

**ROLES OF EMBLICA OFFICINALIS (AMLA) IN MEDICINE****Mrs. Manali. M. Bhide***, **Mr. Sachin. A. Nitave**

Dr. J.J.Magdum Trust's, Anil Alias Pintu Magdum Memorial Pharmacy College,
Dharangutti.Tal: Shirol, Dist:Kolhapur, Maharashtra, India.

Article Received on
11 April 2014,
Revised on 29 April
2014,
Accepted on 21 May 2014

Correspondence for Author*Manali. M. Bhide**

Dr. J.J.Magdum Trust's, Anil
Alias Pintu Magdum Memorial
Pharmacy College,
Dharangutti. Tal: Shirol,
Dist:Kolhapur, Maharashtra,
India.

ABSTRACT

Medicinal plants are natural gift to human lives to promote disease free healthy life. This article discusses and summarizes important medicinal values of *Emblica officinalis* (EO). Earlier it becomes a notable fruit for its rich amount of vitamin C, polyphenols such as tannins, gallic acid, ellagic acid, flavonoids like quercetin and rutin. *Emblica officinalis* (Amla) are widely distributed in tropical and subtropical areas and has therapeutic potential against deleterious diseases such as in cancer, diabetes, liver treatment, heart disease, ulcer, anemia and various other diseases. The use of EO as antioxidant, immunomodulatory, antipyretic, analgesic, cytoprotective, antitussive and gastroprotective are also reviewed. Its applications for memory

enhancing, ophthalmic disorders, lowering cholesterol level are focused. The effects of EO in neutralizing snake venom and as an antimicrobial are also included.

Key words: *Emblica officinalis*, immunomodulatory, antipyretic, analgesic, cytoprotective.

INTRODUCTION

In this century, unparalleled medicinal inventions have been achieved to resolve incalculable diseases, including cancer and AIDS. Yet most of the investigation studies have been conducted in all over the world against newly discovered diseases. Thus, we have forgotten our ancient medicines such as Siddha, Ayurveda and Unani systems. In spite of synthetic medicines like antibiotics, steroids and advanced surgical practices gives faster action and bring quick relief, it cause some life threatening side effects including death. Furthermore, regular ingestion of antibiotics and some pain killer tablets may produce toxic substances in liver. Ancient people had been live long when compared to nowadays. Because of their life style, which is completely depends on nature. Traditionally life threatening diseases have

been deals with herbal medicines which are taken as food not as medicine or drug. Phytochemicals present in fruits and vegetables could reduce various risks of diseases owing to prevent the oxidative damage produced by free radicals. *Phyllanthus emblica* (amla), one of the most common medicinal herbs has been widely used in ayurvedic medicines. In this article the nature of amla and its medicinal properties have been briefly discussed [1]. According to believe in ancient Indian mythology, it is the first tree to be created in the universe. It belongs to family Euphorbiaceae. It is also named as Amla, *Phyllanthus Emblica* or Indian gooseberry. Other vernacular names of EO have been listed in the table 1.

Table1: Vernacular names of *Emblica officinalis*

Sr. No.	Language	Vernacular Names
1	Sanskrit	Dhatriphala, Amla, Amaliki, Amalakan, Sriphalam, Vayastha
2	Hindi	Amla
3	English	Emblica myroblan
4	Italian	Mirabolano emblico
5	German	Amla
6	Nepalese	Amba
7	Chinese	An Mole
8	Malaysian	Popok Melaka
9	Portuguese	Mirabolano emblico
10	Tibetan	Skyu-ru-ra

