



“Formulation and Evaluation of Herbal Soap for Anti-Aging by using Aloe” .

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Abstract: Bacterial skin infection are most common among people, requiring significant attention for treatment and also to maintain healthy skin some herbal plant extract have antibacterial activity. The aim and the object of present study is to formulate anti-aging herbal soap using aloe vera, neem oil, honey, turmeric, rose water. The research work aimed at investigating some phytochemical constituents present in aloe vera. The main objective of our study to develop and evaluate anti-aging herbal soap which is fulfill with different activities such as Anti-aging, Anti-wrinkles, Anti-inflammatory, Anti-acne, Anti-bacterial. We studies the parameter such as pH, physical evaluation, foam test, foam retention, determination of percentage free alkali, acceleration stability test, foam height, alcohol insoluble matter. Based on the result we can suggest that formulation was stable and can be safely use on the skin.

Key words: *Anti-acne, Anti-aging, Ayurveda, Anti-bacterial, Skin care, etc.*

1. INTRODUCTION:

Human skin, the outer covering of the body constituents the first line of defense protecting the body against various pathogens ⁽¹⁾. As the skin interferes with environment, it is constantly exposed to with different environment stimuli, this makes the skin damage prone ⁽²⁾. Ayurveda is one of the most ancient medical traditional practiced in India, Sri lanka and other south Asia countries and has a sound philosophical and experimental basis ⁽³⁾. Atharvaveda, Charak Samhita⁽⁴⁾ and Sushruta, Samhita are its main classics, giving detailed descriptions of over 700 herbs, mineral and fats to maintain and enhance the health and beauty of the skin ⁽⁵⁾. Acne is one among the common skin problem encountered during adolescent and young age . There are three major forms, namely acne vulgaris, acne conglobate and acne rosacea. Acne vulgaris is characterized as a superficial disease which affects hair follicles and oil secreting glands of the skin . It also manifests as blackheads, whitehead and inflammatory process. Though it is not life threatening, it affects the quality of life by creating a physiological burden due to diverse lesions on the face, chest ,shoulder ,and back ⁽⁶⁾ . Since prehistoric times herbal medicines plant product and extract are imitative for its utilization. Since the existence of mankind functional food, medicines ,cosmetics, dyes as well as in prevention cure and treatment of various disease . The plant comprises with different pharmacological active properties are in utilize ⁽⁷⁾. Mostly skin infection are caused by fungi, staphylococcus aureus and streptococcus species ⁽⁸⁾.

Ethnomedical Ly, juice and extract from leaves of the plants are topically applied as like scabies and also used as a anti-wrinkles property ⁽⁹⁾. The basic method of soap making is known as saponification ⁽¹⁰⁾. Soap is defined as a mixture of chemical compound resulting from the interaction of fatty acid with a metal radical. Soap may also be described as any water soluble salt of those fatty acid, which contain eight or more carbon atom. The metals commonly used in soap making are sodium and potassium , which produce water. Soluble soap that are used for laundry and cleaning purposes ⁽¹¹⁾. Herbal soap preparation is a medicine or drugs it contain ant-bacterial and anti-fungal agent which mainly uses of part of plant such as leaves ,root ,stem and fruit to treatment for a injury or disease or to achieve good health ⁽¹²⁾. Soap consist different properties like good moisturizing effects , long -lasting fragrance .Herbal soap are prepared by adding various dried herbs , flowers and steam into soap base. Herbs are natural product could be found in the treatment of almost all diseases and skin problem owing to their high medical value, cost effectiveness, availability and compatibility ^(13,14). The attributes of soap includes gentleness on the skin ,rich lather, protection against various skin disorder ,treatment of skin infection (such as ringworm) ,protection of even skin toning and smoothness of the skin ⁽¹⁵⁾. In comparison to chemical goods, herbal treatment have benefits of being inexpensive, readily available and having less adverse affects ⁽¹⁶⁾. The soap should have good ingredient which have the ability to kill bacteria but not to damage body tissue. Health care worker should use soap according to criteria of health and hygiene .In this way many immunocompromised or low immunity patient can be protected from transfer of pathogenic or opportunistic pathogen ⁽¹⁷⁾.

