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Research Article

LITERATURE REVIEW OF VACHA (*ACORUS CALAMUS L.*)

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ABSTRACT

Vacha (Acorus calamus L.) is a herb extensively used in the Indian system of medicine belongs to the family Araceae. As traditional medicine, the plant is useful in diarrhea, slurred speech, headache, edema, skin diseases, eye diseases, colic, piles, indigestion, acid gastritis, heart disease and ear diseases. *Vacha* is mentioned as one of the *Rasayana dravya* and its regular intake is said to make one endowed with sharp intellect and sweet voice. Along with other therapeutic applications, *The Ayurvedic Pharmacopoeia of India* indicates the use of the dried rhizomes as a brain tonic in weak memory, psychoneurosis and epilepsy. The chemical constituent reveals the presence of asarone, beta-asarone, eugenol, methyl eugenol, tannins and essential oil which are valuable in wide range of ailments. Here an attempt has been made to compile the detail information of the drug *Vacha* mentioned in historical era and modern era giving a scope for further researches.

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INTRODUCTION

Vacha (Acorus calamus L.) is exceedingly influential and renowned drug in *Ayurveda* well known for *medhya karma* (that which improve memory & intellect). The rhizome of this plant has been indicated as brain tonic in weak memory (API). In *Sanskrit* the word *Vacha* means that which improves speech or enhances the power of speech. It is commonly known as Sweet flag, a tall perennial wetland monocot plant from the *Araceae* family. It is exceedingly common in Manipur and Naga Hills and on the edges of lakes & streams. It is found throughout India under cultivation as well as in the wild state, in plains, lower elevations and in Himalayan upto altitude of 2200 m. The scented leaves and rhizomes of sweet flag have been traditionally used as a medicine and the dried and powdered rhizome has a spicy flavour and is used as a substitute for ginger, cinnamon and nutmeg for its odour. Due to varied uses, there has been demand for the plant. The rhizomes of *Acorus calamus* contain aromatic oil that has been used medicinally since ancient times and has been harvested commercially. The rhizomes are considered to possess anti-spasmodic, carminative, anthelmintic, aromatic, expectorant, nauseate, nervine, sedative, stimulant properties and also used for the treatment of epilepsy, mental ailments, chronic diarrhoea, dysentery, bronchial catarrh, intermittent fevers, glandular and abdominal tumors.

History of any drug gives insight into properties and therapeutic or dietary utility of any drug in different ailments. Thus detail literature review of *Vacha* has been compiled here to provide scope for more scientific researches on this drug in future.

Vedic Era

Atharvaveda provides a vivid description of the medicinal use of *Vacha*. The use of *Vacha* on the *Manovaha strotas* was known since the Vedic period. It is also mentioned as *Krimihara* (Anthelmintic) Medicine².

Samhita Era

In *Samhita* period comprehensive depiction of *Vacha* is observed.

Charaka Samhita

Charaka Samhita, the backbone of *Ayurveda* provides around 100 references for the *Vacha*. The foremost important among them being quoted under the *Pratham* and *Dwitiya Brahmarasayana*³, *Indrarasayana*⁴, *Indroktarasayana* ⁵ etc. Various others are included in the chapters of *Unmada* (Insanity), *Apasamara* (Epilepsy), *Rajyakshma* (Consumption), *Jwara* (Fever) etc.

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Sushruta Samhita

Approximately 80 references can be quoted of *Vacha* in *Sushruta Samhita*. It is being utilized in various *kalpa* and *yoga*.

Important *kalpa* *Hingavadi Gutika*⁶, *Syandana Taila*⁷, *Mahavajarak Taila*⁸, *Dvitiya Brahmi swaras Rasayana*⁹, *Kalyanaka Ghrit*¹⁰, *Panchagavya Ghrit*¹¹ and *Triphaladi Ghrit*¹² are mentioned.

Astanga Sangraha

About 100 different references of *Vacha* have been quoted in this treatise. It is also categorized under *Vachadi Gana*¹³, *Vamana gana*¹⁴, *Sangyakarana gana*¹⁵, *Shirovirecana gana*, etc¹⁶.

Ashtanga Hridaya

The *Rasayana ghrit*¹⁷ is one of the 109 different *yoga* of *Vacha* being quoted in *Ashtanga Hridaya*. Besides it is included in the *yoga* viz. *Mahatiktaka ghrit*¹⁸, *Mahavajaraka ghrit*¹⁹ indicated in *Kushtha chikitsa* chapter (Therapeutics of Dermatitis), *Dhanwantar ghrit*²⁰, *Sardul churna*²¹, *Balasya prasya leha*²², *Ashtanga ghrit*²³, *Saraswata ghrit*²⁴, *Siddarthaka ghrit*²⁵, *Apasmara taila*²⁶, *Brahma rasayana*²⁷ etc.