The fruits of EO are widely used in the Aryurveda and are believed to increase defense against diseases. It has its beneficial role in treatment of cancer, diabetis, liver treatment, heart trouble, ulcer, anemia and various other diseases. Similarly, it has application as antioxidant, immunomodulatory, antipyretic, analgesic, cytoprotective, diuretic, laxative, carminative and stomachic, antitussive and gastroprotective. Additionally, it is useful in memory enhancing, ophthalmic disorders and lowering cholesterol level. It is also helpful in neutralizing snake venom and as an antimicrobial. It is often used in the form of Triphla which is an herbal formulation containing fruits of EO, *Terminalia chebula* and *Terminalia belerica* in equal proportions [2]. According to ayurvedic doctors regular usage of Amla will make you live more than 100 years like a youth. Amla is supposed to rejuvenate all the organ systems of the body, provide strength and wellness. It keeps us away from all the diseases by boosting our immune system. It is believed by ayurvedic practitioners that if an individual regularly takes amla he can live up to an age of 100 without suffering from any type of ailments. [3]

MORPHOLOGY OF THE PLANT

A small to medium sized deciduous tree, 8-18 meters height with thin light grey bark exfoliating in small thin irregular flakes, leaves are simple, sessile, closely set along the branchlets, light green having the appearance of pinnate leaves; flowers are greenish yellow, in axillary fascicles, unisexual, males numerous on short slender pedicels, females few, sessile, ovary 3-celled; fruits globose, fleshy, pale yellow with six obscure vertical furrows enclosing six trigonous seeds in 2-seeded 3 crustaceous cocci [4].



Fig.:1 Amla Fruit .



Fig. 2 Amla Tree.

GEOGRAPHICAL DISTRIBUTION

Found throughout India, the sea-coast districts and on hill slopes upto 200 meters, also cultivated in plains [4].

PROPERTIES

It is sour (Amla) in taste (Rasa) but sweet (Madhur) after digestion (Vipaka), Madhur (Sweet), Amla (Sour), Katu (Pungent), Kashaya (Astringent) except Lavana (Salt) in characteristics, Cold (Sita) in potency (Virya) [5].

NOTE

According to Ayurveda there are six tastes. Amla has five tastes out of six. If it would have all the six taste it might be called as amrita (divine fruit) instead of Amla [5].

ACTION (KARMA)

It helps to balanced all the Tridosha (Three humors alleviator - Vatta (Air), Pitta (Fire) and Kapha (Water)), Rejuvenator (Rasayna), anti-aging, Chakshushya (works as an eye Tonic) [5].

COMMON INDICATIONS

Prameha (diabetic disorder), Rakta Pitta (Hemorrhage), Netra Roga (Eye problems), Kustha (Leprosy), Arsha (Piles), Pradara (Leucorrhoea), Mutrakrcchra (Retention of urine), Sula (Colic)[5].

PARTS USED

It is a plant that is used in its entirety and so presents the herbalist with excellent value for money! The dried fruit, the nut or seed, leaves, root, bark and flowers are frequently employed. The ripe fruits are generally used fresh, but dried fruit are also used [6].

CHEMICAL CONSTITUENTS

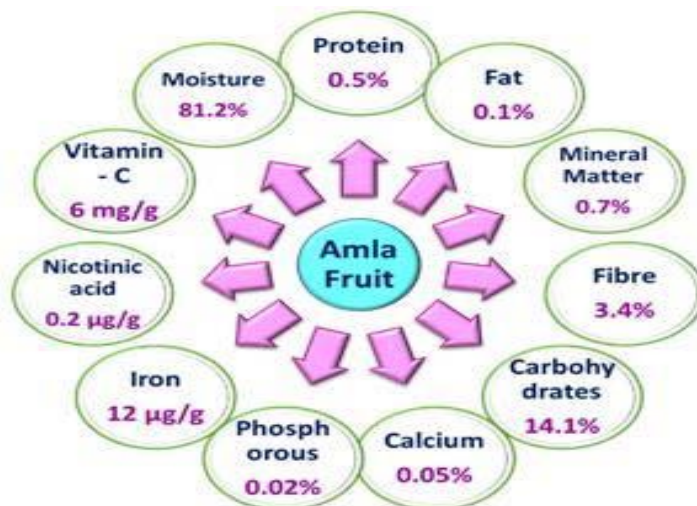
EO primarily contains tannins, alkaloids, phenolic compounds, amino acids and carbohydrates. Its fruit juice contains the highest vitamin C (478.56 mg/100 mL). The fruit when blended with other fruits, boosted their nutritional quality in terms of vitamin C content. The other principle components are Emblicannin A, Emblicannin B, Punigluconin and Pedunculagin. Compounds isolated from EO were gallic acid, ellagic acid, 1-O-galloyl-beta-D-glucose, 3,6-di-O-galloyl-Dglucose, chebulinic acid, quercetin, chebulagic acid, corilagin, 1,6-di-O - galloyl beta D glucose, 3 Ethylgallic acid (3 ethoxy 4,5 dihydroxy benzoic acid) and isostrictiniin. *Phyllanthus emblica* also contains flavonoids, kaempferol 3 O alpha L (6" methyl) rhamnopyranoside and kaempferol 3 O alpha L (6"ethyl) rhamnopyranoside. A new acylated apigenin glucoside (apigenin 7 O (6" butyryl beta glucopyranoside) was isolated from the methanolic extract of the leaves of *Phyllanthus emblica* together with the known compounds; gallic acid, methyl gallate, 1,2,3,4,6-penta-O-galloylglucose and luteolin-4'-Oneohesperidoside were also reported. A number of compounds found in EO are listed in Table 2 [7]

