



**KAIDARYA (*Murraya koenigii* L. Sprengel): A DRUG REVIEW**

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**ABSTRACT**

Plants have been used in traditional medicine for several thousand years from the Vedic period. Ayurveda helps in the management of various diseases by means of herbal medicines. *Kaidarya* (*Murraya koenigii* L. Sprengel) being native to India are extensively employed as flavouring in curries, apart from this *Kaidarya* possesses various medicinal properties. Hence due to the colossal medicinal importance of *Kaidarya* a review has been attempted considering all the information related to it.

**KEY WORDS:** *Kaidarya*, *Murraya koenigii* L. Sprengel, Vedic period

**INTRODUCTION**

The substance, where in the properties (*Guna*) and actions (*Karma*) exist in an inseparable relationship (*Samavaya Sambandha*) is known as *Dravya*<sup>1</sup>. According to WHO, Drug is any substance or product that is used or intended to be used to modify or to explore the physiological systems or pathological status for the benefit of recipient. In *Ayurveda*, *Dravya* (Drug) is considered as a whole and *Chikitsa* (Treatment) of the patient is considered as a whole. *Ayurveda* believes that each and every substance existing in this universe is *Panchabhauthik* in nature<sup>2</sup>. Hence *Dravya* can be defined as, any substance or mixture of substances intended to be used internally or externally for the preservation and fortification of health and for prevention,

mitigation or cure of disease of either man or other animal. Evidently, both dietetic and medicinal substances are *Dravya* in this context. History of any drug gives insight into its, morphology, properties and therapeutic or dietary utility as conceived by various authors at different stage of the history. The past experience about drugs is of great help with regards to their quality, individuality, uniqueness etc. thus making it more fruitful for future generations.

**VEDAKALA**

The *Vedas* are considered to be the oldest scriptures, the most important and highest written authority. There are no references regarding *Kaidarya* (*Murraya koenigii* L. Sprengel) in the *Vedas*.

**SAMHITA KALA**

**Table 1: KAIDARYA in SAMHITA KALA**

<b>Charaka Samhita</b>	<ul style="list-style-type: none"> <li>• <i>Kaidarya</i> is mentioned under <i>Samjnasthapana Mahakashaya</i><sup>3</sup>.</li> <li>• <i>Kaitarya</i> is mentioned as one of the ingredient in <i>Vachadya ghrta</i> and for <i>Pradeha</i> and <i>Dhupana</i> used in <i>Apasmara Chikitsa</i><sup>4,5</sup>.</li> <li>• <i>Kaitarya</i> is mentioned as a drug used for <i>Kaphaja Mutra Krcchra</i>. Juice of <i>Kaidarya</i> is mentioned along with <i>Ela</i> and honey<sup>6</sup>.</li> <li>• <i>Kaidarya</i> is mentioned under a group of drugs used to prepare <i>Kwatha</i> for <i>Asthapana Basti</i><sup>7</sup>.</li> </ul>
<b>Susrutha Samhita</b>	<ul style="list-style-type: none"> <li>• <i>Kaidarya</i> is mentioned under <i>Apachi chikitsa</i> for doing <i>Murdha-Virechana</i><sup>8</sup>.</li> <li>• <i>Kaidarya</i> is mentioned as one among the drug given for <i>Sisuprasa</i> for children up to 1 year of age<sup>9</sup>.</li> <li>• <i>Kaidarya</i> is given along with <i>Hema Churna</i>, <i>Shwetadurva</i>, <i>Ghrta</i> and <i>Madhu</i>. These enhance good body (physique), intelligence, strength and wisdom.</li> </ul>
<b>Astanga Hrudaya</b>	<ul style="list-style-type: none"> <li>• <i>Kaidarya</i> is given mixed with honey and ghee along with other drugs to bestow good growth, intelligence, strength, complexion and goodness for children up to 1 year<sup>10</sup>.</li> </ul>
<b>Bhela Samhita</b>	<ul style="list-style-type: none"> <li>• <i>Kaidarya</i> is mentioned as one among the drug used for <i>Bhojanotharam Dhumapanam</i> in <i>Matrashiteeya Adhyaya</i><sup>11</sup>.</li> <li>• Also one of the ingredients in <i>Shanabijadi Churna</i> mentioned in <i>Apasmara Chikitsa</i><sup>12</sup>.</li> </ul>

**NIGHANTUKALA**

After a great pause, Ayurveda was again revived to its past glory in the *Nighantukala*.

A large number of drugs were studied and included in different *Nighantus*. The era of *Nighantu* is very important for the aspect of 'Systematic understanding of the drugs' because the authors of *Nighantu* tried their level best to give detailed description of the drugs by introducing synonyms and *Guna-Karmas*.

