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Pharmacognostical and phytochemical figures of Kutaja Veeja & Twak (*Holarrhena antidysenterica* Linn.): A textual review

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Abstract

Kutaja (*Holarrhena antidysenterica* Wall) is a magical plant of Apocynaceae family with white flowers, good smell and long follicles which exists abundantly in hilly forests like Gandhamardhan Hills, Nrusinghnath, Bargarh; Odisha. It got a wide range of significance in social and medicinal field since time immemorial. It is said to be effective in various diseases such as bleeding disorders, skin diseases, hemorrhoids, fever, and worm infestations and most notably in irritable bowel syndrome. Its multiple actions make it very special in Ayurveda.

Keywords: *Holarrhena antidysenterica*, indrayava, Kutaja, Amruta, pharmacognosy

1. Introduction

With increase disease load, adverse effects and cost of contemporary treatment, societies around world fell back on natural treatment system, i.e. Ayurveda. This is considered and documented to be the oldest proven system of medicine. It is a general rule that nature stocks the remedy where it finds specific disease Burdon. In that sense Kutaja is found abundantly in Kalinga area along with other parts of India. Kutaja is scientifically identified as *Holarrhena antidysenterica* Wall. It is composed of three Greek words as per Greek medical literature *Holos*, *Arrehen*, and *Antidysenterica*. *Holos* means entire, *arrehen* means male and *antidysenterica* means remedy for dysentery. In English, it is called as Conessai tree/Kurchi tree. It is a prominent plant which pacifies diarrhoea, dysentery, haemorrhoids and a proven antipyretic drug acting specifically on Pitta kapha ^[1].

2. Mythological aspect

In story of Ramayana, the war between lord Rama and demon Ravan become mortal to several holy monkeys, which prompt lord Indra to provide Amruta for their survival. During which few drops of Amruta fell on the ground from the mouth of holy monkeys that gave rise to the Kutaja plant. As the plant is originated by the grace of Lord Indra, it is called Indravrikshya or Indrayava. In another context of Ramayana Rama while describing monsoon thought of offering its small white flowers to Lord Surya. In Kalidas's Meghadoota, the Yakshya uses the Kutaja flowers to propitiate his fiancée, the Megha ^[2].

3. Classical categorization

Table 1: Showing classical categorization of Kutaja in different texts

Sr. No.	References	Gana/Verga
1	Ch. S.	Arshoghna, Kandughna, Stanyasodhana, Asthapanopaga ^[3]
2	Su. S.	Aragbadhadi, Pippalyadi, Haridradi, Lakshadi ^[4]
3	A. H.	Aragbadhadi, Pippalyadi ^[5]
4	Kai. Ni.	Oushadhi Verga ^[6]
5	Dh. Ni.	Satapuspadi Verga ^[7]
6	R. Ni.	Pravadradi Verga ^[8]
7	Madanapala Ni	Abhayadi Verga ^[9]
8	BP Ni.	Guduchyadi Verga ^[10]
9	Saligram Ni.	Guduchyadi Verga ^[11]
10	Ni. Adarsha	Kutajadi Verga ^[12]
11	Sodhala Ni.	Aragbadhadi Verga ^[13]

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Table 2: Showing synonyms of Kutaja/Kutaja Twak

Sr. No.	Synonyms	Dh. Ni.	Kai. Ni.	M. Ni.	Ni. Ad.	BP Ni.	Raj Ni.	Ch. S.
1	Kutaja	+	+	+	-	-	+	-
2	Koutaja	+	-	-	-	+	+	+
3	Kouto	+	-	-	-	+	-	-
4	Vastako	+	+	+	-	+	-	+
5	Girimallika	+	+	+	-	+	+	+
6	Kalinga	+	-	+	-	+	-	-
7	Mallika puspa	+	+	+	-	-	+	-
8	Indravrikshya	+	-	-	+	-	-	-
9	Vrikshyaka	+	+	-	-	+	-	+
10	Kohi	-	+	-	-	-	-	-
11	Utsaka	-	+	-	-	-	-	-
12	Vara tikta	-	+	+	-	-	+	-
13	Koti Vrikshaka	-	-	+	-	-	-	-
14	Sara vuruha	-	-	+	-	-	-	-
15	Tuccaka	-	-	+	-	-	-	-
16	Panduradruma	-	-	+	-	+	+	-
17	Sata druma	-	-	+	-	-	-	-
18	Druma koti	-	-	+	-	-	-	-
19	Mallika	-	-	+	-	-	-	-
20	Sakra sakhi	-	-	-	-	+	-	-
21	Yava phala	-	-	-	-	+	+	-
22	Simbi phala	-	-	-	+	-	-	-
23	Sweta puspa	-	-	-	+	-	-	-
24	Deergha patra	-	-	-	+	-	-	-
25	Pravrishya	-	-	-	-	-	+	-
26	Saka padapa	-	-	-	-	-	+	-
27	Bamsha Kutaja	-	+	-	-	-	-	-
28	Kutaji	-	+	-	-	-	-	-
29	Neela ystika	-	+	+	-	-	-	-
30	Samgrahi	-	-	-	-	-	+	-
31	Mahagandha	-	-	-	-	-	+	-
32	Sukra	-	-	-	-	-	-	+

