

A LITERARY REVIEW ON THE MEDICINAL IMPORTANCE OF *MUSTAKA*

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ABSTRACT

Ayurveda is a science which helps a individual to live a healthy life, also it helps in management of diseases. *Ayurveda* states that every substance on earth can be used as medicine either it is in dry form or fresh form. There are many diseases which can be cure with the use of *Mustaka*. It is an important herbal drug which can be used in various forms in the treatment of various disorders mainly in *Kapha-Pitta*. The present study shows the various properties of *Mustaka* from various *Ayurvedic* texts books as well as from modern concept of it. It includes the *Rasa Panchaka*, *Guna-Karma*, indications, and therapeutic uses, also with latest research on *Mustaka*.

KEYWORDS: *Mustaka*, *Charaka*, *Sushruta*, *Vagbhatta* etc.

INTRODUCTION

Ayurveda is an ancient Indian system holistic medicine and plants are the backbone of this science. *Mustaka* (*Cyperus rotundus* Linn) is described as “*Kyambu*” in the *Vedic* literature, its synonyms like “*Gundra & Gangeyam*” denotes the hydrophytic nature of this plant.^[1] *Acharya Charaka* mentioned it in *Lekhaniya*,^[2] *Trishnanigrahana*,^[3] *Kandughna*^[4] and *Stanyasodhana*^[5] *Mahakashya*. *Acharya Sushruta*^[6] and *Acharya Vagbhatta*^[7] mentioned it *Mustadi*, *Vachadi Gana*. Almost every *Nighantukara* talks about *Mustaka* and its properties. *Acharya JLN Shastri*^[8] quoted that in the western medicine, Romans used it as emmanagogue and

in Combia this tuber is known as diuretic and anti-periodic. He also states that Chinese medicine claims, its small tuber are in liver and Lung Disorders. There are three varieties *Mustaka* explained by *Acharya JLN Shastri* i.e. *Bahra Mustaka*^[9] (*Cyperus rotundus* Linn) or nut grass, *Nagarmustaka*^[10] (*Cyperus Scariosus* Linn) or Nut hedge and *Kaivarta/Jala Mustaka*^[11] (*Cyperus esculentus* Linn) or earth almond.

MATERIAL AND METHODS

- Literary review from different *Ayurvedic* texts.
- Literary review on the basis of modern parameters.

Classical categorization of *Mustaka*

S. No.	Classical texts	<i>Gana and Varga</i>
1.	<i>Charak Samhita</i>	<i>Lekhaniya</i> , ^[12] <i>Trishnanigrahana</i> , ^[13] <i>Kandughna</i> , ^[14] <i>Stanyasodhana</i> ^[15]
2.	<i>Sushruta Samhita</i>	<i>Mustadi</i> , ^[16] <i>Vachadi Gana</i> ^[17]
3.	<i>Astang Sangraha</i>	<i>Mustadi</i> , ^[18] <i>Vachadi Gana</i> ^[19]
4.	<i>Dhanvantri Nighantu</i>	<i>Guduchaiyadi Varga</i> ^[20]
5.	<i>Priya Nighantu</i>	<i>Satpushpaadi Varga</i> ^[21]
6.	<i>Kaidev Nighantu</i>	<i>Aushadhi Varga</i> ^[22]
7.	<i>Bhavaparkasha Nighantu</i>	<i>Karpuradi Varga</i> ^[23]

Varnacular Names of *Mustaka*^[24]

S. No.	Language	Names
1.	Sanskrit	<i>Mustaka</i>
2.	Hindi	<i>Motha</i>
3.	Gujarati	<i>Moth</i>
4.	Tamil	<i>Muthakacch</i>
5.	Bangali	<i>Mutha</i>
6.	Telgu	<i>Tungmuste</i>
7.	Arabic	<i>Sohed Kufi</i>
8.	English	Nut Grass

Synonyms of *Mustaka* in Different Classical texts^[25,26,27,28,29]