Kasyapa Samhita

Acharya Kasyapa shows a free hand while using the herb *Vacha*. *Vacha* has been mentioned in 69 different *yogas*. The important among them are *Brahmi ghrit*²⁸, *Medhajanaka ghrit*²⁸, *Phala taila*²⁹ etc.

Bhela Samhita

The *Bhela Samhita* also utilizes the plant *Vacha* at 29 different places. It includes the *yoga* like *Mahapaisachika ghrit*³⁰, *Ayorajiya rasayanam*³¹, *Mahasneharasayana*³² in *Hidroga* (Heart disease) *Karviradi yoga*³³ in *Kushtha* (Skin disease) and so many.

Chakradatta

In *Chakradatta* various *yoga* like *Ekvinsatiko guggulu*³⁴, *Panchatikta ghrit*³⁵, *Mahatrina taila*³⁶, *Brihata Marichyadham tailam*³⁷, *Visha taila*³⁸, *Mahasinduradhya taila*³⁹ are mentioned under *Kushtha chikitsa* chapter (Therapeutics of Dermatitis). Root of *Vacha*, *Vasa* & *Patola*, and barks of *Nimbi* & *Priyangu* is externally applied in *Kaphaja Kushtha*⁴⁰, also included in *Aragvadhadi* etc. six *pradeha* (external application)⁴¹. In *Niruddhaprakasha* (Phimosi), paste of *Vacha* & *Devadaru* is introduced through open thicker tube to open the passage⁴².

Sarangdhara Samhita

Thirty eight different *Yogas* do include the drug *Vacha* in the *Sharangdhara Samhita*. The prime among these include the *Hapusyadi churna*⁴³, *Phala ghrit*⁴⁴, *Pradhamana nasya*⁴⁵, *Maharasnadi kwatha*⁴⁶, *Manjisthadi kwatha*⁴⁷ and *Chandrprabhavati*⁴⁸, *Chandrodaya varti*⁴⁹ etc. *Vacha* is described as *pramathi dravya* and *lekhana* (scrapping) *dravya* (drugs) in *purvabhaga*⁵⁰.

Nighantu Era

Dhanvantari Nighantu

Its original form *Dravyavali* describes various synonyms of *Vacha*⁵¹. Here two types of *Vacha* i.e *Vacha* and *Shweta Vacha*, their synonyms, properties are described in *Shatapushpadi Varga*.

Shodala Nighantu

Vacha is described in *Shatapushpadi Varga*⁵². Two types *Vacha* and *Shweta Vacha* are mentioned. *Vacha* is described as *Rakshogni*, *Medya* and *Shulagni*.

Madanpal Nighantu

The synonyms and properties of *Vacha* are mentioned in *Sunthyadi Varga*⁵³.

Kaiyadev Nighantu

Vacha is described in *Oushadi Varga*. It is considered as *Rakshogna* & *Jantughna*⁵⁴.

Bhavaprakasha Nighantu

In this *Nighantu* synonyms, properties, morphology, habitat, chemical composition and therapeutic indication of *Vacha* in *Bhoot*, *Jantu* and *Vataja* diseases has been explained under *Haritakyadi Varga*⁵⁵.

Raj Nighantu

Vacha is mentioned in *Pippalayadi Varga*. Here *Shweta Vacha* is described as *Krimi doshaghna*⁵⁶.

Shaligrama Nighantu

In *Haritakyadi Varga* 3 types of *Vacha*, their synonyms and properties have been described. This *Nighantu* mentioned that on the day of Solar or Lunar eclipse, if a person eats *Vacha churna* in a dose of 1 pal he becomes intelligent⁵⁷.

Mahaoushadi Nighantu

Vacha is mentioned in *Mahaoushadi Varga* as *Jantuhara* drug. Here along with the synonyms the *guna karma* of *Vacha* has been described⁵⁸.

Brihat Nighantu Ratnakar

Vacha is mentioned in *Vachadi*, *Pippalyadi* and *Mustadi Gana*⁵⁹.

Priya Nighantu

Here *Vacha* is mentioned in *Shatapushpadi Varga*. Four types of *Vacha* are described i.e *Vacha* (*Ghorbach*), *Haimavati* (specially found in Himalayan region), *Kulanjan* and *Dvipantar Vacha*. *Vacha Churna* is indicated as best in treating *Apasmara*, *Unmada*, *Vibanda* and *Bhoot badha*⁶⁰.

Adarsh Nighantu

Vacha is mentioned as *Krimihara* in *Vachadi varga*⁶¹.

Gunaratnamala

Here *Ghorbach*, *Sugandhi Vach* and *Sthoolmula* are mentioned⁶²

Vanoushadi Chandrody

Different names, family, morphology, usable parts, dose, chemical composition and properties of *Vacha* are described⁶³.

