



International Journal of Research in Pharmacy and Allied  
Science (IJRPAS)

Published by Ideal Publication

Available at <https://idealpublication.in/ijrpas/>

## Formulation and Evaluation of Herbal Cold Cream by using Aegle marmelos

Harsha S Suryawanshi\*, Ms. Komal Sonawne, Mr. Rahul Tadvi, Mr. Roshan chaudhari

Department of pharmaceutics, PSGVPM's College of Pharmacy, Shahada.

### Article History

Received: 23/05/2023

Accepted: 08/06/2023

Published: 01/07/2023

### Corresponding Author:

Harsha S Suryawanshi

### Email ID:

harshasuryawanshi0802@gm  
ail.com

### Abstract:

Due to its many therapeutic characteristics, aegle marmelos (L) correa, often known as Bael or Bilva and a and the members the Rutaceae family, is frequently utilised in traditional Indian practices. It is also discuss in annicient literature including Rigveda, yujarveda, athravavada, charak shamita and sushruta samihita how to employ plants to treat a variety of illness. ingredients that fall under the organic category are found in organic cold cream. Natural cold cream include ingredient that fall within the natural category. The formulation of cold cream we herbal ingredients such as aloe vera, tulsi, aegle marmelos, sandalwood powder. Then we formulate the cold cream. After formulating the cold cream. Then we performed evaluation test that is physical parameters, PH determination, viscosity, homogeneity, irritancy test, microbial test, spreadability test.

**Keywords:** cold cream, Bael, aegle marmelos,

### INTRODUCTION

Due to its many therapeutic characteristics, aegle marmelos (L) correa, often known as Bael or Bilva and a and the members the Rutaceae family, is frequently utilised in traditional Indian practices. Hindus rever aegle marmelos and offer them in prayers to the god Lord Shiva and Parvati, giving the tree the name "Shiva duma" (the tree of Shiva). The Eastern Ghats and central India are where the bael tree originated. Additionally native to the Indian subcontinent, it can be found primarily in tropical and subtropical areas.<sup>[1]</sup> one of the most significant Indian medicinal plant is known to Bael. More than 100 phytochemicals substance, including phenols, flavonoids, alkaloids, cardiac glycosides, saponins, terpinods, steroids, and tannins, have been isolated from diverse plant sections. It is generally recognised that these substances have biological and

pharmacological efficacy against a number of chronic diseases, include cancer, cardiovascular diseases, and gastrointestinal disorders. Crude extract of this plant has been shown to have antioxidant, anti ulcer, antidiabetics, anticancer, anti inflammatory, and antimicrobial action on a variety of animal models. The aegle marmelos plant has medical properties in all of its parts, including the fruit, stem, bark, and leaves, which are used to cure a variety of eye and ailments. One of the plant sections with the largest concentrations of bioactive chemical, which are produced as secondary metabolites, is the leaf. The use of Bael for qualities like moisturization in exterior care, however, are not well documented. Therefore, the objective of current study was assess the phytochemical potential and moisturising ability of aqueous and chloroform leaf extract from aegle marmelos.<sup>[2]</sup> oil and water (o/w) or water in oil (w/o) type semisolid emulsion that are meant for external application are what are reffered to as cream.<sup>[3]</sup> cream is categories as an emulsion of water and oil. It is applied to the outermost or most superficial of the skin, and its main benefit is that it longer application site. The purpose of the skin cream is to protect the skin from various environmental factors, including weather, and to provide calming effect. There are various kinds of cream, including hand, body, cleansing, cold, foundation, disappering, night, and massage creams. For thousands of years, people have used sources of pharmaceutical chemicals. Humans use a variety of plant and product made from plants to treat and relieve a wide range of physical and mental illness. These plants are employed in Tibetan, Chinese, Ayurveda, and uninani and siddha medicine. It is also discuss in annicient literature including Rigveda, yujarveda, athravavada, charak shamita and sushruta samihita how to employ plants to treat a variety of illness.<sup>[4]</sup>

### Collection of plant material-

#### 1. Aloe Vera-

Name of drug- aloe Vera

Family- Aspodelacea

Biological source- Dried latex of leaves

Biological name- aloe barbadensismiller

Therapeutic use- A number of beneficial effects of aloe Vera including immunomodulatory, wound and burn healing, hypoglycemic, anticancer, gastro-protective, antifungal and antiinflammatory properties.