S. No.	Synonyms	P.N.	B.P.N.	K.N.	D.N.	N.A.
1.	<i>Ambudhar</i>	-	-	-	+	-
2.	<i>Motha</i>	+	+	-	-	-
3.	<i>Megh</i>	+	-	-	+	+
4.	<i>Rajkesaruk</i>	-	-	-	+	+
5.	<i>Ghan</i>	-	-	+	+	-
6.	<i>Bhadramustak</i>	-	+	+	+	+
7.	<i>Vrah</i>	-	-	-	+	-
8.	<i>Abad</i>	-	-	-	+	-
9.	<i>Kuruvindak</i>	-	+	+	+	+
10.	<i>Jeemut</i>	-	-	-	+	-
11.	<i>Jalad</i>	-	-	-	+	-
12.	<i>Blahak</i>	-	-	-	+	-
13.	<i>Nagarmustak</i>	-	+	-	+	+
14.	<i>Pindmustak</i>	-	-	+	+	-
15.	<i>Abhadrabhed</i>	-	-	-	-	+

Action & uses of *Mustaka* in Different Classical texts

S. No.	Classical texts	Action & Uses
1.	<i>Charaka Samhita</i>	<i>Lekhaniya</i> , ^[30] <i>Trishnanigrahana</i> , ^[31] <i>Kandughna</i> , ^[32] <i>Stanyasodhana</i> ^[33]
2.	<i>Susrutta Samhita</i>	<i>Kapha-hara</i> , ^[34] <i>Yonidoshavinashaka</i> , ^[35] <i>Stanyshodhaka</i> , ^[36] <i>Aampachaka</i> ^[37]
3.	<i>Astanga Sangraha</i>	<i>Aamatisara</i> , ^[38] <i>Yoniroganasa</i> , ^[39] <i>Stanyavikarahara</i> ^[40]
4.	<i>Bhavaparkasha Nighantu</i> ^[41]	<i>Grahi</i> , <i>Dipaka</i> , <i>Pachak</i> , <i>Swedjanaka</i> , <i>Mutrajana</i> , <i>Stanyajanaka</i> , <i>Aartavjanaka</i> , <i>kinchita-Garbhutejaka</i> , <i>Keshvardhaka</i> , <i>Varanropaka</i> , <i>Krimighna</i>
5.	<i>Dhanvantri Nighantu</i> ^[42]	<i>Raktavikara</i> , <i>Jwara-Atisara-Trishna-Krimihara</i> , <i>Kapha-Pitta-Hara</i>
6.	<i>Kaidev Nighantu</i> ^[43]	<i>Grahi</i> , <i>Agnidipak</i> , <i>Pachak</i> , <i>Kapha-Pitta-Raktavikara-Trisha-Jwara-Aruchi-Krimi-Hara</i>
7.	<i>Priya Nighantu</i> ^[44]	<i>Grahi</i> , <i>Dipaka</i> , <i>Aampachaka</i> , <i>Jwara-Daha-Aamdosha-Grahi-hara</i>

Rasapanchaka of *Agnimantha* in Different Classical texts.^[45,46,47,48,49]

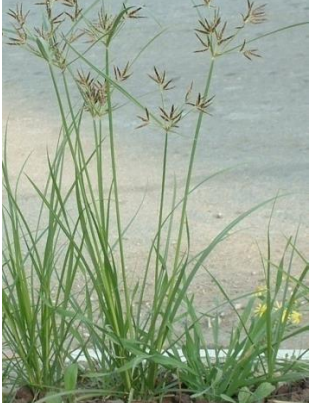


S. No.	Classical texts	Rasa	Guna	Virya	Vipaka	Doshakarma
1.	<i>Dhanwantri Nighantu</i>	<i>Tikta</i> , <i>Kashaya</i>	-	<i>Ati-Seeta</i>	-	<i>Kapha-Pitta-Hara</i>
2.	<i>Priya Nighantu</i>	<i>Tikta</i> , <i>Katu</i>	-	-	-	-
3.	<i>Bhavprakash Nighantu</i>	<i>Katu</i> , <i>Tikta</i> , <i>Kashaya</i>	-	<i>Seeta</i>	-	<i>Kapha-Pitta-Nashaka</i>
4.	<i>Kaidev Nighantu</i>	<i>Tikta</i> , <i>Katu</i> , <i>Kashaya</i>	-	<i>Seeta</i>	-	<i>Kapha-Pitta-Hara</i>
5.	<i>Nighantu Adarsha</i>	<i>Tikta</i> , <i>Katu</i> , <i>Kashaya</i>	-	<i>Seeta</i>	<i>Katu</i>	<i>Kapha-Pitta-Hara</i>

