



TRIPHALA FACE MASK FOR GLOWING SKIN (COSMETIC PREPARATION BASED ON AYURVEDIC PRINCIPLES)

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ABSTRACT

A face mask/pack is a smooth powder which is used for facial application to provide an exfoliating, cleansing, tighten, beautifying, and clarifying effect to the skin. In Ayurveda, the herbal paste is called as “Mukha Lepa” and is smeared on the face and let dry to help treat acne, wrinkles, scars and pigmentation. Triphala is an Ayurvedic herbal rasayana formula comprising of equal parts of three “fruits”: Amalaki (*Emblica officinalis*), Bibhitaki (*Terminalia bellirica*), and Haritaki (*Terminalia chebula*). Studies have found Triphala is equally as beneficial internally as well as externally. It helps to protect skin cells. The finding suggests that it may help to rebuild skin proteins and retain moisture in the skin and increase collagen formation. It was also found to reduce inflammation, oxidative injury as well as bacteria present on the skin. In this review we shall formulate a face mask with Triphala as the main ingredient which will provide anti acne and anti-inflammation benefits to the skin.

Key words: Ayurveda, Cosmetics, Anti-acne, Natural, Herbal, Triphala, Standardization, Apocotary, Skin, Remedies.

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INTRODUCTION

Biological source

1. Amalaki

Biological source: It is obtained as an edible dried ripe fruits from the deciduous tree “*Phyllanthus emblica*” of the family Phyllanthaceae.

Synonyms: Amla, Indian gooseberry, Malacca tree

Kingdom: Plantae

Clade: Tracheophytes

Clade: Angiosperms

Clade: Eudicots

Clade: Rosids

Order: Malpighiales

Family: Phyllanthaceae

Genus: Phyllanthus

Species: *P. emblica*



Organoleptic properties

Colour: the green fruit changes colour from light yellow to brick red on maturity

Taste: Sore and astringent

Odour: Odourless

Shape: Globular, obscurely four lobed

Size: 1.5 to 2.2 cm in diameter

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2. Bibitaki



Biological source: It is obtained as the dried ripe fruits from the deciduous tree "*Terminalia bellirica*" of the family Combretaceae

Synonyms: Bahera, Bayada

Kingdom: Plantae

Clade: Tracheophytes

Clade: Angiosperms

Clade: Eudicots

Clade: Rosids

Order: Myrtales

Family: Combretaceae

Genus: Terminalia

Species: *T. bellirica*

Organoleptic properties

Colour: Fruits are dark brown to black

Taste: Astringent

Odour: odourless

Shape: fruits are globular and obscurely five angled

Size: 1.3 to 2 cm in length

3. Haritaki

Biological source: It is obtained as the dried ripe fruits from the deciduous tree "*Terminalia chebula*" of the family Combretaceae

Synonym: Harde, Chebulic myrobalan

Kingdom: Plantae

Clade: Tracheophytes

Clade: Angiosperms

Clade: Eudicots

Clade: Rosids

Order: Myrtales

Family: Combretaceae

Genus: Terminalia

Species: *T. chebula*



Organoleptic properties:

Colour: fruits are yellowish brown

Taste: Astringent, slightly bitter, and sweet at the end

Odour: odourless

Shape: Ovate and wrinkled longitudinally

Size: 20 to 25 mm long and 15 and 25 mm wide

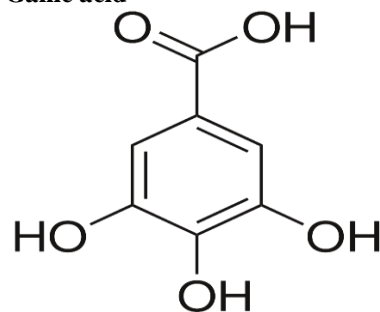
Main Active Constituents of Triphala:

It consists of four major phenolic chemical constituents, these include:

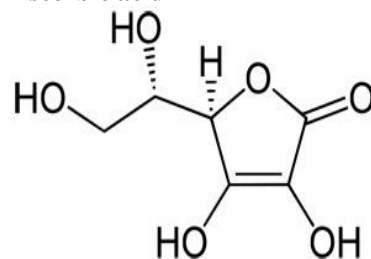
1. Gallic acid,
2. Tannic acid
3. Ascorbic acid
4. Syringic acid

It also contains an anti-oxidant flavonoid compound called Epicatechin.

