



## A CRITICAL REVIEW OF *KARAVELLAKA* (*MOMORDICA CHARANTIA* LINN.) AS A *VISHAGNA DRAVYA* (ANTI POISONOUS DRUG)

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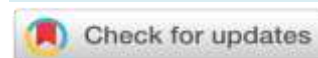
<https://doi.org/10.46607/iamj0912032024>

(Published Online: March 2024)

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Article Received: 07/02/2024 - Peer Reviewed: 04/03/2024 - Accepted for Publication: 11/03/2024.



## ABSTRACT

**BACKGROUND:** Our ancestors know the day-to-day common and medicinal uses of *Karavellaka* (*Momordica charantia* Linn.). It is also known to be utilised by folklore practitioners for medicinal purposes. **MATERIALS AND METHODS:** Here is an attempt made to gather information about *Karavellaka* as *Vishagna* through the literary resources from various classical and contemporary texts and other publications like *Kriyakaumudi*, *Indian Medicinal Plants*, *Rasatarangini* and research updates. **OBSERVATION AND RESULT:** The reference to *Vishagna* property is available in the classics and is supported by research articles. **CONCLUSION:** Studies prove the (*Vishagna*) anti-poisonous activity of *Karavellaka* utilised either *Ekamoolika Dravya* or another form of *Aushadhi Yoga* and expanded the scope of exploration of its medicinal benefits.

**Keywords:** *Karavellaka*, *Vishagna*, *Uragavisha samanya chikitsa*, *Vishakallu*, *Malla Shodhana*, *Karavellaka Swarasa*.

## INTRODUCTION

*Karvellaka* is widely known as *Karela* almost all over India. *Hagalakayi* in Kannada, *Kaippa* in Malayalam. It is a vegetable belonging to the Cucurbitaceae family, i.e., *Momordica charantia* Linn. *Karvellaka* is a powerhouse of vital nutrients, including iron, magnesium, and potassium. A rich source of dietary fibre, it contains twice the amount of calcium available in spinach and broccoli. It has twice the amount of potassium than in a banana & is a fantastic source of Vit B, B1, B2, B3 & B9, and has many therapeutic benefits<sup>1</sup>. Traditional medicine vouches for the therapeutic properties imbibed in the bitter taste and its unique characteristic of penetrating deep into the fat, blood, and nervous system, thus offering a great cleansing from within. It naturally flushes out toxins, improves digestive functions, boosts metabolism and contributes to the health of the liver<sup>2</sup>, pancreas, spleen and other vital organs. It is cultivated throughout India, especially in tropical and subtropical regions. Morphology of *Karavellaka* - stem is aerial, weak, climbing using tendrils, herbaceous and green. Leaves are simple, alternate, sincerely 5- to 7-lobed, and reticulate multistate venation. The inflorescence is Solitary monoecious. The flowers are yellow with five petals. Fruits are dark green berries dehiscing by three valves, longitudinally ridged with rows of triangular tubercles. Seeds are compared and immersed in bright red pulp. Part used *Phala* (Fruit), *Patra* (leaves)<sup>3</sup>.

It has been used in folk medicine<sup>4</sup> for treating *Prameha* (diabetes mellitus), and its fruit has been employed as a vegetable for thousands of years. Phytochemicals including Proteins, Polysaccharides, Flavonoids, Triterpenes, Saponins, Ascorbic Acid, Vi-

cine, Steroidal Glucoside, Momorcharaside A, B, Spinasteroid, Stigmasteroid, Diosgenin and Thiocyanogen<sup>5</sup> have been found in this plant.

*Vishagna* is the one that helps remove *Visha* (toxin) from our bodies. Here, *Karavellaka* as *Vishagna*<sup>6</sup> means it nullifies the *Visha* present in our body. In *Visha Samprapti*, the first and foremost affected *Dhatu* is *Rakta* so by the *Dhatu Karmukata* of *Karavellaka* it's said to be *Raktaprasadakara* (Blood purifying) and even if it is widely used in *Raktapradoshakara* (Blood vitiating) *Vikaras*<sup>7</sup> like *Vatarakta* (Gout), *Visoochika* (Cholera), *Kustha* (Psoriasis), *Visha Vikaras* (Poisonous conditions) etc. We can analyse that *Karavellaka* can act as *Pittashamaka Dravya* predominantly due to its *Tikta rasa*.