Taxonomical classification of *Mustaka*^[50]

S. No.	Taxonomical classification	<i>Cyperus rotundus</i> Linn
1.	Kingdom	Plantae
2.	Clade	Tracheophytes
3.	Order	Poales
4.	Family	Cyperaceae
5.	Genus	<i>Cyperus</i>
6.	Species	<i>C. rotundus</i>

Botanical description of Different varieties of *Mustaka*

S. No.	Botanical Description	<i>Cyperus rotundus</i> Linn ^[51]	<i>Cyperus scariosus</i> Linn ^[52]	<i>Cyperus esculentus</i> Linn ^[53]
1.	Habit	A perennial slender herb	A perennial slender herb	An annual or perennial plant.
2.	Stem/Bark	Thickened at base	Thickened at base	Solitary stem growing from tuber.
3.	Leaves	Long, often overtopping stem	Long, often overtopping stem	Slender leaves about 3-10mm wide.
4.	Flowers	In compound umbel	In compound umbel	8-35 florets with vary colours from straw- coloured to gold-brown.
5.	Fruits/Seeds	Trigonous nuts	Trigonous nuts	Oval
6.	Distribution	Common in rice fields, low lands, water logged places throughout India.	Common in rice fields, low lands, water logged places throughout India.	Indian subcontinent.

7.	Chemical Constituents	Cineol(+) copadiene, copaene, cyperen I & II, cyperenone, isopatchoulone, cyperrotundone, cyperol etc.	Cypriol, essential oils, cyperene, α -copaene, caryophyllene oxide etc.	Rich energy contents (starch, fat, sugar & protein), dietary minerals, palmitic acid, stearic acid, oleic acid, linoleic acid and fatty acids.
8.	Image			

Therapeutic uses of *Mustaka*

1. *Antra vikara*^[54]:- Its fresh rhizome mixed with *Adraraka* and given with honey.
2. *Madatya*^[55]:- For *Trishna shamnam* its cold decoction is given.
3. *Apasmara*^[56]:- Its powder is given with *Swasta* cow Milk.
4. *Aamatisara*^[57]:- Its *Kshirpaka* is beneficial in *Aamatisara*.
5. *Aksivrana*^[58]:- It is fried with *Ghritta* and apply for three to four days.
6. *Vrana*^[59]:- Its fresh root, once crushed and then mix in cow *Ghritta* and apply on *Vrana*.
7. *Stanyavridi*^[60]:- It is apply on breast after mixing with water for milk production.
8. *Atisara*^[61]:- In all types of *Atisara* its cold decoction is given with honey mixed.
9. *Pittatisara*^[62]:- The powder of *Motha*, *Inderyava*, *Chirayata* & *Rasanjana* is used in *Pittaatisara*.
10. *Pakwatisara*^[64]:- Its decoction is given with honey to treat *Pakwatisara*.

DISCUSSION

Mustaka is drug having properties like *Katu-Tikta-Kasaya Rasa*, *Seeta Virya*, *Katu Vipaka* and *Kapha-Pitta-Samaka Doshkarma*, also described by almost every ancient *Acharya* in his texts. It is useful in disorders related with *Kapha-Pitta Dosha*. It plays an important role in *Manas Dosha*. It is described by *Acharya Charaka* in *Lekhaniya*, *Trishnanigrahana*, *Kandughna Mahakashaya* and *Acharya Sushruta* as well as *Acharya Vagbhata* explains it in *Mustakadi* and *Vachadi Gana*. Almost all the *Nighantu* talks about *Mustaka* and its properties like *Dhanwantri Nighantu*, *Priya Nighantu*, *Nighantu Adarsha*, *Bhavprakash Nighantu*, *Kaidev Nighantu* etc. from modern point of view it is also a very important plant as its variety *Cyperus esculentus* Linn contains many nutrients like energy contents (starch, fat, sugar & protein), dietary minerals, palmitic acid, stearic acid, oleic acid, linoleic acid and fatty acids. Also it's very helpful in the treatment of disorder like *Atisara*, *Aamatisara*, *Kasa*,

Madatya, *Vrana* etc.

