

EVALUATION OF POWDER MICROSCOPY AND PHYSICOCHEMICAL STUDIES ON THE FRUIT OF AMALAKI (*EMBLICA OFFICINALIS GAERTN*)

Sapna Chaudhary*, Apurva Joshi**, Vinod Kumar Joshi***

* Department of Dravyaguna, I.M.S, B.H.U, Varanasi, U.P., India.

**Ph.D.Scholar, Department of Pharmaceutics, I.I.T.,BHU Varanasi, U.P., India.

***Prof. Department of Dravyaguna, I.M.S, B.H.U, Varanasi, U.P. , India.

ABSTRACT

The present work deals with the Physicochemical and Powder microscopy and studies on the fruit of Amalaki (*Emblica officinalis* Gaertn.), Euphorbiaceae family. Amalaki is considered to be one of the best drugs in Ayurveda. It is considered to be Dhatri which nurtures the human kind. In Hindu mythology it is regarded as an important and sacred tree. Amalaki is becoming increasingly well known for its high level Vit-C, shows pronounced adaptogenic properties and has been shown to be active in in-vivo against free radical damage induced during stress. It acts as a Rasayana, Nadibalya, Hrudya, Chakshushya, and indicated in Apasmara, Prameha, Raktapitta, Netraroga, Kusta etc.

KEY WORDS- Amalaki, Ayurveda, Dhatri, Rasayana.

INTRODUCTION

Local name of Amalaki (*Emblica officinalis* Gaertn, family Euphorbiaceae) is Amla. Amalaki is one of the most celebrated herbs in the Indian system of traditional medicine, with intense regard in the minds of common people. Amalaki is eaten raw or cooked into various dishes, also murabbah a sweet dish indigenous to the northern part of India (where in the berries are soaked in sugar syrup for a long time till they are imparted the sweet flavor) is traditionally consumed after meals. Amalaki is easily available, easily identified by the common people and also cost effective drug. It is considered as a single herb treatment for majority of the disease. It helps in maintaining the balance in all the three doshas that is vital for proper functioning of the body. It is widely used in Ayurvedic preparations as one of

the prime Rasayana dravya like Chyavanaprasha, Amalaka Rasayana, Amalaka avaleha, Bramha Rasayana, Triphala Rasayana, etc. Amalaki is classified under Kustaghna, Virechanopaga, Kasahara, Jwarahara, Prajasthapana and Vayasthapana. Aqueous as well as ethanol extract of the fruits of Amalaki have been reported to possess cytoprotective and immunomodulating property in vivo¹ and in vitro². Ethanol extract of the fruit prevented the country made liquor and paracetamol induced liver damage in rats and mice, respectively³. Emblicanin A and B enriched fraction from fresh juice prevented the iron-induced hepatic damage in rat⁴. Aqueous extract of dried fruit prevented the hepato-and renal- toxicity of heavy metals like lead and aluminium in mice⁵.

BOTANICAL DISCRPTION-

A medium sized deciduous tree , It is found throughout India, Occur commonly in tropical & subtropical regions. Fruit is a compact,heavy, fleshy drupe,almost globular in shape, 3 to 4 cm in diameter, smooth shining, shows 5 to 8 longitudinally running furrows and minute light coloured specks, a depression at the base and at the top, indicating the scar of pedicel and style, on drying it splits longitudinally, exposing the hard mesocarp and endocarp , and become highly shrivelled.fresh fruits are yellowish green in colour , dried one are greyish white, dark brownish or black in colour .Odour characteristic; taste slightly bitter and sour, followed by a delicately sweet astringent feeling. Bark is light, greyish in colour. Leaf are small, very closely set in pinnate form giving a feathery appearance. Flowers are

monoecious, greenish, yellow in axillary clusters. Flowering & Fruiting time are Autumn to spring season.

AYURVEDIC PROPERTIES⁶:-

Rasa-Amla, Kasaya, Madhura, Tikta ,Katu. Guna-Laghu , Ruksa .

Virya-Sita.

Vipaka-Madhura.

Dosakarma- Tridosahara

MATERIAL & METHOD

Amalaki(*Embllica officinalis Gaertn.*), has been identified by Prof.V.K. Joshi, Department of Dravyaguna, B.H.U. The mature fruit of Amalaki was collected from the Ayurvedic Dravyaguna garden, B.H.U. Fruit was pulverized in the mechanical grinder to a moderate fine powder to carry out powder microscopic studies and was stored in a well closed airtight vessel for further analysis.



Figure-1 Twig with fresh Fruit of Amalaki



Figure-2 Dried Fruit of Amalaki



Fruit Powder of Amalaki

POWDER MICROSCOPY OF FRUIT POWDER OF AMALAKI-



Figure-4 Sclereids from endocarp

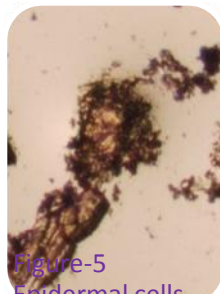


Figure-5 Epidermal cells



Pitted vessels

Parenchyma

PHYSICO-CHEMICAL ANALYSIS OF FRUIT OF AMALAKI-

Name of tests	Result
Description	Brownish

Foreign matter	Nil
Total ash value	2.64% w/w
Acid insoluble ash value	0.56% w/w
Water soluble extract	60.21% w/w

DISCUSSION AND CONCLUSION

The fruits of *Embllica officinalis* Gaertn were collected and analysed the various standardization parameters. Powder microscopy results showed the presence of Sclereids from endocarp, Epidermal cells, Parenchyma and Pitted vessels. Physicochemical parameters of the fruits of *Embllica officinalis* Gaertn are tabulated. Total ash value of plant material indicated the amount of minerals and earthy materials attached to the plant material and results showed total ash value content was 2.64 %w/w. The negligible amount of acid-insoluble siliceous matter present in the plant was 0.54%w/w. The water-soluble extractive value was 60.21%w/w.

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