Gana (Groups)

Different *Acharya* have described *Vacha* in different *Gana*, which are described as follows

Table 1 Table showing classification of *Vacha* by different *Acharya*

Charaka Samhita	Virechan Varga; Lekhaniya, Triptighana, Arshoghna, Asthapanopaga, Sheetaprashamana & Sangyasthapan Mahakashaya; Shirovirechana Dravya, Tikta Skanda.
Sushruta Samhita	Pippalyadi, Vachadi, Mustadi Gana; Urdhavabhagahara & Shirovirechana Dravya.
Ashtanga Hridaya	Tikta Skanda, Vachadi Gana, Mustadi Gana, Vamaka Gana, Vastakada Gana, Niruha Gana. Vamaka & Virechaka Gana, Niruha Gana, Shirovirechana Gana, Lekhaniya Gana, Hridhya, Gana, Arshoghna Gana, Sheetaprashamana Gana, Sangyasthapanana Gana, Vatsakadi & haridradi Gana
Ashtanga Sangraha	
Dhanvantari Nighantu	Shatpushpadi Varga
Shodala Nighantu	Shatpushpadi Varga
Madanpala Nighantu	Shuntyadi Varga
Kaiyadev Nighantu	Oushadi Varga
Bhavprakash Nighantu	Haritakyadi Varga
Raj Nighantu	Pippalyadi Varga
Shaligram Nighantu	Haritakyadi Varga
Shankara Nighantu	Haritakyadi Varga
Mahaoushadi Nighantu	Mahaoushadi Varga
Brihat Nighantu	Vachadi, Pippalyadi & Mustadi Gana
Ratnakara	
Nighantu Adarsha	Vachadi Varga
Priya Nighantu	Shatpushpadi Varga

Interpretation of Synonyms

Vacha - It provides good speech or enhances the power of speech.

Aruna - Due to its *Aruna* or reddish brown rhizome called *Aruna*.

Uragandha - It has strong odour or intense smell.

Ugra - It is highly potent drug and produces burning sensation for longer time also.

Karshani - It reduces body weight.

Golomi - The rhizome covered by hairs similar to cow's hair.

Shadagrantha - Its rhizome has six nodes i.e. more number of nodes.

Shadparvika - It has numerous nodes and internodes.

Jatila - Its rhizome is dense hairy i.e. known as *Jatila*.

Bodhaniya - It arouses consciousness.

Bhootnashi - It destroys *bhootas* or micro-organisms.

Mangalya - Generally it is regarded as auspicious.

Rakshogani - It destroys *rakshasas* or organisms.

Lomani - Due to its hairy rhizome.

Swaralu - It is used for improving voice.

Smarani - Because of arousing consciousness and memory it is reputed drug for epilepsy.

Shulagni - It reduces pain.

Types of Vacha

Two types of *Vacha* are mentioned in *Samhita kala* - *Vacha* (*Acorus calamus* L.) and *Haimavati Vacha* (*Iris germanica* Linn). However the types of *Vacha* were stressfully said by the *nighantukaras*. An overview of the types of *Vacha* shows that

it is of two different kinds - *Vacha* and *Shweta Vacha*. Here the opinion of different *Acharya* has been mentioned:

Kaiyadeva Nighantu

1. *Shweta* or *Parasika Vacha*
2. *Aruna*

Bhavaprakash, Priya Nighantu & Dravyaguna Vigyana: (P.V.Sharma)

1. *Vacha (Ghodavaca)* - *Acorus calamus* Linn.
2. *Parasika Vacha (Haimavati Vacha, Khurasani Vacha or Bala Vacha)*-
3. *Iris germanica* Linn.
4. *Mahabhari Vacha (Kulanjan or Malaya Vacha)* - *Alpinia galanga* Willd.
5. *Sthulagranti* - *Zinziber zerumber* Rosc.ex Smith (*Mahabhara Vacha*)
6. *Dwipantara Vacha (Chopachini)* - *Smilax china* Linn.

Sankara nighantu

1. *Ghodavaca*
2. *Shweta Vacha* or *Khurasani Vacha*

Vanausadicandrodraya

1. *Ghodavaca*
2. *Shweta* or *Khurasani Vacha*

Rasa Panchaka (Ayurveda Properties)

Rasa (taste): *Katu* (Pungent), *tikta* (bitter)

Virya (potency): *Ushna* (hot potency)

Vipaka (end metabolism): *Katu* (Pungent)

Prabhava (special action): *Medhya*

Doshagnata: *Kaphavataghna* (Alleviates *kapha* and *vata*)

Guna (Properties): *Ruksha* (dry), *Laghu* (easy to digest),

Tikshna (fast acting)

Karma (Action)

Vamaka (Emetic), *Vanahikara* (Digestive fire stimulant), *Mala Vishodhan* (Clears *mala*), *Mutra Vishodhana* (Clears urine), *Kaphaghana* (Alleviates *kapha*), *Vataghna* (Alleviates *vata*), *Jantughna* (Anti-microbial/Disinfectant), *Kanthy* (Beneficial for throat), *Medhya* (Intellect promoting), *Krimighna* (Anthelmintic), *Ayushya* (Life promoter), *Amapachaka* (Digestant), *Vrishya* (Aphrodisiac), *Swaradayaka* (that which improves voice), *Vatanuloman* (Carminative), *Jivaniya* (*Vitalizer*), *Rakshoghna* (*Disinfectant*), *Dipana* (*Appetizer*), *Smritivardhak* (Improves cognizance/recollection).

