

PREPARATION AND EVALUTION OF HERBAL ANTIMICROBIAL SOAP

Submitted to

ATMIYA UNIVERSITY



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2023-24



Certificate

This is to certify that Mr./Ms. Nandaniya Krishna Bhayabhai with Enrollment no. 200501041 of Program B. Pharm. Semester VIII has satisfactorily completed his/her term work in the Course Project Work, Course Code 18BPHCC803 for the term ending in the month of April Academic year 2023-2024.

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DECLARATION

We, all hereby declare the Work is presented in the project report entitled “ANTIMICROBIAL HERBAL SOAP.”

The project is submitted to Atmiya University. For the partial fulfillment of the bachelor of pharmacy. I also declare that this project report has not been previously submitted to any other university.

Krishna Nandaniya

Gopi Bodar


Neha Bambhaniya

Ekta Manek

Sujay Vasoya

Title :- Antimicrobial herbal soap

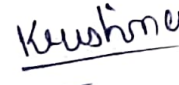


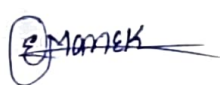

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ACKNOWLEDGEMENT

This research work has been a rewarding and enriching experience for me, as I had privilege and honour of formulating an “ANTIMICROBIAL HERBAL SOAP”.I would like to express my sincere gratitude and thanks to the respected authorities who gave me this opportunity and supported me throughout this project. I am also thankful for the chance to interact with many wonderful people and professionals who guided me, inspired me and shared their valuable insights with me during this period. I have learned a lot from them and I appreciate their kindness and generosity.

We would like to express our sincere appreciation to our research guide, Dr. Samixa Patel, faculty of pharmacy, Atmiya University for their valuable advice and guidance throughout this project. They provided us with the necessary resources and facilities to conduct our research and supported as with their expertise and encouragement, We are grateful for their trust and confidence in us. We also thankful the staff and authorities who helped us in making this project possible.

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ABSTRACT

Ayurvedic cosmetic are also known as the herbal cosmetic the natural content in the herbs does not have side effect on the human body. Most herbal supplement are based on several botanical ingredients with long histories of traditional or folk medicine usage. Among them numerous botanical ingredients available in the market today. Numerous chemical toxins microorganism present in the atmosphere may cause chemical infection and damage to skin, cosmetic alone are not sufficient to take care of skin and body parts. Here we use antimicrobial agents, antidandruff agents and moisturizing agents in the formulation of herbal soap. Agents like Hibiscus, Reetha, Multani mitti, Aloe vera gel and coconut oil. Here we also used some extract like Neem, Turmeric and Lemon. This study was conducted to evaluate the affinity of the agents when it use in soap and give its property in the microbes.

1. INTRODUCTION

INFORMATION ABOUT INGREDIENTS

Sr. No.	Ingredients	Uses
1	Hibiscus	Cleanses and moisturizes your skin.
2	Reetha	Use as foaming agent & prevent dryness of skin.
3	Multani mitti	Exfoliates the skin.
4	Aloevera gel	Used to skin care like acne.
5	Coconut oil	Creates a protective moisturizing shield on the skin.
6	Neem extract	Hold antioxidant, antimicrobial, anti-inflammatory properties.
7	Turmeric extract	Helps prevent bacteria from spreading.
8	Lemon extract	Helps to cleaning skin and getting rid of bacteria.
9	Water	Contains minerals which can affect the quality of soap.
10	Fragrance	To mask unpleasant odours from other active chemical ingredients.

