



**IJAYUSH**  
*International Journal of AYUSH*  
AYURVEDA, YOGA, UNANI, SIDDHA AND HOMEOPATHY  
<http://internationaljournal.org.in/journal/index.php/ijayush/>

International Journal  
Panacea  
Research library  
ISSN: 2349 7025

Review Article

Volume 10 Issue 04

July – August 2021

## ROLE OF AMALAKI IN DIABETES MELLITUS –A REVIEW

Dr. Virendra Singh Solanki<sup>1</sup>, Dr. Trupti Jain<sup>2</sup>, Dr. Charu Bansal<sup>3</sup>

<sup>1</sup>PG Scholar <sup>2</sup>Asst. Professor <sup>3</sup>Professor,

Dept. of Swasthavritta, Govt. (Auto.) Ayurveda College and Institute, Bhopal (M.P)

**Corresponding Author-**Dr. Virendra Singh Solanki

**E- Mail-** [veer123s@gmail.com](mailto:veer123s@gmail.com)

**Abstract:** Diabetes is an “iceberg” disease. The prevalence of Diabetes is rapidly rising all over the globe at an alarming rate. Diabetes Mellitus occurs throughout the world, but it is more common; especially Type-2 Diabetes Mellitus in the developed countries. WHO predicted that 30 million people were diagnosed with Diabetes worldwide in 1985, by 1995 the number had risen to 135 million and at the current rate there will be some 592 million by the year 2035. In India, it is estimated that by year 2045 it is rise to 134.3 million (IDF).

In *Ayurvedic* classics almost all the *Acharyas* have quoted *Amalakias* a *Rasayana* and highlighted its *Pramehaghna* property too. Our ancient *Acharyas* have described *Amalaki* as a antidiabetic drug on the basis of its *Rasa, Guna, Veerya, Vipaka* and *Karma*. Results of clinical trials, epidemiological investigations, experimental studies proved the antioxidant, hypolipidemic, immunomodulatory and hypoglycemic property of *Amalaki*. So *Amalaki* can be used as an adjuvant therapy for DM.

**Key Word:** Type 2 Diabetes, *Madhumeha*, *Amalaki Churna*

## INTRODUCTION:

Diabetes is an “iceberg” disease. The prevalence of Diabetes is rapidly rising all over the globe at an alarming rate.<sup>[1]</sup> Diabetes Mellitus occurs throughout the world, but it is more common; especially Type-2 Diabetes Mellitus in the developed countries.<sup>[2]</sup> Diabetes is a lifestyle disease and it can affect people at any age, leading to many complications like heart disease and kidney disease etc. One way to keep Diabetes and its complications under control is; early detection of the disease and to adopt the healthy lifestyle. The ancient Indian physicians also had a sound knowledge of Diabetes. It is considered as one of the serious disease and included in ‘*AshtaMahagada*’. In *Ayurveda*, types, clinical features, complications and treatment of Diabetes described vividly. Both *Sushruta* and *Charaka* emphasizes the importance of diet and exercise in the management of Diabetes. WHO also emphasizes on the using of traditional drug with the lowest sideeffects to control and Prevention of DM.

Various Ayurvedic single herbs proved its potential in the control of Diabetes and its complications by their properties and Amalaki is one of them. In *Ayurvedic* classics almost all the *Acharyas* has quoted *Amalaki* as a *Rasayana* and highlighted its *Pramehaghna* property on the basis of its *Rasa*, *Guna*, *Veerya*, *Vipaka* and *Karma*

## REVIEW ON AMALAKI



Various references of *Amalaki* as an antidiabetic has been mentioned in our classics:

- *Acharya Charaka* has mentioned *Amalaki* as one of the important content of *pramehanashaka Yoga* in 6 chapter of *Chikitsasthana*. (*C.Chi.6/26-40*.)
- *Acharya Vagbhata* explained *Nisha Amalakichurna* in A.H. Chi 12/5
- *Acharya Bhavaprakash* quoted *Amalaki* as a “रक्तपित्तप्रमेहघ्नपरंवृष्यं रसायनम्” in