**Table 2: K Aidarya in NIGHANTU KALA**

<i>Shaligrama Nighantu</i>	<i>Kaidarya</i> is mentioned under <i>Guduchyadi Varga</i> <sup>13</sup> .
<i>Madanapala Nighantu</i>	<i>Kaidarya</i> is mentioned under <i>Shaaka Varga</i> <sup>14</sup> .
<i>Raja Nighantu</i>	<i>Kaidarya</i> is mentioned under <i>Prabhadradi Varga</i> as a variety of <i>Nimba</i> <sup>15</sup> .
<i>Nighantu Adarsh</i>	<i>Kaidarya</i> is mentioned under <i>Beejapurakaadi Varga</i> <sup>16</sup> .
<i>Shabdakalpadruma</i>	<i>Kaidarya</i> is mentioned as <i>Mahanimba</i> <sup>17</sup> .

#### ADHUNIKA KALA

The advent of modern pharmaceutical science has further advanced the field of better understanding of the drug. Modern botanists have studied this plant in a comprehensive way and in spite of the textual controversies; they concluded *Kaidarya* as *Murraya koenigii* L. Sprengel of the family 'Rutaceae.'

**Table 3 : K Aidarya in ADHUNIKA KALA**

<i>Vanoushadi Chandrodya</i>	<i>Murraya koenigii</i> L. Sprengel is mentioned as <i>Neem meeta</i> <sup>18</sup> .
<b>Indian Medicinal Plants (K.R.Kirtikar &amp; B.D.Basu)</b>	Varieties of <i>Murraya</i> are mentioned, <i>Murraya koenigii</i> & <i>Murraya paniculata</i> . Among these <i>Murraya koenigii</i> L. Sprengel is Identified as <i>Kaidarya</i> . <i>Bergera koenigii</i> is mentioned as its synonym <sup>19</sup> .
<b>Glossary of vegetable drugs in Bruhatrayees</b>	<i>Kaitarya</i> is mentioned <sup>20</sup> .
<b>Indian medicinal plants</b>	<i>Murraya koenigii</i> L. Sprengel is mentioned in Sanskrit as <i>Surabhi-Nimba</i> <sup>21</sup> .
<i>Dravyaguna Vijnana</i>	<i>Kaidarya</i> is mentioned in the context of Ignored Medicinal Plants <sup>22</sup> . <i>Kaidarya</i> is mentioned <sup>22</sup> . Detailed description of <i>Kaidarya</i> is seen <sup>23</sup> .
<b>Indian Materia Medica</b>	<i>Murraya koenigii</i> L. Sprengel is mentioned also as <i>Bergera koeigii</i> <sup>24</sup> .
<i>Madhava Dravyaguna</i>	<i>Kalashaka</i> is identified as <i>Murraya koenigii</i> (L) Sprengel under <i>Shaaka Varga</i> <sup>25</sup> .
<b>Medicinal Plants of India</b>	Varieties of <i>Murraya</i> , <i>M.koenigii</i> and <i>M.Paniculata</i> are mentioned. <i>Murraya koenigii</i> L. Sprengel is identified as <i>Surabhinimba</i> <sup>26</sup> .
<b>Herbs in Vasavarajeeyam</b>	The botanical source <i>Murraya koenigii</i> L. Sprengel is identified as <i>Karivepa</i> <sup>26</sup> .
<b>Flora of Udupi</b>	Family and species characters of <i>Murraya koenigii</i> L. Sprengel are mentioned <sup>27</sup> .
<b>Medicinal and Aromatic Plants of Himachal Pradesh</b>	<i>Murraya koenigii</i> L. Sprengel and its varieties <i>Murraya exotica</i> and <i>Murraya paniculata</i> are also mentioned. <i>Murraya koenigii</i> L. Sprengel is identified as <i>Kaidarya</i> <sup>28</sup> .
<b>Medicinal Plants of Arya Vaidyasala Garden</b>	<i>Murraya koenigii</i> L. Sprengel and other species varieties also mentioned <sup>29</sup> .
<b>A Dictionary of Medicinal Plants</b>	<i>Murraya koenigii</i> L. Sprengel is mentioned <sup>30</sup> .

#### CHEMICAL CONSTITUENTS<sup>31,32</sup>

##### Major

Leaves contain essential oil [0.14 to 0.32% (v/w)] whose main constituents are mono and sesquiterpenes. The major constituents of the essential oil are sabinene (31.8 to 44.8 %) beta-caryophyllene (24.4%), alpha-pinene (19 to 19.7%) and beta-phellandrene.