➤ Hibiscus

Synonyms: Shoeblick plant, Hibiscus mutabilis

Scientific name : Hibiscus rosasinensis

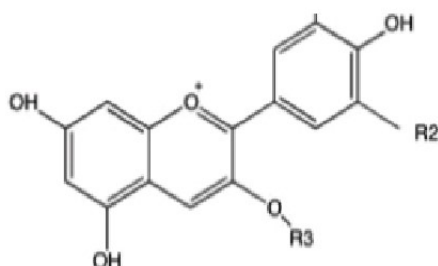
Family : Malvaceae

Biological source : Native to warm temperate and tropical regions

Chemical constituents : The preliminary phytochemical analysis showed that Hibiscus rosa-sinensis contained tannins, anthraquinones, quinines, phenols, flavanoids, alkaloids, terpenoids, saponins, cardiac glycosides, protein, free amino acids, carbohydrates and essential oils.

Uses : Improves skin elasticity and it is a moisture booster, evens out skin tone, natural cleanser, exfoliates dead skin cells.

Chemical structure :



➤ Reetha

Synonyms: Soapberry, soapnut, dodani

Scientific name : Sapindus mukorossi gaetn

Family : Sapindaceae

Biological source : Large deciduous tree of the sapindaceae family

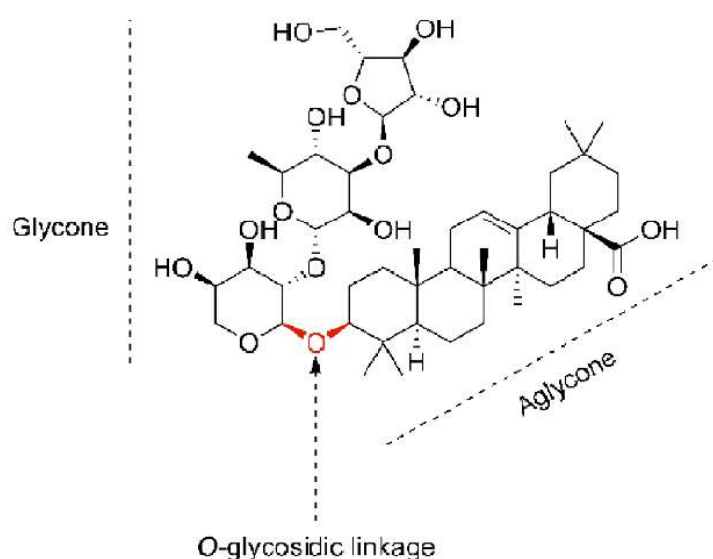
Chemical constituents : The major phytochemicals isolated and identified from the different parts of the S. makorossi are triterpenoids, saponins, dammaranes, tirucullanes. Phytochemicals



such as flavonoids, carbohydrates, fatty acids, phenols and fixed oils are also found in fruit, seed and leaves of reetha.

Uses : Widely used in preparation of shampoo. The dried fruit powder may be used as a foaming agents. It may clean the oily secretions in the skin and might be used as a cleanser.

Chemical structure :



➤ Aloe vera

Synonyms: Musabbar

Scientific name : Aloe barbadensis miller

Family : Liliaceae

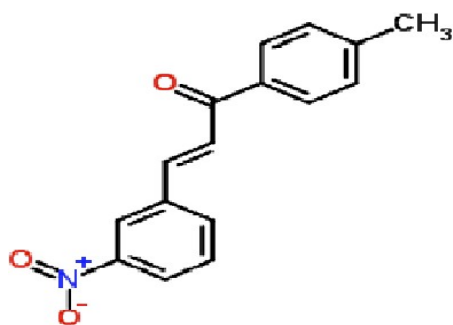
Biological source : Aloe is obtained from the dried juice of leaves of aloe vera

Chemical constituents : The most important constituents of aloes are three isomers of aloins – Barbaloin, Beta barbaloin and Isobarbaloin. Other constituents are amorphous aloin, resin, leucine, isoleucine.

Uses : It gives chilling effect and also acts as a moisturizing agents. It improves the skin integrity, decrease appearance of wrinkle and decrease erythema.



