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Medicinal Values of *Emblica officinalis* in Doon Valley

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Abstract

The human being appears to be affected with more diseases than any other animal species. There can be little doubt than that he, very early, sought to alleviate, his suffering from injury and diseases by taking advantages of plants, the plants being man's only chemist for ages.

There are several thousand drug yielding plants all over the world. Most of the plants were known and utilized by herbs doctors and Ayurvedic Vaids. The drug yielding plants are popularly known as *jari bootis* in India.

The present work is based on a medicinal plant *Emblica officinalis.* This plant has been used as a home remedy and it has also become popular in cosmetic effects on skin and hair tissue.

In this present work a comprehensive study of the *Emblica officinalis* plants has been carried out.The useful part of this plant is fruit, leaves, bark, roots, seeds.

In the present studies, important medicinal value of *Emblica officinalis* and its products are discussed. In this communication, we reviewed the applications of EO in cancer, diabetes, liver treatment, heart disease ulcer, anemia and various other diseases. The use of EO as antioxidant, immunomodulatory, antipyretic, cytoprotective, antitussive and gastro protective are also reviewed. Its applications for memory enhancement, ophthalmic disorders, lowering cholesterol level are focused. The effects of EO neutralizing snake venom and as an antimicrobial are also included.

Keywords: Medicinal values, Emblica officinalis, Immunomodulatory.

Introduction

Amla is a rich source of Vitamin C (L-ascorbic acid) and is important water soluble antioxidant and plays a vital role in maintaining the preferred water soluble oxidating reduction potential in human tissue.

The therapeutic effects of Amla have been attributed to its vitamin C-rich fruit pulp. Fresh fruits are used in inflammation of lungs and of the eyes as a collyrium. The seeds are used in the treatment of asthma, bronchitis and biliousness. The dried fruits are useful in haemorrhage, diarrhoea, dysentery.

Amla can be induced in diet in many different ways such as vegetable, pickle, jam, murabba and as 'Ayurvedic' where amla is the main component.

Recently, the chemistry and antioxidative effect of two hydrosable tannins, emblicanin A-B , isolated from fresh fruit juice of *E. officinalis* has been reported.

Amla Tree

Amlaplant

Amla Fruit

History

According to Scartezzini et al., 2006, the fruit of *Emblica officinalis* commonly known as amla is highly valued in traditional Indian medicines. In Unani medicine the fruits of amla is dried and used to treat haemorrhage, diarrhoea and dysentery (Parrotta, 2001)

In addition the fruit of *E. officinalis* is diuretic (Anon, 2006), adaptogenic (Rege et aAl., 1999) and antiulcergenic (Sairam et al., 2002).

According to Ahmed et al., 1998, earlier studies have demonstrated antimicrobial properties of *E. officinalis* and it is used as antiviral for curing cold and flu. The use of natural products as an alternative to conventional treatments in healing and treatment of various diseases has been on the rise in the last few decades. (Ansari et al., 2006).

Material and Methods

General

Amla, is the moderate sized deciduous tree, native to Southeast Asia is distributed throughout India. Amla is one of the non-wood forest producers of Chhattisgarh, having fairly high demand in national and international drug markets.

All the parts of the plant are used in various herbal preparations, including the fruit, seeds, leaves, roots, bark and flower. The traditional heaters of Chhattisgarh have rich traditional medicinal knowledge about uses of all parts of amla in treatment of different diseases. It is found throughout India along the sea coast and on hill slopes upto 200 metres.

Botanical classification and identification

Botanical Name: *Emblica officinalis*
Kingdom: Plantae
Division: Magnoliophyta
Class: Magnoliopsida
Order: Euphorbiales
Family: Euphorbiaceae
Genus: Phyllanthus L
Species: Phyllanthus emblica L.
Popular Name(s): Phyllanthus Emblica, Emblica, Amla
Latin names: Phyllanthus emblica Linn., *Emblica officinalis* Gaertn, Phyllanthus laxifolius Don, Cicca emblica Kurz, Dichelastina nodicaulis Hance.

Taxonomy and Etymology

The family Euphorbiaceae has been included in the Unisexuales by Hooker; in the Geraniales by Engler and Prantle; and in the Euphorbiales by Hutchinson, Cronquist, Takhtajan, etc.

