



RAJAKOSHATAKI (LUFFA ACUTANGULA (L). ROXB.) AN UNDERRATED DRUG

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Abstract

Rajakoshataki or *Luffa acutangula* (L). Roxb. generally known as Ridge gourd belongs to cucurbitaceae family. It is a common vegetable crop used widely for its culinary and therapeutic purpose. It is cultivated all over India and is commercially used for its unripe fruits as vegetable. Matured fruits are used as natural cleaning sponges. It resembles a cucumber with ridges. The fruits of the plant are widely used by many folklore practitioners in the form of food and medicine in cases like hyperuricemia. Drug posses *Madhura rasa*, *Snigdha guna*, *Sheetha virya* and has *anilahara* and *rakthapittahara* action. It is mentioned in classics under *Shaka varga*, *Aushadi varga* and so on. It is widely used in case of jaundice, diabetes, haemorrhoids, dysentery and headache. Fruit is said to have diuretic action and the seeds has purgative, emetic and anthelmintic properties. Here is an attempt to know more about the drug, its therapeutic efficacies mentioned in classics.

Keywords : *Rajakoshataki*, *Shaka varga*, *Aushadi varga*, **Haemorrhoids, Diuretic, Purgative, Emetic, Anthelmintic**

I. Introduction:

Luffa acutangula is the member of cucurbitaceae family. These plants are mostly succulent, trailing, decumbent annual or perennial herbs. 'Luffa' or 'loofah' derived from Arabic name, 'louff' for 'specific epithet', 'acutangula' means 'with sharp edges'.

Koshataki is of 2 varieties wild variety and edible variety. The edible one is considered as *Rajakoshataki*. *Acharya charaka* describes *Koshataki* under *Urdhwa* and *Adhobagahara dravya*^[1,2,3]. *Acharya Sushruta* mentioned it under *Urdhwabagahara dravya*^[4]. *Ashtanga hridaya* has mentioned it under *Ksharagni karma vidhi*^[5,6], where he mentioned about its four variety. *Bhavaprakasha Nigantu* explained *Koshataki* under *Saka varga*^[7]. He explains it has *Madhura rasa*, *Seetha virya* and hence it pacifies *pitta*. In *Bhavaprakasha Nigantu* it is mentioned that *Rajakoshataki* has *sitha virya*, *madhura rasa* and increases *kapha* and *vata*. He also states that it has *pittahara* property. *Raja Nigantu* explains it under *Mulakadi varga*^[8], where he explained about two varieties. *Dhanwanthari Nigantu* mentions this plant under *Guduchyadi varga*^[9].

Here is an effort made to review the Reference of *Rajakoshataki* in various *Samhitha*, *Nigantu* and Contemporary literature.

II. Materials and Methods:

2.1) Source of data : The information about plant, its categorization, synonyms, morphology, properties and actions was compiled from various *Samhitha*, *Nigantu*, Contemporary text book, various publications and journals.

2.2) Result**2.2.1)Taxonomical classification^[10]:**

Kingdom – Plantae

Subkingdom – Viridiplantae

Infrakingdom – Streptophyta

Superdivision – Embryophyta

Division – Tracheophyta

Subdivision – Spermatophytina

Class – Magnoliopsida

Superorder – Rosanae

Order – Cucurbitales

Family – Cucurbitaceae

Genus – Luffa

Species – *Luffa acutangula*

2.2.2)Vernacular Names^[11]:

English – Ridge gourd, Smooth luffa

Hindi – Taroi

Kannada – Heerekayi

Malayalam – Peechinga

Telugu – Adavibeera

Tamil – Peerakangai

Gujarati – Ghisoda

Bengali – Ghinga

Marathi – Shirola

Punjabi – Kalitori

BOTANICAL ORIGIN :

Luffa Acutangula(L.)Roxb.

Family: Cucurbitaceae

2.2.3) BOTANICAL DESCRIPTION^[12]:

Monoecious climbing to a considerable height. Stem five angled, glabrous. Tendrils usually 3 fid. Leaves orbicular - cordate in outline, pale green, 15-20cm long and broad, palmate, 5-7 lobed. Male flowers in axillary 10-20 flowered racems, 10-15cm long. Petals 2cm, long spreading, ovate, yellow with green hairy veins. Stamens 3. Female flowers solitary in the same axis as



the males. Fruit 5-10cm long, clavate-oblong, longitudinally ribbed with 10 sharp angles. Seeds 6-8mm, ovoid oblong, black, compressed.

