



Formulation And Evaluation Of Bael Fruit Peel Off Mask

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ABSTRACT:

Here we are formulating the bael fruit peel off mask, these peel off mask having cleansing as well as soothing properties. In this formulation, bael fruit pulp powder is acting as the active ingredient. It adds to its value by enhancing the role of peel off mask by absorbing dust particles and moisturizing the skin. Excipients used in the formulation polyvinyl alcohol, glycerin, Polyethylene glycol, Ascorbic acid, Methanol etc. Different formulations were taken and evaluated for the various parameters like spreadability, pH, stability studies, peeling time etc. The formulation evaluated for the parameter stands in standard range.

Skin preparations include gel lotion, ointment, cream, peel off mask etc. Peel-off masks are dosage forms that are delicately applied to the facial skin surface and then peeled off after a few minutes of its application. The major advantage of herbal cosmetics is that they are non-toxic and decrease allergic responses.

It is used as a cure to treat face skin problems such as tightening of skin, moisturizing of skin, removing tan from the skin, glowing of skin, and removing dirt from skin pores. The active ingredients in this composition include bael fruit pulp powder and aloe vera. Using it as an active component in a peel off mask increases its value by improving the peel off mask's role in absorbing dust particles and moisturizing the skin.

KEYWORDS: Bael fruit, film forming, peel mask, skin care.

INTRODUCTION

Skin is a very sensitive and protective layer of the human body, which is exposed to environmental pollution hence, it is very essential to protect the skin. Therefore, it is necessary to take care of facial skin to overcome the problem associated with it, one of which is taking care of facial skin by using face masks. The benefits of face masks include tightening of skin, moisturizing and nourishing facial skin. Aegle Marmelos(Family: Rutaceae) is a widely available plant in various places mostly in India, Sri-lanka, Nepal, and Bangladesh etc. Plant is familiar with several names like Bael, Bengal quince, Golden apple, Wood apple, etc. This drug includes a variety of phytochemicals such as alkaloids, tannins, essential oils, gums, resins, coumarin, and polysaccharide, which makes it effective for a variety of diseases as well as various studies on bael reveal that it acquires a variety of nutritional elements like a large group of phytochemicals which includes phenolic acids, flavonoids, alkaloids, tannins, terpenoids and coumarins. Other than these, amino acids, fatty acids, a wide range of organic acids, minerals, carbohydrates, vitamins, fibers make bael a highly nutritious fruit with immense health benefits. Each part of this plant such as its fruits, stem, bark, and leaves possesses medicinal properties and is used for treating various eye and skin infections. Major constituents of bael fruit are Xanthotoxol, Imperatorin, Marmelin, Marmesin, Psoralen, Allo-imperatorin. Peel-off mask is applied as a liquid film that thinly spreads with fingers on the face and peels off as a thin plasticized film and done at room temperature and cold temperature. The skin is the human body's most sensitive and protective covering. Peel-off masks were created specifically for cosmetic treatments used in beauty salons. Because our formulation is ready to use, we apply our mask directly to the skin. Peel of mask may be used as a therapy for face skin issues such as black heads, dark spots, dead skin, and white heads, and it is very useful for opening blocked pores, removing debris, and closing them. Its primary function is to boost metabolism due to its occlusive impact on the skull. The most crucial quality of this mask peel is its ability to absorb moisture. Herbal formulations, as opposed to synthetic formulations, are simple, economical, have fewer side effects and it protect the skin from environmental pollution, the The moisturizing ingredient provides skin smoothing properties. Get rid from dead skin cells. Sunburn treatment for acne Rights deterioration Aloe Vera is an excellent moisturizer for the skin. Aloe Vera rejuvenates the skin, moisturizes it. Aloe Vera contains antibacterial properties, making it perfect for treating acne and pimples.

Benefits of applying peel off face masks:-

- It nourishes the skin and aids in the reduction of acne and blackheads.
- The natural elements in it assist to decrease acne and blackheads.
- Face masks often remove dead skin cells.
- These face masks have a calming and relaxing effect on the skin, and they assist to restore the skin's lost shine and radiance in a short period of time.