### MATERIALS AND METHODS:

The present article is a critical review of *Karavellaka* (*Momordica charantia* Linn.) as a *Vishagna dravya* (antioxidant) as mentioned in Ayurvedic Pharmacopeia of India, along with other references taken from Malayalam *Visha Chikitsa Grantha* like *Kriyakau-mudi* and Kannada textbooks like *SaralaSulabha Ayurveda Chikitse*, *Rasatarangini* etc and also inferred from different authentic sources like journals and websites.

### OBSERVATION AND RESULT:

- *Karavellaka* properties:  
Botanical name<sup>7</sup>: *Momordica Charantia* Linn.  
*Momordica* – Mordeo – One bite appears jagged as if it were bitten—*Charantia* – Graceful pendant fruits.  
Family<sup>7</sup> – Cucurbitaceae  
*Kula*<sup>7</sup> – *Koshaataki*

Table No: 1 - Taxonomy<sup>8</sup>

Kingdom	Plantae
Class	Dicotyledons
Subclass	Calyciflorae
Series	Passiflorales

Order	Cucurbitales
Family	Cucurbitaceae
Genus	Momordica
Species	Charantia

Table No: 2 - *Gana Vargikarana*

Charaka	<i>Shakha Varga</i> <sup>9</sup>
Sushruta	<i>Phala Varga</i> <sup>10</sup>
Vagbhat	<i>Shakha Varga</i> <sup>11</sup>
Bhavaprakash Nighantu	<i>Shakha Varga</i> <sup>12</sup>
Adarsh Nighantu	<i>Kushmanda Varga</i> <sup>13</sup>

Table No: 3 - Varieties of *Karavellaka*

I.	<i>Brihat Karavellaka</i> <sup>14</sup>	<i>Laghu Karavellaka</i> <sup>14</sup>
II.	<i>Gramya</i> <sup>15</sup>	<i>Vanya</i> <sup>15</sup>
III.	<i>Karavelli</i> <sup>16</sup>	<i>Jalakaravelli</i> <sup>16</sup>

Table No: 4<sup>17</sup> – *Rasa Panchaka*

<i>Rasa</i>	<i>Tikta, Katu</i>
<i>Guna</i>	<i>Laghu, Rooksha</i>
<i>Vipaka</i>	<i>Katu</i>
<i>Virya</i>	<i>Ushna</i>
<i>Dosha Karma</i>	<i>Kapha- Pittashamaka</i>
<i>Karma</i>	<i>Raktashodhaka, Vishagna, Pramehagna, Kushtagna, Dipana, Rochana, Pachana, Krimighna, Shothahara &amp; Jwaraghna</i>
<i>Rogagnata</i>	<i>Jwara vikara, Prameha, Kustha, Raktavikara, Krimi, Agnimandya, Ajeerna, Jwara, Shopha</i>
Formulations	<i>Brihat sarva jwarahara lehya, Aragwadadi Kashaya, Maha Vishagarbha taila</i>

Table No- 5 - Major bioactive<sup>18</sup> components of *Karavellaka* (*Momordica charantia* Linn.) and their related functions:

Major Bioactive Components	Distribution	Functions
Polysaccharides	Various parts of plant	Antioxidant, antidiabetic, immune enhancement, neuroprotective, antitumor
Peptides and proteins	Seed	RNAN-glycosidase, polynucleotide adenosine glycosidase (PAG), DNase-like, phospholipase, superoxide dismutase, anti-tumour, immune suppression, antimicrobial
Lipids	Seed, Flesh	Antitumor, antioxidant
Terpenoids	Stem, Leave, Fruit	Anticancer, antioxidant, antidiabetic, hypoglycemic, cancer, chemoprevention
Saponins	Fruit, Root, Seed	antihyperglycemic, hypolipidmic, antiviral
Phenolics	Fruit, Pericarp, Seed	Antioxidant, anti-inflammation, immune enhancement
Sterols	Fruit, Pericarp	Antimicrobial

- **Karavellaka Vishagna properties:**

- 1) **Vishakallu a toxic absorbent**<sup>19</sup>.