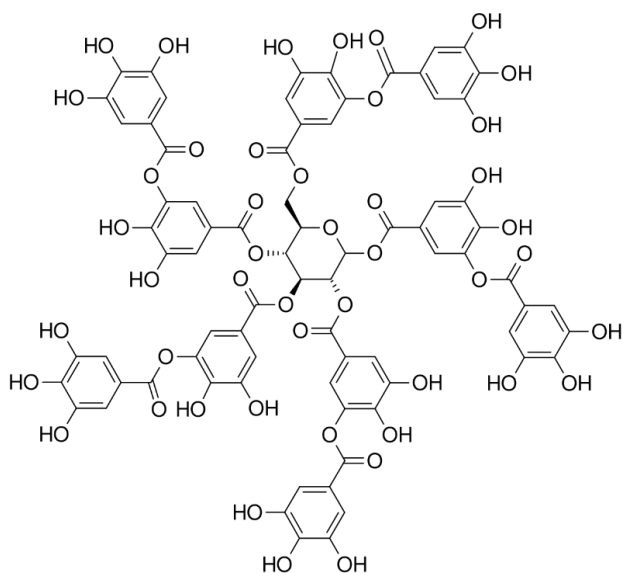
Gallic acid



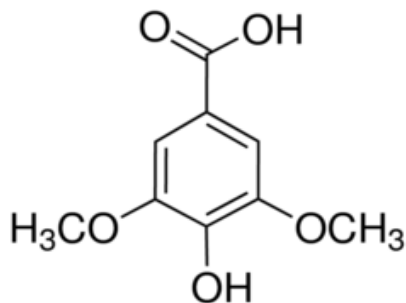
Ascorbic acid



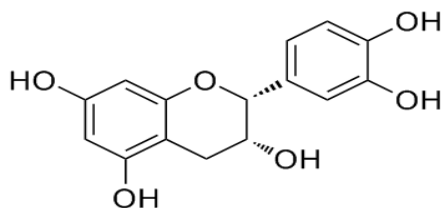
Tannic acid



Syringic acid



Epicatechin



Ayurvedic remedies with Triphala

1. With Sugar : For Acidity and treatment of ulcers
2. With hot water : Laxative
3. With honey : Kapha diseases (Cough treatment)
4. With Ghee : Pitta diseases
5. With Ghee and Honey : Eye sight promoter
6. With Rock salt : Vata diseases
7. As powder : Sensitive gums

8. As black ash : Asthma
9. As a decoction : Liver diseases
10. In oil : Non-healing ulcers
11. As a face mask : Completion promoter (Rieger MM, 2009; Millikan, Larry E, 2001)

Developments of standardization parameters for Triphala Churna

Sample No. 1: Patanjali Triphala Churna.

Sample No. 2: Shree Shree Ayurveda Triphala Churna.

Sample No. 3: Lab made Triphala churna.

Triphala churn contains mainly three ingredients as Harad or Haritaki (Chebulic myrobalans or *Terminalia chebula*), Baheda or Bibhitaki (*Terminalia bellirica*) and Amla or Amalaki (Indian gooseberry or *Emblica officinalis*)

Method to Prepare the Triphala Churna: Harad or Haritaki (Chebulic myrobalans or *Terminalia chebula*), Baheda or Bibhitaki (*Terminalia bellirica*) and Amla or Amalaki (Indian gooseberry or *Emblic aofficinalis*) collected from local market. Fine powder was made both by grinding and filtering them. All the powders were mixed properly in a ratio 1:2:4. The Triphala Churna is prepared and ready to use. For future use it can be kept into a plastic box.

Study of organoleptic characters: The polyhedral formulation is studied for organoleptic characters like colour, odour and taste using the sensory organs of our body (Khandelwal KR, 2010).

1. Ash value

Determination of Total ash: About 2 to 3 g of sample was accurately weighed in a tarred silica dish at a temperature not exceeding 450⁰C until it was free from carbon. Then it was cooled and weighed. The percentage of total ash was calculated with reference to the air dried drug.

$$\text{Total ash value of sample} = 100(Z-X)/Y\%$$

Where:

X = Weight of empty dish

Y = Weight of the drug taken

Z = Weight of dish + ash (after complete incineration)

(Z-X) gm = Weight of ash

Y gm of crude drug gives (Z-X) gm of ash

Therefore, 100 gm of crude drug gives 100/Y (Z-X) gm of the ash.