2.2.4) USEFUL PARTS^[13]:

Leaf, Fruit, Root

2.2.5) MICROSCOPIC CHARACTERS^[13]:

Fruits – presence of broad sclerenchymatous layer in mesocarp well developed vascular bundles below each rib and presence of sclerenchymatous sheath above vascular bundles, narrow mesocarp, sclerenchymatous layer, small, scattered vascular bundles.

2.2.6) Chemical Constituents^[14]:

Cucurbitacin B & E, oleanolic acid, Luffin, fixed oil, Moisture, Carbohydrates.

2.2.7) CLASSICAL REFERENCES:

Table 2.2.7.1) Classical categorization

Sl.No	TEXT	GANNA/VARGA	Name of the drug
1.	<i>Charaka samhitha</i> ^[1,2,3]	<i>Vamaka, Phalini</i>	<i>Rajakoshataki</i>
2.	<i>Sushrutha samhitha</i> ^[4]	<i>Urdhwabaghahara, Ubhayathobaghahara</i>	<i>Koshataki</i>
3.	<i>Ashtangahridaya</i> ^[5,6]	<i>Vamaka, Vishaprathishedha</i>	<i>Rajakoshataki</i>
4.	<i>Dhanwanthari Nigantu</i> ^[9]	<i>Guduchyadi varga</i>	<i>Koshataki</i>
5.	<i>Shodala Nigantu</i> ^[15]	<i>Guduchyadi varga</i>	<i>Koshataki</i>
6.	<i>Madanaphala Nigantu</i> ^[16]	<i>Shaka varga</i>	<i>Rajakoshataki</i>
7.	<i>Kaiyyadeva Nigantu</i> ^[17]	<i>Aushadi varga</i>	<i>Rajakoshataki</i>
8.	<i>Bhavaprakasha Nigantu</i> ^[7]	<i>Shaka varga</i>	<i>Rajakoshataki</i>
9.	<i>Raja Nigantu</i> ^[8]	<i>Mulakadi varga</i>	<i>Hasthikoshataki</i>
10.	<i>Shaligrama Nigantu</i> ^[18]	<i>Shaka varga</i>	<i>Koshataki</i>
11.	<i>Saraswathi Nigantu</i> ^[19]	<i>Lathadi varga</i>	<i>Rajakoshataki</i>
12.	<i>Priya Nigantu</i> ^[20]	<i>Shaka varga</i>	<i>Koshataki</i>

Table 2.2.7.2) Synonyms:

Sl. No	SYNONYMS	Dh.Ni ^[9]	Sha.Ni ^[18]	Ma.Ni ^[16]	Kai.Ni ^[17]	Bh.Ni ^[7]	Ra.Ni ^[8]	Sho.Ni ^[15]
1.	<i>Dhamargava</i>		+		+	+	+	+
2.	<i>Mahajalini</i>			+	+			
3.	<i>Pitapushpika</i>		+		+	+		
4.	<i>Hasthiparnika</i>				+			
5.	<i>Sapitaka</i>			+	+			
6.	<i>Koshaphala</i>				+			+
7.	<i>Swaduphala</i>		+					
8.	<i>Karkotaki</i>		+				+	
9.	<i>Dharaphala</i>		+				+	
10.	<i>Dirgaphala</i>		+				+	
11.	<i>Jalini</i>	+				+		+
12.	<i>Krithavethana</i>	+				+		+
13.	<i>Rajimathphala</i>					+		
14.	<i>Supushpa</i>						+	
15.	<i>Sukosha</i>							
16.	<i>Kotaphala</i>							
17.	<i>Shweda</i>	+						+
18.	<i>Mrudangaphal</i>	+						+

	<i>a</i>						
19.	<i>Krithachidra</i>	+					
20.	<i>Sutiktha</i>	+					

Table 2.2.7.3)Rasa Panchaka

Sl.No.	NIGANTU	RASA	GUNA	VIRYA	VIPAKA
1.	<i>Dh.Ni</i> ^[9]	<i>Tiktha, Katu</i>	<i>Tikshna</i>	-	-
2.	<i>Ma.Ni</i> ^[16]	-	-	<i>Sita</i>	-
3.	<i>Kai.Ni</i> ^[17]	<i>Madhura, Tiktha</i>	-	-	-
4.	<i>Bh.Ni</i> ^[7]	<i>Madhura</i>	-	<i>Sita</i>	-
5.	<i>Ra.Ni</i> ^[8]	<i>Madhura</i>	<i>Snigdha</i>	-	-
6.	<i>Sha.Ni</i> ^[18]	<i>Madhura</i>	<i>Snigdha</i>	<i>Sita</i>	-
7.	<i>Pri.Ni</i> ^[20]	<i>Madhura</i>	<i>Laghu, Snigdha</i>	<i>Sita</i>	-

