

An Indian Herb: *Emblica Officinalis* and Its Therapeutic Significance

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Abstract

Medicinal plants are the best gift of nature which play an important role in the healthcare system of developing nations and a source of medicament to heal various ailments in the world. They play a vital role in securing our health. Herbal care or traditional systems of medicine have been used since ancient times; herbs have been the source of most of the drugs. Today approximately 70% of the world's population depends on medicinal herbs. Medicinal plants contain so many chemical compounds which are the major source of therapeutic agents to cure human diseases. *Emblica Officinalis* (Amla)/Indian Gooseberry has an important position in Ayurveda- an “Indian Indigenous system of medicine”. It is a deciduous tree and the Fruit of amla is widely used in the Indian system of medicine as a diuretic, laxative, liver tonic, refrigerant, hair tonic, ulcer preventive, stomachic, restorative, antipyretic and for the common cold, and fever. Nowadays the use of herbal products has become the chief option for people everywhere because of curing treatment without any side effects.

Keywords: *Emblica officinalis*, Amla, Indian Gooseberry, health benefits.

Summary

Botanicals have been used traditionally by herbalists and indigenous healers worldwide for the prevention and treatment of many diseases. Basic scientific research has uncovered the mechanisms by which some plants afford their therapeutic effects . Belonging to the family – Euphorbiaceae is commonly known as amla in Hindi and Indian gooseberry in English. It is one of the important Ayurvedic herbs which is used since ages for the treatment of various health problems. Amla has a very high nutritive value. It is used as a medicinal herb for the treatment of diseases as well as in our daily diet in the form of pickles, murabba, sweet jams, candies, etc (2). *Emblica officinalis* (Amla) is a major tree in the Indian system of Medicine and is widely used in ayurvedic medicines with the belief to increase defense against diseases. Their strong antioxidant and biological properties prevent innumerable health disorders related to oxidative stress, cardiovascular diseases, neurodegenerative diseases, and cancer.

Introduction

We all know that all parts of Amala are useful in the treatment of various diseases. The most commonly used and important part is fruit among all useful parts. The fruit is valued in Unani and Indian holistic medicine system for its tremendous medicinal properties¹. The chemical composition of the Amala fruit contains more than 80% of water. At present, approximately 80% of the arena

population depends on medicinal herbs. Medicinal plants contain so many chemical substances that can be the principal supply of therapeutic sellers to healing human diseases². *Emblica officinalis*, “Indian gooseberry” is also known as “the king of all medicinal crops”. It is the most important drug in the ordinary approach, primarily Ayurveda.) It has occupied an important location in ayurvedic drugs. EO is a famous ayurvedic herb the name means sour in Sanskrit is likely one of the most useful drug treatments within the Indian pharmacopeia, and is considered to be one of the strongest rejuvenating Rasayana, particularly for the blood, bones, liver, and hear). It is an exceptionally rich source of vitamin C containing ,T times the amount found in oranges. It is one of the oldest oriental medicines mentioned in Ayurveda as a potential remedy for various ailments³. Dried fruit is sour and bark acts as an astringent containing tannin and proanthocyanidin. The herb is also aphrodisiac, hemostatic, nutritive tonic, and rejuvenating. It increases red blood cell count⁴. It has a beneficial role in cancer, diabetes, liver treatment, heart trouble, ulcers, anemia, and various other diseases. Similarly, it has applications as antioxidant, immunomodulatory, antipyretic, analgesic, cytoprotective, hepatoprotective, and gastroprotective.



