonoids, Alkaloids, Azadirone, Nimbin, Nimbidin, Terpenoids, Steroids, Margosicacid, Vanilic acid,

Glycosides, B-sitosterol, Nimbectin, Kaempeerol, Quercursertin are present in

Importance of NEEM :-

• Some of its health restoring benefits Effective in skin infection, rahes & pimples.

• Immunity booster, Anti obesity, Blood purifier for beautiful & healthy skin, Anti diabetic, Anti viral, Dispels 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) Margosicacid,

i) Vanilic acid,

j) Glycosides,

k) B-sitosterol,

l) Nimbectin,

m) Kaempeerol,

n) Quercurserti

RITHA

Biological name:- Sapindus mukorossiPart Typical used:- Seeds

Colour:- Brown

Uses:- Detergent , Surfactant

Description:- The fruit is a small leathery skinneddrup 1 to 2 cm in diameter, yellow ripening blackish , containing 1 to 3 seeds

Fig.2 Reetha

Benefits of Reetha

Promotes skin health

The essence of saponins in reetha works well as an excellent cleanser and is used as an alternative for soap and face wash. It is suitable for all types of skin, blending reetha with besan flour improves the skin sustenance and glow. The potent moisturizing property of the soapnut keeps the skin well hydrated, prevents drying of the skin and making the skin look radiant and supple. Furthermore, the powerful antibacterial and anti-inflammatory properties treat skin disorders like acne, eczema and psoriasis.

TULSI

Biological name :- Ocimum tenuiflorum

Common name:- Holy basil

Chemical Constituents:- eugenol , germacrene ,terpenes

Part Typical used:- Leaves

Colour:- Green

Fig.3 Tulsi

Importance of TULSI :-

Owing to its healing, antibacterial, antifungal anti-inflammatory properties

Tulsi benefits the skin by preventing blackheads, acne and relieves skin infections, to name a few.

Rich in vitamin K and antioxidants

Tulsi benefits hair by stimulating blood circulation and promoting hair growth amongst others. .

Tulsi has skin and hair benefits. 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.

Chemical Constituents Of Tulsi Are:

1) Oleanolic acid

2) Ursolic acid

3) Rosmarinic acid

4) Eugenol,

5) Carvacrol

6) Linalool

7) β-caryophyllene

8) vitamin 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 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.

SHIKEKAI

Biological name:- Acacia concinna

Common name:- shikekai

Chemical Constituents:- Spinasterone, Acacic acid

Part Typical used:-

Fruits podsColour:

Fig.4 Shikakai

Uses:- Antidandruff detergent

May help with wound healing

May have anti-hair fall potential

May be anti-inflammatory

May have potential antifungal activity

May have antibacterial activity

May be potentially a good anti-oxidant

Formulation and Evaluation of Herbal Soap :-

Table1

Chemicals	Source
Ethanol	Laboratory reagent
Stearic acid	Laboratory reagent
Soft paraffin	Laboratory reagent
Orange oil	Laboratory reagent

Table2

Herbal plant	Source
Neem	Plant
Shikekai	Plant
Reetha	Plant
Tulsi	Plant

FORMULA:-

The formula shown in Table 3 is best suited for the preparation of herbal soaps**:**

Sr.no	Ingredients	Quantity (%)	Use
1	Stearic Acid	1 gm	Hardening
2	Soft Paraffin	0.70	Hardening
3	Ethanol	5ml	Solvent
4	Neem Powder	4gm	Antibacterial
5	Reetha	3gm	Surfactant
6	Shikekai	2gm	Cleanser
7	Tulsi	1gm	Antiviral
8	Orange oil	q.s	Perfume

EXPERIMENTAL MATERIAL AND METHODS :

Chemicals:

These include stearic acid, soft paraffin, ethanol, orange oil.

Collection, identification and processing of plant The leaves of Azadiracta indica, Ocimum tenuiflorum, and seeds of Sapindus mukorossi and pods of Acacia concinna were collected from different matured plant. The leaves were dried in hot air oven, pulverized and stored in airtight bottles for the studies

Extraction:

The Azadiricta indica, Ocimum

tenuiflorum, Sapindus concinna powder was extracted by granding .

PROCEDURE :

Adding soap Base ingradingts coconut oil 100 gm heat oil for 5 min in water bath

↓

add NaOH 20 gm + 100 ml water stir continusly 8 min

↓

add SLS solution of 10 ml for 2 min continusly stir

↓

add 10 ml Glycerine stir 2-3 min continusly

↓

adding herbal drugs

↓

add steric acid 1 gm or hardening

↓

add 5 ml ethanol as a solvent

↓

add soft paraffin 0.7 gm continus stir for 5-8 min

↓

add 10 ml tri ethanol amine stir continusly to form thick peste

add rose water (QS) as a perfume

↓

solution with continus agition for 30 min until moltel mix become homogeneous semisolid mix was poured in to mould and allow to solidefy

METHODS FOR EVALUATION OF VARIOUS PHYSICAL PARAMETERS OF HERBAL SOAP :

Evaluation of five batches of herbal soap are given below.

1. Physical evaluation

In this test colour, odour and state of five formulations were checked.

2. pH

The pH of herabal face toner was determined by using a pH meter. The most accurate common means of measuring pH is through a lab device called Probe and meter or simply a pH meter. The probe consist of a glass electrode through which a small voltage is passed. The meter, voltmeter measures the electronic impedance in the glass electrode and pH unit instead of volt. A pH meter typically has to be calibrated before each use with two standard liquid solutions of Known pH. Measurement is made by submerging the probe in the herbal soap until a reading is registered in pH meter

Fig.5 pH Meter

3. Skin irritation-

Skin irritation test was performed by herbal soapon different hands in a 1 cm box and exposed to sunlight for 5 mins to check for any irritation on skin.

After applying herbal soap on skin and exposed to sunlight no any variety of redness occurred of any one batches of two batches .

4. Stickiness-

The stickiness test was perform by spray face toner on hand and check stickiness of all batches.

5. Temperature variations-

The formulation was exposed to different temperatures at 45o C and -10 o C for 1 months to check the stability.

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 odourPlant Materials :-

EVALUATION :

a. Physical Characteristics

Appearance: Color, uniformity, texture, shape.
Fragrance: Strength, pleasantness, and natural aroma.
Foaming Ability: Amount and stability of lather.
Hardness: Resistance to pressure (too soft may dissolve quickly).
pH Level: Ideal range is 5.5 to 7 for skin-friendliness.

b. Chemical Analysis

pH Test: Using pH strips or a meter.

Moisture Content: Should be within acceptable limits to prevent microbial growth.
Saponification Value: Indicates the amount of alkali required to saponify the fat/oil.
Free Alkali Test: Ensures no excess caustic substances are present.

c. Microbial Tests

Antimicrobial Activity: Test against bacteria (e.g., E. coli, Staphylococcus aureus).
Stability Test: Check for spoilage or microbial growth over time.

d. User-Based Evaluation

Skin Reaction Test: Patch test on volunteers for irritation or allergies.
Moisturizing Effect: Subjective/user-reported feedback.
Cleansing Efficiency: Ability to remove dirt/oil.

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%

FINAL PRODUCT :

Final Product

DISCUSSION:-

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

CONCLUSION:-

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 preparedformulation when tested for different test gave good results.

It does not give any irritancy to skin it was determined byusing thesesoap by few volunteer hence it is proved that soap does not give any irritancy to skin. Furthermore the preparedsoap were standardized by evaluating various physico chemical properties such as pH appearance odour in which the exhibit satisfactory effect.

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