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Review on *Musta* (*Cyperus rotundus* Linn.)

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ABSTRACT

Musta is a medicinal plant explained in Ayurvedic literature. *Musta* (*Cyperus rotundus* Linn...) of the family Cyperaceae. Being one of the constituent of *Chandraprabha Gutika*, *Yogaraja Guggulu*, *Punarnava mandura*, *Jatyadi taila etc* *Musta* is used in Ayurveda for the treatment of various disorders. Rhizomes of *Musta* are mainly used for *Deepana*, *Pachana Grahi karma*. The review article provides the details of the medicinal plant about its uses, synonyms etc as per the ayurvedic literature.

Key Words *Musta*, *Cyperus rotundus*

Received 07th July 21 Accepted 18th August 21 Published 10th September 2021

INTRODUCTION

Medicinal plants play an important role in Indian culture since *Rig Veda* (5600 BC) where in 67 medicinal plants were recorded. India is among the world's 15 nations that are exceptionally rich in species diversity¹. Out of 18 hot spots of biodiversity recognized in the world; India has two of them, viz Eastern Himalaya and The Western Ghats. (*Cyperus rotundus* Linn...) is an important medicinal plant used in Ayurveda, Unani, Siddha and in folk medicine for treating several ailments like fever, diarrhea etc.. *Cyperus rotundus* (Cyperaceae), commonly referred to as "nut grass" is a polymorphic sedge up to 60cm tall. It is common in rice fields, low lands, water logged places throughout India².

Historical Review

*Veda kala*³

Musta is addressed for the purpose of *Vashikarana* property in *Atharva Parishishta* and in *Varaha Shrotrasutra* *Phanta kalpana* of *musta* is described.

Samhita Kala

In *Charaka Samhita*, *Musta* is mentioned under *Lekhaniya*, *Triptighna*, *Kandughna*, *Sthanyashodhana* and *Trishnanigrahana mahakashaya gana* (Refer Table No.5). It is also mentioned under *Agrya Dravya* and considered best among *Deepana*, *Pachana* and *Sangrahi Dravya*. *Acharya Charaka* has mentioned *Musta* as an ingredient in 23 formulations⁴ (Refer Table No. 7).



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In *Susruta Samhita*, *Musta* is included in *Vachadi Gana*, *Mustadi Gana* and *Katu Varga* (Refer Table No. 5) and is an ingredient in 10 formulations⁵ (Refer Table No. 7).

In *Ashtanga Hridaya*, *Musta* is described under *Kaphaghna Gana*, *Vachadi Gana* and *Tiktaka Gana*⁶ (Refer Table No. 5).

Nighantu Kala

Almost all *Nighantu*'s have mentioned about *Musta* in various *Varga*. Synonyms, botanical

descriptions, properties, therapeutic uses are also mentioned.

Adhunika Kala^{7,8}

Nighantu Adarsha has placed it under *Mustadi Varga* (Refer Table No. 6) and *Priya Nighantu* has placed it under *Shatapushpadi Varga* (Refer Table No. 6). In modern botanical texts it is been identified as *Cyperus rotundus* Linn.

Table 1 Synonyms of *Musta* according to Different *Nighantu*

Sl.No	Synonyms	B.N ⁹	R.N ¹⁰	D.N ¹¹	K.N ¹²	Mp.N ¹³
1	<i>Mustam</i>	+	+	+	+	+
2	<i>Mustakam</i>	+	--	--	--	+
3	<i>Medhakya</i>	--	--	--	--	+
4	<i>Varidanamakam</i>	+	--	--	--	--
5	<i>Kuruvinda</i>	+	+	+	+	+
6	<i>Bhadra</i>	--	+	+	+	--
7	<i>Varida</i>	--	+	--	+	--
8	<i>Ambhoda</i>	--	+	--	--	--
9	<i>Megha</i>	--	+	+	--	--
10	<i>Jeemuta</i>	--	+	+	--	--
11	<i>Abda</i>	--	+	+	--	+
12	<i>Ghana</i>	--	+	+	+	--
13	<i>Gangeya</i>	--	+	--	+	--
14	<i>Varahi</i>	--	+	+	+	+
15	<i>Gunja</i>	--	+	--	--	--
16	<i>Granthi</i>	--	+	--	--	--
17	<i>Bhadrakashi</i>	--	+	--	--	--
18	<i>Kaseru</i>	--	+	--	--	--
19	<i>Krodeshta</i>	--	+	--	--	--
20	<i>Sugandhi</i>	--	+	--	--	--
21	<i>Granthila</i>	--	+	--	--	--
22	<i>Hima</i>	--	+	--	--	--
23	<i>Vanya</i>	--	+	--	--	--
24	<i>Kacchotha</i>	--	+	--	--	--
25	<i>Ambudhara</i>	--	--	+	--	--

Table 2 Taxonomical Classification^{2,3}

Kingdom	Plantae
Clade	Angiosperms
Clade	Monocots
Order	Poales
Family	Cyperaceae
Genus	Cyperus
Species	Rotundus

