

## Review Article

### Haritaki A Boon To Herbalism – A Review

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**Abstract:** The demand for herbal therapeutics is increasing gradually in the world. The Indian system of medicines uses herbal preparations in majority for the management of diseases. Globally a large number of Pharmacological studies have been conducted extensively on various medicinal plants. In recent years a lot of research is being conducted on *Terminalia chebula* (Haritaki). The pharmacological studies of Haritaki were reviewed in this paper.

**Keywords:** *Terminalia chebula*, herbal drugs, Indian medicinal plants, pharmacological studies, haritaki, Kadukkai.

#### INTRODUCTION

According to the World Health Organization (WHO) more than 80% of the people living in the developing countries depend on traditional medicine for their primary health needs [1]. The traditional Indian system of medicines like Ayurveda, Siddha and Unani support the importance of medicinal plants to treat diseases [2].

Plants produce a wide array of bioactive principles and constitute a rich source of medicines [3]. The demand for plant-based therapeutics is increasing in both developing and developed countries due to the growing recognition that they are natural products, non narcotic, easily biodegradable, pose minimum environmental hazards, have no adverse side-effects and are easily available at affordable prices [4].

*Terminalia chebula* (haritaki) is used in traditional medicine due to the wide spectrum of pharmacological activities associated with the biological active chemicals present in this plant [5]. The name Haritaki in Sanskrit refers to the yellowish dye (harita) that contains the god Siva (Hari, i.e. the Himalayas) and that it cures (harayet) all the diseases [6].

Haritaki is a moderate sized tree grows widely in India, Myanmar, Bangladesh, Iran, Egypt, Turkey, China etc. [5]. It is found throughout India, chiefly in deciduous forests and areas of light rainfall, but occasionally also found in slightly moist forests, flowers appear from April-August and fruits ripen from October-January, fruit is drupe-like, 2–

4.5 cm long and 1.2–2.5 cm broad, blackish, with five longitudinal ridges [7].

#### SYNONYMS [8]

**China** – Zhang-Qin-Ge, Hezi

**France** – Myrobalan in dien

**Germany** - Myrobalane

**India** - {Assamese – Shilikha; Bengali – Haritaki; Gujarati–Hirdo, Himaja, Pulo-harda; Hindi – Harre, Harad, Harar; Kannada – Alalekai; Kashmiri–Halela; Malayalam – Katukka; Marathi - Hirda, Haritaki, Harda, Hireda; Oriya – Harida; Punjabi – Hakeka, Harar; Sanskrit – Haritaki, Abhaya, Kayastha, Siva, Pathya; Tamil – Ammai, Amutam, Aritaki, Pethiyam, Varikkai; Telugu – Karakkaya; Urdu – Halela}

**Srilanka** – Aralu

**Tibet** – Harro

#### Types of haritaki:

In Siddha literature seven types of Haritaki are identified according to their geographical distribution namely Vijayan, Boodhana, Rogini, Abhyan, Amrutha, Boothagi and Sethagi.

#### Tastes found in the fruit of haritaki:

Among the six tastes except salt other five tastes are found in the fruit of haritaki namely outer skin-pungent, ridge-sour, seed-astringent, stem-bitter, endosperm-sweet.

#### Haritaki for tridosha:

To Indian system of medicine all diseases are due to the imbalance in tridosha or three bodily humors. Haritaki if taken with salt can cure kapha dosha, with

sugar can cure pitha dosha and when taken with ghee can cure vatha dosha.

#### Chemical constituents of haritaki

It contains high phenolic content, especially hydrolyzable tannins, anthraquinone, flavonol, carbohydrates, glucose and sorbitol [9], chebulic acid [10], chebulinic acid [11], ellagic acid, gallic acid [12], chebulagic acid [13] etc.,

#### Pharmacological studies of Haritaki:

Based on the chemical constituents present in haritaki several pharmacological investigations have been conducted in various in vivo and in vitro. Table 1 shows the summary of the findings of some of these pharmacological studies.