Chemical structure :



➤ **Coconut oil**

Synonyms: Copra oil

Scientific name : *Cocos nucifera*

Family : Arecaceae

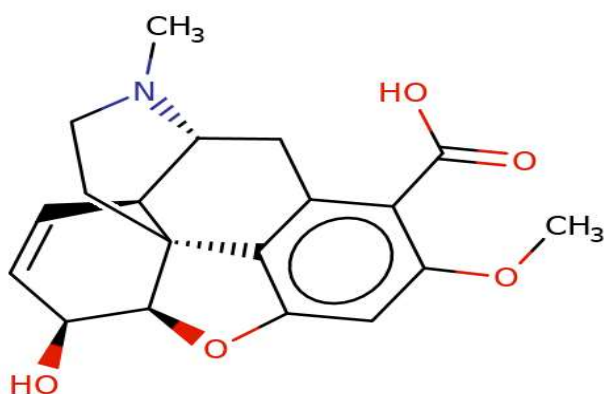
Biological source : Oil expressed from the dried solid part of endosperm of coconut.

Chemical constituents : Coconut obtained from the hard dried endocarp consists of a

mixture of triglycerides of saturated fatty acids. The oil contains about 95% of saturated fatty acids with 8 and 10 carbon atoms. It shows the presence of 2% caprylic acid, 50-80% capric acid, 3% lauric acid, 1% of myristic acid.

Uses : It moisturizes skin and has antibacterial properties. It helps in acne, slows skin aging and rich in antioxidants.

Chemical structure :



➤ Turmeric

Synonyms: Haldi

Scientific name : *Curcuma longa*, *curcuma aromatica*

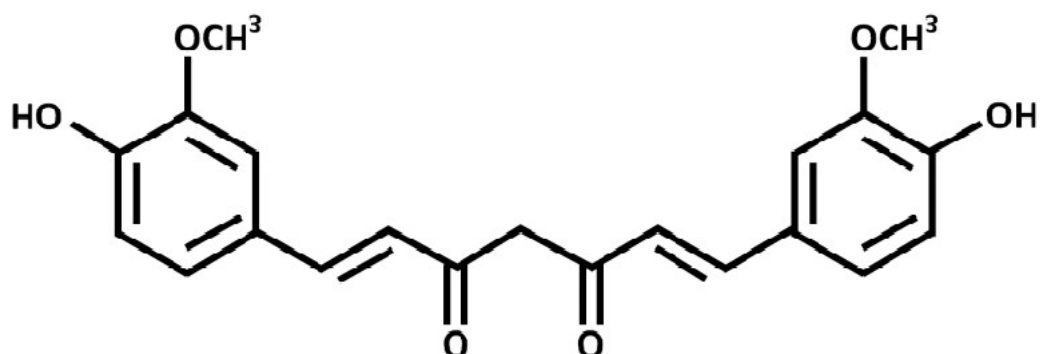
Family : Zingiberaceae

Biological source : Obtained from dried rhizomate of *curcuma longa*

Chemical constituents : Curcuminoids, curcumin-I, II and III

Uses : Turmeric helps brighten skin and the appearance of uneven tone, leaving you with clearer skin.

Chemical structure :



➤ Lemon

Synonyms: Citrous fruit

Scientific name : *Citrus limon*

Family : Rutaceae

Biological source :

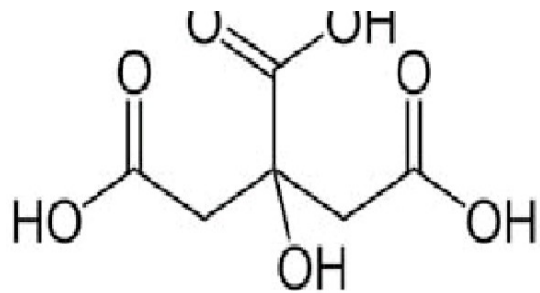
Chemical constituent : Its main compounds include-

limonene(31.5%),sabinene(15,9%),citronellal(11.6%),linalool(4.6%), terpne-4-ol(1,4%),citral (3.4-3.6%).



Uses : Lemon is a powerful cleaning agent. The acid in lemon is antibacterial as well as antiseptic, resulting in a stronger, long-lasting and sanitizing clean.