##### Minor

Among the minor constituents of essential oil are mono and sesquiterpenes such as, alpha-terpinene, terpinen-4-ol, linalool, beta-ocimine, beta-pinene, etc. numerous carbazole alkaloids namely koenigicine, koenimbine, girinimbine, mahanimbine, curryangine, mahanine, koenidine, koenidibine, mahanimbicine, bicyclomahanimbicine, cyclomahanimbine, murrayanine, mahanine, isomahanimbine, curryanine, mukonine, mukonicine, bismurratafoline E are reported from the leaves of *Murraya koenigii* (L) Sprengel.

#### INFORMATION FROM RECENT TEXT

The vernacular name of the drug is mentioned by K.R.Kirtikar and B.D.Basu, in Indian Medicinal Plants (vol-1). The drug distribution and habitat, Ethno medicinal and other ethnic uses are described by K.R.Kirtikar and B.D.Basu, in Indian Medicinal Plants and K.M. Nadakarn in Indian Materia Medica. Meaning of *Murraya* and *koenigii* are mentioned by Wikipedia, the Free Encyclopedia.

**Botanical source** – *Murraya koenigii* L. Sprengel

**Family** – *Rutaceae*

The species name commemorates the botanist Johann Koenig and the genus name commemorates the 18th-century German-Swedish herbal doctor Johan Andreas Murray.

#### VERNACULAR NAMES OF K Aidarya<sup>32</sup>

Though the drug today are very well known by its scientific name, still the knowledge of local name of a particular plant in a particular place is very important to achieve any drug from any region. Similarly the vernacular names of plant *Kaidarya* (*Murraya koenigii* L. Sprengel) are mentioned as follows:

**Table 4: Vernacular name of *Kaidarya* (*Murraya koenigii* L. Sprengel)**

Languages	Vernacular Names
Bengal	Barsunga, Kariaphyli
Bhabar	Ganma
Bombay	Goranimb, Karriapat, Karrinim
Burma	Pidosin, Pidosin
Canarese	Karibevana, Karibevu, Gandhabevu
Ceylon	Karavempu, Watukarapincha
Deccan	Karepak, Karyapak, Karyapat
Dehradun	Gandhela
English	Curry-leaf Tree
Gujarat	Goranimb, Khadilimbdo
Hindi	Bursanga, Gandhela, Gandhla, Harri, Katnim
Hyderabad	Chanangi
Indochina	Dok ki be, Xantroc
Kumaon	Gandhela, Gandla, Gani
Lakhimpur	Maskoita
Malayalam	Kareapela, Kariyapala, Karivepu, Marisangam
Marathi	Gandla, Jhirang, Jirani, Karepacha, Karipat, Karhinimb, Kudianim, Puspala
Michi	Umwah
Nepal	Mechiasag
North Western Provinces	Bowala, Gandla, Gani, Gant
Porebunder	Midholimbdo
Punjab	Bowala, Gandalu, Gandanim, Gandi, Gandla
Sanskrit	<i>Alakavhaya, Chhardighna, Girinimba, Kaidarya, Kalasaka, Krishnanimba, Krishnapatra, Mahanimba, Maharishtha, Nimbapatra, Priyasala, Raman, Suklasara, Surabhi, Surabhinimba, Varatikta</i>
Sinhalese	Karapincha, Karpipincha
Tamil	Karuventbu, Karuveppilai, Kattuvepillai
Telugu	Karepeku, Karivepaku, Karivemu
Tulu	Besoppu
Uriya	Basango, Bhursunga, Marisingipotoro, Sanomoringi

**Table 5: Taxonomical classification of *Kaidarya*<sup>33</sup> (*Murraya koenigii* L. Sprengel)**

Kingdom	Plantae
Subkingdom	Tracheobionata
Super division	Spermatophyta
Division	Magnoliophyta
Class	Magnoliopsida
Subclass	Rosidae
Order	Sapindales
Family	Rutaceae
Genus	Murraya
Species	Koenigii

**SYNONYMS<sup>34,35</sup>**

**Table 6: Synonyms of *Kaidarya* (*Murraya koenigii* L. Sprengel)**

Synonyms	BPN	RN	DN	KN	MPN	PN	SN	NA
<i>Chardighna</i>		+						
<i>Girinimba</i>		+						
<i>Kaidarya</i>		+						
<i>Kaphaghna</i>		+						
<i>Raamann</i>		+						
<i>Mahanimba</i>		+		+		+	+	
<i>Maharishtra</i>		+		+				

**Rasa Panchaka<sup>36,37</sup>**

**Table 7: Rasapanchaka of *Kaidarya* (*Murraya koenigii* L. Sprengel)**

Rasa	<i>Katu, Tikta, Kashaya</i>
Guna	<i>Laghu, Sheeta</i>
Veerya	<i>Ushna</i>
Vipaka	<i>Katu</i>
Doshagnata	<i>Vatahara</i>
Karma	<i>Deepana, Pachana</i>
Therapeutic uses	<i>Atisara, Agnimandhya, Sadyovrana, Prameha</i>

## ETHNO MEDICINAL USE <sup>38,39</sup>

Leaves and root are bitter, acrid, cooling; alexettric, anthelminthic, analgesic; cure piles, allay heat of the body, thirst, inflammation, itching; useful in leukoderma and blood disorders. Leaves help to improve digestion and its decoction reduce vomiting. Juice of root can be used in nephroplegia.