Table 2: Chemical Constituents

Sr. No.	Chemical Constituent	Sr. No.	Chemical Constituent
1	Tanins	11	Alkalods
2	Phenolic compounds	12	Amino acids
3	Carbohydrates	13	Vitamin C
4	Flavanoid	14	Ellagic acid
5	Punigluconin	15	Quercetin
6	Chebulagic acid	16	Emblicannin-A
7	Gallic acid	17	Emblicannin-B
8	Pedunculagin	18	Citric acid
9	Ellagotannin	19	Trigallayl glucose
10	Pectin	20	Quercetin

NUTRITIONAL VALUE

Amla is well known for its nutritional qualities. It is rich in polyphenols, minerals and is regarded as one of the richest source of vitamin C (200-900 mg per 100 g of edible portion) [8].



THERAPEUTIC USES

- 1) **As an energy refiller:** One teaspoon of amla powder over with honey after taking milk in the morning helps to improve freshness and strength to the body[9].
- 2) **Aperient:** The green fruits are made into pickles and preserves to stimulate the appetite[9].
- 3) **Antibacterial, antifungal, antiviral:** Medical studies conducted on Amla fruit suggest that it has antiviral properties and also functions as an antibacterial and anti-fungal agent [9].
- 4) **Boils and spots:** The pericarp of the fruit is often used in decoctions along with other ingredients and also applied externally on boils with cow ghee to promote suppuration [9].
- 5) **Antipyretic:** The seeds are given internally as a cooling remedy in bilious affections and nausea, and in infusion make a good drink in fevers. The flowers are employed by the Hindu doctors for their supposed refrigerant and aperient qualities. Often after a fever there is a loss of taste and a decoction of the emblic seed, dried grapes and sugar is used for gargling [10].
- 6) **In Gonorrhoea:** The juice of the bark combined with honey and turmeric is a remedy for gonorrhoea [10].

7) Analgesic: A paste of the fruit is a useful application to the forehead in cases of cephalalgia (headache). The name "Itrifal" of Unani medicine is the same as "Triphala" in the Ayurvedic system and represents a group of preparations used for the care of all manner of cranial conditions. Amla is mixed with buttermilk for anointing and "cooling" the head [10].

8) For Skin Fareness: Skin lightening agents have been widely used to either lighten or depigment the skin in the Asia, Far East and Middle East countries, whereas in the European market products tend to be employed for age spots and freckles. The effectiveness of a standardized antioxidant fraction of *Phyllanthus emblica* fruits as a skin lightener and also as an antioxidant was proven [10].

9) To Stop burning in the vagina: A mixture of the fruit juice and sugar is prescribed as a remedy for burning in the vagina. Juice of the bark combined with honey and turmeric is a remedy for gonorrhoea [11].

10) To stop nausea and vomiting: A powder of the amla seed and red sandalwood is given with honey, to stop emesis [11].