CONCLUSION

After studying in detail about *Mustaka* in various texts it can be concluded *Cyperus rotundus* Linn is *Mustaka* and its main property, which is explained by different ancient *Acharya's* is *Kapha-Pitta-Samaka* and widely used to treat *Atisara* mainly *Aamatisara* because it is *Grahi*, *Deepana* and *Aamapachana*. With the help of *Kapha-Pitta-Shamaka* property it is used to treat *Kapha-Pitta-Kasa*. Due to its *Lekhanya* property it is used to treat *Madatya*. It is also used to treat *Vrana Vikara* because this drug has *Vrana Ropana* property. Due to the property of *Yonirognashana* it is widely used to treat gynaecological disorders. It contains the property of *Stanyashodhana* so it is used to treat *Stanya Dusti Janya Vikara*. In short we can say that *Mustaka* is very helpful in the treatment of Dysentery, Obesity, Cough, Wound, Vaginal and breast milk related disorders etc.

REFERENCES

1. Dr J.L.N Shastry, *Dravyaguna Vijnana*, volume II, forwarded to Prof. K.C. Chunekar, reprint edition 2015, Chaukhamba Orientalia, Varanasi, p-551.
2. Agnivesh, *Charaka, Dradhabala, Charaka Samhita, Sutrathana*, edited with Vidyotini Hindi commentary by Pt. Kashinath Sastri, Reprint edition 2013, Chaukhamba Bharati Academy, Varanasi, Adhaya 4/3, p-72.
3. Agnivesh, *Charaka, Dradhabala, Charaka Samhita, Sutrathana*, edited with Vidyotini Hindi commentary by Pt. Kashinath Sastri, Reprint edition 2013, Chaukhamba Bharati Academy, Varanasi, Adhaya 4/3, p-72.
4. Agnivesh, *Charaka, Dradhabala, Charaka Samhita, Sutrathana*, edited with Vidyotini Hindi commentary by Pt. Kashinath Sastri, Reprint edition 2013, Chaukhamba Bharati Academy, Varanasi, Adhaya 4/29, p-87.
5. Agnivesh, *Charaka, Dradhabala, Charaka Samhita, Sutrathana*, edited with Vidyotini Hindi commentary by Pt. Kashinath Sastri, Reprint edition