Need of the study:-

Removing dirt bacteria debris and overall impurity is essential to have balanced toned healthier skin

- Tan removal
- Glowing of skin
- Moisturizing of skin
- Remove black head and white heads.

Novality of Project:-

- Some new drugs are added In the our formulation like aloe Vera, turmeric, orange peel powder.
- In our reference bael fruit only treat skin infections.
- But we added some herbal ingredients in this peel of mask.
- Aloe Vera helps the moisturize skin
- Turmeric deals with dull skin. Reduces dark circles.
- Orange peel powder it helps in toning your skin.
- It helps to lighten the skin naturally.

AIM

Formulation and evaluation of Bael fruit peel off mask

OBEJECTIVES:

The Aim of the study was obtain a peel of facial mask preparation from Bael fruit.

- Having a balanced, toned, and healthier skin requires this peel off mask formulation and development to operate by eliminating dirt, germs, debris, and general impurity.
- This peel-off mask is designed to remove the top layer of skin while sloughing away dull dead skin cells. This leaves skin feeling smooth and looking fresh and glowing. The purpose of this peel off

mask that when the mask dries off on your skin and becomes tighter, it also extracts dirt, bacteria, blackheads and whiteheads.

- This mask contains orange peel powder, which exfoliates the skin by removing dirt, pollutants, and dead skin cells.

PLANT PROFILE

Bael Fruit:



Fig. 1 Bael Fruit

Synonyms: Indian Bel

Biological source: Bael fruits consist of ripe or un-ripe or irregular piece of *Aegle Marmelos* corr.

Family: Rutaceae.

Chemical Constituents: Chief constituent of the drug is **marmelosin** A, B, & C (0.5%) which is furocoumarin, marmesin, marmelin, xanthotoxol, imperatorin.

Uses: It used to treat facial skin related problem, antibacterial, antimicrobial, antifungal, antipyretic, antiulcer, radioprotective, diarrhea, and dysentery etc.

Scientific Classification:

Botanical name	Bael fruit
Kingdom	Plantae
Order	Sapindales
Family	Rutaceae
Subfamily	Aurantioideae
Genus	<i>Aegle correa</i>
Species	<i>Aegle marmelos</i>
Common name	Bael patra, bael
Division	Magnoliophyta
Class	Magnoliopsida

Table No. -1

Orange Peel



Fig. 1 Orange Peel Powder

Synonyms: Citrus vulgaris

Biological Source: The orange peel is the fresh or dried outer part of the pericarp of citrus aurantium linn / citrus sinesis linn

Family: Rutaceae

Chemical Constituents: Limonene (90%), citric acid, volatile oil(1 to 2.5 %), aldehyde citral, vitamin c.& pectin, citronellal

Uses: Flavouring agent perfume, bitter tonic, stomachic, and carminative, aromatic etc.

Scientific Classification:

Botanical name	Citrus sinensis
Kingdom	Plantae
Order	Rosidae
Family	Rutaceae
Subfamily	Aurantoidae
Species	Sinesis/ citrus sinesis
Genus	Citrus
Bionomial name	Citrus sinesis
Division	Magnoliophyta
Class	Dicotyledons

Table No. – 2

Turmeric Powder:**Fig.3 Turmeric Powder**

Synonyms: Indian saffron, haldi.

Biological source: Turmeric consists of dried as well fresh rhizome of plant known curcuma longa linn

Family: Zingiberaceae

Chemical Constituents: Curcumin, curcuminoids, cymene, turmeron, borneol.

Uses: It used as antiseptic, antioxidant, condiment, expectorant, for headache, colouring agent, cancer; improve liver function arthritis, lung function, cardiovascular protection etc.

Scientific Classification:

Botanical Names	Curcuma longa
Kingdom	Plantae
Order	Zingiberales
Family	Zingiberaceae
Genus	Curcuma
Species	Curcuma longa
Class	Liliosida
Division	Mangoliphyta
Bionomial name	Curcuma longa

Table No. -3

Aloevera



Fig. 4 Aloe Vera

Synonyms: Aloe, ghrīt kumara.