Chemical structure :



HELPS IN

 <p>NATURAL MOISTURIZER</p>	 <p>SKIN ACNE</p>	
 <p>ECZEMA</p>	 <p>DANDRUFF</p>	
 <p>ATHLETE FOOT</p>	 <p>JOCK ITCH</p>	 <p>BODY ODOR</p>

SOAP

➤ **General information**

Skin is the outermost layer of the body and protecting it from the external environment is necessary. Thus, soaps and many other formulations are used to prevent the accumulation of the microorganisms.

➤ **Characteristics of soaps**

Hardness :-

Harder the soap longer it would last for.

Cleaning :-

Main reason to use soap is for its cleaning property.

Fragrance :-

It is an essential factor. Fragrances revitalize us, calm us and most important mask our body odor.

➤ **Cleaning mechanism of soap**

From hygienic standpoint, it should be made as a law that the resultant soap should be neutral to any reaction. The fatty acid and alkali matter should be chemically bounded and no free alkali should be present in the soap.

In presence of abundance of water, the soap molecule is assumed to be temporary disassociating into two parts. The alkali part bearing positive charge and the long hydrocarbon fatty acid part having negative charge. The soap should clean the oily dirt without harming the actual skin and avoid removal of excess of moisture from skin. The dirt is deposited on the outermost layer of the skin made up of epithelial cells. The soapy water helps the epithelial cells to absorb moisture and become turgid by nature. This provides better exposure of epithelial cells. The alkali part of soap is hydrophilic by nature and the fatty acid part is hydrophobic and lipophobic by nature. The lipophilic part of soap attracts oily dirt to form oil droplets and it clusters around, which is technically called Micelle formulation. The oily droplets are fully encircled by the lipophilic part and reposition is avoided by micelle. Rinsing the skin with excess of water helps in removal of all the micelle formed on the surface and the skin is free from oil and dirt.