Rogagnata (Therapeutic indication)

Vibandha (Constipation), *Adhamana* (Flatulence), *Shoolanashak* (Pain reliever), *Apasmara* (Epilepsy), *Unmada* (Insanity), *Hridya Roga* (Heart disease), *Granthi* (localized swelling), *Shotha* (Edema), *Vataja Jwara* (*Vataja* fever), *Atisara* (Diarrhea)

Table no 2 Karma (Action) of *Vacha* in various *Nighantu*

Karma	D.N	Sho.N	M.N	K.N	B.P	R.N	Sha.N	Maha.N	P.N
<i>Vamaka</i>			+	+	+	+	+	+	+
<i>Vanhikara</i>			+		+		+	+	+
<i>Mala</i>				+	+			+	
<i>Vishodhan</i>	+							+	
<i>Mutra</i>				+	+			+	
<i>Vishodhana</i>	+			+					
<i>Kaphaghana</i>	+	+		+		+	+		+
<i>Vataghna</i>	+	+	+	+	+	+	+		+
<i>Bhootaghna</i>			+		+	+	+	+	+
<i>Jantughna</i>	+			+	+			+	
<i>Kanthya</i>	+								
<i>Medhya</i>	+	+		+				+	
<i>Krimighna</i>	+							+	
<i>Ayushya</i>	+							+	
<i>Amapachaka</i>				+				+	
<i>Vrishya</i>								+	
<i>Swaradayaka</i>			+	+				+	
<i>Vatanuloman</i>									+
<i>Jivaniya</i>				+					
<i>Rakshoghna</i>				+					
<i>Dipana</i>	+			+				+	
<i>Smritivardhak</i>		+							

D.N-Dhanwantari Nighantu; S.N-Sodhala Nighantu; M.N-Madanapala Nighantu; R.N-Raj Nighantu; K.N-Kaiyadeva Nighantu; B.P.N-Bhavaprakasha Nighantu; Sa.N-Shaligram Nighantu; Ma.N-Mahaoushad Nighantu; P.N-Priya Nighantu.

Table no 3 Rogagnata (Therapeutic indication) of *Vacha* in various *Nighantu*

Roga	D.N	Sh.N	M.N	K.N	B.P	R.N	Sha.N	Maha.N	P.N
<i>Vibandha</i>	+			+	+			+	+
<i>Adhamana</i>	+			+	+			+	+
<i>Shoolanashak</i>	+	+	+	+	+			+	+
<i>Apasmara</i>			+	+	+			+	+
<i>Unmada</i>			+	+	+	+	+	+	+
<i>Hridya Roga</i>	+								
<i>Granthi</i>						+	+		
<i>Shotha</i>						+	+	+	
<i>Vataja Jwara</i>						+	+	+	
<i>Atisara</i>						+	+		

D.N-Dhanwantari Nighantu; S.N-Sodhala Nighantu; M.N-Madanapala Nighantu; R.N-Raj Nighantu; K.N-Kaiyadeva Nighantu; B.P.N-Bhavaprakasha Nighantu; Sa.N-Shaligram Nighantu; Ma.N-Mahaoushad Nighantu; P.N-Priya Nighantu.

Modern Era

1. *Dravyagunavijnana* by PV Sharm: Different names, morphology, distribution, chemical constituents, pharmacodynamics, actions, properties and therapeutic uses are mentioned⁶⁴.
2. *Dravyagunavijnana* by JLN Sastry: Different names, morphology, distribution, chemistry, pharmacodynamics, properties and therapeutic uses are mentioned⁶⁵.
3. Database of Medicinal Plants. : Detail explanation regarding *Vacha* has been given such as family, classical text, vernacular names, morphology, useful parts, along with pharmacognosy, chemical constituents, pharmacological activity, toxicology and therapeutic evaluation is explained¹.
4. Ayurvedic Pharmacopoeia of India: Macroscopic and microscopic structures of the drug noted, along with identity, purity, strength, constituents, properties and therapeutic uses⁶⁶.
5. Indian Medicinal Plants (Kirtikar & Basu): Different names, morphology and therapeutic uses of *Vacha* are mentioned⁶⁷.

6. Indian Materia Medica (A.K Nadkarni): Vernacular name and chemical constituent of the plant has been mentioned.

Vernacular names

Vernacular names of *Vacha* in some National Languages: Sanskrit - *Vacha*, *Uraganda*, *Shadgrantha*; Hindi - Bach, Gorbach, Ghourbach; Gujrati - Vaj, Ghodavaj, Gandhilovaj; Marathi - Vekhand; English - Sweet flags

Taxonomical Classification 68

Kingdom - Plantae
 Division - Spermatophyta
 Sub division - Angiospermae
 Class - Monocotyledonae
 Sub class - Nudiflorae
 Order - Acorales
 Family - Araceae
 Genus - Acorus
 Species - calamus

Botanical Description 69

It is an aromatic marshy herb; rootstock as thick as the middle finger, creeping and branching.