These polyphenols, along with a number of other substances in aloe Vera, aid in preventing development of specific bacterial that can result in diseases in people. The antibacterial, antiviral, and antiseptic qualities of aloe Vera are well documented. Because of this, it might aid in wounds healing and the treatment of skin conditions. The topical gel made from Aloe Vera is frequently used to cure sunburn. It has the potential to offer additional health advantages, particularly because of its antioxidant characteristics. Aloe Vera may enhance your skin, dental, oral and digestive health, according to preliminary research.

#### • Benefits of aloe Vera on face-

Moistrize the skin.

Reduced infections and acne.

## 2. Tulsi-

Name of drug-Tulsi

Family- Lamiaceae

Biological name: -Ocimumtenuiflorum

Biological source- ocimum species like ocimum sanctum L and ocimumbasilcum., Among other, have fresh and dried leaves.

Therapeutic use- treat skin issues like blackheads, acne, and early ageing. Amla atomic composition.

Tulsi help treat fever. Blackheads, acne and accelerated ageing are among condition that can be treated with Tulsi leaves. Insect bites can be treated with Tulsi. Furthermore, fever and heart problems are treated with Tulsi. In addition, Tulsi is utilised to treat respiratory issues.

• Benefit of Tulsi on face-

Face acne.

Support healthy skin aging.

Reduced pigmentation.

## 3. Sandalwood-

Sandalwood paste is perfect for skin treatment because of its medicinal properties and peaceful smell. Sandalwood has comparable cleaning and whitening properties. But they are kinder to the skin on the face because it is more delicate there. Due to it's high antioxidant content and ability to counteract the harm done by free radicals, sandalwood aids in wrinkles prevention. As a result, sandalwood has been utilised as a medicine for anti- aging from the drawn of time. Because it is an astringent, it can cause very little contraction in the soft tissue, which soothes and tighten the skin and minimise the visibility of pores. This make it a crucial component of aftershave products as well. In addition to preventing infections in regions where there are pimples, cuts, or superficial wounds, sandalwoods antibacterial properties are also help keep the skin clean.

• Benefits of sandalwood powder-

Cooling on face.

Tanning and sunburn.

For wrinkles.

## 4. Aegle marmelos-

Kingdom- plantae

Clade- trichophytes

Family- Rutaceae

Subfamily- Aurantioideae

Genus- *Aegle*<sup>[5]</sup>

Species- *A. Marmelos*

Binomial name- *Aegle Marmelos*

Synonyms- *Belou marmelos* (L) *A. Lyons*, *crateva marmelos* L.<sup>[6]</sup>

*Aegle marmelos* is a small to medium- sized tree or dedicious shrub that can grow up to 13 meter(43 feet) tall, with slender branches that droop and open, uneven crown.<sup>[7]</sup> due to it's numerous therapeutic characteristics, *aegle marmelos* (L.) *Correa* ( *A. Marmelos*), also as *Bael* and a member of *Rutaceae* family, has been utilised extensively in indeginous system of Indian medicine. Although *A. Marmelos* is widely distributed throughout the Indian peninsula and in celyon, Bruma, Bangladesh, Thailand, and Indo China, it is native to Northern India.<sup>[8]</sup> it is medium to large sized, armed, dedicious tree with axillary leaves that are 2.5 cm long and alternate trifoliate leaves. It's flowers are brief and it's fruit are globular.<sup>[9]</sup> *Aegle marmelos* has been reported to contains several phytocontistituent mainly *marmenol*, *marmin*, *marmelosin*, *marmelid*, *psoraïen*, *alloimperatorin*, *rutartein*, *scopoletin*, *aegling*, *marmelin*, *fagarin*, *anhydromarmelin*, *limonene*.<sup>[10]</sup> *Tannin* (0.985%) and *riboflavin*(0.005%) concentrations have been found by *Yadav et al.*<sup>[11]</sup> A PR-HPLC was used to separate and quantify a number of organic acids, including *oxalic* , *tartaric acid*, *malic* and *ascorbic acid*. The *bael* plants is a great treatment for skin anomalis because it has anti- bacterial, antifungal, and anti-inflammatory qualities. *Bael oil* and *Bael leaf extract* eliminate dangerous fungi that can result in minor to serous skin infections. The treatment of skin rashes and itchy skin bumps might also be advantageous. *Bael* natural and moderate astringent characteristics are found in its roots, bark, leaves, and fruit which also includes anti- inflammatory, antibacterial, antiviral and antifungal properties. With all of these powerful qualities, this magnificent fruit balance an unbalanced pitta dosha and reduces skin swelling.