Botanical Description of the Plant

Emblica officinalis belongs to the Euphorbiaceae family. Euphorbiaceae is a large and extremely variable family which includes 300 genera and 5000 species, cosmopolitan in distribution except in the Arctic region but they are most abundant in the tropical regions.

In India the family is represented by about 61 genera and 336 species mostly in the tropical and sub tropical Himalayas and the mountains of South India.

Family Characters

The plants are mostly shrubs or trees and rarely herbs. The root may be tap and branched. Stem is herbaceous or woody, erect and branched. It may be cylindrical, angular or flat. Usually solid but sometimes hollow.

The inflorescence is complex. The first branching is usually racemose and the subsequent branching is cymose. In Euphorbieac (Euphorbia and related genera) the partial inflorescence is a cythium which appear as a single flower. Each cythium is surrounded by an involucre of four or five connate bracts and between this large and often coloured glands are present which bear petaloid appendage in some.

The flowers are unisexual, actinomorphic and hypogynous of rarely perigynous as in Briendelia. They show considerable variation. The number of stamens in the male flowers ranges from one to numerous. Usually as many stamens are present as many perianth leaves.

The gynoecium is tricarpellary and syncarpous with a superior and trilocular ovary. There are one or two collateral, pendulous, anatropous ovules, in each locule and placentation is axile. The style is three, often bipartite, free or more or less united.

At the base of the ovary a nectariferous disc is present which is annular or of separate glands. The fruit is usually a three chambered schizocarpic capsule splitting into cocci. Rarely is it a drupe or a berry.

The seed are with fleshy endosperm and straight embryo.

Cultivation

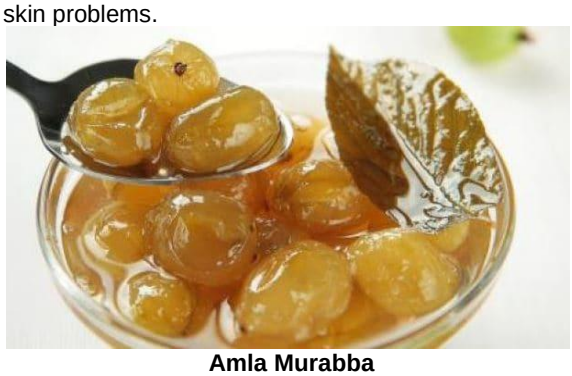
Soil and Climate

Amla can be grown in light as well as heavy soils except purely sandy soil. Calcareous soil with rocky substratum can also be good. However, well drained fertile loamy soil is the best for higher yield. The plants have capacity for adaptation to dry regions and can also grow in moderately alkaline soils. It is grown extensively under tropical condition. Annual rainfall of 630-800 mm has given good yield.

Uses: Antibacterial, antifungal, antiviral

Medical studies conducted on Amla fruit suggest that it has antiviral properties [Udupa] and also functions as an antibacterial and anti-fungal agent [Treadway].

The *Emblicia oficinalis* is also useful as an antioxidant, aphrodisiac, boils and spots, chelating agent, constipation, dental problems, diabetes, diarrhoea, diuretic, fever and hair fall, headache, indigestion, mouth ulcers, inflammation, nose bleeding, perfumery, respiratory problems, scurvy, skin problems.



Amla Murabba

Amla Candy

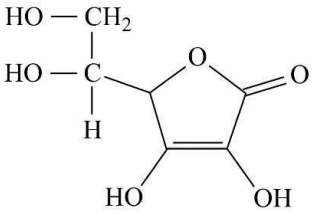
Chemical Constituents

The fruit is a very rich source of vitamin C according to most if not nearly all references, this is probably not the case [Chosat. 1996 It was proposed that superior effect of the mistaken "vitamin C" component is actually the more stable and potent anti-oxidant effect of the tannins that appeared to be the vitamin.

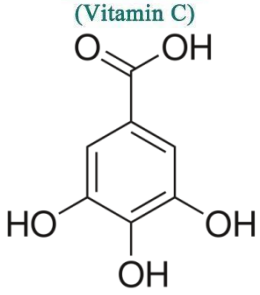
A repeated laboratory test showed that every 100g of fresh fruit provides 470 - 680mg of vitamin C. The vitamin value of amla increased further when the juice was extracted from the fruit. The dehydrated berry provided 2428 - 3470mg of vitamin C per 100g.