Biological source: Aloe is the dried juice of the leaves of aloe barbadensis miller known as curaco aloes.

Family: Liliaceae/ Asphodelaceae.

Chemical Constituents: Anthracene glycoside (11-40 %), barbolin or aloin, isobarbaloin, aloe- emodin, resin, glycoside.

Uses: Laxative, purgative, ulcer & burn. Found many uses in cosmetic like hair conditioner, face wash, moisture base cleanser, clear acne, pimples, remove dead cells, for glowing skin and provide the nourishment to skin etc.

Scientific Classification:

Botanical Names	Aloevera
Kingdom	Plantae
Order	Liliales
Family	Liliaceae/asphodelaceae
Genus	Aloe linn
Species	Aloevera
Class	Liliosida
Division	Magnoliophyta
Bionomial name	Curcuma longa

Table No. -4

MATERIAL AND INSTRUMENT

Formulation table -

Sr. No.	Material	Quantity		
		F1	F2	F3
1	Bael fruit powder	1.50g	2.50g	2.50g
2	Aloevera	3ml	5ml	5ml
3	Orange peel powder	1g	1g	1g
4	Turmeric	0.1g	0.1g	0.1g
5	Polyvinyl alcohol	23g	23.33g	23.33g
6	Glycerin	25ml	25ml	25ml
7	Polyethylene glycol	8.3ml	8.3ml	8.3ml
8	Polysorbate (tween 20)	0.8ml	0.8ml	0.8ml
9	Methanol	1.66ml	1.66ml	1.66ml
10	Ascorbic acid	0.16g	0.16g	0.16g
11	Distilled water	100ml	100ml	100ml

Table No. - 5

Sr. No.	Instruments
1	Beaker
2	Stirrer
3	Thermometer
4	Water bath
5	Measuring cylinder
6	Weighing balance
7	Sieve no.32
8	Mortal pestle

Table No. -6

METHOD

Preparation of peel face mask

1. Take bael and orange fruit peel out off them, after that dried the peel of both fruits after drying grinded it by using domestic mixer
2. The powder were passed through the suitable sieve no.- 32 to make a fine powder
3. All herbal powder and ingredient weighted accurately by using digital weighing balance further process follow according to **phases**

4. Phase 1

Take 100 ml of beaker in which the add of 23.33gm of polyvinyl alcohol (PVA) into 100 ml distilled water and heat it until the polyvinyl alcohol get soluble with a constant vigorously stirring further allowed mixture to cool down.

5. Phase 2

Take 8.3 ml of polyethylene glycol (PEG) and 25ml glycerin added into the phase 1 mixture at 40 degree Celsius temperature and mix well.

6. Phase 3

Take 0.83ml of (tween 20) and in which add 0.16gm of ascorbic which is pass through # sieve no. 32

7. Phase 4

Take 1.66ml methanol and distilled water with 0.16gm ascorbic acid in phase 3 mixture and mixed well.

8. Phase 5

Take bael Powder 2.5gm and turmeric powder 0.1gm and orange peel powder 1gm and then add 5ml of aloe Vera gel.

9. After addition of whole ingredient stirr continuously until the smooth dispersion is obtained.

10. Transfer the formulation into the suitable container.



Fig. 5A Prepared formulation



Fig. 5B Apply peel of mask



Fig. 5C after 15 minute



Fig. 5D At the removal of mask

Phytochemical test

Alkaloid Test for Bael Fruit

1. Mayers test- Powder extract + Mayers reagent = Creamy white ppt
2. Wagners test- Powder extract + Wagners reagent = Reddish brown ppt
3. Hagers test- Powder extract + Hagers reagent = Yellowish ppt
4. Dragendroffs test- Powder extract + Dragendroffs reagent = Orange ppt



Fig. Alkaloid Test

EVALUATION PARAMETER

1. Physical evaluation

We have done the visual inspection of product and observed that it was

- Colour – pale yellow
- Odour –characteristic
- State – semisolid
- Consistency – smooth and thick