*HaritkyadiGana /39.*

**Table No.1. Properties and indication of *Amalaki* according to different *Acharyas*.**

Properties and indication	C.S. (C.Su.27/147)	S.S. (S.Su.46/143-144)	A.H. (A.H.Su.6/157)	B.P. (B.P.M.Hrit.39)
<i>Panchrasatmak</i>	+	+	+	+
<i>Saram</i>	-	+	-	-
<i>Chaksusya</i>	-	+	-	-
<i>Sarvdoshghnam</i>	+	+	-	-
<i>Vrishyam</i>	-	+	-	-
<i>Tridosahara</i>	-	-	-	+
<i>Pittakphahar</i>	+	-	+	-
<i>Agnidipak</i>	-	-	+	-
<i>Rasayanam</i>	+	-	-	+
<i>Pramehadhna</i>	-	-	+	+
<i>Raktapittahara</i>	-	-	-	+
<i>Deepan-Pachan</i>	+	-	-	-
<i>Vayasthapanam</i>	+	-	-	-

## **Amalaki**

**Latin name:** *Phyllanthus emblica* Linn (*Emblica officinalis* Gaertn.)

**Family :** Euphorbiaceae

**Synonyms:** *Amalaki, Vayasya, Vrishya, Dhatriphala, Amritaphala, Amalaka, Tishyaphala*

**Properties:**

**Rasa :-** *Amla, Madhura, Kashaya, Tikta, Katu*

**Guna :-** *Guru, Ruksha, Sheeta*

**Veerya:-***Sheeta*

**Vipaka:-***Madhura*

**Doshaghnata**– It is excellent *Tridoshashamaka*, especially *Pittashamaka*

**Karma**<sup>[3]</sup> –

Excellent work as Dahaprashamana, Chakshushya, Keshya, Medhya, Nadibalya, Balya, Rochana, Deepana, Anulomana, Amlatanashaka, Yakriduttejaka, Stambhana, Sransana, Hridya, Shonitasthapana, Kaphaghna, Vrishya, Garbhasthapana, Mootrala, Pramehaghna, Kushthagha, Jwaraghna, Rasayana.

**Pharmacological activity**<sup>[3]</sup>:

Spasmolytic, mild CNS depressant, hypolipidaemic, antiatherosclerotic, antimutagenic, antimicrobial, antioxidant, immunomodulatory, antifungal, antitumour, hypoglycaemic, anti-inflammatory, antibacterial, antiulcer, adrenergic potentiating, HIV-1 reverse transcriptase inhibitory action.

**Rogaghnata**<sup>[3]</sup>:

Usful in Paittikavikara, Daha, Mootravarodha, Netraroga, Khalitya, Palitya, Mastishkadaurbalya, Drishtimandya, Indriyadaurbalya, Aruchi, Trishna, Agnimandya, Vibandha, Yakridvikara, Amlapitta, Raktapitta, Raktavikara, Kasa, Shwasa, Yakshma, Pradara, Parinamashoola, Udavarta, Udararoga, Arsha, Hridroga, Shukrameha, Garbhashayadaurbalya, Mootrakrichchhra, Paittikaprameha, Kushtha, Visarpa, Charmaroga, Jeernajwara, Kshaya, Daurbalya, Daha, Shotha.

**Chemical constituents**<sup>[3]</sup>:

It is a good source of vitamin C; carotene, nicotinic acid, riboflavine, D-glucose, D-fructose, myoinositol and a pectin with D-galacturonic acid, D-arabinosyl, Dxylosyl, L-rhamnosyl, D-glucosyl, embicol, mucic, Indole acetic acid and four other auxins- a1, a3, a4 and a5, two growth inhibitors- R1 & R2; phyllembic acid and phyllembin in fruits and fatty acids in seed oil; leucodelphinidin, procyanidin, 3-O-gallated prodelphinidin and tannin (bark); ellagic

acid, lupeol, oleanolic aldehyde and 0-acetyl oleanolic acid in root; tannins, polyphenolic compounds; 1,2,3,6-trigalloylglucose, terchebin, corialgin, ellagic acid, alkaloids, phyllantidine and phyllantine (leaves & fruits).