Leaves: Strongly aromatic, simple, alternate, distichous, very closely arranged, vertically oriented, linear to narrowly ensiform, two to three feet long and half to one inch broad, occasionally longer and broader, glossy bright green, with wavy margin, acute tip and broad amplexical base.

Spadix: The spadix is sessile, cylindrical, thick, greenish, slightly curved, obtuse and densely and compactly covered with a mass of numerous pale green flower.

Fruit: Turbinate prismatic, top pyramidal.

Seeds: Oblong, micropyle often fimbriate, albumen fleshy, embryo axile.

Rhizome: Rhizome is woody, branched, light brown, cylindrical to flatten and 10-15 mm. in diam. with distinct nodes and internodes. Nodal regions are broad with leaf scars and hair like fibres. Internodes 8-10 mm. in length ridged and furrowed. Under surface provided with zigzag line of circular root scars. Transversely cut surface cream in colour with pinkish ringed and differentiated into central and peripheral regions.

Phenology

Blooming & Fruiting time: May to June

Collection time : Late Autumn or spring

Chemical constituents¹

Asarone, beta-asarone, calamenol, calamine, calamenone, eugenol, methyl eugenol, alpha-pinene and camphene, two selinane type sesquiterpenes-acolamone and isoacolamone, sugars, glucoside-acorine, calameon, calamusenone, various fatty acids, calamol, calamine acoradin, azulene, a flavones-luteolin-6, 8-c-diglucoside, new natural products acoramone, sasarylaldehyde, carcinogen and epoxyisoacoragermacrone are the main chemical constituents reported from this plant.

Actions and Uses1

The rhizome is acrid, bitter, thermogenic, aromatic, intellect promoting, emetic, laxative, carminative, stomachic, anthelmintic, emmenagogue, diuretic, anodyne, expectorant, antispasmodic, aphrodisiac, anticonvulsant, resuscitative, anti-inflammatory, antipyretic, insecticidal, tranquilising, nerve tonic, sedative. It is useful in stomatopathy, hoarseness, colic, flatulence, dyspepsia, amenorrhoea, dysmenorrhoea, nephropathy, calculi, strangury, cough, bronchitis, odontalgia, pectoralgia, hepatodynia, otalgia, gout, inflammation, epilepsy, amentia, convulsions, mental disorders, tumours and fever.

Part Used: Rhizome

Doses1: 0.25 to 0.5 gm; for vama (emesis) 1 to 2 gm

Toxicology1

Calamus oil and extract are prohibited from use in human food due to its toxicity. Acute toxicity studies in rats revealed that near toxic doses of asarone caused ataxia, hypnosis and loss of righting reflex whereas beta-asarone failed to induce any of three responses. LD50 of volatile oil of root rhizome for guinea pigs found to be 0.6275 ml/100 gm body weight.

Substitute and Adulterants

Alpinia galanga Willd. And *Alpinia officinarum* Hance are adulterants of *Vacha* and being sold in the name of *Bach* and *Ghorbach* in the local market apart from the genuine *Calamus* rhizomes.

CONCLUSION

The drug *Vacha* is used as nervine tonic, hypotensive, tranquilizer, sedative (with neuroleptic and antianxiety properties), analgesic, spasmolytic, anti convulsant and also used in bronchial catarrh, chronic diarrhoea and dysentery. Almost all the authors described *Vacha* having *katu tikta rasa*, *katu vipaka* and *ushna virya* making the drug acting more prominent on *kapha vata dosha* predominant diseases. The drug has tremendous potency in treatment of wide array of diseases. Thus this review would help the researches to get a detailed *Ayurvedic* references about the drug *Vacha*.