As a result, research has accelerated in the direction of developing natural goods that are higher in quality less costly, and have no adverse side effects when compared to chemical product. The main aim of this study is to develop a herbal soap by using soap base aloe vera, neem oil, honey, turmeric, rose oil as well as to study these ingredients antibacterial activity against the bacteria⁽¹⁸⁾.

2. Material and Equipment :

2.1. MATERIAL:

TABLE NO. 1 : Materials of herbal soap.

Sr .No.	Materials
1	Aloe vera extract.
2	Bees wax.
3	Neem oil .
4	Honey.
5	Turmeric.
6	Rose oil.

2.1.1. ALOE VERA :



Dig. no.1: Aloe vera.

- I) **Synonym** - Ghrith kumari.
- II) **Family**- Liliaceae.
- III) **Chemical constituents** – lignin, vitamin, enzymes, minerals.
- IV) **Use** – Anti-Aging.

2.1.2. BEES WAX:



Dig.no.2: Beeswax.

- I) **Synonym** – Yellow wax.
- II) **Family** – Apidae.
- III) **Chemical constituent** – Myricin, melissic acid, cerolein.
- IV) **Use** -Soap base.

2.1.3.NEEM :



Dig.no.3: Neem.

- I) **Synonym** – Arishth .
- II) **Family** – Mellaceae.
- III) **Chemical constituents** – Nimbin ,Nimbinene.
- IV) **Use** – Anti –bacterial.

2.1.4.HONEY:



Dig.no.4: Honey.

- I) **Synonym** – Madhu.
- II) **Family** – Apidae.
- III) **Chemical constituent** – Dextrose , Laevulose .
- IV) **Use** – Anti –aging.

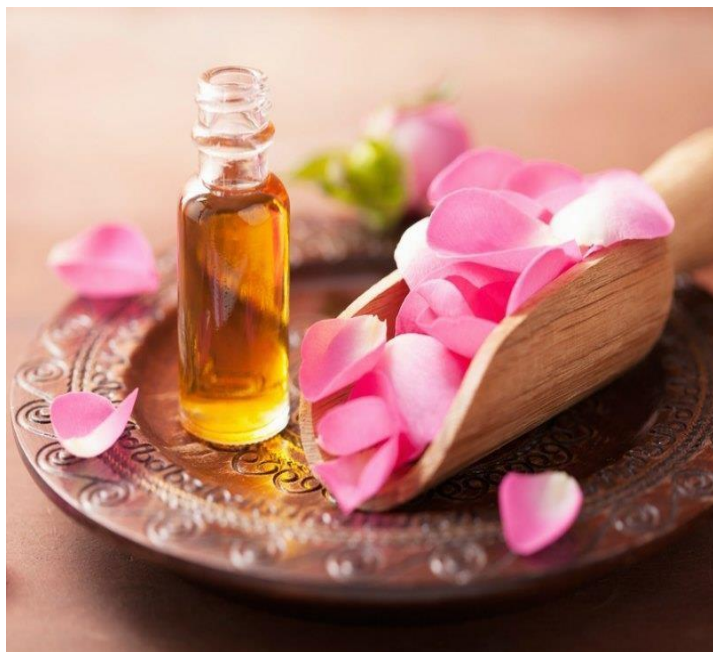
2.1.5.TURMERIC:



Dig.no.5:Turmeric.

- I. **Synonym**- Haldi.
- II. **Family**- Zingiberaceae.
- III. **Chemical constituents**- Curmin , Dimethoxy Curmin.
- IV. **Use**- antibacterial.

2.1.6. ROSE OIL:



Dig.no.6: Rose oil.

- I. **Synonym** – Attar rose.
- II. **Family** – Rosaceae.
- III. **Chemical constituents** – Citronellol, linalool.
- IV. **Use** – Flavouring agent.

2.2. Equipment:

TABLE No.2 : Equipment's for herbal soap.

Sr. No	Equipment's
1	Immersion blender.
2	Soap mould.
3	Thermometer.
4	Measuring lye.
5	Mixing lye.
6	Spatula.

3. METHOD OF PREPARATION:

3.1. Selection Of Herb :

The herb used in formulation is aloe vera. Aloe vera ,was selected on the basis of documented literature.