In *Uragavisha Samanya Chikitsa prakaranam* -Preparation of *Vishakallu* as follows.

*Chaitra Masa* (March / April) and *Ashada Masa* (June / July) collect the Eagle's egg from the nest and make a hole.

↓  
Take the egg's contents and conduct *Bhavana* (trituration) with *Karavellaka Swarasa*.

↓  
220 mg kept back in the egg and closed with bee wax.

↓  
I kept back in the nest for 41 days.

↓  
Break the egg and the contents and keep it in *Haridrachurna*.

↓  
Wrap with silk cloth and store.

↓  
It can be kept inside an amulet and worn.

- 2) *Shodhana* of *Malla*<sup>20</sup> by *Karavellaka Swarasa* by *swedana* method for 2 *yamas*.

- 3) *Karavellaka* acts as a *Vishagna* reference directly available in Indian Medicinal Plants book<sup>21</sup>.

## DISCUSSION

*Karavellaka* acts as *Vishagna*, which we can conclude by its *Dhatu- Dosha Karmukata*. In *Visha Samprapti*, the first and foremost affected *Dhatu* is *Rakta*, so by the *Dhatu Karmukata* of *Karavellaka*, it is said to be *Raktaprasadakara*, and even it is widely used in *Raktapradoshakara Vikaras*. It is *Pit-tashamaka* due to *Tikta Rasa*. It also *Kaphahara* due to *Ushna Virya*, *Katu Vipaka* and *Tikta Katu Rasa*. From the references of *Uragavisha Samanya Chikitsa prakaranam* - The mode of action of *Vishakallu* should be kept on the snake bite site. When it absorbs *visha*, the colour changes to black and falls off independently after absorption. *Shodhana* of *Malla* by *Karavellaka Swarasa* by *Swedana* method shows the *viagra* action of *Karavellaka*. As *Malla* (Arsenic) is

*Dhatu* (Metal) *visha*, to use it as *oushadhi*, it needs to be *Shodhita*. As we are using *Karavellaka Swarasa* to remove its toxicity, it shows the *vishagna action* of *Karavellaka*. As mentioned in Table 5, it is beneficial as a daily food and can be used medically with a therapeutic dose of *Karavellaka Swarasa*<sup>22</sup> 10-20 ml. The fruit contains 5-hydroxytryptamine, charantin, diosgenin, lanosterol and beta-sitosterol. It also contains bitter principles of cucurbitacin glycosides. The fruits and seeds yield polypeptide insulin called p- p- insulin, alpha and beta glycoproteins. The seed also contains the hypoglycemic constituent *Vicine*. Another protein called *MRK-29*<sup>23</sup> is found in the smaller variety of bitter gourd.

## CONCLUSION

From the above discussion, it can be concluded that the *Karavellaka* is *Vishagna* in nature due to its *Tikta Rasa Pradhanata*, which acts as *Pittahara*. So, in *Visha Vikaras*. Its chemical constituents and bioactivities are also indeed helping resolve toxicity. Hence, it can be used as a single drug therapy or in rational combinations. The resultant drugs can be explored for a detailed clinical study to focus on the priority areas of research yet to be discovered. This article also points out the importance of unexplored *Vishagna Dravyas* and their decisive actions from different *Vishachikitsa Granthas* in the era of Agadatantra.

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Source of Support: Nil

Conflict of Interest: None Declared

How to cite this URL: Priyanka C. Patil et al: A critical review of *karavellaka* (*momordica charantia* linn.) As a *vishagna dravya* (anti poisonous drug). *International Ayurvedic Medical Journal* [online] 2024 {cited March 2024} Available from: [http://www.iamj.in/posts/images/upload/530\\_534.pdf](http://www.iamj.in/posts/images/upload/530_534.pdf)