**Table no 2 Nutrition Facts per 100 ml**(Approximate Values)

Energy	44 Kcal
Protein	0g
Carbohydrates	11 g
Fat	0g
Fibre	5g
Vitamin C	40mg
Potassium	80mg
Calcium	5mg
Magnesium	4mg
Omega 3 fatty acid	48mg
Omega 6 fatty acid	276mg

Source- [Dr. Jagdev Singh](#), November 21, 2014

## RESEARCH REVIEW OF AMALAKI

### 1. Antioxidant action:<sup>[4]</sup>

The antioxidant properties of *E. officinalis* extracts and their effects on the oxidative stress in streptozotocin-induced diabetes were examined in rats. *Amalaki* showed strong inhibitory action on production of advanced glycosylated end products which is a glycosylated protein that is an indicator of oxidative stress. Furthermore, thiobarbituric acid-reactive substances levels were significantly reduced with *Amalaki*, indicating a reduction in lipid peroxidation. In addition, the decreased albumin and adiponectin levels in the diabetic rats were significantly improved

with *Amalaki* (Rao et al., 2005)

## 2. Hypolipidemic action:<sup>[5-8]</sup>

*Amalaki* may be effective in hypercholesterolemia as well as for prevention atherosclerosis. Fresh juice and ethylacetate extract of *Amalaki* exhibited serum lipid lowering effect. Serum cholesterol, S.triglyceride, phospholipid and LDL levels were significantly decreased by the administration of *Amalaki*.

## 3. Hypoglycemic action:<sup>[9-11]</sup>

Oral administration of extracts of *E. officinalis* reduced the blood sugar level in normal and in alloxan induced diabetic rats.

## 4. Immunomodulatory action:<sup>[3]</sup>

*Emblica officinalis* is significantly beneficial in stimulating immune system. It enhances natural killer cell activity and antibody dependent cellular toxicity. There are several reports regarding the immune stimulatory effects of ascorbic acid. As *Emblica officinalis* is considered the richest source of vitamin C, it is thought that the immunomodulatory effects of *Emblica officinalis* is mediated by the ascorbic acid present in it.

## DISCUSSION

- Madhumeha is *Vatapradhan vyadhi* associated with kapha and pitta. Due to *Amla* rasa it is *vaatnashak* and because of *Madhura rasa* and *Sheet veerya* it alleviates pitta and it is *kaphashamak* due to its *kashaya* and *rukshaguna* so *Amalaki* has *Tridoshnashak* property.
- Especially *Amla* and *Katu Rasa* present in *Amalaki* improves *Jatharagni* and correct digestion and metabolism.
- Due to *Amla* and *Madhur* rasa it pacifies *Vata*.
- Because of *Madhura Rasa* and *Sheeta Guna* it pacifies *Pitta*.
- Due to *Kashaya* and *Ruksha Guna* it alleviates *Kapha Dosha* and corrects *Medodhatu Dushti*.

- *Amalaki* has *Rasayana* property so it can cause nourishment of *Dhatus*.
- *Amalaki* primarily contains tannin, alkaloids, phenolic compounds, amino acids and carbohydrates. It is rich in chromium and contains many nutrients like Vit.C, Vit.B, calcium phosphorus, iron and carotene. Various study proved it's hypoglycemic, antioxidant, hypolipidemic, immunomodulator, antimutagenic, antimicrobial and anti-inflammatory properties. [12]
- Antioxidant activity of *Amalaki* is associated with presence of vit-c. It plays a role in reducing oxidative stress and improving glucose metabolism in type 2 DM. [13]
- Tannins and flavonoids, uniquely present in *Amalaki* also possess and exhibit potent antioxidant property. [14]
- Phenolic phytochemicals present in *Amalaki* are natural inhibitor of  $\alpha$ -amylase and  $\alpha$ -glycosidase and thus might be responsible for glucose lowering effect. [15]
- *Amalaki* fruit also contains chromium, as it stimulates the islets group of cells that secrete the hormone insulin. It has a therapeutic value in diabetes. [16]