Determination of Acid insoluble ash: The total ash obtained was boiled for 5 minutes with 25 ml of dilute hydrochloric acid; the insoluble matter obtained was collected on an ash less filter paper, washed with hot water and ignited to constant weight. The percentage of acid insoluble ash was calculated with reference to the air dried drug.

Determination of Water-soluble Ash: The ash obtained in the determination of total ash was boiled for 5 minutes with 25 ml of water. The insoluble matter was collected

on an ash less filter paper and washed with hot water. The insoluble ash was transferred into a tarred silica crucible and ignited for 15 minutes at a temperature not exceeding 450°C. The weight of the insoluble matter was subtracted from the weight of the total ash. The difference in weight was considered as the water-soluble ash was calculated with reference to the air dried drug.

Determination of loss and drying: 10 g of the sample (without preliminary drying) was weighed and placed in a tarred evaporating dish. It was dried at 105°C for 5 hours and at 1 hour interval until difference two successive weighing corresponded to not more than 0.25%.

Determination of extractive values:

Determination of Water-soluble extractive: 5 g of test sample was weighed and macerated with 100 ml of chloroform water in a closed flask for twenty-four hours, shaking frequently during six hours and allowing standing for eighteen hours. It was filtered rapidly, taking precautions against the loss of solvent. 25 ml of the filtrate was taken and evaporated to dryness in a tarred flat bottomed shallow dish at 105 °C, to constant weight and weighed the percentage of water soluble extractive was calculated with reference to the air dried sample.

Determination of Alcohol-soluble extractive: Procedure for water soluble extractive was followed for the determination of alcohol soluble extractive but 90% ethanol was used instead of chloroform water (Indian Pharmacopoeia, 1996).

Qualitative Phytochemical Screening

Detection of tannins: 2-3 ml of aqueous or alcoholic extract of powders was tested carefully with various tannins test reagents as:

5% FeCl₃ solution: A deep blue-black colour indicates the test is positive.

Lead acetate solution: A white precipitate indicates the test is positive.

Bromine water: Discoloration of bromine water indicates the test is positive.

Dilute iodine solution: Transient red colour indicates the test is positive.

Detection of alkaloids: 50 mg of solvent free extract was hydrolysed with dil. HCl and filtered. The filtrates were tested carefully with various alkaloid test reagents as follows:

Dragendroff's test: To a few ml of filtrates, 1 to 2 ml of Dragendroff's reagent was added. A prominent yellow precipitate indicates the test is positive.

Wagner's test: To a few ml of filtrates, few drops of Wagner's reagent were added by the side of the test tube. A reddish-brown precipitate confirms the test as positive.

Mayer's test: To a few ml of filtrates, few drops of Mayer's reagent were added by the side of the test tube. A white or creamy precipitate if obtained indicates the presence of alkaloids (Indian Pharmacopoeia, 1996).

Determination of physical characteristics

Bulk density: It is the ratio of given mass of powder and its bulk volume. It is determined by transferring an accurately weighed amount of powder sample to the graduated cylinder with the aid of a funnel. The initial volume was noted. The ratio of weight of the volume it occupied was calculated.

$$\text{Bulk density} = w/v_0 \text{ g/ml}$$

Where,

w = mass of the powder

v₀ = untapped volume

Tapped density: It is measured by transferring a known quantity (25g) of powder into a graduated cylinder and tapping it for a specific number of times. The initial volume was noted. The graduated cylinder was tapped continuously for a period of 10-15 min. The density can be determined as the ratio of mass of the powder to the tapped volume.

$$\text{Tapped volume} = w/v_f \text{ g/ml}$$

Where,

w = mass of the powder

v_f = tapped volume.

Compressibility index/ Carr's index: It is the propensity of the powder to be compressed. Based on the apparent bulk density and tapped density the percentage compressibility of the powder can be determined using the following formula.