Table 3: Showing synonyms of Kutaja Veeja

Sr. No.	Synonyms	Dh. Ni.	Ka. Ni.	Mad. Ni.	Raj. Ni.	BP Ni.
1	Shakrahna	+	-	+	-	-
2	Kalingaka	+	+	+	-	+
3	Vatsaka veeja	+	-	-	+	-
4	Bhadra Yava	+	+	+	+	+
5	Indra Yava	-	+	+	-	+
6	Koutaja	-	+	+	-	-
7	Niryava	-	+	-	-	-
8	Indraka	-	+	-	-	-
9	Puruhuta	-	-	+	-	-
10	Lingaka	-	-	-	-	+
11	Kutaja veeja	-	-	-	-	+
12	Yava	-	-	-	-	+
13	Shakra veeja	-	-	-	-	-
14	Bhadraja	-	-	-	+	-
15	Veejantara	-	-	-	+	-
16	Kalingaveeja.	-	-	-	+	-

Table 4: Showing synonyms of Kutaja with meaning

Sr. No.	Synonyms of Kutaja	Meaning of synonyms
1	Kutaja	Found in hilly forests.
2	Giri mallika	Flowers seen in hills.
3	Pandura druma	Plant with pale coloured bark.
4	Mallika puspa	The flower with smell and colour of Jasmine.
5	Yava phala	The fruit contain seeds which looks like Yava.
6	Sweta puspa	Flowers are white in colour.
7	Simbi phala	Fruits are like legume (Simbi).
8	Bana tiktaka	Bitter plants found in forest.
9	Bara tikta	Superior tikta rasa plants.
10	Snigdhapatra	Leaves are smooth to touch.
11	Pravrishya	Fruits seen in Varsha ritu.

12	Kalinga	Found mostly in Kalinga area. (Odisha & Bihar)
13	Vastaka	Found in Vasta desha.
14	Mahagandha	Flowers with strong Odour.

4. Morphology of *Holorrhena antidysenterica* Wall^[14]

A shrub or small to medium tree, glabrous or pubescent: bark pale, leaves 10-20 cm × 5-11.5 cm, from broadly ovate to elliptic, obtuse or obtusely acuminate, glabrous or more or less pubescent, base usually obtuse: main nerve 10-14 pairs, conspicuous: petiole 3 mm, long, sometimes 0. Flowers white, inodorous in terminal corymbose, cymes 7.5-15 cm, pedicles slender: bracts small, lanceolate, pubescent and ciliate. Calyx: 2-3 mm long, oblong, lanceolate, acute ciliate. Corolla: Puberulous, outside; tube 8-13 mm long, slightly inflated near the base over the stamens, mouth not closed with a ring of hairs, throat hairy inside; lobes equaling the tube, oblong at apex, more or less pubescent. Follicles 20-38 cm long, 6-8 mm diameter, cylindrical, often dotted with white spots. Seeds 8 mm long or rather more, linear oblong, tipped with a spreading deciduous coma of brown tuft hairs, 2-2.3 cm long.

5. Habitat of *Holorrhena antidysenterica* Wall^[15]

This tree grows throughout India up to an altitude of 4000 ft & is especially abundant in the sub Himalayan tract.

6. Pharmacognostical data of *Holorrhena antidysenterica* Wall.

Microscopic data^[16]

Dried stem bark found as small re curved pieces of varying size and thickness; outer surface buff to brownish, longitudinally wrinkled and bearing horizontal lenticels; inner surface brownish, rough, rough and scaly. Fractures are short & granular; Taste acrid and bitter. Transverse section of dried stem bark under microscope shows cork consists of 4-12 rows of tangentially elongated cells, followed by cork cambium of a single row of thin walled tangentially elongated cells. Secondary cortex is usually wide, parenchyma inter-spread with strands of stone cells. Stone cells are rectangular to oval, with numerous pits often containing prismatic crystals of calcium oxalate. Pericyclic fibers are non-lignified. Secondary phloem is wide, consisting of sieve tubes, companion cells, phloem parenchyma and stone cells. Stone cells are arranged

in concentric manner associated with crystal sheath containing prism of calcium oxalate. Medullary rays are mostly bi or tri seriate, rarely uniseriate, becoming wide towards outer part and consist of thin walled, radially elongated parenchymatous cells. Medullary ray cells near stone cells become sclerosed.