**Table 1. Pharmacological studies on Haritaki**

Pharmacological activity	Author/Reference	Extract type	organisms
Antibacterial	Kannan et al.,[4]	Ethanol extract	Salmonella typhi, Staphylococcus aureus, Bacillus subtilis etc.
	Malekzadeh et al.,[14]	Ether, alcoholic, water extract	Helicobacter pylori
Anticancer	Saleem et al.,[15]	70% of methanol	Human(MCF-7), mouse (S115) breast cancer cell lines etc.
Anticaries	Jagtap et al.,[16]	Aqueous extract	Streptococcus mutans
Anticonvulsant	Hogade Maheswar et al.,[17]	Ethanol, chloroform, Petroleum ether aqueous extract	Rats
Antidiabetic	Gandhipuram P et al.,[18]	Ethanol extract	Adult albino male rats
	Rao et al.,[19]	chloroform extract	Streptozotocin induced diabetic rats
Antifungal	Saheb Shinde et al.,[20]	Aqueous, alcoholic, ethyl acetate extract	Aspergillus niger, Aspergillus flavus, Alternaria alternata etc
	Vivek et al.,[21]	70% of methanol, ethylacetate, hexane, chloroform extract	Fusarium oxysporum, Phytophthora capsici, Fusarium solani etc.
Antimutagenic	Grover et al.,[22]	Chloroform, aqueous extract	Salmonella typhimurium
	Kaur et al.,[23]	Acetone, aqueous chloroform extract	Salmonella typhimurium
Antioxidant	Suchalata et al.,[24]	95% of ethanol extract	Adult male albino rats
	Chia-lin chang et al.,[25]	water, methanol & 95% of ethanol extract	Fermented products
Antiulcer	Raju et al.,[26]	Methanolic extract	Wistar albino male rats
Antiviral	Hongbo Ma et al.,[27]	Acetone extract	Swine influenza A virus
	Kim et al.,[28]	Aqueous extract	Hepatitis B virus
Cardioprotective	Suchalata et al.,[29]	95% of ethanol extract	Adult albino male rats
Cytotoxic	Kaur et al.,[30]	Acetone extract	Cancer cell lines
Immunodulatory	Vaibhav Aher et al.,[31]	Alcohol extract/	Male wistar rats
Radioprotective	Jagetia et al.,[32]	Aqueous extract	Rats
Wound healing	Manish PalSingh et al.,[33]	Hydroalcoholic extract	Induced diabetic rats
	Choudhary [34]	90% of ethanol extract	Wistar albino rats

#### Toxicological studies on Haritaki:

The inner seed of the fruit of Haritaki is toxic hence removed while preparing therapeutics based on

Haritaki. The acute toxicity study of the 50% alcoholic extract [35], subchronic toxicity study of both powder and water extract [36], acute and chronic toxicity studies of water extract given orally [37] from dried fruits of haritaki demonstrated no toxic effects in mice.

#### Traditional Uses of haritaki:

The fruit of haritaki has been extensively used in Thai traditional medicine for laxative, carminative, astringent, expectorant, and tonic effects [38]. It is routinely used as traditional medicine by tribes of Tamil Nadu to cure several ailments such as fever, cough, diarrhea, gastroenteritis, skin diseases, candidiasis, urinary tract infection and wound infections [6]. It is used commonly in many Ayurvedic preparations as diuretic and cardiogenic [16]. It is used to prevent aging and impart longevity, immunity [31]. It is reputed to cure blindness and it is believed to inhibit the growth of malignant tumors [15].

#### Haritaki as Kayakalpa:

It can be used as a kayakalpa (rejuvenating the body and the mind) if taken in evening in prescribed amounts. To act as kayakalpa it should be consumed according to the season as shown in Table 2.

**Table 2. Consumption of Haritaki in 6 seasons**

Season/Kaalam	Adjuvant
Illavenil (mildly sunny)	Honey
Muthuvenil (intense sunny)	Jaggery
Kar (Cloudy rainy)	Rock salt
Kuthir (Cold)	Sugar
Munpani (Early misty)	Dried ginger
Pinpani (Late misty)	Long pepper

#### Important preparations of haritaki:

Kadukkai mathirai: Iron deficiency  
 Moola kudori thylam: For bleeding piles.  
 Bhavana kadukkai: Anaemia  
 Kadukkai legiyam: constipation, gas trouble, ulcer  
 Triphala choornam: Digestive, blood purifier, reduces cholesterol, antioxidant, balances three body humors.

#### CONCLUSION

The traditional Indian system of medicines like Siddha, Ayurveda and Unani mainly uses medicinal plants for the management of diseases. Recognition for herbal therapeutics is gradually increasing in the world because they are safe and natural products. Extensive research has been carried out on medicinal plants attracting many more scholars to devote themselves for further study. *Terminalia chebula* (Haritaki) is one of the important herbal drug used for treating many diseases including some varieties of cancer. It is rich in chemical constituents. Many pharmacological investigations have been carried out based on its chemical constituents. A review on some pharmacological studies on haritaki are presented in this

paper. These studies justify the claim on ancient literatures that haritaki called as amutham (nectar) in tamil is a kayakalpa which balances the three bodily humors or doshas that are the main reasons for illness and stress that herbal medicines treats the cause of the disease rather than suppressing the symptoms.

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