Botanical Name *Cyperus rotundus*

Table 3 Synonyms and their meanings²

<i>Mustaka</i>	Grows gregariously and tubers are in clusters
<i>Kacchotha</i>	Grows in aquatic and sub-aquatic regions
<i>Ghana</i>	Tubers are very hard
<i>Krodeshta</i>	Liked by pigs



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<i>Granthila</i>	Tubers of Musta are nodular
<i>Sugandhi</i>	Tubers are aromatic

Table 4 Vernacular Names¹⁵

Kannada	Konnari gedde
Hindi	Motha, Nagaramotha
Tamil	Kilangu
Telugu	Tunga mustalu
Bengali	Mutha, Motha
Marathi	Motha, Bimbal, Bhadramushti
Gujarati	Moth
English	Nut grass

Table 5 Categorization of *Musta* in *Bruhatraya*

Name of Samhita	Categorization of <i>Musta</i>
<i>Charaka Samhita</i> ⁵	<i>Lekhaniya mahakashaya</i> <i>Triptighna mahakashaya</i> <i>Kandughana mahakashaya</i> <i>Stanyashodhana mahakashaya</i> <i>Trishnanigrhana mahakashaya</i>
<i>Susruta Samhita</i> ⁶	<i>Vachadi gana</i> <i>Mustadi gana</i> <i>Katu Varga</i>
<i>Ashtanga Hridaya</i> ⁷	<i>Mustadi Gana</i> <i>Vachadi Gana</i> <i>Kaphaghna Gana</i> <i>Tiktaka Gana</i>

Table 6 Categorization of *Musta* in *Nighantus*⁷⁻¹²

Name of Nighantu	Categorization of <i>Musta</i>
<i>Dhanwantari Nighantu</i>	<i>Guduchyadi Varga</i>
<i>Shodala Nighantu</i>	<i>Guduchadi varga</i>
<i>Madanapala Nighantu</i>	<i>Abhayadi varga</i>
<i>Kaiyyadeva Nighantu</i>	<i>Aushadi varga</i>
<i>Bhavaprakasha Nighantu</i>	<i>Karpuradi varga</i>
<i>Raja Nighantu</i>	<i>Pippalyadi varga</i>
<i>Saligrama Nighantu</i>	<i>Karpuradi Varga</i>
<i>Nighantu Adarsha</i>	<i>Mustadi Varga</i>
<i>Priya Nighantu</i>	<i>Shatapushpadi Varga</i>
<i>Mahaushada Nighantu</i>	<i>Chandanadi Varga</i>

Table 7 Yoga's of *Musta* In *Charaka Samhita*⁵

Yoga	Indication	Reference
<i>Musta swarasa</i>	<i>Santarpanjanya vyadhi</i>	C.Su.23/12
<i>Agrya dravya</i>	<i>Sangrahi, Deepana, Pachana</i>	C.Su.25/40
<i>Brhma rasayana</i>	<i>Rasayana Karma</i>	C.Ci.1-1/48
<i>Chyavana prasha</i>	<i>Kasa, Shwasa</i>	C.Ci.1-1/64

<i>Indroktha rasayana</i>	<i>Rasayana karma</i>	C.Ci.1-4/14
<i>Shadanga paniya</i>	<i>Pipasa, Jwara</i>	C.Ci.3/145
<i>Trayamanadya ghruta</i>	<i>Gulma</i>	C.Ci.5/119
<i>Kanakabindwarishta</i>	<i>Kushta</i>	C.Ci.7/77
<i>Siddharthaka snana</i>	<i>Kusta</i>	C.Ci.7/91
<i>Kanakaksiri taila</i>	<i>Mandala kusta</i>	C.Ci.7/113
<i>Tiktashatpala ghruta</i>	<i>Kushta</i>	C.Ci.7/142
<i>Mahatiktaka ghruta</i>	<i>Kusta</i>	C.Ci.7/144
<i>Kshara gutika</i>	<i>Svayathu</i>	C.Ci.12/43
<i>Sunishannaka changeri ghruta</i>	<i>Arsha</i>	C.Ci.14/236
<i>Kiratadya churna</i>	<i>Grahani roga</i>	C.Ci.15/138
<i>Mulaasava</i>	<i>Deepana, Raktapitta</i>	C.Ci.15/158
<i>Navayasa Churna</i>	<i>Pandu roga</i>	C.Ci.16/70
<i>Manduravataka</i>	<i>Pandu roga</i>	C.Ci.16/73
<i>Punarnava Mandura</i>	<i>Pandu roga</i>	C.Ci.16/94
<i>Vyoshadya ghruta</i>	<i>Pandu roga</i>	C.Ci.16/119
<i>Shatiyadi churna</i>	<i>Tamaka swasa, Hikka</i>	C.Ci.17/123
<i>Duhshparshadi lehya</i>	<i>Vataja kasa</i>	C.Ci.18/51
<i>Jeevanthyadi lehya</i>	<i>Kasa</i>	C.Ci.18/176

