



PHARMACOGNOSTICAL AND PHYTOCHEMICAL INVESTIGATION OF Pharmacognositcal and phytochemical Investigation of *Emblica officinalis* (Amla)

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Abstract

Natural remedies from plants help people live healthy, disease-free lives. In tropical and subtropical regions, *Helianthus emblica*, often known as amla, is readily available and has the ability to treat harmful ailments. Before it became a well-known fruit due to its high content of vitamin C, flavonoids like quercetin and rutin, and polyphenols like tannins, Gallic acid, and ellagic acid. The highest natural source of Vitamin C (200–900 mg per 100 g of edible part) is found in *Emblica officinalis*, a natural, effective antioxidant. A remarkably powerful natural anti-aging product is *Emblica officinalis*. Peptic ulcers and acid reflux can both be effectively treated with *emblica officinalis*. Vitamin C, calcium, iron, vital amino acids, and a variety of other vitamins and minerals are abundant in *Emblica officinalis*.

Keywords: Amla, Chemical constituents, nutritional value, pharmacological activities, mechanism, traditional uses, ayurveda

Introduction

Amla (*Emblica officinalis*) (EO) is revered in the ancient Indian medical system known as Ayurveda.

Indian mythology holds that Amla, a member of the Euphorbiaceae family and also known as *Phyllanthus emblica* or Indian gooseberry, was the first tree to be created in the universe. Amla is a native of India and also grows in Pakistan, Uzbekistan, Sri Lanka, South East Asia, China, and Malaysia in tropical and subtropical climates [1]. The fruits of the Amla tree are frequently employed in Ayurvedic medicine and are thought to strengthen the body's resistance to illness [2]. It plays a positive effect in the treatment of degenerative conditions such cancer, diabetes, liver disease, ulcers, anaemia, and heart problems1 and is a crucial component of hepatoprotective formulations.

The most priceless product of nature, medicinal herbs are the greatest gift to all living things, including humans. It is essential for preserving human health. According to a WHO poll, 80% of the populace in developing nations rely almost solely on traditional medicine for their basic healthcare requirements, and the remaining 20% of the population play a significant role in the health care system.

Indian gooseberry, or amla, is a gift from nature to people.

Classification :

- Kingdom: Plantae
- Division: Angiospermae
- Class: Dicotyledonae
- Order: Geraniales
- Family: Euphorbiaceae
- Genus: Emblica
- Species: officinalis Geartn.

Vernacular names

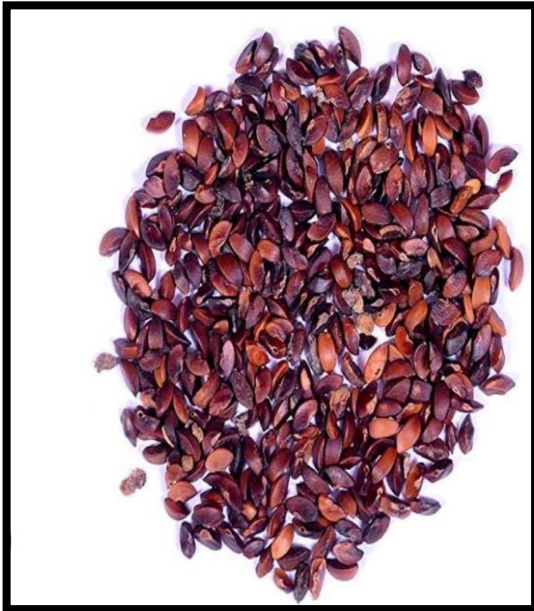
- English: Emblic myrobalan,
- Indian Goose berry
- Sanskrit: Aamalaki
- Hindi: Amla
- Kannada: Nelli Kayi
- Marathi: Amla

Morphology

Amla tree is a small to medium sized deciduous tree with an average height of 8-18 m, with thin light grey bark exfoliating in small thin irregular flakes, exposing the fresh surface of a different color underneath the older bark.

Leaves are 10 -13 mm long, 3 mm wide, closely set in pinnate faishon³ which makes the branches feathery in general appearance. The stone of the fruit is 6 ribbed, splitting into three segments [23]eachcontaining usually two seeds; seeds are 4-5 mm long and 2-3 mm wide, each weighing 572 to 590 mg [23-24]