2. Physiochemical evaluation

3. PH

Value of peel off mask was determined by using digital PH meter and PH value of bael fruit

peel off mask was found to be 7.76

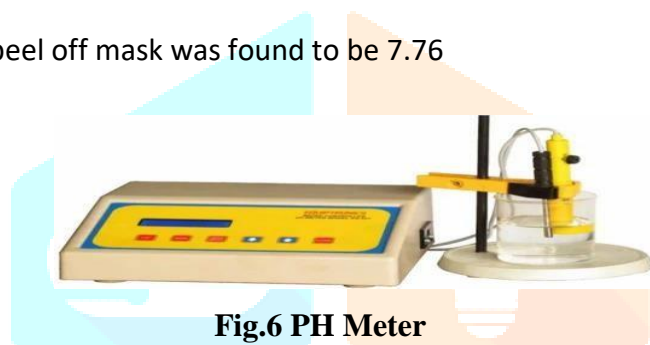


Fig.6 PH Meter

4. Spreadability

A value 1gm peel off mask/preparation was placed on butter paper and on the preparation put watch glass. After 5gm weight was placed on watch glass for 2 min. to compress the sample to uniform thickness and its diameter was measured.

5. Homogeneity

The homogeneity test is used to determine particle uniformity and even particle dispersion on the preparation. They were examined visually for their appearance and the existence of any aggregates by applying the formulation on glass or transparent material.

6. Drying time

The drying time test was carried out by equally putting a mask on the back hand. A timer was used to time how long it took for the preparation to dry.

7. Irritation test

The irritant test is performed by putting a prepared peel off gel mask to the skin of the hands. The mask is put on the back hand for 15 minutes to observe the irritation reaction such as swelling, itching, and

the appearance of redness on the skin.

8. Peel Test or Peeling time

The peel gel was applied on the face and over hand and surface uniformly. Peel was allow to dry accordingly to studies the ideal drying time of the peel able the mask gel 15-20. Drying time of the gel mask was determining using stopwatch. The drying time peel off mask is 17 minutes.

9. Washability test

After applying the formulations to the skin, the easy and extent of washing with water were manually assessed.

RESULT & DISCUSSION -

The prepared peel off face mask was evaluated and data was reported in table.

Sr. No	Test	Result		
		F1	F2	F3
1	Colour	Pale yellow	Pale yellow	Pale yellow
2	Odour	Characteristic	Characteristic	Characteristic
3	Consistency	Smooth	Smooth	Smooth
4	State	Semisolid	Semisolid	Semisolid
5	PH	7.76	7.70	7.76
6	Irritancy test	No irritation	No irritation	No irritation
7	Spreadibility test	Spreadable	Spreadable	Spreadable
8	Peel of test	Easily removed from skin without breaking	Easily removed from skin without breaking	Easily removed from skin without breaking
9	Homogeneity	Homogenous	Homogenous	Homogenous
10	Washability	Washable	Washable	Washable
11	Drying time	15min.	16min.	17min.

Table No. -7

Sr. No	Test for Alkaloid	Observation	Result
1	Mayers test	Creamy white ppt	Positive
2	Wagners test	Reddish brown	Positive
3	Hagers test	Yellowish ppt	Positive
4	Dragendroffs test	Orange ppt	Positive

Table No. -8

F1 ,F2,F3 Formulation were observed in pale yellow colour,PH of formulation ranging from 7.70 to7.76. The peel off test is passed, peel off mask is easily removable from the skin surface without breaking . homogeneity of formulation is appeared homogeneous,the drying time is 15- 17 min when spread on the skin surface .The F3 formulation is appeared good as compared to F1&F2 formulation which give the best results it is easily spreadable , easily washable ,no irritancy occur and it was suitable for all type of skin.

CONCLUSION

We discovered that the formulation was substantially more stable at room temperature and had good flow characteristics in our testing. Volunteers provided positive comments on the formulation of the Bael fruit dry pulp peel off mask. This composition is suitable for all skin types and causes no irritation. The comments also suggested that the formulation can improve skin cleaning by eliminating dead skin on the surface and provides a moisturizing impact to the skin. This data will be used for batch scale up and product refinement by evaluating more parameters.

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