



IJPPR

INTERNATIONAL JOURNAL OF PHARMACY & PHARMACEUTICAL RESEARCH
An official Publication of Human Journals

ISSN 2349-7203




Human Journals

Review Article


January 2019 Vol.:14, Issue:2

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Kanocha (*Phyllanthus maderaspatensis*): A Popular Unani Drug



IJPPR
INTERNATIONAL JOURNAL OF PHARMACY & PHARMACEUTICAL RESEARCH
An official Publication of Human Journals



ISSN 2349-7203

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Submission: 21 December 2018
Accepted: 26 December 2018
Published: 30 January 2019

Keywords: Kanocha, *Phyllanthus maderaspatensis*, Unani drug, Maru.

ABSTRACT

Unani medicine is one of the ancient system of medicine of India. *Kanocha* is a Unani drug botanically named as *Phyllanthus maderaspatensis* belongs to family *Phyllanthaceae* is a perennial herbaceous species of plant found in tropical parts of India, Myanmar, Sri Lanka, Tropical Africa, Java, China, and Australia. The species named as “maderaspatensis” is owing to its origin, i.e., ‘the Madras region of India’ (now Chennai region). It is also known as *Maru* in Arabic language. It has various types. It has been used for its various therapeutic purposes such that carminative, anti-inflammatory, antimicrobial, analgesic and astringent. In this review, an effort has been made to provide information on medicinal properties of *Kanocha* (*Phyllanthus maderaspatensis*) mentioned in Unani classical literature as well as in recent scientific studies.



HUMAN JOURNALS

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INTRODUCTION

The Unani system of medicine or Unani Tibb is based on Greek philosophy. It is a traditional system of medicine practiced in Indian subcontinent. The drug *Kanocha* botanically named as *Phyllanthus maderaspatensis* belongs to family *Phyllanthaceae*. The species named as “*maderaspatensis*” is owing to its origin, i.e., ‘the Madras region of India’ (now Chennai region). It is also known as *Maru* in Arabic language. It has many types. It is very famous drug which is black in colour with insipid mucilaginous taste. The seeds are polished, triangular, of a grey colour, prettily marked with delicate dark-brown lines like basket-work. The drug has mucilaginous properties [1-5].

The plants of *Kanocha* are found in tropical parts of India, Myanmar, Sri Lanka, Tropical Africa, Java, China, and Australia. It is unclear if this plant has ever been introduced to areas outside of its native range [6-8].

DESCRIPTION ACCORDING TO UNANI CLASSICAL LITERATURE

According to Muhazzab al Deen Abu al Hasan Ali bin Ahmad bin Ali Hubal Baghdadi, *Kanocha* is known as *Maru*. It has many types; one of its types is called as *Marmajooz* which is hot and aromatic and other type is white *Kanocha*. In his opinion, it is nothing but *Gaozaban* as it had been described by some physician. It is of *moatadil mizaj*. One more type is known as *shahyaar* (*Mustehaar* mentioned by Ibn Sina in *Al Qanoon fil Tib*) which is cold in *mizaj*. Ibn Baitar mentioned its type as *Mustehaar* and quoted Ibn Sina. Najmul Ghani referred Gilani as the best seeds are of fresh, thick and yellow in colour [3,6,9-11].

Kanocha is one of the types of *Maru*. Its branches are scanty, long, and leaves are round and pointed in shape like that of *Kapas* (*Gossypium*) and scanty. Its seeds are coated like *tukhme-alsi* and black in colour. Its flowers are yellow. Its fruits are similar to *Kanghi*. It is mucilaginous and insipid in taste [12-15].

The parts of *Kanocha* plant used for medicinal purpose are mainly seeds, and leaves [1-3,11-14]. The *Mizaj* (temperament) of this plant described in Unani classics is hot and dry in Second degree [10-14, 16]. The seeds of *Kanocha* are shown in Figure 1.



Figure 1: Seeds of *Kanocha*

ETHNO-BOTANICAL DESCRIPTION

It is annual, but sometimes woody at the base, very variable in habit; stems glabrous, 30-90 cm. long, erect, ascending or decumbent. Leaves scattered variable, 6-32 by 3-16 mm., glabrous, obovate cuneate, rounded, truncate or somewhat obcordate at the apex, mucronate, much tapering into a very short petiole, glaucous and with a few lateral nerves conspicuous beneath; stipules peltate, lanceolate, very acute. Flowers, axillary the male flowers minute in small clusters, subsessile, the female larger, solitary, shortly pedicellate. Sepals 6, obovate, obtuse, green with white margins. Stamens 3; filaments connate. Styles 3, distinct, very small, 2-lobed. Capsules 3 mm. diam., depressed-globose, glabrous, 3-lobed. Seeds 1.5 mm. long, 3-gonous, rounded on the back, muriculate in fine lines (beautifully marked like basket work), brown[3,6]. The scientific classification of *Kanocha* are shown in table 1.