References

1. Sharma P.C., Database on medicinal plant used in Ayurveda, vol -I, CCRAS, Delhi, Reprint 2002.
2. Kanda.2, Sukta.31, Sutra 2 & 5
3. Agnivesha: Charakasamhita, Ayurveda Dipika Commentary by Chakrapani, Ed. Pt. Y T Acharya: New Delhi, Rastriya Sanskrit Samsasthan; Reprint 2011, verse no Charaka Chikitsa 4/41-58.
4. Agnivesha: Charakasamhita, Ayurveda Dipika Commentary by Chakrapani, Ed. Pt. Y T Acharya: New Delhi, Rastriya Sanskrit Samsasthan; Reprint 2011, verse no Charaka Chikitsa 4/24-27.
5. Agnivesha: Charakasamhita, Ayurveda Dipika Commentary by Chakrapani, Ed. Pt. Y T Acharya: New Delhi, Rastriya Sanskrit Samsasthan; Reprint 2011, verse no Charaka Chikitsa 1, 4/6
6. Sushruta, Sushruta Samhita, with Nibandhasangraha Commentary Of Sri Dalhanacarya Ed. Vd. Yadavaji Trikamji Acharya & Narayana ram Acharya
7. Sushruta, Sushruta Samhita, with Nibandhasangraha Commentary Of Sri Dalhanacarya Ed. Vd. Yadavaji Trikamji Acharya & Narayana ram Acharya "Kavyatirtha", Chaukhamba Orientalia, Varanasi, 8th Edi, (2005), verse no Sushrut Chikitsa 5/28.
8. Sushruta, Sushruta Samhita, with Nibandhasangraha Commentary Of Sri Dalhanacarya Ed. Vd. Yadavaji Trikamji Acharya & Narayana ram Acharya "Kavyatirtha", Chaukhamba Orientalia, Varanasi, 8th Edi, (2005), verse no Sushrut Chikitsa 8/50.
9. Sushruta, Sushruta Samhita, with Nibandhasangraha Commentary Of Sri Dalhanacarya Ed. Vd. Yadavaji Trikamji Acharya & Narayana ram Acharya "Kavyatirtha", Chaukhamba Orientalia, Varanasi, 8th Edi, (2005), verse no Sushrut Chikitsa 9/59.
10. Sushruta, Sushruta Samhita, with Nibandhasangraha Commentary Of Sri Dalhanacarya Ed. Vd. Yadavaji Trikamji Acharya & Narayana ram Acharya "Kavyatirtha", Chaukhamba Orientalia, Varanasi, 8th Edi, (2005), verse no Sushrut Uttartantra 39/230.
11. Sushruta, Sushruta Samhita, with Nibandhasangraha Commentary Of Sri Dalhanacarya Ed. Vd. Yadavaji Trikamji Acharya & Narayana ram Acharya "Kavyatirtha", Chaukhamba Orientalia, Varanasi, 8th Edi, (2005), verse no Sushrut Uttartantra 39/240.
12. Sushruta, Sushruta Samhita, with Nibandhasangraha Commentary Of Sri Dalhanacarya Ed. Vd. Yadavaji Trikamji Acharya & Narayana ram Acharya "Kavyatirtha", Chaukhamba Orientalia, Varanasi, 8th Edi, (2005), verse no Sushrut Uttartantra 5/28.
13. Vriddhavagbhatt, Astangasangraha with Sashilekha Sanskrit Commentory by Indu, Ed. Vd. Dr.Shivaprasad Sharma, Choukhamba Sanskrit Series Office, Varanasi, 2nd Ed, (2008), verse no Astangasangraha Sutrasthana 16/19.
14. Vriddhavagbhatt, Astangasangraha with Sashilekha Sanskrit Commentory by Indu, Ed. Vd. Dr.Shivaprasad Sharma, Choukhamba Sanskrit Series Office, Varanasi, 2nd Ed, (2008), verse no Astangasangraha Sutrasthana 14/2.
15. Vriddhavagbhatt, Astangasangraha with Sashilekha Sanskrit Commentory by Indu, Ed. Vd. Dr.Shivaprasad Sharma, Choukhamba Sanskrit Series Office, Varanasi, 2nd Ed, (2008), verse no Astangasangraha Sutrasthana 15/8.
16. Vriddhavagbhatt, Astangasangraha with Sashilekha Sanskrit Commentory by Indu, Ed. Vd. Dr.Shivaprasad Sharma, Choukhamba Sanskrit Series Office, Varanasi, 2nd Ed, (2008), verse no Astangasangraha Sutrasthana 14/6.
17. Vagbhatta, Astangahridayam, Commentory by Sarvangasundara of Arunadatta & Ayurveda of Hemadri, Ed. Pt. Hari Sadasiva Sastri Paradakara, Chaukhamba Sanskrit sansthan, Varanasi; Reprint 2014, verse no Astangahridayam Uttarasthana 39/50-53.
18. Vagbhatta, Astangahridayam, Commentory by Sarvangasundara of Arunadatta & Ayurveda of Hemadri, Ed. Pt. Hari Sadasiva Sastri Paradakara,