11) To Treat Indigestion: Fruit is carminative and stomachic. The tender shoots given in butter-milk cure indigestion and it is known that green fresh leaves combined with curds have similar effect [11].

12) To Stop bleeding of the nose: Seed fried in ghee and ground in conjee is applied as Lep to the forehead to stop bleeding from the nose [11].

13) Antitumour activity: Aqueous extract of *emblica officinalis* (E.O) was found to be cytotoxic to L 929 cells in culture in dose dependent manner. Concentration needed for 50% inhibition was found to be 16.5g/ml. E.O and chyavanaprash (a non toxic herbal preparation containing 50% E.O) extracts were found to reduce ascites and solid tumours in mice induced by DLA cells. Animals treated with 1.25 g/kg b.wt. Of E.O extract increased life span of tumour bearing animals (20%) while animals treated with 2.5 g/kg b.wt of chyavanaprash produced 60.9% increased in the life span. Both E.O and chyavanaprash significantly Reduced the solid tumours. Tumour volume of control animals on 30th day was 4.6 ml where as animals treated with 1.25 g/kg b.wt of E.O extract and 2.5 g/kg bwt chyavanaprash showed tumour volume of 1.75 and 0.75 ml, respectively E.O extract was found to inhibit cell cycle regulating enzymes cdc 25 phosphates in a dose

dependent manner. Concentration needed or 50% inhibition of cdc 25 phosphatase was found to be 5 g/ml and that needed for inhibition of cdc2 Chinese was found to be >100g/ml. The results suggest that antitumour activity of E.O extract may partially be due to its interaction with cell cycle regulation [12].

14) Hepatoprotective activity: Hepatoprotective activity of emblica officinalis (EO) and chyavanaprash (CHY) extracts were studied using carbon tetrachloride (CCI (4)) induced liver injury model in rats. EO and CHY extracts were found to inhibit the hepatotoxicity produced by acute and chronic CCI (4) administration as seen from the decreased levels of serum and liver lipid peroxides (LPO), glutamate-phruvate transminase (GPT), and alkaline phosphatase (ALP). Chronic CCI (4) administration was also found to produce liver fibrosis as seen from the increased levels of collagenhydroxyproline and pathological analysis EO and CHY extracts were found to reduce the elevated levels significantly, indicating that the extract could inhibit the induction of fibrosis in rats [12].

15) Heals Mouth Ulcers

A decoction of the leaves is used as a chemical-free bactericidal mouthwash. Bark of the root mixed with honey is applied to inflammations of the mouth and a decoction of the leaves is also useful as a mouth wash in the treatment of aphthae. Another remedy suggests root bark rubbed with honey is used in aphthous stomatitis (an inflammation of the mouth) [13].

16) Improves Eyesight: The juice of fresh amla has been found to preserve eyesight, and may be helpful in treating conjunctivitis and glaucoma. A cupful of amla juice mixed with honey should be taken twice daily for eye problems. Even if one does not suffer from eye disease, amla is also used to reduce intraocular tension and weakness of the eyes. A.P.

Dewan suggests soaking the dried fruit in water overnight and then splashing some of the amla water into the eyes, two to three times. Vaid Misra has had good results in treating patients with eye weakness using both amla chutney and amla ka murabba [13].

17) Heals Arthritis Condition: Amla has anti-inflammatory properties which help in reducing the swelling and pain of the joints of knees caused due to arthritis. Take raw or amla juice daily in the morning [14].

18) Cures Sleep Disorders: Amla cures sleep disorders like the insomnia [14].

19) Removes Toxins from the Body: Consumption of alcohol, pain killers, medicines etc regularly increases the build up of large amount of toxins in our body. Amla helps in maintaining the proper functioning of the liver and the bladder, and get rid of these toxins. Take amla juice in an empty stomach every morning [14].

20) Regulates Acid Levels in the Stomach:

Regular consumption of amla is very good for our stomach, as it balances the acids of stomach and thus improving digestion [15].

21) Improves Metabolism: Amla helps in increasing our protein metabolism. High metabolism is helpful for weight reduction. Therefore those who want to lose weight, have an amla daily to increase metabolism [15].