6.1 Physical constants^[17]

Foreign matter: Not more than 2%

Total ash: Not more than 7%

Acid insoluble ash: Not more than 1%

Alcohol soluble extractive (60%): Not less than 18%

Water soluble extractive: Not less than 10%

6.2 Phytochemical constituents^[18]

Stem bark

Conessine, holarrhenine, holarrhimine, kurchine, kurchicine, norconessine, hollarrhimine, holarrhine, conarrhimine, conamine, conessimine, isoconessimine, conessidine, conkurchine, holarrheninelettocine.

Seed

A steroid called antidysenterine, crystalline glucoalkaloid, other alkaloids viz. kurchiline, kurchiphyllamine, kurchiphylline, holarrhesmine, kurchessine, holarrhedine, holarrhemine, holantosine-E, trimethyl conkurchine.

Root bark

A steroidal alkaloid-holacetine (20-S-acetamido-5-alpha-pregnan,3 beta-ol) aspartic acid and argentine.

Bark extracts

A triterpene characterized as 5,20(29)-lupadien-3-beta-ol, together with known steroids sitosta-5,23-dien-3-beta-ol, two alkaloids such as holacine & holacimin.

7. Ayurvedic pharmacology of Kutaja twak

Table 5: Showing properties of Kutaja twak

Properties		Kai. Ni.	Dh. Ni.	Mad. Ni.	BP. Ni.	Raj. Ni.	Ni. Ad.
Rasa	Katu	+	+	+	+	+	+
	Tikta	-	+	-	-	+	+
	Kashaya	+	+	-	-	+	+
Guna	Laghu	-	-	+	-	-	-
	Rukshya	+	+	+	+	-	+
Veerya	Sheeta	+	+	-	+	-	+
	Ushma	-	-	-	-	+	-
Prabhava	Deepana	+	-	+	+	-	+
Doshaghnata	Vata	-	-	-	-	-	-
	Pitta	+	-	+	+	+	+
	Kapha	+	-	+	+	-	+
	Rakta	+	-	+	+	+	+

7.1 Ayurvedic pharmacology of Kutaja veeja

Table 6: Showing properties of Kutaja veeja

Properties		Kai. Ni.	Dh. Ni.	Mad. Ni.	BP. Ni.	Raj. Ni.	Ni. Ad.
Rasa	Katu	+	+	+	+	+	+
	Tikta	+	+	-	-	+	+
	Kashaya	-	+	-	-	-	-

Guna	Laghu	-	-	+	+	+	-
	Rukshya	+	+	+	+	-	+
Veerya	Sheeta	-	-	+	+	+	+
	Ushma	+	+	-	-	-	-
Prabhava	Deepana	-	+	-	+	-	+
	Samgrahi	+	-	+	-	-	-
Doshagnata	Vata	-	-	-	-	-	-
	Pitta	+	-	+	+	+	+
	Kapha	+	-	+	+	-	+
	Rakta	+	-	+	+	+	+

8. Therapeutic action of Kutaja twak

Table 7: Showing actions of Kutaja twak

Sr. No.	Roghagnata	Kai. Ni.	Dh. Ni.	Mad. Ni.	BP. Ni.	Raj. Ni.	Ni. Ad.
1	Trishna	+	-	+	+	-	+
2	Kustha	+	+	+	+	-	+
3	Krimi	+	-	-	-	-	+
4	Ama dosha	+	-	+	+	-	+
5	Arsha	+	-	+	+	+	+
6	Atisara	+	+	+	+	+	+
7	P. arsha	-	+	-	-	-	-
8	Twag dosha	-	-	-	-	+	-

8.1 Therapeutic action of Kutaja Veeja.

Table 8: Showing action of Kutaja veeja

Sr. No.	Rogagnata	Kai. Ni.	Dh. Ni.	Mad. Ni.	Raj. Ni.	BP. Ni.	Ni. Ad.
1	Kustha	+	-	+	+	-	+
2	Jwara	+	-	+	+	+	+
3	Visarpa	+	-	+	+	-	+
4	Shula	+	-	-	+	+	+
5	Arsha	+	-	-	+	-	+
6	Rakta Rodhaka	+	-	-	+	-	+
7	Raktarsha	-	+	+	-	-	-
8	Atisara	-	+	+	+	+	+
9	Shula	-	+	-	-	-	-
10	Vamana	-	+	-	+	-	+
11	Krimi	-	-	+	-	-	-
12	Daha.	-	-	-	-	+	-

9. Useful parts^[19]

Stem bark, seed & leaves.

