



MARVELS OF MULAKA (*RAPHANUS SATIVUS* LINN.) : UNRAVELLING ITS MEDICINAL POTENTIAL

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ABSTRACT

Tubers are a wonderful treasure of mother earth. Numerous tubers are used as both food and medicine, in ayurveda as well as the folk system of medicine. *Mulaka* (*Raphanus sativus* Linn.) belonging to Brassicaceae family, is an annual erect herb with fusiform tap root. It is commonly known as radish. It is widely grown in India for its culinary purposes and also has extensive therapeutic utility. Part specific, maturity specific, and form specific *doshakarma* as well as *rogagnata* of *mulaka* are mentioned in ayurveda. It is stated that *baala mulaka* is *hita* for consumption since it is *tridosahara* and the *vrddha mulaka* is *ahita* since it is *tridoshakara*. This review article presents information regarding medicinal utility of *mulaka* in various ayurvedic texts in a

systematic order.

KEYWORDS: *Mulaka*, Radish, *Raphanus sativus*, medicinal utility.

INTRODUCTION

Herbal medicines are in great demand because of their wide biological and medicinal activities, higher safety margins and lesser cost.^[1] Ayurveda opines that there is no plant which has no medicinal value and which cannot be utilized as medicine. A wise physician can utilize any plant available after its detailed scrutiny using the knowledge of dravyaguna.^[2] *Mulaka* (*Raphanus sativus* Linn.) is widely used as *ahaara* as well as *aushadha*. It is commonly known as radish and cultivated as popular vegetable throughout India. Radish is a highly medicinal tuber, with its leaves and seeds also having medicinal

properties and utility. *Mulaka* is mentioned as an ingredient in many formulations like *hapushadya ghrita*, *kanakaksheeri taila*, *yavadi taila*, *mulaka taila* and *mahavajraka taila*.^[3-7] The *gana/varga* in which description regarding *mulaka* is available has been listed in Table 1.

Table 1: Gana or varga of mulaka according to different acharyas.

Sl. no.	Name of the Text	Gana/Varga
1.	Charaka Samhita	<i>Harita Varga</i>
2.	Sushruta Samhita	<i>Pippalyadi, Surasadi Gana</i>
3.	Ashtanga Hridaya	<i>Shaaka Varga</i>
4.	Amarakosha	<i>Vanaushadhi Varga</i>
5.	Dhanwantari Nighantu	<i>Karaveeradi Varga</i>
6.	Shodala Nighantu	<i>Karaveeradi Varga</i>
7.	Madhava Dravyaguna	<i>Shaaka Varga</i>
8.	Hridayadeepika Nighantu	<i>Ekapaada Varga</i>
9.	Madanapala Nighantu	<i>Shaaka Varga</i>
10.	Kaiyyadeva Nighantu	<i>Oshadhi Varga</i>
11.	Raja Nighantu	<i>Mulakadi Varga</i>
12.	Bhavaprakash Nighantu	<i>Shaaka Varga</i>
13.	Shaligram Nighantu	<i>Shaaka Varga</i>
14.	Adarsha Nighantu	<i>Rajikadi Varga</i>
15.	Saraswati Nighantu	<i>Latadivarga, Bhakthadi Varga</i>
16.	Priya Nighantu	<i>Satapushpadi Varga, Saka Varga</i>

Botanical description:^[8]

Mulaka (*Raphanus sativus* Linn.) belonging to Brassicaceae family, is an annual erect herb with fusiform tap root.

Root: White in colour, fleshy, cylindrical to fusiform, broad near the crown, tapering towards the lower extremity, 30-40cm in length, 2.5 to 5cm in diameter near the crown, surface is smooth with occasional wiry short lateral rootlets or the scar left by them.

Stem: 0.2-1m in height, flexuose, fistular, branched in the upper part, glabrous or hispid, often purple.

Leaves: Lower leaves - on hairy petioles 0.5-3cm long, lyrate-pinnatifid, 3-4, rarely 5-jugate, terminal lobe suborbicular or shortly ovate, rounded at the apex, with the margin - crenate, subcordate at the base or more or less confluent with the lateral lobes. Lateral lobes are alternate oblong-ovate, obtuse, dentate or subentire. Upper leaves are shorter, petiolate, 2-1 jugate, terminal lobe oblong-ovate, margin coarsely dentate. Uppermost leaves are simple,

sublinear, but narrowed at the base. All roughly pilose, bright green, often obscurely red margined, often also red nerved.

Flowers: In long terminal raceme, bisexual, regular, complete, 1-2cm long pedicle with scattered hairs, sepals 6.5-10cm long, oblong sometimes brown-red. Petals 1.7-2.2cm long, blade obovate, sub marginate at the apex, white or lilac with yellow or purple veins. Stamen 6 in two whorls, 2 outer smaller and four inner longer. Ovary superior, green or brown purple, 10-12 ovuled, style about 4mm long.

Fruit: Siliqua, erect, cylindrical, 3-9cm long and 0.8-1.4cm thick, continuous or more or less constricted, longitudinally sulcate, greenish-yellow occasionally pale purple. Pods indehiscent, elongate, erect thick with a long pointed beak.

Seed: sessile, pendulous, ovoid, light brown, testa reticulate.

The fig. 1, fig. 2 and fig.3 depict the morphology of *mulaka* (*Raphanus sativus*).

Figures



Fig. 1: Morphology of raphanus sativus (top view).



Fig. 2: Morphology of *Raphanus sativus* (side view).



Fig. 3: Macroscopic Structure of *mulaka kanda* (tuber of *Raphanus sativus*).

Rasa panchaka of mulaka:^[9]

The *rasa panchaka* of *mulaka* (*Raphanus sativus*) has been depicted in Table 2.