In *Susruta Samhita*⁶

<i>Trivrdashtaka modaka</i>	<i>Pittaja vyadhi</i>	S.Su44/54
<i>Vardhamana pippali yoga</i>	<i>Vataraktha</i>	S.Ci.5/ 12
<i>Mahatiktaka ghruta</i>	<i>Kusta</i>	S.Ci.9/8
<i>Tiktaka ghruta</i>	<i>Kusta</i>	S.Ci.9/9
<i>Navayasa loha</i>	<i>Shopha</i>	S.Ci.12/11
<i>Mustadi raja yapana basti</i>	<i>Vatarakta prameha</i>	S.Ci.38/106
<i>Tarkshya agada</i>	<i>Takshaka sarpa visha</i>	S.Ka.5/65
<i>Mahasugandhi agada</i>	<i>Sarpa Visha</i>	S.Ka.6/19
<i>Pachagavya ghruta</i>	<i>Vishama jwara</i>	S.U.39/241
<i>Kalyanaka ghruta</i>	<i>Apasmara</i>	S.U.62/22

In *Ashtanga Hridaya*⁷

<i>Drakshadi phanta</i>	<i>Jwara</i>	A.H.Ci.1/56
<i>Pippalyadi Ghruta</i>	<i>Jwara</i>	A.H.Ci.1/90
<i>Kasamardadi Ghruta</i>	<i>Shosha, Jwara, Pliha roga, Kasa</i>	A.H.Ci.3/162
<i>Jivantyadi Ghruta</i>	<i>Parvshvaruka, Jwara, Kasa, Hikka shwasa</i>	A.H.Ci.4/43



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<i>Tramanadi Ghrita</i>	<i>Vidhradi</i>	A.H.Ci.13/15
<i>Bala taila</i>	<i>Vata vyadhi</i>	A.H.Ci.21/76
<i>Siddha basti</i>	<i>Vatarakta, Moha</i>	A.H.Ka.4/37
<i>Patoladi Ghrita</i>	<i>Shukra, Timira, Naktandhya</i>	A.H.U.13/8
<i>Kshara taila</i>	<i>Karna Bharidrya</i>	A.H.U.18/28

Chemical constituents of *Musta*²

Alkaloids, Coumarin, Carbohydrate, steroid, Phenol, Tannin, Terpenoids, Resins, Saponins.

Rasapanchaka of *Musta*² (Properties)

Rasa – Laghu, Ruksha

Guna – Tikta, Katu, Kashaya

Veerya – Sheeta

Vipaka – Katu

Doshakarma – Kapha-pitta Shamaka

Dhatukarma – Rakatha shamaka

Malakarma – Sthambhana **Guna Karmas of**

*Musta*²

Deepana

Pachana

Trishnanigrahana

Krimighna

Rakthaprasadana

Mutrala

Balya

Medhya- Nadibalya

Part Used – Mula (Rhizome)

Dosage form³

Churna: 3-6gm

Kashaya: 50-100ml in divided doses per day

Shodhana of *Musta*¹⁴ (Method of Purification)

Acharya Chakrapanidatta is the only one who mentions *shodhana* for *Musta* in *Vata vyadhi Chikitsa* while explaining about the preparation of *Maharaja prasarani taila*. As explained in

Chakradatta, *Musta* should be ground slightly and kept inside a mud pot for 3days, after which Swedana with Panchapallava kashaya should be done followed by drying under the sunlight. Then *Bharjana* should be done by sprinkling with *Gudaambu* and *churna* should be made. *Churna* should be given *Bhavana* with *Ajamootra* and *Shobhanjanajala*.

Research and Studies

1. Chemical Composition, Antibacterial and Antimutagenic activities of Essential Oil from *Cyperus rotundus*.
2. In a clinical report of 30 cases *Cyperus rotundus* (1gm to 2gm twice daily orally) showed significant weight reduction and total serum cholesterol lowering effect (Sinhadri, 1998)
3. The root tubers are reported as a remedy for snake bite (Mahaskar & Caicus.,1931). Root is used as an anti dote is snake bite by rural folk of Banskara Dist, Rajasthan (Mishra & Billore.,1985)
4. Phytochemical, antimicrobial, antioxidant and antigenotoxic potentials of *Cyperus rotundus* extracts (South African Journal of Botany Volume 77, Issue 3, August 2011, Pages 767-776)
5. The hypolipidemic effect of the drug was studied in 30 clinical cases and found it effectively reduces serum cholesterol and serum triglyceride levels (Ansary, 1994)
6. The effect of *Cyperus rotundus* in lipid disorders is extensively studied (Tridev & Mann, 1980; Nityanand & Kapoor, 1981; Karnick, 1992; Bambhole & Jiddewar, 1984).



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CONCLUSION

From this review it can be concluded that *Musta* is one of the very valuable medicinal herb of ayurveda and used as an ingredient in different formulations which are extensively used in treating various diseases.



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