## OTHER ETHNIC USES <sup>38</sup>

- Bark and root are used as stimulants. Externally, they are used to cure eruptions and the bites of poisonous animals.
- Green leaves are described to be eaten raw for the cure of dysentery, also bruised and applied externally to cure eruptions, infusion of toasted leaves used to stop vomiting
- In Punjab, leaves are applied to bruises; in Bombay leaves are given in decoction with bitters as a febrifuge. In Lakhimpur (Assam) juice of root is said to be good for pain associated with kidney. In Indo China fruit is considered astringent, and eaves are used in diarrhoea and dysentery. In Ceylon decoction of leaves is given internally in snake bite and root are applied externally to bitten part.
- The plant is credited with tonic and stomachic properties.
- Root is slightly purgative
- Plant is credited with tonic and stomachic properties.

## Dose <sup>41</sup>

Juice: 10-20ml, Powder: 5-10gm

## MURRAYA KOENIGII (L) Sprengel<sup>40</sup> – Species Characters

- A small tree with dark grey bark, leaves imparipinnate up to 30cm long
- **Petioles** - Terete, pubescent; leaflets 11-25, alternate, 2-5 by 1-2.5cm, obliquely ovate or somewhat rhomboid, acuminate, obtuse or acute, tip usually notched (the lower leaflets often suborbicular or obovate, much smaller than the upper), irregularly crenate-dentate, glabrous or nearly so above, pubescent beneath, sprinkled with black dots; petiolules very short.
- **Flowers** - White, in much branched terminal peduncled corymbose cymes; peduncles and pedicels pubescent.
- **Calyx** - Pubescent; lobes subacute, triangular.
- **Petals** - 6mm long, linear-oblong, rounded at the apex, gland dotted. Filaments dilated at the base. Ovary is 2-celled; ovules solitary (rarely 2), in each cell.
- **Fruit** - Ovoid or subglobose, 6-10 mm diameter, apiculate, rough with glands, black, 2-seeded.

## DISTRIBUTION<sup>41</sup>

Konkan, Western Ghats of Bombay to Travancore and Ceylon, Deccan, S. M. Country, in most districts of Madras Presidency, chiefly in the N.Circars, along the foot of the Himalaya from Kumaon to Sikkim, up to 5000 ft, Bengal, Burma.

## USEFUL PARTS <sup>42</sup>

Leaves and Roots

## PHARMACOLOGICAL PROFILE<sup>43</sup>

Tremendous research works have been done on various pharmacological activities attributed to *Kaidarya (Murraya koenigii L. Sprengel)*. The pharmacological profile includes Antidiarrhoeal activity, Antibacterial activity, Hepatoprotective

effect, Apoptosis in human leukaemia cells, Antitrichomonal activity, Anti-inflammatory activity, Anthelmintic activity, Immunomodulatory activity, Antidiabetic activity, Nephroprotective activity, Antioxidant, Antiasthmatic activity, Antifungal activity, Antiosteoporotic activity, Anticholinesterase property, Anti-amnesic activity, Wound-healing activity, Anticancer activity, Antipyretic activity, Haematological studies, Radio protective activity.

## DISCUSSION

*Kaidarya (Murraya koenigii L. Sprengel)* is a common plant with wide range of utility dated from classical era to modern era. Apart from being a flavouring agent since ages in day to day cooking, *Kaidarya (Murraya koenigii L. Sprengel)* possess wide range of medicinal value which ranges from anti-bacterial to anti-cancerous and many more. As it easily grows throughout India it is inveterate availability. Further research to establish its medicinal value should be taken up to highlight the medicinal importance of *Kaidarya (Murraya koenigii L. Sprengel)* in various diseases.

## CONCLUSION

*Kaidarya (Murraya koenigii L. Sprengel)* even though being a multifunctional drug has more commercial value rather than medicinal value. Extensive research works have been done to establish the medicinal and pharmacological profile. Hence one has to give more importance towards the medicinal activity and further extensive research has to be carried out to establish the same.

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