- Chaukhamba Sanskrit sansthan, Varanasi; Reprint 2014, verse no Astangahridayam Chikitsa 19/8.
19. Vagbhatta, Astangahridayam, Commentory by Sarvangasundara of Arunadatta & Ayurveda of Hemadri, Ed. Pt. Hari Sadasiva Sastri Paradakara, Chaukhamba Sanskrit sansthan, Varanasi; Reprint 2014, verse no Astangahridayam Chikitsa 19/19.
 20. Vagbhatta, Astangahridayam, Commentory by Sarvangasundara of Arunadatta & Ayurveda of Hemadri, Ed. Pt. Hari Sadasiva Sastri Paradakara, Chaukhamba Sanskrit sansthan, Varanasi; Reprint 2014, verse no Astangahridayam Chikitsa 12/19-23.
 21. Vagbhatta, Astangahridayam, Commentory by Sarvangasundara of Arunadatta & Ayurveda of Hemadri, Ed. Pt. Hari Sadasiva Sastri Paradakara, Chaukhamba Sanskrit sansthan, Varanasi; Reprint 2014, verse no Astangahridayam Chikitsa 14/36.
 22. Vagbhatta, Astangahridayam, Commentory by Sarvangasundara of Arunadatta & Ayurveda of Hemadri, Ed. Pt. Hari Sadasiva Sastri Paradakara, Chaukhamba Sanskrit sansthan, Varanasi; Reprint 2014, verse no Astangahridayam Uttarasthana 1/7-9.
 23. Vagbhatta, Astangahridayam, Commentory by Sarvangasundara of Arunadatta & Ayurveda of Hemadri, Ed. Pt. Hari Sadasiva Sastri Paradakara, Chaukhamba Sanskrit sansthan, Varanasi; Reprint 2014, verse no Astangahridayam Uttarasthana 1/44-45.
 24. Vagbhatta, Astangahridayam, Commentory by Sarvangasundara of Arunadatta & Ayurveda of Hemadri, Ed. Pt. Hari Sadasiva Sastri Paradakara, Chaukhamba Sanskrit sansthan, Varanasi; Reprint 2014, verse no Astangahridayam Uttarasthana 1/46.
 25. Vagbhatta, Astangahridayam, Commentory by Sarvangasundara of Arunadatta & Ayurveda of Hemadri, Ed. Pt. Hari Sadasiva Sastri Paradakara, Chaukhamba Sanskrit sansthan, Varanasi; Reprint 2014, verse no Astangahridayam Uttarasthana 5/10-12.
 26. Vagbhatta, Astangahridayam, Commentory by Sarvangasundara of Arunadatta & Ayurveda of Hemadri, Ed. Pt. Hari Sadasiva Sastri Paradakara, Chaukhamba Sanskrit sansthan, Varanasi; Reprint 2014, verse no Astangahridayam Uttarasthana 1/34.
 27. Vagbhatta, Astangahridayam, Commentory by Sarvangasundara of Arunadatta & Ayurveda of Hemadri, Ed. Pt. Hari Sadasiva Sastri Paradakara, Chaukhamba Sanskrit sansthan, Varanasi; Reprint 2014, verse no Astangahridayam Uttarasthana 39/15-23
 28. Kashyapa, Kashyapa Samhita, Shastri Girijashankar, (Translator), 1st ed., Sastu Sahitya Vardhaka Karyalaya, 1970, verse no Kashyapa Samhita, Sutrasthana, Lehaadhyaya 5.
 29. Kashyapa, Kashyapa Samhita, Shastri Girijashankar, (Translator), 1st ed., Sastu Sahitya Vardhaka Karyalaya, 1970, verse no Kashyapa Samhita, Khilasthana, 8/89-96.
 30. Bhela, Bhela Samhita, edited by Shri Girija Dayalu Shukla, Chaukhambha Vidya Bhavan, Varanasi, 1959. verse no chikitsa 2/34-37.
 31. Bhela, Bhela Samhita, edited by Shri Girija Dayalu Shukla, Chaukhambha Vidya Bhavan, Varanasi, 1959. verse no Hridarogachikitsa 21.
 32. Bhela, Bhela Samhita, edited by Shri Girija Dayalu Shukla, Chaukhambha Vidya Bhavan, Varanasi, 1959. verse no shvayathuchikitsa 19/36.
 33. Bhela, Bhela Samhita, edited by Shri Girija Dayalu Shukla, Chaukhambha Vidya Bhavan, Varanasi, 1959. verse no kusthachikitsa 6/70.
 34. Shri Chakrapanidatta, Chakradatta, edited by Shri Jagadishwaraprasad tripathi, Chaukhamba Sanskrit Series Office, Varanasi, 2008, verse no Kushtha chikitsa 50/85.
 35. Shri Chakrapanidatta, Chakradatta, edited by Shri Jagadishwaraprasad tripathi, Chaukhamba Sanskrit Series Office, Varanasi, 2008, verse no Kushtha chikitsa 50/119.
 36. Shri Chakrapanidatta, Chakradatta, edited by Shri Jagadishwaraprasad tripathi, Chaukhamba Sanskrit Series Office, Varanasi, 2008, verse no Kushtha chikitsa 50/129.
 37. Shri Chakrapanidatta, Chakradatta, edited by Shri Jagadishwaraprasad tripathi, Chaukhamba Sanskrit Series Office, Varanasi, 2008, verse no Kushtha chikitsa 50/140.
 38. Shri Chakrapanidatta, Chakradatta, edited by Shri Jagadishwaraprasad tripathi, Chaukhamba Sanskrit Series Office, Varanasi, 2008, verse no Kushtha chikitsa 50/146.
 39. Shri Chakrapanidatta, Chakradatta, edited by Shri Jagadishwaraprasad tripathi, Chaukhamba Sanskrit Series Office, Varanasi, 2008, verse no Kushtha chikitsa 50/157.
 40. Shri Chakrapanidatta, Chakradatta, edited by Shri Jagadishwaraprasad tripathi, Chaukhamba Sanskrit Series Office, Varanasi, 2008, verse no Kushtha chikitsa 50/3.
 41. Shri Chakrapanidatta, Chakradatta, edited by Shri Jagadishwaraprasad tripathi, Chaukhamba Sanskrit Series Office, Varanasi, 2008, verse no Kushtha chikitsa 50/10.
 42. Shri Chakrapanidatta, Chakradatta, edited by Shri Jagadishwaraprasad tripathi, Chaukhamba Sanskrit Series Office, Varanasi, 2008, verse no chikitsa 55/38.
 43. Sharangadhar, Sharangadhar Samhita, Ed. Smt. Shailaja Shrivastav, Chaukhambha Orientalis, Varanasi; 2009, verse no Madhyam Khand 6/92-94.
 44. Sharangadhar, Sharangadhar Samhita, Ed. Smt. Shailaja Shrivastav, Chaukhambha Orientalis, Varanasi; 2009, verse no Madhyam Khand 9/80-87.
 45. Sharangadhar, Sharangadhar Samhita, Ed. Smt. Shailaja Shrivastav, Chaukhambha Orientalis, Varanasi; 2009, verse no Uttara Khand 8/22-23.
 46. Sharangadhar, Sharangadhar Samhita, Ed. Smt. Shailaja Shrivastav, Chaukhambha Orientalis, Varanasi; 2009, verse no Madhyam Khand 2/88.
 47. Sharangadhar, Sharangadhar Samhita, Ed. Smt. Shailaja Shrivastav, Chaukhambha Orientalis, Varanasi; 2009, verse no Madhyam Khand 2/36-38.
 48. Sharangadhar, Sharangadhar Samhita, Ed. Smt. Shailaja Shrivastav, Chaukhambha Orientalis, Varanasi; 2009, verse no Madhyam Khand 7/40.