- 2013, Chaukhamba Bharati Academy, Varanasi, Adhaya 4/18, p-84.
6. Sushruta, Sushruta Samhita, Sutrasathana, Edited with Ayurveda-Tattava-Sandipika, commentary by Kaviraj Dr Ambika Dutt Shastri, Reprint edition 2012; Chaukhambha Sanskrit Sansthana, Varanasi; Adhaya 38/69; p-187.
 7. Vriddha Vagbhata, Astang Sangraha, Sutrasathana, Edited with Saroj Hindi commentary by Dr Ravi Dutt Tripathi, Chaukhamba Sanskrit Pratisthana, Delhi, Adhaya 16/34, p-319-329.
 8. Dr J.L.N Shastri, Dravyaguna Vijnana, volume II, forwarded to Prof. K.C. Chunekar, reprint edition 2015, Chaukhamba Orientalia, Varanasi, p-552.
 9. Dr J.L.N Shastri, Dravyaguna Vijnana, volume II, forwarded to Prof. K.C. Chunekar, reprint edition 2015, Chaukhamba Orientalia, Varanasi, p-552.
 10. Dr J.L.N. Shastri, Dravyaguna Vijnana, volume II, forwarded to Prof. K.C. Chunekar, reprint edition 2015, Chaukhamba Orientalia, Varanasi, p-552.
 11. Dr J.L.N. Shastri, Dravyaguna Vijnana, volume II, forwarded to Prof. K.C. Chunekar, reprint edition 2015, Chaukhamba Orientalia, Varanasi, p-553.
 12. Agnivesh, Charaka, Dradhabala, Charaka Samhita, Sutrasathana, edited with Vidyotini Hindi commentary by Pt. Kashinath Sastri, Reprint edition 2013, Chaukhamba Bharati Academy, Varanasi, Adhaya 4/3, p-72.
 13. Agnivesh, Charaka, Dradhabala, Charaka Samhita, Sutrasathana, edited with Vidyotini Hindi commentary by Pt. Kashinath Sastri, Reprint edition 2013, Chaukhamba Bharati Academy, Varanasi, Adhaya 4/3, p-72.
 14. Agnivesh, Charaka, Dradhabala, Charaka Samhita, Sutrasathana, edited with Vidyotini Hindi commentary by Pt. Kashinath Sastri, Reprint edition 2013, Chaukhamba Bharati Academy, Varanasi, Adhaya 4/29, p-87.
 15. Agnivesh, Charaka, Dradhabala, Charaka Samhita, Sutrasathana, edited with Vidyotini Hindi commentary by Pt. Kashinath Sastri, Reprint edition 2013, Chaukhamba Bharati Academy, Varanasi, Adhaya 4/18, p-84.
 16. Sushruta, Sushruta Samhita, Sutrasathana, Edited with Ayurveda-Tattava-Sandipika, commentary by Kaviraj Dr Ambika Dutt Shastri, Reprint edition 2012; Chaukhambha Sanskrit Sansthana, Varanasi; Adhaya 38/69; p-187.
 17. Sushruta, Sushruta Samhita, Sutrasathana, Edited with Ayurveda-Tattava-Sandipika, commentary by Kaviraj Dr Ambika Dutt Shastri, Reprint edition 2012; Chaukhambha Sanskrit Sansthana, Varanasi; Adhaya 38/69; p-185.
 18. Vriddha Vagbhata, Astang Sangraha, Sutrasathana, Edited with Saroj Hindi commentary by Dr Ravi Dutt Tripathi, Chaukhamba Sanskrit Pratisthana, Delhi, Adhaya 16/34, p-329.
 19. Vriddha Vagbhata, Astang Sangraha, Sutrasathana, Edited with Saroj Hindi commentary by Dr Ravi Dutt Tripathi, Chaukhamba Sanskrit Pratisthana, Delhi, Adhaya 16/34, p-319.