## CONCLUSION

- ✓ *Acharyas* have described *Amalaki* as antidiabetic drug on the basis of its *Rasa*, *Guna*, *Veerya*, *Vipaka* and *Karma*.
- ✓ *Amalaki* primarily contains tannin, alkaloids, phenolic compounds, amino acids and carbohydrates. Also rich in chromium and contains many nutrients like Vit.C, Vit.B, calcium phosphorus, iron and carotene. Various study proved it's hypoglycemic, antioxidant, hypolipidemic, immunomodulator and anti-inflammatory properties. [16]
- ✓ Thus *Amalaki* can be used as a safe and healthy addition to diet as well as medicine especially for prevention and control of Type-2 Diabetes Mellitus.

## REFERENCES:

1. Huizinga MM, Rothman RL. Addressing the diabetes pandemic: A comprehensive approach. Indian J Med Res. 2006; 124: 481-484.

2. Nita Gandhi, et.al. Epidemiology of Diabetes Medicine (Abingdon). Dec.2014; 42(12): 698–702.
3. Database on Medicinal Plants Used in Ayurveda, Published by The central council of Research in Ayurveda & Siddha, New Delhi, Year of publication. 2001; volume 3: page no.11-14.
4. Rao, T.P., N. Sakaguchi, L.R. Juneja, E. Wada and T. Yokozawa. Amla (*EmblicaofficinalisGaertn.*) extracts reduce oxidative stress in streptozotocininduced diabetic rats. J. Med. Food. 2005; 8: 362-368.
5. Kim, H.J.T. Yokozawa, H.Y. Kim, C. Tohda, T.P. Rao and L.R. Juneja. Influence of amla (*EmblicaofficinalisGaertn.*) on hypercholesterolemia and lipid peroxidation in cholesterol-fed rats. J. Nutr. Sci. Vitaminol Tokyo. 2005; 51: 413-418.
6. Thakur, C.P., B. Thakur, S. Singh, P.K. Sinha and S.K. Sinha. The Ayurvedic medicines Haritaki, Amala and Bahira reduce cholesterol induced atherosclerosis in rabbits. Int. J. Cardiol. 1988; 21: 167-175.
7. Mathur, R., A. Sharma, V.P. Dixit and M. Varma. Hypolipidaemic effect of fruit juice of *Emblicaofficinalis* in cholesterol-fed rabbits. J. Ethnopharmacol. 1996; 50: 61-68.
8. Mishra, M., U.N. Pathak and A.B. Khan. *EmblicaofficinalisGaertn* and serum cholesterol level in experimental rabbits. Br. J. Exp. Pathol.1981; 62: 526-528.
9. Sabu, M.C. and R. Kuttan. Anti-diabetic activity of medicinal plants and its relationship with their antioxidant property. J. Ethanopharmacol.2002; 81: 155-160.
10. Tripathi, S.N., C.M. Tiwari, B.N. Upadyay and R.S. Singh. Screening of hypoglycemic action in certain indigenous drugs. Screening of hypoglycemic action in certain indigenous drugs. 1979; 14: 159-169.
11. Hakim, Z.S., R.A. Bangaru, D.D. Santani and R.K. Goyal. Potential antidiabetic agents from plant sources. Indian J. Nat. Prod. 1996; 11: 3-10.
12. Santhi Sri K.V. et al. Effect of Amla, an approach towards the control of Diabetes Mellitus. International Journal of Current Microbiology and Applied Sciences (2003); 2(9):103-108



13. Ibid 12

14. Ibid 12

15. Ibid 12

16. K.Walia, et.al. Role of Amla in Type-2 Diabetes Mellitus-A Review. Research Journal of Recent Sciences (2015); Vol.4:31-35