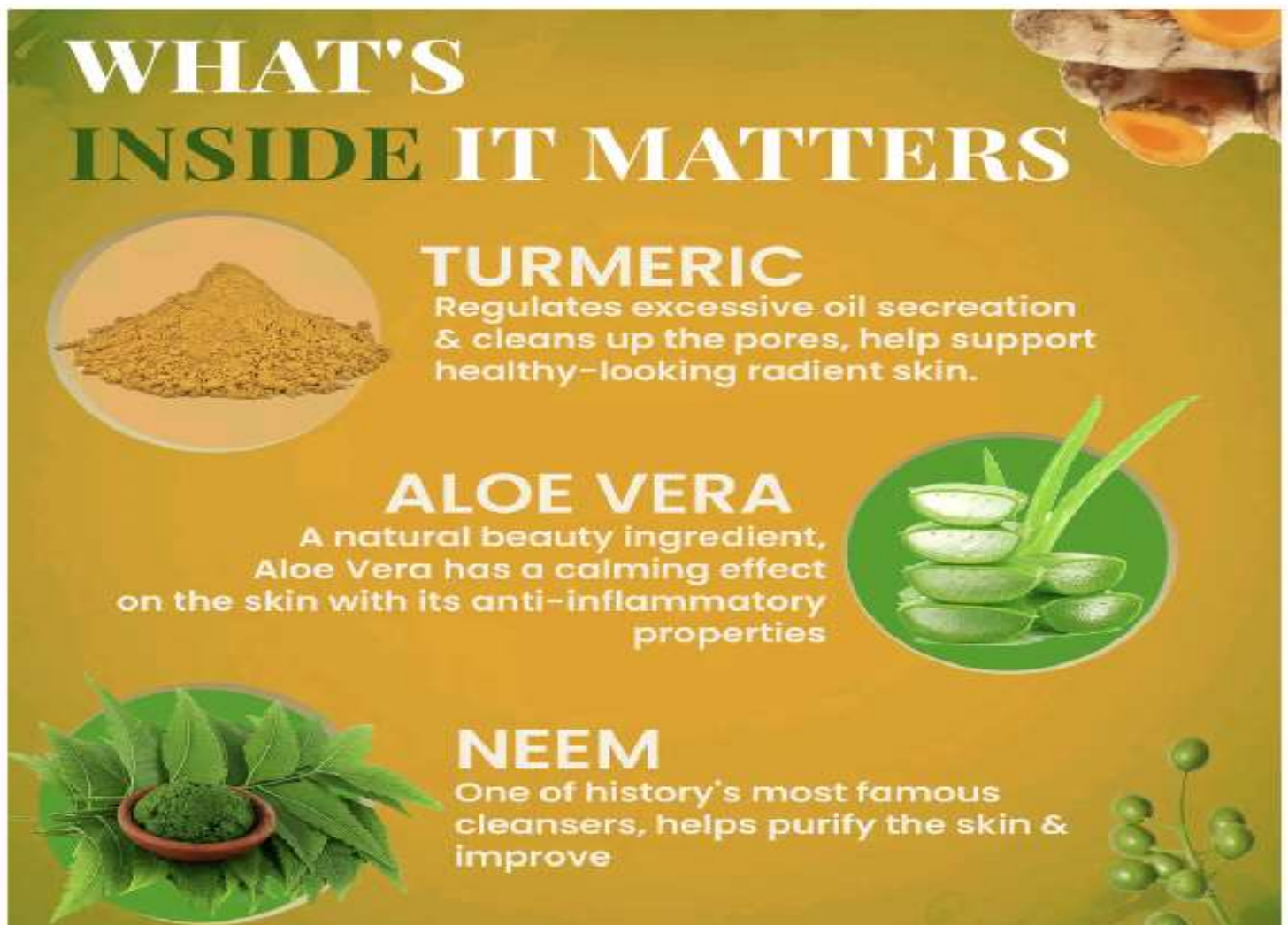
If the soap contains excess of caustic instead of dissolving oily dirt, the true skin gets dissolved and develops minute cuts on the skin.

➤ **Herbal soap**


Herbal soap preparation is a medicine or a drug containing antibacterial and antifungal agents which mainly uses a part of plant like leaves, stems, roots and fruits to treat injury or disease or to achieve good health. Herbal preparation of soap is able to promote healing and resolution in less time.

➤ Benefits of herbal soap

- It helps in reducing acne & dry skin.
- It reduces skin tanning, dryness and itching.
- It also detoxifies the skin and removes dirt from the skin.




WHAT'S INSIDE IT MATTERS




TURMERIC

Regulates excessive oil secretion & cleans up the pores, help support healthy-looking radiant skin.



ALOE VERA

A natural beauty ingredient, Aloe Vera has a calming effect on the skin with its anti-inflammatory properties



NEEM

One of history's most famous cleansers, helps purify the skin & improve

➤ **Qualities of the herbal soap**

- Luxurious handmade soaps.
- Herbal & non toxic.
- Assured quality.
- Enriched with goodness of Ayurveda.
- Provides moisture, brightness to skin.
- Gentle on the skin.
- They are free from harsh chemicals and artificial additives that can cause irritation.

➤ **Why use this herbal soap ?**

- Great for skin :-

This soap contain all herbal ingredients which is made naturally & the natural extract which gives best affinity.

- Eco Friendly :-

Some ingredients used in the soap, shampoo, shower gels can cause harm to the environment. Herbal soap contain zero harmful ingredients.

- No chemical :-

No harmful chemicals are in these soaps. 100% herbal soap.

ANTIMICROBIAL

- Antimicrobial resistance is the of a microorganism (like bacteria, viruses, and some parasites) to stop an antimicrobial (such as antibiotics, antivirals, and antifungals) from working against it.
- Discovery of anti-microbial agents created a new era in the field of medical science.
- Microbes on the other hand, develop various mechanisms to counter this threat to their existence.
- Antimicrobial drug resistance is the ability of a microbe to resist the effects of medication which was previously used to treat them.
- Now, Antimicrobial soap can better protect you from commonly transmitted bacteria.