 20. Mahendra Bhogolik, Dhavantri Nighantu, Guduchiyadi Varga, edited by Prof. Priyavart Sharma, Chaukhambha Orientalia, Varanasi, p-23.
 21. Acharya Priyavart Sharma, Priya Nighantu, Satpushpadi Varga, by Acharya Priyavart Sharma, 2nd edition 1995, Chaukhambha Surbharati Prakashan, Varanasi, p-82.
 22. Kaidev, Kaidev Nighantu, Aushadha Varga, edited and translated by Acharya Priyavart Sharma and Dr Guru Prasad Sharma, Chaukhambha Orientalia, Varanasi, p-252.
 23. Bhavmishra, Bhavprakash Nighantu, Karpuradi Varga, commentary by Dr K.C. Chunekar, edited by Dr G.S. Pandey, Reprint edition 2013, Chaukhambha Bharati Academy, Varanasi, p-233.
 24. Acharya Priyavrat Sharma, Dravyaguna Vigyan, volume II, Reprint edition 2012, Chaukhamba Visvabharati, Adhyay 5, p-370.
 25. Acharya Priyavart Sharma, Priya Nighantu, Satpushpadi Varga, by Acharya Priyavart Sharma, 2nd edition 1995, Chaukhambha Surbharati Prakashan, Varanasi, p-82.
 26. Bhavmishra, Bhavprakash Nighantu, Karpuradi Varga, commentary by Dr K.C. Chunekar, edited by Dr G.S. Pandey, Reprint edition 2013, Chaukhambha Bharati Academy, Varanasi, p-233.
 27. Kaidev, Kaidev Nighantu, Aushadha Varga, edited and translated by Acharya Priyavart Sharma and Dr Guru Prasad Sharma, Chaukhambha Orientalia, Varanasi, p-252.
 28. Mahendra Bhogolik, Dhavantri Nighantu, Guduchiyadi Varga, edited by Prof. Priyavart Sharma, Chaukhambha Orientalia, Varanasi, p-23.
 29. Bapalala G. Vaidya, Nighantu Adarsha, volume II, Mustadi varga, Reprint edition 2005, Chaukhambha Bharati Academy, Varanasi, p-706-707.
 30. Agnivesh, Charaka, Dradhabala, Charaka Samhita, Sutrasathana, edited with Vidyotini Hindi commentary by Pt. Kashinath Sastri, Reprint edition 2013, Chaukhamba Bharati Academy, Varanasi, Adhaya 4/3, p-72.
 31. Agnivesh, Charaka, Dradhabala, Charaka Samhita, Sutrasathana, edited with Vidyotini Hindi commentary by Pt. Kashinath Sastri, Reprint edition 2013, Chaukhamba Bharati Academy, Varanasi, Adhaya 4/3, p-72.
 32. Agnivesh, Charaka, Dradhabala, Charaka Samhita, Sutrasathana, edited with Vidyotini Hindi commentary by Pt. Kashinath Sastri, Reprint edition 2013, Chaukhamba Bharati Academy, Varanasi, Adhaya 4/3, p-72.
 33. Agnivesh, Charaka, Dradhabala, Charaka Samhita, Sutrasathana, edited with Vidyotini Hindi commentary by Pt. Kashinath Sastri, Reprint edition 2013, Chaukhamba Bharati Academy, Varanasi, Adhaya 4/3, p-72.
 34. Sushruta, Sushruta Samhita, Sutrasathana, Edited with Ayurveda-Tattava-Sandipika, commentary by Kaviraj Dr Ambika Dutt Shastri, Reprint edition