Key Active Constituents

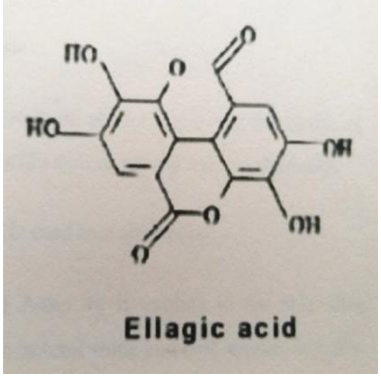
Emblicanin A&B, Puniglucanin. Pedunculagin, 2-keto-gluconolactone (Vitamin-C equivalents), Gllagic acid, Hexahydroxy-diphenic acid and conjugates.



Ascorbic acid
(Vitamin C)



Gallic Acid



Contents of Amla

Amla is highly nutritious and is an important dietary source of Vitamin C, minerals and amino acids. It should be taken every morning. Its regular use will promote vigor in the body within few days.

Uses of Amla Juice

1. Amla Juice is richest Natural Source of Vitamin C.
2. Amla Juice helps to control Blood sugar thus useful in diabetes.
3. Amla Juice enhances production of Red Blood Cell.
4. Amla Juice prevents lipid pre-oxidation in cell membranes.
5. Amla Juice increases Immunity in the body.
6. Amla Juice protects against Heart & Nervous disorders.
7. Amla Juice keeps Cholesterol level in control
8. Amla Juice is effective for respiratory complaints.
9. Amla Juice restores Stomach and Intestinal digestive Enzymes
10. Amla Juice works as an Anti-oxidant & Anti ageing
11. Amla Juice keeps Tridoshas in balance.
12. Amla Juice cleanses the mouth, strengthens the teeth.
13. Amla Juice is very effective in treatment of Acidity & Peptic Ulcers.
14. Amla Juice is used in treatment of Acne & other skin problems.
15. Amla Juice is useful in eye problems, Improves eyesight.
16. Amla Juice raises the total protein level and helps maintaining body weight due to its richness in nutrients
17. Amla juice cleans Digestive, Blood & Urinary Systems, thus enhances metabolism, keeps the body young healthy& energetic.

Conclusion/ Discussion

The prime reason is that other system of medicine although effective come with a number of side effects that often lead to serious complications. Plant based system of medicine being natural does not pose this serious problems.

Though *Emblica officinalis* has various medicinal applications, but it is the need of hour to explore its medicinal values at molecular level with help of various biotechnological tools and techniques. It has been used since ancient times as Ayurvedic medicine and this present day world also its usefulness is exploded more and more in modern science and modern medicines.

References

1. *Anonymous. 2006. Emblicaofficinalis.http://www.ayurvediccure.com/amla.htm*
2. *Chaudhuri, Ratan K. Guttierez, Gilles and Serrar, Mustafa: Low Molecular-Weight Tannins of Phyllanthusemblica: A New Class of Anti-Aging Ingredients. Proceedings Active Ingredients Conference., Paris. 2003*
3. *Jeena, K.L.. K.L. Joy and R. Kuttan. 1999. Effects of Emblicaofficinalis, Phyllanthusamarus and Picrorhizakuroa on N- nitrosodiethyl amine induced hepatocarcinogenesis. Cancer Lett.. 136:11-16*
4. *Jose, J.K., Y. Kuttan and R. Kuttan. 2001. Antitumor activity of Emblicaofficinalis. J.*
5. *Kim, H.J., T. Yokozawa, Y.H. Kim, C. Tohda, T.P. Rao and LR Juneja. 2005. Influence of amla (EmblicaofficinalisGaertn.) on hypocholesterlemia and lipid peroxidation in cholesterol-fed rats. J. Nutr. Sci. Vitaminol., 51(6): 413-418.*
6. *Sairam, K., C.V. Rao, B.M. Dora, K.K. Vijay. V.K. Agarwal and R.K Goel. 2002. Antiulcerogenic effect of methanolic extract of Emblicaofficinalis: An experimental study. J. Ethnopharmacol, 82: 1-9.*
7. *Scartezzini, P., F. Antognoni, M.A. Raggi. F. Poli and C. Sabbioni2006. Vitamin C content and antioxidant activity of the fruit and of the Ayurvedic preparation of EmblicaofficinalisGaertn. .Ethnopharmacol, 104(1-2): 113-118.*