10. Posology^[20]

Decoction & infusion (1 in 10): 1-3 ounces

Tincture (1 in 8): 1/2 to 2 drachms.

Powder: 1/2 to 2 drachms

Solid & liquid extracts (Kurchine): 2 to 5 grains.

Liquid extracts: 10 drachms per day can be given for 10 days.

11. Special formulations

Kutajastaka quath

Gangadhar churna

Laghu gangadhar churna

Brihat gangadhar churna

Pathadya churna

Kutajarista

Kalingakadi quath

Kutaja leha

Kutaja ghanavati

Pradarari louha

Mahasudarshan churna

12. Conclusion

The literature about Kutaja plant is widely available in almost

all Samhitas & Nighantus. This shows its popularity and usefulness in both Samhita & Nighantu period. Though it's found abundantly in Odisha and Bihar area also in other parts, but its overuse may leads to its gradual diminish from forest area. Its use in treatment of various diseases makes it fit as future miracle drug thus fulfilling its synonym as *Amruta*.

13. References

1. Dr. Ganga Sahaya Pandey. Bhavaprakash Nighantu, Reprint, Chaukhamba Bharati Academy, Varanasi 2006;1:347.
2. Kale MR. The Meghaduta of Kalidas, Reprint, Uttaramegha-1, Motilas Banarasidass, Publication, Delhi 2011, P103.
3. Shrimad Agneevasha Pranita, Ganga Sahaya Pandey. Charak Samhita, Uttarardha, Choukhamba Sanskrit Sansthan, Varanasi 2006, P132.
4. Kaviraj Ambikadutta Shastri. Sushruta Samhita, Purvardha, Choukhamba Sanskrit Sansthan, Varanasi 1995, P141-146.
5. Pandit Sadashiva Shastri. Astanga Hridaya, Purbardha, Sutrashtanam, Choukhamba Sanskrit Sansthan, Varanasi 2011, P104-107.
6. Acharya Priya Vrata Sharma. Kaiadeva Nighantu, Aushadhi verga, 1st Edition, Choukhamba Orientalia,

- Varanasi 1979, P166.
7. Acharya Priya Vrata Sharma. Dhanwantari Nighantu, Satapuspadhi Verga, 3rd Edition, Choukhamba Orientalia, Varanasi 2002, P72.
 8. Shri Narahari Pandit. Raja Nighantu, Prabhadradi Verga, 2nd Edition, Krishna Das Academy, Varanasi 1998, P275.
 9. Vaidya Bhawan Dash. Madana Pala Nighantu-Materia Medica Of Ayurveda, Reprint, Abhayadi Verga, B. Jain Publishers Pvt Ltd, New Delhi 1994, P81.
 10. Bhava Mishra Pranita, Dr. Ganga Sahaya Pandey. Bhava Prakash Nighantu, Haritakyadi Verga, Reprint, Choukhamba Bharati Academy 2006;1:347.
 11. Krishna Ramachandra Rao. Saligram Nighantu, Abhayadi Verga, 1st Edition, Bombay Popular Prakashan, Bombay 1985, P157.
 12. Bapalal Vaidya G. Nighantu Adarsha, 1st Edition, Choukhamba Bharati Prakashan, Varanasi 1968;1:847.
 13. Vaidya Acharya Sodhala. Sodhala Nighantu, Aragbhadadi Verga, 1st Edition, Orientalia Publishers, Baroda 1978, P117.
 14. Basu BD, Kirtikar KR. Indian Medicinal Plants, Allahabad Publishers, Bhubaneswari Ashram, Bahadurganj, 1st Edition 1918;2:1543.
 15. Basu BD, Kirtikar KR. Indian Medicinal Plants, Allahabad Publishers, Bhubaneswari Ashram, Bahadurganj, 1st Edition 1918;2:1569.
 16. Nadakarni KM. Indian Materia Medica, 3rd Edition, Popular Prakashan, Bombay 1893;2:634.
 17. Nadakarni KM. Indian Materia Medica 3rd Edition, Popular Prakashan, Bombay 1893;2:625.
 18. Sharma PC, Yelne MB, Dennis TJ. Database on Medicinal Plants used in Ayurveda, Reprint, CCRAS, Documentation & Publication Division, Government of India, New Delhi 2005;2:348/349.
 19. Sharma PC, Yelne MB, Dennis TJ. Database on Medicinal Plants used in Ayurveda, Reprint, CCRAS, Documentation & Publication Division, Government of India, New Delhi 2005;2:348/349.
 20. Sharma PC, Yelne MB, Dennis TJ. Database on Medicinal Plants used in Ayurveda, Reprint, CCRAS, Documentation & Publication Division, Government of India, New Delhi 2005;2:348/349.