2. LITERATURE REVIEW

Ingredients	Therapeutic effect
Hibiscus	It is rich in antioxidants called anthocyanins, which fight off free radicals that help to prevent skin ageing and decrease inflammation.
Multani Mitti	It helps control sebum production, which aids in mattifying the skin and prevents clogged pores, which can lead to acne breakouts.
Reetha	Reetha powder help in various skin infection like psoriasis, eczema and pimples as it has Tridosha (Pitta, Vata and Kapha) properties.
Aloe vera	To prevent skin ulcers and treat burn wounds.
Coconut oil	It nourish dry skin and cracked skin, strengthening the skin.
Neem	It fight against skin infection, promote wound healing.
Turmeric	It can help with eczema, alopecia, lichen planus and other skin issues.
Lemon	To reduce skin damage and premature aging.

BATCH -1



➤ INGREDIENTS

- Multani mitti
- Hibiscus powder
- Reetha
- Glycerin
- Rosewater
- Lemon extract
- Turmeric extract
- Neem extract
- Coconut oil

➤ METHOD

- Weigh 1.16gm of hibiscus, 2.3gm reetha, 4.6gm Multani mitti(solution A).
- Mix well in mortar pestle no cluster should be their.
- Now take a beaker, weigh 3.3mlgm glycerin, 1ml coconut oil, 1ml neem extract, 1ml turmeric extract, 1ml lemon extract, 2-3 drops of rose oil & mix it well.(solution B)
- Add this solution B in A and mix. Add sufficient amount of water in it.
- Make proper solid paste.
- Now take soap mould and grease it with coconut oil.
- The solid paste of soap is fill in the mould & refrigerate for 1 hour.
- Take it out and let it dry for 24hour.
- The soap is ready to evaluate.

BATCH – 2



➤ INGREDIENTS

- Reetha
- Multani Mitti Powder
- Reetha
- Gram Flour
- Hibiscus powder
- Aloe vera gel
- Rose oil
- Neem extract
- Lemon extract
- Turmeric extract
- Coconut oil

➤ METHOD

- Weigh 1.16gm of hibiscus, 2.3gm reetha, 2.6gm Multani mitti and 2gm gram flour(solution A).
- Mix well in mortar pestle no cluster should be their.
- Now take a beaker, weigh 3.33gm aloe vera, 1ml coconut oil, 1ml neem extract, 1ml turmeric extract, 1ml lemon extract, 2-3 drops of rose oil & mix it well.(solution B)
- Add this solution B in A and mix. Add sufficient amount of water in it.
- Make proper solid paste.
- Now take soap mould and grease it with coconut oil.
- The solid paste of soap is fill in the mould & refrigerate for 1 hour.
- Take it out and let it dry for 24hour.
- The soap is ready to evaluate.

BATCH - 3



➤ INGREDIENTS

- Multani mitti
- Hibiscus powder
- Reetha
- Aloe Vera gel
- Rosewater
- Lemon extract
- Turmeric extract
- Neem extract
- Coconut oil

➤ METHOD

- Weigh 1.16gm of hibiscus, 2.3gm reetha, 4.6gm Multani mitti(solution A).
- Mix well in mortar pestle no cluster should be their.
- Now take a beaker, weigh 3.33gm aloe vera, 1ml coconut oil, 1ml neem extract, 1ml turmeric extract, 1ml lemon extract, 2-3 drops of rose oil & mix it well.(solution B)
- Add this solution B in A and mix. Add sufficient amount of water in it.
- Make proper solid paste.
- Now take soap mould and grease it with coconut oil.
- The solid paste of soap is fill in the mould & refrigerate for 1 hour.
- Take it out and let it dry for 24hour.
- The soap is ready to evaluate.