• Fig 1 : seed



:fig 2 : fruits



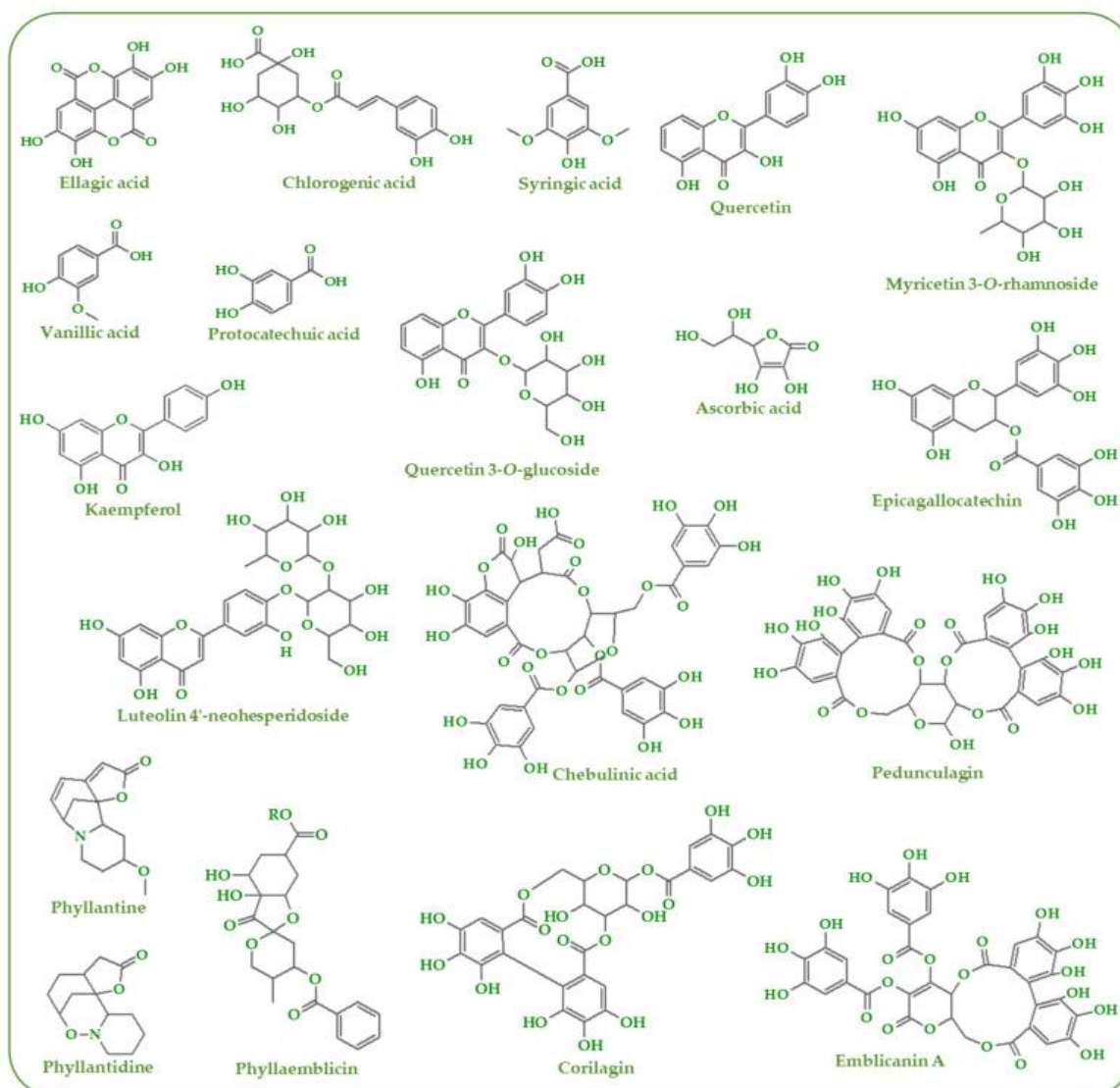
• Fig 3 : leaves
• Chemical composition of Amla

Amla is one of the most extensively studied plants. Reports suggest that it contains tannins, alkaloids and phenols [4]. Fruits have 28% of the total tannins distributed in the whole plant. The fruit contains two hydrolysable tannins Emblicanin A and B [25] which have antioxidant properties; one on hydrolysis gives gallic acid, ellagic acid and glucose wherein the other gives ellagic acid and glucose respectively

- Vitam c
- 0.5% fat
- Phyllembin
- 5% tannins
- Phosphorus
- Calcium
- Iron
- Pectin

Phytochemistry of Amla

Amla has been found to possess rich phytochemistry distributed in different sections of the plant (fruits, leaves, and roots). Polyphenols comprise the main group of secondary metabolites wherein several compounds belonging to phenolic acids, flavonoids, tannins, other phenolics and derivatives compounds have been reported in different studies.