2.2.8) DOSHAGNATHA^[16]:

Due to Madhura - Tiktha rasa, snigdha - laghu guna and sheetha virya drug posses pittahara, vatahara and kaphavardhaka action.

2.2.9) KARMA^[7,8,9]:

The drug posses Jwarahara, Rakthapittahara, Krimigna, Kushtagna, Sophahara, Vishahara action.

2.2.10) CULTIVATION AND PROPAGATION^[21]:

Usually cultivated from April – May. The seeds are soaked for 24 hours in lukewarm water before sowing encourages germination.. Sow 2 – 3 seeds to a 12cm/4in pot.

If planting in open ground, luffa need sunny, well drained spot sheltered from strong winds. The plant require support fence as the plant will twine but don't climb well unless tied regularly.

2.2.11) MARKET VALUE^[22]:

The drug costs about Rs 40 to 60 per Kg.

2.2.12) Medicinal uses^[23]:

- In case of Gandamala juice of Rajakoshataki is mixed with pippali and used as nasya.(VM 41/25)
- Powder of Rajakoshataki is mixed with honey and applies in vagina act as contraceptive.(BS.jaladoshadi/11)
- For counteracting Rat poisoning vama is induced by Rajakoshataki and ankota.(SS.Ka 7/34)
- Decoction of Rajakoshataki can destroy all sorts of Rat poisoning.(GN 7.6.5)
- In case of Kusta, oil prepared of Rajakoshataki, Sarshapa, Karanja, Ingudi and Khadira is beneficial.(CS Ci 7/119)
- Water is filled in the fruit of Rajakoshataki and kept overnight should be taken at a dose of 10ml. It destroys all sort of kushta.(GN 2/36/49)
- By rubbing the haemorrhoids with powder of Rajakoshataki they will fall off. It is even beneficial in bleeding piles.(CD 5/4/6)
- Decoction of Rajakoshataki along with takra is beneficial in yonikanda.(BS Striroga/388)
- After removing hairs, private parts are anointed with oil of Rajakoshataki seeds. By this hair do not re-appear.

2.2.13) Traditional uses^[24] :

Different parts of Luffa acutangula are extensively used in case of many conditions.

- The leaf and fruit powders are used for jaundice by the tribes of Maharashtra. It is also used incase of insect bite.
- In Andhrapradesh drug is widely used in diabetes treatment.
- Fruit powder and local application of leaf in case of swollen hemorrhoids.

- Kernel of the fruit is used in case of dysentery.
- Fruit juice is applied to cure headache.
- Oral administration of fruit juice given in the treatment of urinary bladder stone.
- Leaf juice is administered in case of granular conjunctivitis in case of children.
- Dried fruit powder is useful in treating premature graying of hair.

2.2.14) As Diet:

Raw fruits of *Luffa acutangula* are widely used as vegetable. Being rich in dietary fibers and smooth flesh, it facilitates easy digestion and smooth bowel movements. Hence this fiber rich diet helps in relieving indigestion and constipation problems.

2.2.15) Action^[25]:

Fruit is demulcent, diuretic, bitter-tonic and nutritive. Fruit juice is bitter, Seeds especially riped ones have emetic, expectorant and purgative properties.

The plant contains oleanane type triterpene saponins which is reported to have antitumour activity.

III. Conclusion:

Rajakoshataki is a medicinal plant which has both therapeutic and nutritional values. It is commonly used as vegetable all over India. In classics it is mentioned under shodhana dravya which has both urdhwa and adbhogahara property. Even it can be used in Shwasa, kasa, jwara and rakthapitta. Due to rich fiber content it can be added as a diet of choice in case of Constipation, Hyperlipidemia and it is also a best choice for weight reduction. Due to its wide availability and therapeutic efficacies the drug Rajakoshataki is obviously a promising drug.

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