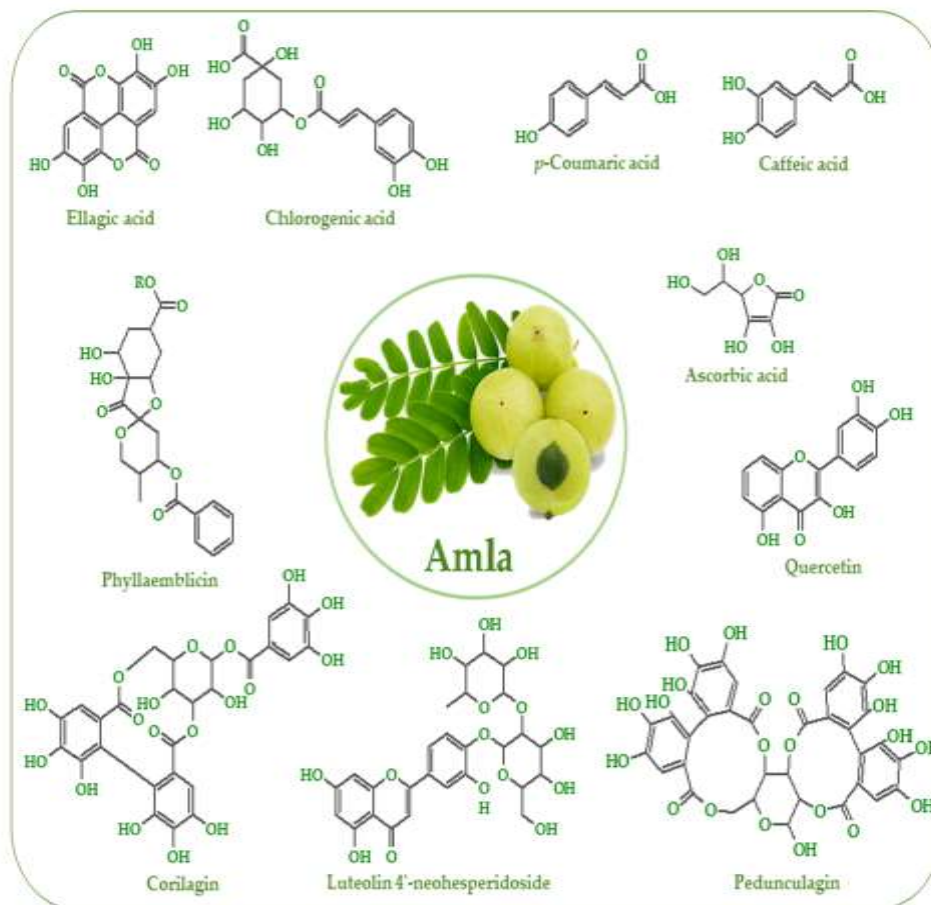
***Emblica officinalis* (Amla)**

• **Classification**

Kingdom	Plantae
Sub kingdom	Trachebionta
Super division	Spermatophyta
Division	Angiospermae
Order	Euphorbiales
Class	Dicotyledonae
Family	Euphorbiaceae
Genus	<i>Emblica</i>
Species	<i>Emblica Officinalis</i>
Latin Name	<i>Emblica officinalis</i>
Local Name	Amla

	Myrobatan
Latin	<i>Emblica officinalis</i> Gaerte
Sanskrit	Aamalki, Dhatri Pacifics Tridoshas
Tamil	Nelli
Kannada	Nellaka
Telugu	Usirikaya
Malayalam	Nellimaram
Marathi	Amla
Bangla	Aamalki
Tibetan	Skyu-ru-ra
Portuguese	Mirabolano emblico
Malaysian	Popok Melaka
Nepalese	Amba

Besides this *Emblica officinalis* is a rich source of vitamin C. The transformation of the environment is a complex process that is influenced by the nature and amount of the problem present, the structure and dynamics of the indigenous living community, and the interplay of geochemical and biological factors. Additionally, it also lowers cholesterol levels. It is also helpful in neutralizing snake venom and acts as an antimicrobial agent^{5,6}. It is also present on the hill slopes up to 2000 meters. It is commercially cultivated in the state of Uttar Pradesh in India. It is also grown in Tamil Nadu, Rajasthan, and Madhya Pradesh. Dried fruits, fresh fruit, seeds, leaves, root bark, and flowers of Amla are mostly used in medicines. Amla is a medium size deciduous plant. It grows to a height of 8 -18 meters. Its flower is yellow-greenish in color. The fruit is spherical and pale yellow with six vertical furrows. The average weight of the fruit is 60-70 g. It has a gray bark and reddish wood. Its leaves are feathery, linear oblong in shape, and smell like lemon. Its wood is hard in texture⁷.



The above table shows the phytoconstituents contained in Amla (*Emblica officinalis*).

AMLA: A natural wonder.

It is one of the precious gifts of nature to mankind. It is an excellent nutritional supplement with numerous medicinal benefits. Because of the high concentration of phenolic compounds. Emblica fruit may be considered a plant source of natural antioxidants, nutraceuticals, and medicinal components.

Flowers

Small, inconspicuous greenish-yellow flowers grow in compact clusters in the lower leaf axils. Male flowers are unisexual and numerous on short, slender pedicels, while females are few, sub-sessile, and have a three-celled ovary⁸.

Fruit

Pale yellow, depressed, fleshy, globose, about 2 cm across, with 6 obscure vertical furrows enclosing 6 trigonous seeds in 2 seeded 3 crustaceous cocci .

Organoleptic properties⁹

Colour: Yellowish green

Consistency: Hard

Odor: Aromatic

Taste: Sour

Shape: The fruits are globose and depressed.

Size: 1.5 to 2.5 cm in diameter.

Bark

β -sitosterol, Leucodelphinidin, Lupeol, Tannin.