22) Boosts Immunity: Daily consumption of an amla, boosts immunity due to its high concentration of vitamin C [15].

23) Improves Haemoglobin & Purifies Blood: Amla increases the haemoglobin in blood, the RBC (red blood cells) count and purifies blood [15].

24) Maintains Cholesterol Levels: High cholesterol levels increases the probability of heart attack and stroke. It builds up and deposits on the walls of the arteries, thus clogging them completely. For this, have 500 mg of amla powder daily with a glass of water before going to sleep. It is known to Reduce LDL (bad cholesterol), VLDL and triglycerides level by over 40%.

Increases the level of HDL (good cholesterol) significantly [16].

25) Reduces the Risk of Gall Stone Formation

Amla reduces the risk of gall stone formation in the gall bladder. When there is excess cholesterol in the bile, gall stones are formed. Amla helps in reducing them as it contains vitamin C, which converts the cholesterol into bile acid in the liver [16].

26) Prevents Scurvy & Jaundice Outbreak

Drinking amla juice early in the morning with an empty stomach is a natural tonic to prevent scurvy and jaundice [16].

27) Cures Diabetes: Diabetes or high blood sugar is most common and prevalent in today's world. Amla cures diabetes naturally. Amla is rich in chromium which regulates the carbohydrate metabolism and makes the body more responsive to insulin, which reduces the blood glucose levels. Mix 2-3 teaspoons of amla powder or juice in a glass of water and consume daily [17].

28) Reduces Ill Effects of Cigarette Smoke

Studies have shown that intake of amla juice regularly reduces ill effects of the cigarette smoke in the lungs. Due to its high anti-oxidant contents, it fights off free radicals liberated from the smoke [17].

29) Gives Soft & Supple Skin

High content of vitamin C boosts the collagen cells production in the skin, giving you soft, supple and youthful skin [17].

30) Cures Hair Loss: Amla oil is being used since ancient times for hair growth and as a cure for hair loss [17].

31) To Prevent Constipation

The fruit is occasionally pickled or preserved in sugar. When dry it is said to be gently laxative, according to some sources the fresh fruit is also laxative, one or two fruits being sufficient for a dose [18].

32) Dental problems

The roots of *Emblica officinalis* (10 g) are ground and taken twice daily for one day only after taking food. Alternatively, the leaves of *Emblica officinalis* are squeezed and the juice extracted. This juice is put in the ear (a few drops) to find relief from toothache. A final alternative is to grind the node of an *Emblica officinalis* and mix it with water. After vigorous stirring it is filtered through a cloth. This water is put drop by drop in the right ear if the teeth on the left hand side are in pain and *vice versa*. The remedy is continuing for three days[18].

33) Diarrhoea

It is used medicinally for the treatment of diarrhoea. As a fruit decoction it is mixed with sour milk and given by the natives in cases of dysentery. The bark partakes of the astringency of the fruit. A decoction and evaporation of the root solution produces an astringent extract

equal to catechu. An infusion of the leaves with fenugreek seed is given for chronic diarrhoea[18].

34) Skin sores and wounds

The milky juice of the leaves is a good application to sores. Grind the bark of *Emblica officinalis* (10g) into a paste and apply to the cut or wound area once daily for 2 to 3 days [19].

35) Indigestion

Fruit is carminative and stomachic. The tender shoots given in butter-milk cure indigestion and it are known that green fresh leaves combined with curds have similar effect [20].

36) Hair growth

The dried fruits have a good effect on hair hygiene and have long been respected as an ingredient of shampoo and hair oil. Indian gooseberry is an accepted hair tonic in traditional recipes for enriching hair growth and also pigmentation. A fixed oil obtained from the berries strengthens and promotes the growth of hair. The fruit, cut into pieces, is dried, preferably in shade and then boiled in coconut oil, the resulting oil is said to be excellent for preventing hair graying in Ayurvedic terms, a classic sign of excess *pitta dosha*. The water in which dried Amla pieces are soaked overnight is also said to be nourishing to the hair[21].