Table 1: Scientific Classification

Kingdom	Plantae
Order	Malpighiales
Family	Phyllanthaceae
Genus	<i>Phyllanthus</i>
Species	<i>maderaspatensis</i>

VARIOUS ACTIONS AND CLINICAL INDICATIONS OF KANOCHA

Various actions and clinical indications of *Kanocha* are given below:

Kasir-e-Riyah(Carminative)[1,2,5,6,7,14-16], *Munjiz* (Concotic)[1,10,12,16], *Mugharri* (Emollient)[12,13], *Muqawwi-e-Meda*(Stomachic tonic)[1,10,12-14,16], *Muqawwi-e-Ama*(Intestinal tonic) [12-15], *Muqawwi-e-Qalb*(Cardiac tonic)[1], *Mulatiff*

(Demulcent)[1,2,10,14], *Jajeeb-e-Balgham*(Absorbent)[1], *Muqawwi-e-Jigar*(Liver tonic)[6], *Mulayyin*(Laxative) [1,5-7,12], *Muarriq*(Diaphoretic)[2,6,10,14], *Mudir-e-Baul*(Diuretic) [2,6,7,10,14,15], *Mudir-e-Haiz*(Emmenagogue)[15], *Qabiz*(Astringent), *Zaheer*(Dysentery), *Is'hal* (Diarrhoea) [2,6,12-15], *Munaffis-e-Balgham*(Expectorant) [6], *Muffatah Sudat*(Deobstruent) [1,2,10,14], *Naffakh* (Flatulent) [14], *Musakkin*(Analgesic/Anodyne), *Suda*(Headache)[10,12], *Waram-e-Ama*(Colitis)[1,6,12-16], *Waram-e-Shobatein* (Bronchitis) [6], *Istisqa* (Ascites) [6,10,16], *Waja-ul-Uzn*(Otagia)[6,10,12], *Waram-e-Ain*(Ophthalmits)[6].

SCIENTIFIC STUDIES

I. Phytochemical Study

The dried seeds on extraction with light petroleum gave 8.1% of clear deep yellow oil. The fatty acid composition (saturated 10.2 and unsaturated 89.8%) revealed the presence of myristic, palmitic, stearic, oleic, linolenic and linolenic acids. Beta-sitosterol had been identified in the unsaponifiable. The defatted seeds yield 15.3% of a fibrous mucilage which yields galactose, arabinose, rhamnose and aldobionic acid. The presence of a reddish brown colouring matter, maderin, and an essential oil had also been reported [7].

II. Pharmacological Studies

Antihistaminic study

Nirmal *et al.*,(2009) studied antihistaminic activity of various extracts of leaves of *Kanocha* by using animal models. The results of the study showed that aqueous extracts had significant antihistaminic activity. Hence, it was concluded that the polar constituents from leaves of *Kanocha* might responsible for antihistaminic activity and had potential role in the treatment of asthma [17].

Antifibrotic study

Krishnakumaret *al.*,(2016) evaluated *in vitro* antifibrotic activity of the extract of *Kanocha* on human activated hepatic stellate cell line- LX-2. It was observed that *Phyllanthus maderaspatensis* Linn. hexane extract inhibited the proliferation of activated LX-2 cell and suppressed the fibrotic gene expression (as evidenced by the inhibition of α -Smooth muscle actin- the marker- expression) along with functional restoration. Hence, the results of the

study showed that hexane extracts of *Phyllanthus maderaspatensis* Linn. had good antifibrotic potential [18].

Anticancerous study

Ravichandran *et al.*, (2012) carried out a study on anticancerous activity of *Phyllanthus maderaspatensis* L. which was subjected to phytochemical analysis and *in vitro* cytotoxicity studies. It was observed that the cytotoxic effect was dose dependent, 96.03% of cell death was observed at 1000 µg/ml. Further, in-depth studies could result in a safe and efficacious anticancer drug from this plant source [19].

Antimicrobial study

Leelaprakash and Dass (2011) conducted a study on antimicrobial activity of *Phyllanthus maderaspatensis* against a wide variety of pathogenic bacteria, such as *Bacillus subtilis*, *Staphylococcus aureus*, *Escherichia coli*, *Pseudomonas aeruginosa*, *Klebsiella pneumoniae* and *Salmonella typhimurium*. Qualitative phytochemical analysis of *P. Maderaspatensis* confirmed the presence of various phytochemicals, such as saponins, carbohydrate, proteins, and tannins with various Rf values (0.05, 0.27, 0.40) identified by TLC. At the concentration of 100 mg/ml the *P. maderaspatensis* showed maximum activity (25 mm) against *Staphylococcus aureus*. Thus, it was observed that antibacterial activities were believed to be due to the presence of saponins, carbohydrate, proteins and tannins identified in the extracts [20].

CONCLUSION

Unani system of medicine is a traditional system of medicine practiced in Indian subcontinent. There is vast experience-based evidence of uses of Unani drugs mentioned in Unani classical literature. *Kanocha* is widely used as a medicine for various therapeutic purposes. Unani physicians had described two types of *Kanocha* and both are extensively used for a number of human ailments as is evident from Unani classical literature. In present time scientific studies have been performed on *Kanocha* namely phytochemical and pharmacological studies. Many studies found its strong anti-inflammatory, anticancerous, analgesic and antimicrobial activities. Therefore, more researches can be done to exploit the unexplored potentials of *Kanocha* which have already been mentioned in Unani classical literature.

Conflict of Interest

There is no conflict of interest.

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