3.2. Collection and Authentication of plant:

The herb used in formulation was collected from the garden.

To formulation and characterization of herbal soap using aloe vera extract.



Pre formulation of antiseptic aloe vera soap.



Formulation and evaluation of antifungal soap of aloe vera extract.



Fabrication and evaluation of poly herbal soap via utilizing variety of herbal extracts.



Formulation and evaluation of herbal soap by using natural ingredients by simple method.

Fig No.1: Method of Preparation.

4. FORMULA:

TABLE No.3 : Formula for herbal soap.

Sr. No.	INGREDIENTS	QUANTITY TAKEN [100gm]	QUANTITY GIVEN [30gm]	USE
1	Aloe vera extract.	5.0 ml	2.5ml	Anti-aging.
2	Bees wax.	75 gm	23gm	Soap base.
3	Neem oil.	2.0 gm	1.0gm	Antibacterial.
4	Honey.	1.0 ml	0.5ml	Anti-aging.
5	Turmeric extract.	0.5 ml	0.30ml	Antibacterial.
6	Rose oil.	Q.S	Q.S	Flavouring,Moisturizing agent.

5.FORMULATION:

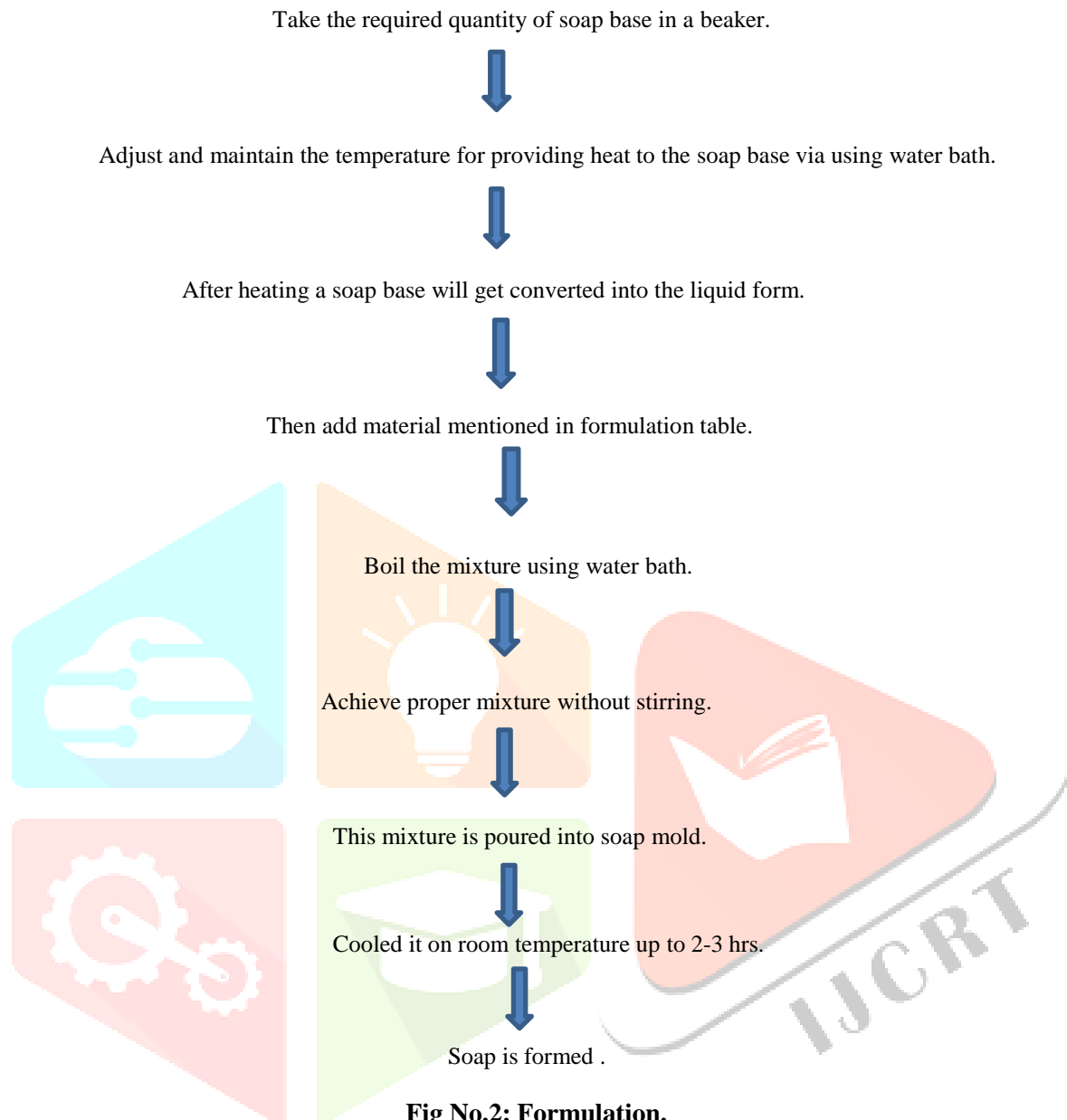


Fig No.2: Formulation.

Take the required amount of beeswax in a beaker and adjust and maintain the temperature providing heat to the beeswax using water bath. Then the beeswax get converted into the liquid form. Then add the neem oil, aloe vera, honey, turmeric. Boil the mixture by using water bath, to achieve proper mixture in the absence of stirring. Then add the rose oil to add fragrance. Then this mixture is poured into the soap mold and allow to cool the soap on room temperature, up to 2-3 hours. After 2-3 hours soap will be eventually formed ⁽¹⁹⁾.



IMG .1. FINAL FORMULATION OF HEARBAL SOAP.

6.EVALUATION :

6.1. pH:

The pH was determined by using pH paper, the pH was found to be basic in nature.

6.2. Foam Retention:

25 ml of the one percent soap solution was taken into 100ml graduated measuring cylinder. The cylinder was covered with hand and shake 10 times. The volume of foam at 1min interval for 4 minutes was recorded ^(20,21).

6.3. Determination of percentage free alkali :

A conical flask was filled with around 5gm of sample and 50ml of neutralized alcohol. It was heated for 30 minutes on a water bath, cooled and 1ml of phenolphthalein solution was added. It was then titrated with 0.1 N HCL immediately ⁽²²⁾.