37) Diuretic

The fresh fruit is diuretic. A paste of the fruit alone or in combination with *Nelumbium speciosum* (the Egyptian Lotus), Saffron [author's note: more likely to be *Curcuma longa* (Indian saffron) than *Crocus sativus* (saffron)] and rose water is a useful application over the pubic region in irritability of the bladder, in retention of urine. A sherbet prepared from the fresh fruit with (or without) raisins and honey is a favoured cooling drink which has a diuretic effect. A decoction of the fruit with stems of *Tinospora cordifolia* is a well-known remedy for various urinary diseases[21].

38) Respiratory problems

The fresh fruit is used in Turkeystan in inflammations of the lungs. The juice or extract of the fruit is mixed with honey and pipit added is given to stop hiccough and also in painful respiration. The expressed juice of the fruit along with other ingredients is used to cure cough, hiccough, asthma and other diseases [21].

CONCLUSION

It is concluded that Amla is easily available fruit found everywhere in India. It is widely used in the Aryurveda and are believed to increase defense against various diseases. It has greatest therapeutic value. It is a plant that is used entirety and so presents the herbalist with excellent value for money! The dried fruit, the nut or seed, leaves, root, bark and flowers are frequently employed. The ripe fruits are generally used fresh, but dried fruit are also used.

REFERENCES

1. Sankaran Mirunalini et al, Amla: A Novel Ayurvedic Herb as Functional Food For Health Benefits"- A Mini Review, International Journal of Pharmacy and Pharmaceutical Sciences , Vol 5, Suppl 1, 2013.
2. Dr. Kishwar Hayat Khan, Roles of *Emblica officinalis* in Medicine - A Review, Botany Research International 2 (4): 218-228, 2009.
3. K.P. Sampath Kumar et al, Recent Trends in Potential Traditional Indian Herbs *Emblica officinalis* and Its Medicinal Importance, Journal of Pharmacognosy and Phytochemistry, ISSN 2278- 4136.
4. Natural Remedies Pvt. Ltd., Quality Control Dept., Hosur Road, Bangalore, *Emblica officinalis*.
5. www.wikipedia.org.
6. Anthony C. Dweck, Chesham Chemicals Ltd, *Emblica officinalis*: the Ayurvedic wonder.
7. Mishra et al, Physico-chemical properties of Chakiya variety of Amla and effect of different dehydration methods on quality of powder , African Journal of Food Science Vol. 3(10) pp. October, 2009, 303-306.
8. M. Krishnaveni et al, Amla – The Role of Ayurvedic Therapeutic Herb in Cancer, Asian Journal of Pharmaceutical and Clinical Research Vol. 4, Issue 3, 2011 .
9. www.hillgreen.com
10. Anil Kumar et al, International journal of pharmaceutical and chemical sciences, vol 1 (1) Jan – Mar 2012.
11. Swetha Dasaroju et al, Current Trends in the Research of *Emblica officinalis* (Amla): A Pharmacological Perspective, Int. J. Pharm. Sci. Rev. Res., 24(2), Jan – Feb 2014; n° 25, 150-159.
12. www.hillgreen.com
13. www.stylecraze.com
14. K.H. Khan, Roles of *Emblica officinalis* in Medicine - A Review, Botany Research

- International 2 (4): 218- 228, 2009.
15. Traditional Herbal Remedies for Primary Health Care, 1-5.
 16. Ekta Singh et al, Phytochemistry, traditional uses and cancer chemopreventive activity of Amla (Phyllanthus emblica): The Sustainer. Journal of Applied Pharmaceutical Science 02 (01); 2011: 176-183.
 17. www.manushi-india.org
 18. www.speedyremedies.com
 19. Miriyala Sumitra et al, Emblica Officinalis Exerts Wound Healing Action Through Up-Regulation of Collagen And Extracellular Signal- Regulated Kinasis, Wound Repair And Regeneration, Vol. 17, Jan 2009.
 20. www.care2.com
 21. Health.sify.com/ Ayurveda-Medicinal Properties Of Amla.