- **Potential Health Benefits**

- **Antioxidant activit :**

The observed antioxidant activity observed from extracts and isolated compounds from amla fruit using chemical methods has also been observed in a more complex biological system that includes cells, animals, and clinical trials

In this case, the antioxidant defense system, has an important role in the protection against oxidative damage in vivo

- **Cardioprotective Activity:** Hyperlipidemia is one of the major causes of cardiovascular disorders but amla bioactive compounds may assist in the management of this condition. Different studies have been shown the protective effects of amla and/or its constituents against cardiovascular diseases.
- **Antidiabetic Activity:** The compounds naturally found in *P. emblica* L. have been associated with protective effects against diabetes. An in vitro study indicated that the activity of the main phytochemicals found in amla (such as ellagic acid and ascorbic acid) reduced the activity of key enzymes involved in glucose digestion (especially amylase and glucosidase) The protective effects against diabetes have also been reported at the animal level.
- **Anticancer Activity:** the protective effect of amla bioactive compounds seems to have a relevant limiting effect on the progression of cancer progression in different cell lines. However, the evidence supporting the anticancer activity of amla polyphenols is limited and more efforts are still necessary to clarify the mechanisms involved and explored the effects at the animal level and expand the current knowledge.
- **Anti-Inflammatory Activity:** Amla phytochemistry seems to promote a beneficial effect in the context of inflammation, but current evidence is limited. An example of the anti-inflammatory activity in cell model is the study carried out by Li et al. According to these authors, RAW 264.7 cells treated with amla extract (rich in gallic acid, corilagin, and ellagic acid) displayed lower levels of inflammatory markers
- **Traditional uses:**
 Usages customary
 The fruits have a variety of medicinal properties including aphrodisiac, astringent, bitter, acrid, sweet, cooling, anodyne, ophthalmic, digestive, stomachic, laxative, alterant, rejuvenative, diuretic, antipyretic, and tonic.
 They are useful in vitiated conditions of tridosha, diabetes, cough, asthma, bronchitis, cephalalgia, ophthalmopathy, dyspepsia, colic, flatulence, hyperacidity, peptic ulcer, erysipelas, skin diseases, leprosy, haematogenesis, inflammations, anemia, emaciation, hepatopathy, jaundice, strangury, diarrhoea, dysentery, hemorrhages, leucorrhoea, menorrhagia, cardiac disorders, intermittent fevers and greyness of hair.
 1. Fruit juice mixed with honey is used as a vermifuge. The suggested dosage ranges from 1 to 3 drachms.
 2. Use pickles and preserves created from the green fruits as an appetizer.
 3. For cephalalgia and irritability of the bladder, urine retention, and forehead pain, use a paste of the fruit by itself or in combination with nelumbium.

- **Marketing formulation:**

the largest producer of amla. Since consumers favour nutritious fruits, amla will likely have better prospects in the future. The majority of amla marketing is done by middlemen like merchants, wholesalers, retailers, brokers, and processors. There is a need to enhance the producer share in consumer prices since there is a large price spread in the marketing of amla. The price of agricultural inputs and the lack of knowledge about high-yielding cultivars are two barriers to the production of amla.

The marketing effectiveness was poor, thus efforts should be made to create the necessary infrastructure for the marketing of amla in order to control the costs associated with commission, shipping, and packing. The government and other organisations should make it easier to trade goods and buy farm inputs for use in manufacturing.

- **Conclusion:**

Amla's antioxidant, anti-inflammatory, and hypolipidemic properties as well as its modulation of detoxification enzymes appear to have hepatoprotective benefits.

- **Reference:**

- 1) The Wealth of India, Raw Materials. Council of Scientific and Industrial Research, New Delhi, 1: 346-47.
- 2) N. P. Manandhar. Ethnobotanical Notes on Certain Medicinal
- 3) Plants Used by Tharus of Dang-Deokhuri District, Nepal. Int J Crude Drug Res,
- 4) Shigelladysenteriae type 1-induced diarrhea in rats. Indian J Pharmacol, 2007; 39(5): 240-44.
- 5) Sharma G.D. and Tripathi S.N.; Experimental evaluation of dugdhika (*Euphorbia prostrata* W.Ait.) for the treatment of 'tamakasvasa' (bronchial asthma). Ancient Sci
- 6) Bhandari PR, Kamdod MA. *Emblica officinalis* (Amla):
- 7) A review of potential therapeutic applications.
- 8) International Journal of Green Pharmacy (Medknow Publications & Media Pvt. Ltd.). 2012 Oct 1;6(4)
- 9) Antonucci F, Pallottino F, Paglia G, Palma A, D'Aquino S, Menesatti P. Non-destructive estimation of mandarin maturity status through portable VIS-NIR spectrophotometer. Food and Bioprocess Technology. 2011 Jul;4(5):809-13.
- 10) Waterborg JH, Matthews HR. The Lowry method for protein quantitation. Basic protein and peptide protocols. 1994:1-4.