Fruit

3–6-di-O-galloyl-glucose, Alanine, Ascorbic acid, Aspartic acid, Arginine, β -carotene, Boron, Calcium, Carbohydrates, Chebulagic acid, Chebulic acid, Chloride, Copper, Cystine, d-fructose, d-glucose, Ellagic acid, Emblicanin-A, - B, Gallic acid,

Gallic acid ethyl ester, Gibberellin A1, Gibberellin A3 (syn. Gibberellic acid), Gibberellin A4, Gibberellin A7, Gibberellin A9, Glucose, Glutamic acid, Glycine, Histidine, Iron, Isoleucine, Leucine, Lysine, l- malic acid 2-O-gallate, Manganese, Magnesium,

Methionine, Myo-inositol, Myristic acid, Niacin, Nitrogen, Pectin, Phenylalanine, Phosphorus, Polysaccharide, Potassium, Proline, Protein, Quercetin, Riboflavin, Rutin, Selenium, Serine, Silica, Sodium, Starch, Sucrose, Sulphur, Tannin, Terchebin, Thiamine, Threonine, glucose, Tryptophan, Tyrosine Zinc, Zeatin, Zeatin riboside, Zeatin nucleotide.

Leaf:

Astragalin, Ellagic acid, Gallo-tannin, Kaempferol, Kaempferol-3-O-glucoside, Rutin, Tannin.

Root:

Ellagic acid, Lupeol.

Seed:

β -sitosterol, Flavonoid, Linolenic acid, Myristic acid, Oleic acid, Palmitic acid, Stearic acid, Tannin
Shoot 3–6-di-O-galloyl-glucose, β -sitosterol, Chebulagic acid, Ellagic acid, Gallic acid, Glucogallin, Lupeol.

Twig:

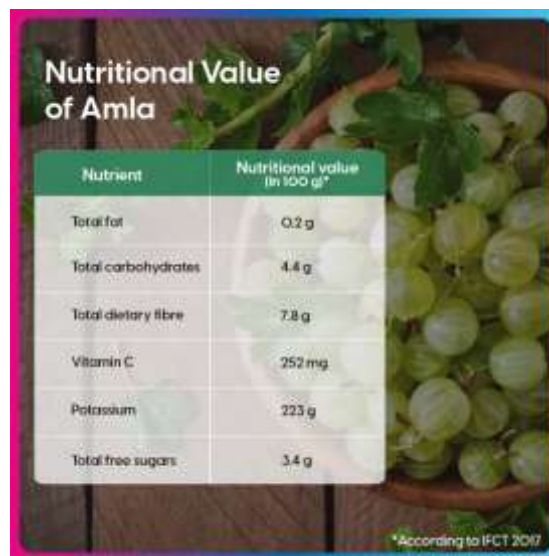
Tannin.

Whole plant:

Ascorbic acid, Lupenon.

Nutritional value^{10,11,12}

E. officinalis (Amla) has been dubbed the "Queen of the Ayurvedic Rejuvenating Herbs" due to the usual balance of tastes (sweet, sour, pungent, bitter, and astringent) multi- function fruit and is well known for its dietary properties. The fruit of *E. officinalis* (Amla) is frequently the richest known natural source of Vitamin C.



Nutrient	Nutritional value (in 100 g)*
Total fat	0.2 g
Total carbohydrates	4.4 g
Total dietary fibre	7.8 g
Vitamin C	252 mg
Potassium	223 g
Total free sugars	3.4 g

*According to IFCT 2017

Applications



Health Benefits Of Amla

- Improves eye vision
- Improve skin health
- Prevents ageing
- Increase immunity
- Improves hair health
- Prevents constipation
- Improves nervous system health
- Improve memory and brain health
- Protect and cure diabetes
- Improve cardiovascular health
- Prevent Anemia

AYURVEDIC CURE

PHARMACOLOGICAL IMPORTANCE OF AMLA^{13,14}

• ANTICANCER ACTIVITY.

E. officinalis inhibits the growth and spread of various cancers, including breast, uterus, pancreas, stomach, and liver cancers, and malignant ascites. It reduces the side effects of chemotherapy and radiotherapy¹. *E. officinalis* reduced the cytotoxic effects in mice dosed with carcinogens¹⁸. It has been reported to possess many medicinal properties, including immune-stimulator and antitumor activities¹⁹. Amla fruit contains 18 compounds that inhibit the growth of tumor cells such as gastric and uterine cancer cells²⁰.

• ANTI-OXIDANT ACTIVITY.

amla can be used for relieving oxidative stress and improving glucose metabolism in diabetes¹⁰. *E. officinalis* is used to protect the skin from the devastating effects of free radicals, non-radicals, and transition metal-induced oxidative stress. It is suitable for use in antiaging, general-purpose skin care products and as sunscreen¹¹. *E. officinalis* fruits contain tannoid principles that have been reported to exhibit antioxidant activity in vitro and in vivo.