BATCH - 4



➤ INGREDIENTS

- Multani mitti
- Hibiscus powder
- Reetha
- Aloe Vera gel
- Rosewater
- Lemon extract
- Turmeric extract
- Neem extract
- Coconut oil

➤ METHOD

- Weigh 1.16gm of hibiscus, 4gm reetha, 3gm Multani mitti(solution A).
- Mix well in mortar pestle no cluster should be their.
- Now take a beaker, weigh 3.33gm aloe vera, 1ml coconut oil, 1ml neem extract, 1ml turmeric extract, 1ml lemon extract, 2-3 drops of rose oil & mix it well.(solution B)
- Add this solution B in A and mix. Add sufficient amount of water in it.
- Make proper solid paste.
- Now take soap mould and grease it with coconut oil.
- The solid paste of soap is fill in the mould & refrigerate for 1 hour.
- Take it out and let it dry for 24hour.
- The soap is ready to evaluate.

BATCH – 5



➤ INGREDIENTS

- Multani mitti
- Hibiscus powder
- Reetha
- Aloe Vera gel
- Rosewater
- Lemon extract
- Turmeric extract
- Neem extract
- Coconut oil

➤ METHOD

- Weigh 3.86gm of hibiscus, 9gm reetha, 14gm Multani mitti(solution A).
- Mix well in mortar pestle no cluster should be their.
- Now take a beaker, weigh 11 gm aloe vera, 3.33ml coconut oil, 3.33ml neem extract, 3.33ml turmeric extract, 3.33ml lemon extract, 2-3 drops of rose oil & mix it well.(solution B)
- Add this solution B in A and mix. Add sufficient amount of water in it.
- Make proper solid paste.
- Now take soap mould and grease it with coconut oil.
- The solid paste of soap is fill in the mould & refrigerate for 1 hour.
- Take it out and let it dry for 24hour.
- The soap is ready to evaluate.

FINAL BATCH



➤ INGREDIENTS

- Multani mitti
- Hibiscus powder
- Reetha
- Aloe Vera gel
- Rosewater
- Lemon extract
- Turmeric extract
- Neem extract
- Coconut oil

➤ METHOD

- Weigh 3.86gm of hibiscus, 9gm reetha, 14gm Multani mitti(solution A).
- Mix well in mortar pestle no cluster should be their.
- Now take a beaker, weigh 11 gm aloe vera, 3.33ml coconut oil, 3.33ml neem extract, 3.33ml turmeric extract, 3.33ml lemon extract, 2-3 drops of rose oil & mix it well.(solution B)
- Add this solution B in A and mix. Add sufficient amount of water in it.
- Make proper solid paste.
- Now take soap mould and grease it with coconut oil.
- The solid paste of soap is fill in the mould & refrigerate for 1 hour.
- Take it out and let it dry for 24hour.
- The soap is ready to evaluate.

3. METHODOLOGY

EVALUATION

a) Physical appearance

- For better customer compliance its physical appearance is very important as it is topically applied.
- So, it needs to be in good texture and color.

b) pH

- Standard pH of soap is between 8-10
- To test, dab a bit of distilled water on the surface of the soap, use your glove to smear the water around, making a paste with the soap.
- Using our pH 1-14 test strips, test the paste.

c) Skin irritation

- Took a 1 gm of soap that has been shocked in water.
- Then applied to the skin, allowed for 1hour, observed the symptoms caused after applied.

d) Foaming ability

- Take 10ml distilled water in test tube, add 1gm of soap sample.
- Now shake it for 25times.
- And then check the foam ability.

e) Foaming Stability

- Same quantity of soap sample and quantity of distilled water along with process was carried out as that of foamability and the mixture was kept stand for 30min.

After 30min measurement of foam height was done from above the water volume.

f) Eye Irritation

- Wet the soap and wash your face.
- Then gentle massage your face and rinse it out.

g) Hair and scalp cleaning test

- First gently rinse your hair with water, then wash your hair with soap and massage your scalp and rinse it after 5 minutes.