6.4 .Acceleration stability testing:

The produced PHF was subjected to accelerated stability testing at room temperature for one week before being investigated at 50°C for three months. On the 0th, 15th, 20th, 30th, 40th, 50th, 60th, 70th, 80th, 90th, days the PHF were stored at room temperature and monitored ⁽²³⁾.

6.5. Foam height:

1gm of sample soap was taken and dispersed in 50ml distilled water .It was then transferred in a measuring cylinder ,and the volume was made up to 100ml and measured the height above the aqueous volume ⁽²⁴⁾.

6.6. Alcohol Insoluble matter:

In a conical flask ,5gm of sample was taken .To this ,50ml of worm ethanol was added and it was shaken vigorously ,until the sample was dissolved completely .The solution was filtered through a tared filter paper along with 20ml warm ethanol and dried it at 105°C for 1hr .The weight of dried paper was noted ⁽²⁵⁾.

6.7. Moisture content:

The moisture content was determined using the formula

$$\% \text{ Moisture content} = \frac{\text{Initial weight} - \text{final weight}}{\text{final weight}} \times 100 \text{ (25)}$$

7.RESULT AND CONCLUSION:

7.1 .Result:

The pH of the soap were tested. The pH of the soap was found to be 8 with pH strip. Remaining parameter such as foam height, foam retention, percentage free alkali, alcohol insoluble matter was also determined.

TABLE NO . 4. Physicochemical properties:

Sr.no.	Parameters	Result
1	Formulation	Soap.
2	Appearance	Good.
3	Ph	8.
4	Foam height	2.5cm.
5	Foam retention	1 cm per minute

7.2. Conclusion:

The aqueous extracts of the plant materials show the potential in soap formulation. the herbal ingredients used in formulation showed significant activities such as moisturizing, anti-aging, soothing, anti-acne, anti-bacterial. This soap is further standardized by evaluating various physicochemical parameters. The formulated soap showed considerable commercial standard, also considerable antibacterial activity and all the other parameter were good. All performed test are found to be satisfactory. The formulation has been determined safe and can be used as promising alternative to commercial chemical containing skin whitening soap.

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