Table 2: Rasapanchaka of mulaka.

<i>Avastha</i> of <i>mulaka</i>	<i>Rasa</i>	<i>Guna</i>	<i>Veerya</i>	<i>Vipaka</i>
<i>Bala Mulaka</i>	<i>Katu, Tikta</i>	<i>Laghu</i>	<i>Ushna</i>	<i>Katu</i>
<i>Vrddha Mulaka</i>	<i>Avyakta rasa, Kinchit kshara, tikta</i>	<i>Guru, Abhishandi</i>	<i>Ushna</i>	<i>Katu</i>

Action of mulaka on tridosha

According to *avastha*

Bala mulaka - *Tridosha hara*

Vrddha mulaka - *Tridosha kara*

According to *samskara*

Sneha sidha mulaka - *Vata hara*

Shushka mulaka - *Vata shleshma hara*

Aama mulaka - *Tridosha kara*

According to part used

Mulaka pushpa - *Kapha pitta hara*

Mulaka phala - *Kapha vata hara*

Chemical constituents^[10]

Roots of *mulaka* (*Raphanus sativus*) contains vitamin C and E, ferulic, caffeic acid, amino acids, orthinine, citrulline, arginine, glutamic acid and aspartic acid. Its leaves contains kaempferol and seeds constitutes of sulforaphane, stearic acid, beta sterol, sinapine, castasterone and bassinolide.

Medicinal utilities of mulaka kanda (radish root)

- **In Arshas:** The *arshas* should be fomented with *shushka mulaka pinda*.^[11] Intake of *shushka mulaka yusha* is useful in alleviation of piles.^[12]
- **In Shotha:** The affected part should be poured with decoction of *mulaka* in case of *kaphaja shotha*.^[13] In *vataja shotha*, one should eat cooked *mulaka* and should sprinkle the part with *mulaka swarasa*.^[14] *Mulaka* mixed with *tila* is an excellent remedy for *shotha*.^[15] Dried radish mixed with *musta* and *sariva* is pounded with *gomutra* and applied as *lepa*.^[16]
- **In Pratishyaya and Amavata:** Intake of *shushka mulaka yusha* is said to be beneficial.^[17]
- **In Granthi Visarpa:** *Kalka* of *shushka mulaka* should be applied locally.^[19]
- **In Kaphaja Arbuda:** Paste of *shankha bhasma* mixed with *mulaka bhasma* should be applied locally. It is also affective in *granthi*.^[20]
- **In Karnashula:** *Karnapurna* should be done with *mulaka swarasa*. *Mulaka swarasa*, *ardraka swarasa* and *tila taila* should be mixed in equal quantities. Its *pichu* and *nasya karma* is said to relieve *daruna karnashula* quickly.^[21]
- **In Visuchika:** *Bala mulaka kwatha* added with *pippali churna* controls *visuchika* and increases *jataragni*.^[22]
- **In Sutikopakrama:** Intake of *ghrita bhrishta mulaka* is indicated.^[23]

Medicinal utilities of mulaka patra (radish leaves)

- The *patra* of *nava mulaka* is said to be *laghu*, *ushna*, and *pachana*.^[24]
- *Mulaka potika* (tender leaves) is said to be *aharopayogi chakshushya shaaka*.^[25]

Medicinal utilities of mulaka beeja (radish seeds)

- **In Shwitra:** Paste of *mulaka beeja* and *bakuchi* is pounded in *gomutra* and applied.^[26]
- **In Sidhma kushta:** *Mulaka beeja* pounded with *apamarga swarasa* and applied as *lepa*. *Mulaka beeja* pounded with *takra* and applied, also helps to alleviate *sidhma*.^[27]
- **In Dadru kushta:** *Mulaka beeja* is pounded with *takra* and applied, helps to alleviate *dadru*.^[28]

Viruddha with regards to mulaka

In *Bhela Samhita*, it is mentioned that eating *mulaka* along with *guda* is said to cause *kushta*.^[29] In the context of *virudhahara* in *Rajavallabha Nighantu*, it is said that *mulaka* shouldn't be consumed with *mashayusha* and *madhu*.^[30] In *Ksheeradi Varga* of *Raja Nighantu*, it is mentioned that *mulaka* and *ksheera* are *samyoga virudha* and if consumed

together, will lead to *kushta*.^[31] Hence, consumption of *mulaka* along with *guda*, *ksheera*, *madhu* and *masha yusha* should be avoided.

DISCUSSION

Mulaka (*Raphanus sativus* Linn.) is one among the commonly used tubers. Ayurvedic classical texts recognize it as a host of various health benefits. *Vrdhha mulaka* is said to cause aggravation of *tridosha* and is hence non conducive. Whereas *bala mulaka*, *sneha siddha mulaka* and *sushka mulaka* helps to mitigate aggravated doshas and is therapeutically beneficial. By its *ushna veerya* and *katu vipaka*, *mulaka* helps to mitigate *vata kaphaja* disorders. The usage of *mulaka beeja* in skin disorders can be attributed to its chemical constituent being sulforaphane. Ayurvedic classical literatures have highlighted therapeutic benefits of not only *mulaka kanda*, but also its *patra* and *beeja*.

CONCLUSION

Mulaka is a potent drug with high medicinal properties and proves to be beneficial as *ahara* as well as *aushadha*. Ayurvedic *acharyas* have highlighted its efficacy in various disorders like *arshas*, *shotha*, *pratishyaya*, *amavata*, *karnashoola*, *visuchika*, *amavata*, *granthi visarpa*, *karna shula*, *kaphaja arbuda*, *dadru*, *shwitra* and *sidhma kushta*. It has been therapeutically used as both *bahya* and *abhyantara prayoga*. It is an easily available and cost effective remedy.

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