- 2012; Chaukhambha Sanskrit Sansthana, Varanasi; Adhaya 38/69; p-187.
35. Sushruta, Sushruta Samhita, Sutrasathana, Edited with Ayurveda-Tattava-Sandipika, commentary by Kaviraj Dr Ambika Dutt Shastri, Reprint edition 2012; Chaukhambha Sanskrit Sansthana, Varanasi; Adhaya 38/69; p-187.
 36. Sushruta, Sushruta Samhita, Sutrasathana, Edited with Ayurveda-Tattava-Sandipika, commentary by Kaviraj Dr Ambika Dutt Shastri, Reprint edition 2012; Chaukhambha Sanskrit Sansthana, Varanasi; Adhaya 38/69; p-187.
 37. Sushruta, Sushruta Samhita, Sutrasathana, Edited with Ayurveda-Tattava-Sandipika, commentary by Kaviraj Dr Ambika Dutt Shastri, Reprint edition 2012; Chaukhambha Sanskrit Sansthana, Varanasi; Adhaya 38/69; p-187.
 38. Vriddha Vagbhata, Astang Sangraha, Sutrasathana, Edited with Saroj Hindi commentary by Dr Ravi Dutt Tripathi, Chaukhamba Sanskrit Pratisthana, Delhi, Adhaya 16/34, p-319.
 39. Vriddha Vagbhata, Astang Sangraha, Sutrasathana, Edited with Saroj Hindi commentary by Dr Ravi Dutt Tripathi, Chaukhamba Sanskrit Pratisthana, Delhi, Adhaya 16/34, p-329.
 40. Vriddha Vagbhata, Astang Sangraha, Sutrasathana, Edited with Saroj Hindi commentary by Dr Ravi Dutt Tripathi, Chaukhamba Sanskrit Pratisthana, Delhi, Adhaya 16/34, p-329.
 41. Bhavmishra, Bhavprakash Nighantu, Karpuradi Varga, commentary by Dr K.C. Chunekar, edited by Dr G.S. Pandey, Reprint edition 2013, Chaukhambha Bharati Academy, Varanasi, p-233.
 42. Mahendra Bhogolik, Dhavantri Nighantu, Guduchiyadi Varga, edited by Prof. Priyavart Sharma, Chaukhambha Orientalia, Varanasi, p-23.
 43. Kaidev, Kaidev Nighantu, Aushadha Varga, edited and translated by Acharya Priyavart Sharma and Dr Guru Prasad Sharma, Chaukhambha Orientalia, Varanasi, p-252.
 44. Acharya Priyavart Sharma, Priya Nighantu, Satpushpadi Varga, by Acharya Priyavart Sharma, 2nd edition 1995, Chaukhambha Surbharati Prakashan, Varanasi, p-82.
 45. Mahendra Bhogolik, Dhavantri Nighantu, Guduchiyadi Varga, edited by Prof. Priyavart Sharma, Chaukhambha Orientalia, Varanasi, p-23.
 46. Acharya Priyavart Sharma, Priya Nighantu, Satpushpadi Varga, by Acharya Priyavart Sharma, 2nd edition 1995, Chaukhambha Surbharati Prakashan, Varanasi, p-82.
 47. Bhavmishra, Bhavprakash Nighantu, Karpuradi Varga, commentary by Dr K.C. Chunekar, edited by Dr G.S. Pandey, Reprint edition 2013, Chaukhambha Bharati Academy, Varanasi, p-233.
 48. Kaidev, Kaidev Nighantu, Aushadha Varga, edited and translated by Acharya Priyavart Sharma and Dr Guru Prasad Sharma, Chaukhambha Orientalia, Varanasi, p-252.
 49. Bapalala G. Vaidya, Nighantu Adarsha, volume II, Mustadi varga, Reprint edition 2005, Chaukhambha Bharati Academy, Varanasi, p-706-707.
 50. https://en.wikipedia.org/wiki/Cyperus_rotundus
 51. Dr J.L.N Shastri, Dravyaguna Vijnana, volume II, forwarded to Prof. K.C. Chunekar, reprint edition 2015, Chaukhamba Orientalia, Varanasi, p-553.
 52. https://en.wikipedia.org/wiki/Cyperus_scariosus
 53. https://en.wikipedia.org/wiki/Cyperus_esculentus
 54. Bhavmishra, Bhavprakash Nighantu, Karpuradi Varga, commentary by Dr K.C. Chunekar, edited by Dr G.S. Pandey, Reprint edition 2013, Chaukhambha Bharati Academy, Varanasi, p-233.
 55. Bhavmishra, Bhavprakash Nighantu, Karpuradi Varga, commentary by Dr K.C. Chunekar, edited by Dr G.S. Pandey, Reprint edition 2013, Chaukhambha Bharati Academy, Varanasi, p-233.
 56. Bhavmishra, Bhavprakash Nighantu, Karpuradi Varga, commentary by Dr K.C. Chunekar, edited by Dr G.S. Pandey, Reprint edition 2013, Chaukhambha Bharati Academy, Varanasi, p-234.
 57. Sushruta, Sushruta Samhita, Uttratantra, Edited with Ayurveda-Tattava-Sandipika, commentary by Kaviraj Dr Ambika Dutt Shastri, Reprint edition 2012; Chaukhambha Sanskrit Sansthana, Varanasi; Adhaya 38/69; p-283.
 58. Bhavmishra, Bhavprakash Nighantu, Karpuradi Varga, commentary by Dr K.C. Chunekar, edited by Dr G.S. Pandey, Reprint edition 2013, Chaukhambha Bharati Academy, Varanasi, p-233.
 59. Bhavmishra, Bhavprakash Nighantu, Karpuradi Varga, commentary by Dr K.C. Chunekar, edited by Dr G.S. Pandey, Reprint edition 2013, Chaukhambha Bharati Academy, Varanasi, p-233.
 60. Bhavmishra, Bhavprakash Nighantu, Karpuradi Varga, commentary by Dr K.C. Chunekar, edited by Dr G.S. Pandey, Reprint edition 2013, Chaukhambha Bharati Academy, Varanasi, p-233.
 61. Bhavmishra, Bhavprakash Nighantu, Karpuradi Varga, commentary by Dr K.C. Chunekar, edited by Dr G.S. Pandey, Reprint edition 2013, Chaukhambha Bharati Academy, Varanasi, p-233.
 62. Sushruta, Sushruta Samhita, Uttratantra, Edited with Ayurveda-Tattava-Sandipika, commentary by Kaviraj Dr Ambika Dutt Shastri, Reprint edition 2012; Chaukhambha Sanskrit Sansthana, Varanasi; Adhaya 38/69; p-285.
 63. Sushruta, Sushruta Samhita, Uttratantra, Edited with Ayurveda-Tattava-Sandipika, commentary by Kaviraj Dr Ambika Dutt Shastri, Reprint edition 2012; Chaukhambha Sanskrit Sansthana, Varanasi; Adhaya 38/69; p-286.