➤ Extraction of *Aegle marmelos*-

Firstly collect leaves of *aegle marmelos*. Then wash with distilled water. Clean the leaves. Then this leaves grind in grinder. Then this grind paste filter with filter paper. Before the use this extract of *aegle marmelos* boiled it and then used this extract.

5. *Borax*-

Molecular mass- 381.37 g/mol

Boiling point- 1575°C

IUPAC ID- *sodium tetraborate decahydrate*

Melting point- 743°C

Density- 1.73 g/ cm<sup>3</sup>

In numerous cosmetic good like cream, gel and lotions, *borax* combined with known for being used in hand soap to help to remove grease and lubricant from hands. *Borax* is the ideal components for cleanser and toners because to its alkaline nature. *Borax* can be used as emulsifier, buffering agent or preservatives in cosmetic good such as creams, shampoo, gel, lotions, bath bombs, scrubs. *Borax* is components in slime, a goopy substance that many children like playing with, which is a mixture of glue, water, and other ingredients.

Almost all skincare products have borax as one of their ingredients, from creams and body lotion to shampoos, bath bombs. With its mild and antibacterial character, quite a few natural cosmetic products tend to contain borax as an essential ingredient as well.

#### 6. Beeswax-

Ability to defend against the irritants when applied to skin, beeswax can serve as a layer of defence. It can shield skin from harsh weather and environment pollutants. Beeswax can prevent moisture from evaporating from the hair, in addition to soothing and moisturizing the hair. In the skin beeswax can form a layer of protection. It also attract water since it is a humectants.

#### 7.Liquid paraffin-

The highly refined mineral oil is also known as liquid paraffin, also known as paraffinum liquidum or Russian mineral oil, is used in cosmetic and medicine. Liquid paraffin used for cosmetic and therapeutic purposes should not be confused with paraffin (also known as kerosene) used as fuel. It is an oily, clear, colourless liquid made up of saturated hydrocarbon that comes from petroleum.

#### METHOD OF PREPARATION-

The formulation of cold cream can be prepared by adding to different phases which is given as follows:

Phase 1:

Firstly melt the beeswax and liquid paraffin in a beaker and maintain the the temperature upto 75°C (oil phase)

Phase 2:

In a beaker add borax, aegle marmelos, glycerin, tulsi, sandalwood powder, aloe vera, methyl paraben, Rose water heat it up to 75°C (water phase).

The phase 1(oil phase) add into the phase 2 (water phase) with vigorous stirring until the creami texture is formed and it's get cold.

Table no 1: Formulation table

Ingredients	Quantity
Beeswax	3gm
Borax	1gm
Liquid paraffin	4ml
Glycerin	3ml
Aegle marmelos	2ml
Aloe Vera	0.10gm
Tulsi	1ml
Sandalwood powder	2.5gm
Methyl paraben	Q. S
Rose water	3ml
Water	Q. S

## Evaluation of cold cream

### 1. Physical properties-

The cream was observed for colour, odour, and appearance.<sup>[12, 13]</sup>

### 2. Washability-

The cream wash applied on hand and then observed it.<sup>[12, 13]</sup>

### 3. PH Determination-

In order to calibrate the PH meter, normal buffer solution was used. A digital PH meter was used to weight 0.5 gm of cream, dissolve it in 50 ml of distilled water, and determine the PH value.

### 4. Viscosity-

A Brookfield viscometer is used to measure the cream's viscosity at 100rpm ( resolution per minute) with needle number.

### 5. Spreadability test-

The area to which the topical application distributes after being applied to the skin's affected areas is referred to as spreadability. The herbal formulation medicinal effectiveness also depends on how widely it spread. Determining the prepared formulation's spreading capacity is therefore essential. A thin layer of uniform thickness was Obtained for the measurements by pressing about 3gm of cream between two glass slides. The spreadability of the prepared formulation can be calculated using the following formula:

$$S = M \times L/T$$

Where,

S= solubility.

M= weight placed on upper glass slide.

L= length of glass slide.

T= Time taken.