4. RESULT

1) Physical Appearance

Color : Brown

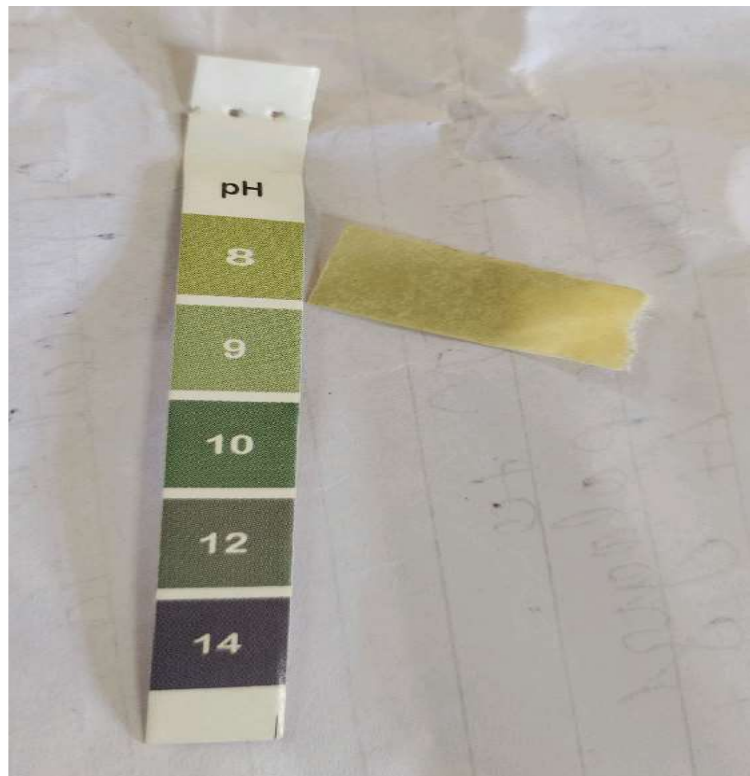
Shape : Oval

Odor : Rosy fragrance



2) pH

- Standard pH is between 8-10. So, here herbal soap pH is 8



3) Skin irritation

- There were no such symptoms observe, no irritation, no itching, and no red patches visible.

4) Foaming ability

- The foam was visible



5) Foaming Stability

- Foam was stable after 30min.



6) Eye Irritation

- While using the soap on the face it does not create any eye irritation.

7) Hair and scalp cleaning test

- Your scalp will be dirt free and hair becomes good.

5. CONCLUSION

- Herbal therapy does have the ability to heal a wide number of skin ailments.
- Herbs are rich source of active ingredients and can cost effective skin infection treatment ranging from rashes.
- Our study showed that the extract od neem, turmeric and lemon gives best antimicrobial effect.
- Antimicrobial herbal soap is 100% chemical free and it is totally made from natural ingredients. So, it does not create any harmful effect to skin.
- It also provides moisture to skin.
- Effectively cleanse the skin, removing dirt, oil, and impurities without stripping away the skin's natural oils.

6. REFERENCE

- A review on herbal soap, Research journal of pharmacognosy and phytochemistry 14 (3), 208-213, 2022
- Development, design and evaluation of herbal neem soap, International journal of pharmaceutical sciences 1(12), 1-1, 2023
- Antimicrobial activity of different medicinal soaps and turmeric against infections micro-organisms isolated from wound area of human, Mrunali patel, Mansi mehta, Gaurav shah.
- Stability of turmeric constituents in natural soaps, ScienceAsia 39 (5), 477-485, 2013
- Use hibiscus in the formulation of antibacterial soaps, International journal of phytocosmetics and natural ingredients
- Hibiscus rosa-science : for herbal formulation, Plant archives (09725210) 23 (2), 2023
- Aloe vera extract as a natural antimicrobial agent in hand washing liquid soap, Nigerian annals of pure and applied science 2, 96-107, 2019