Or

Hausner's ratio: It indicates the flow properties of the powder. The ratio of tapped density to the bulk density of the powder is called Hausner's ratio.

$$\text{Hausner's ratio} = \text{Tapped density/bulk density}$$

Angle of repose: The internal angle between the surface of the pile of powder and the horizontal surface is known as the angle of repose. The powder is passed through funnel fixed to a burette at a height of 4 cm. A graph paper is placed below the funnel on the table. The height and the radius of the pile were measured. Angle of repose of the powder was calculated using the formula:

$$\text{Angle of repose} = \tan^{-1}(h/r)$$

Where,

h=height of the pile
r = radius of the pile

Determination of pH range: The powder sample of triphala churna was weighed to about 5g and immersed in 100 ml of water in a beaker. The beaker was closed with

aluminium foil and left behind for 24 hours in room temperature. Later the supernatant solution was decanted into another beaker and the pH of the formulation was determined using a calibrated pH meter (Harborne JB, 2017; Trease and Evans, 2017).

Table 1: Determination of Organoleptic Characters

Characteristics	Sample 1	Sample 2	Sample 3
Colour	Light yellow	Yellowish	Yellowish
Odour	Characteristic	Characteristic	Characteristic
Taste	Very bitter	Astringent	Astringent

Table 2: Ash Values

Types of ash	Sample 1	Sample 2	Sample 3
Total ash	6.65	7.45	6.35
Acid insoluble ash	2.55	3.4	3.4
Water soluble ash	2.20	4.55	3.5

Table 3: Moisture Content/ Loss on Drying

Characteristics	Sample 1	Sample 2	Sample 3
Moisture Content/Loss on drying	0.779	1.25	1.8

Table 4: Quantitative Estimation

Test	Sample 1	Sample 2	Sample 3
Test of Tannin	+	+	+
5% FeCl ₃ solution	+	+	+
Lead acetate solution	+	+	+
Bromine water	+	+	+
Dilute iodine solution	+	+	+
Test for Alkaloids	+	+	+
Dragendroff's test	+	+	+
Wagner's test	+	+	+
Mayer's test	+	+	+

Table 5: Bulk Density & Tap Density

Characteristics	Sample 1	Sample 2	Sample 3
Bulk Density	0.666	0.476	0.555
Tap Density	0.909	0.625	0.80

Table 6: Carr's Index and Hausner's Ratio

Characteristics	Sample 1	Sample 2	Sample 3
Carr's index	26.73	23.84	30.625
Hausner's ratio	1.36	1.31	1.44

Table 7: Angle of Repose

Characteristics	Sample 1	Sample 2	Sample 3
Angle of response	36.50	39.69	35.75

Table 8: Determination of pH Sample

Characteristics	Sample 1	Sample 2	Sample 3
pH	5 (acidic)	6 (acidic)	6 (acidic)

Formulation of Herbal Face Mask**Ingredients:**

1. Triphala
2. Turmeric
3. Nutmeg
4. Raw Honey
5. Rose petals

Turmeric:

Biological source: It is obtained as the dried roots of the flowering plant "*Curcuma longa*" of the family Zingiberaceae.

Nutmeg:

Biological source: It is obtained as the dried seeds of the tree "*Myristica fragrans*" of the family Myristicaceae.

Raw honey:

Biological source: It is obtained as the saccharine liquid secretions of the insect "*Apis cerana indica*" [Indian honey bee] of the family Apidae.

Rose petals:

Biological source: They are obtained as the dried petals of the flowering plant "*Rosa rubiginosa*" of the family Roseae.

Formula:

1. Triphala powder : 4.2 grams
2. Turmeric powder : 2.1 grams

3. Nutmeg powder : 4.2 grams
4. Raw honey : 15 grams
5. Rose petals : 2.1 grams

Procedure:

1. Mix all ingredients together until cream consistency is obtained.
 2. Apply to a clean face and leave on for 10-15 minutes
 3. Gently exfoliate the mixture with warm water and then wash off with water or a wash cloth
- *Slight redness on the skin indicates that there is circulation of blood.

CONCLUSION

In the present scenario, people need cure for various skin problems without side effects. Herbal ingredients opened the way to formulate cosmetics without any harmful effect. Herbal face packs are considered as sustaining and productive way to advance the appearance of skin which being able to provide physical and chemical exfoliation. Thus in the present work, It is a very good attempt to formulate the herbal face pack containing naturally available ingredients like turmeric, nutmeg, raw enzymatic honey, and rose petals. It is suggested that the prepared formulation was physico-chemically and microbiologically stable, and possessed characteristics of a standard cosmeceuticals formulation for skincare.

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