The measurements where made in triplicate for the findings, and the average of these reading was recorded.

### 6. Irritancy test-

During tests, the cream's formulation exhibits no redness, edema, irritation, or inflammation. The cream's formulation is risk free to use.

### 7. Microbial tests-

The formulated cream is rest for 24 hours at room temperature and then check under microscope.

### 8. Homogeneity test-

The homogeneity of formulated cream was judge by visual appearance and touch.

## RESULT AND DISCUSSION

### 1. Physical properties-

The physical properties of formulated cream was observed for colour, odour and appearance.

Table no 2: physical properties

Sr no	Properties	Result
1	Colour	Crimish colour
2	Odour	Pleasant
3	Texture	Smooth

### 2. Washability-

Washability test is carried out by appling the small amount of cream on hand and then washing with tab water.

### 3. PH Determination-

PH of cold cream was found to be range in 5 which is good for skin.

### 4. Viscosity-

Viscosity is check by Brookfield viscometer.

### 5. Spreadability-

The spreadability show that the formulated cold cream has good spreadability property. The range of spreadability was found to be 24.4 g. cm/s.

### 6. Irritancy test-

When the formulated cold cream wash applied on hand there is no produce irrigation, edema, and inflammation during the studies. The cream is safe for use

### 7. Microbial test-

Take a small amount of cold cream place in a slide. Then observe under microscope. There is no observe any microorganism.

## CONCLUSION

According to aforementioned findings, the cream formulation demonstrated good consistency and spreadability. During the research study period, there is no phase separation and the substance is homogenous, PH- neutral, and non greasy. The herbal cold cream is safe to use because it was made from herbal extract, according to the study mention above. Under the belief that they are safer and have fewer adverse effects than synthetic ones, natural therapies are more widely accepted. Given that the herbal cold cream is made from herbal extract, it is safe to use, according to the study mentioned above. Under the belief that they are safer and have fewer adverse effects that synthetic ones, neutral therapies are more widely accepted.



**REFERENCES**

1. Farina mujeeb et al; Phytochemical Evaluation, Antimicrobial activity, and Determination of Bioactive Components from leaves of Aegle Marmelos; Biomed Research International; Vol 2014;
2. Shailesh Kumar et al; Phytochemical Evaluation of leaf extract of Aegle Marmelos; International Journal of Development Research; Vol 3;2013;30
3. Manisha Yogesh Sonalkar, Sachin Annasaheb Nitave. Formulation and evaluation of polyherbal cosmetic cream. World J Pharm Sci 2016;5:772-9.
4. Maru A D, Lahoti S R. formulation and evaluation of moisturizing cream containing sunflower wax. Int J Pharm Sci, 11: 54-9; 2018.
5. "genus aegle" Germplasm Resources information network (GRIN) online database. Retrieved 20 jun 2017.
6. a b c d e f g "Taxon: Aegle marmelos (L) correa". GRIN Global, National plant Germplasm system, US development of agriculture. 19 September 2017, Retrieved 16 march 2018.
7. Gardentr, Simon(2007). Field guide to forest trees of Northern Thailand. Bangkok: kobfai publishing project. P. 102. ISBN 978- 974-8367-29-3.
8. Brijesh S, Daswani P, Tetali P, Antia N, Birdi T. Studies on the antidiarrheal activity of aegle marmelos unripe fruit: validating it's traditional usage. BMC complement Altern med, 2009; 9 (1): 47.
9. Das SK, Roy C. The protective role of aegle marmelos on aspirin- induced gastroduodenal ulceration in albino rat model: a possible involvement of antioxidant. Saudi J Gastroenterol . 2012; 18(3): 188-194.
10. Bansal Y, Bansal G. Analytical methods of standardisation of aegle marmelos: A review . J Pharm Edu Res. 2011; 2(2): 37-44.
11. Yadav N, Taygi G, Jangir DK, Mehrotra R. Rapid determination of polyphenols, vitamins, organic acids, and sugar in aegle marmelos using reverse phase-high performance liquid chromatography J Pharm Res. 2011; 4(3) : 717- 719.
12. Panda, H. (2000). Herbal cosmetics hand book National Institute of industrial Re.
13. Mali, A. S. , karekar , p., and yadav A. V. (2015). Formulation and evaluation of multi purpose herbal cream. International journal of science and research, international journal of science and research, 4(11), 1495-1498.