• OSTEOPOROSIS ACTIVITY

Amla (*E. officinalis*) fruit is very useful for strengthening weak bones (i.e. osteoporosis).

• IMMUNO-STIMULANT ACTIVITY

As we are familiar with various plants, that are immune stimulants in nature. Similarly, amla is the best source of ascorbic acid that enhances immuno-activity (i.e. make it 2-times more effective) by stimulating immune cells and antibodies.

• DERMA-PROTECTIVE ACTIVITY

Besides the other medicinal plants, *E. officinalis* extract has been very useful in skin care, antiaging, and dermatological disorders for more than 20 years. Amla extract protects human skin against oxidative stress because of its antioxidant nature. *E. officinalis* defends the skin from free radical that causes skin damage. Furthermore, amla (*E. officinalis*) is best for anti-aging and is used for the production of cosmetics for skin care¹⁵.

▪ ANTI-DIABETIC ACTIVITY

Galic acid equivalent as total phenolic The content from fruit and seed of *E. officinalis* has excellent antioxidant properties and play a natural source of Vitamin C. Amla helps scavenges free radicals.

Scurvy: As an extremely rich source of vitamin C. Indian gooseberry is one of the best

▪ REMEDIES FOR SCURVY

Powder of dry gooseberry mixed with equal quantity of sugar should be taken in doses of one teaspoonful three times daily with milk.

▪ AS A SNAKE VENOM NEUTRALIZER

Amla as Snake Venom Neutralizer Amla was explored for the first time for anti-snake venom activity. *Naja kaouthia* and *Vipera russellii* venom were antagonized by the plant extracts significantly both in vivo and in vitro studies. *V. Russell* venom-induced coagulant, hemorrhage defibrinogenating, and inflammatory activities were significantly neutralized by both plant extracts. No precipitating bands were formed between the snake venom and plant extract which confirmed that the plant extracts possess potent snake venom neutralizing capacity and need further investigation.

▪ FIGHTS WITH ACIDITY

The irregular food habits and abnormal intake of sweet, sour, spicy, and oily food may cause acidity, and also tea, coffee, and smoking are causing that trouble. The physiological factors are anger, grief, and

depression. This problem is overcome by taking one gram of amla powder and a small amount of sugar mixed with milk or water twice a day¹⁶.

Action on toxins

▪ **ACTIVITY AGAINST TOXINS**

Some of the toxins may be stored in the liver by regular uptake of painkillers, antibiotics, medication, and alcohol consumption. Amla prevents the body from these toxins by strengthening the liver thereby amla act as a good detoxifier and helps to purify the blood.

▪ **MEMORY ENHANCING ACTIVITY**

Amla churna has produced a dose-dependent improvement in the memory of → Memory Enhancing activity: Amla churna produced a dose-dependent improvement in of of young and aged rats. It reversed the amnesia induced by scopolamine and diazepam. Amla churna may prove to be a useful remedy for the management of Alzheimer's disease due to its multifarious beneficial effects such as memory improvement and reversal of memory deficits.

▪ **ANTI – ARTHRITIS ACTIVITY**

Amla has anti-inflammatory properties. Its use has been found beneficial in reducing inflammation in arthritis and other rheumatic conditions.

Medicinal uses of Amla^{15,16}

- a) Increases white blood cells and strengthens immunity.
- b) Useful in preserving eyesight.
- c) Used for the treatment of conjunctivitis.
- d) Aids in the treatment of Glaucoma.
- e) Renews energy and prevents ageing.
- f) Enhances hair growth and increases haemoglobin.
- g) Used with honey as an anthelmintic.
- h) Strengthens the teeth and freshens the mouth.
- i) Balances nitrogen level and maintain the metabolic activities in the body.

→ Anti arthritis activity: Amla has anti-inflammatory property. Its use has been found beneficial in reducing inflammation in arthritis and other rheumatic conditions.

- important role as free radical scavengers required in the maintenance of ,redox [18]

homeostasis responsible for diverse degenerative diseases with milk. It is a **wonderful antioxidant and a**

- Marketed products of Amla



Conclusion

Amla (*Embllica Officinalis*) is a well-known Indian medicinal herb that has a variety of health benefits. Amla fruit is widely available in tropical and subtropical regions. All parts of this fruit are medicinal, especially the fruit,

which is used in Ayurveda as a powerful Rasayana and in medicine to treat respiratory disorders, eye disorders, diabetes, inflammation, hair related problems and a variety of other ailments. Antioxidants and Phytonutrients aid in the fight against free radicals. Because of its high polyphenol content, Amla has anticancer properties. Amla's rich phytochemistry composition can be viewed as a valuable source of compounds with potential health benefits.

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