49. Sharangadhar, Sharangadhar Samhita, Ed. Smt. Shailaja Shrivastav, Chaukhambha Orientalis, Varanasi; 2009, verse no Uttara Khand 13/75.
50. Sharangadhar, Sharangadhar Samhita, Ed. Smt. Shailaja Shrivastav, Chaukhambha Orientalis, Varanasi; 2009, verse no Purva Khand 4/10,23.
51. Mahendra bhougika, Dhanvantari Nighantu, PV Sharma editor. 4thed. Chaukhamba orientalia, Varanasi; 2005, verse no Shatapushpadivarga/6-7, p.71.
52. Sodhala. Sodhala Nighantu (Namasangraha and Gunasangraha), PV Sharma editor. 1 sted. Oriental Institute, Baroda; 1978, Shatapushpadivarga/290-91, p.113.
53. Rajamadan Pal, Madanapala nighantu, Khenrajsri. 1 sted. Krishnadas prakashan, Mumbai; 2004, verse no Sunthyadivarga/38-39, p.83.
54. Kaiyadeva, Kaiyadeva nighantu, PV Sharma, Guruprasad Sharma, editors. 1st ed. Chaukhamba orientalia, Varanasi; 1979, verse no Oushadivarga/1215-17, p.224-225.
55. Bhavamishra, Bhavaprakasa nighantu, Dr. K.C Chunekar comm..Chaukhamba Bharati Academy, Varanasi; 2006, verse no Haritakyadivarga/102-103, p.42-43.
56. Pandit Narahari. Raja Nighantu, Tripathi. Indradeva, editor.,3rd ed. Chowkamaba Krishnadas Academy, Varanasi; 2003, verse no Pippalyadivarga/51-54, p.144-45
57. Vaishya Lala Shaligrama, Shaligrama Nighantu., 3rd ed., Khemraj Shri Krishnadas Prakashan, Bombay, 1995.verse no Haritakyadivarga/112.
58. Pt. Aryadasa Kumar Singha and Śri Indradeva Tripathi, Mahaoushadi Nighantu, 1st ed. Chaukhamba Vidhyabhavan, Varanasi; 1971, verse no Mahaoushadivarga/79, p.31-32.
59. Shri Dattaram shrikrishnalal Mathura, Brihat Nighantu Ratnakar, 1st ed., Khemraj Shri Krishnadas Prakashan, Mumbai, 1995.
60. Sharma P V, Priya nighantu, 1st ed., Chaukhamba Surbharati prakashna; Varanasi; 2004, verse no Shatapushpadi varga/45-47, p.83.
61. Vaidya Bapalal G, Nighantuaadarsha, Vachadi varga, 1st ed., Chaukhamba Bharati academy, Varanasi, 1985, p.689-695.
62. Gunaratnamala, Pandey k p , Singh A N (ed), Haritakyadi varga, 1st ed., Chaukhamba Sanskrit bhavan, Varanasi, 2006, p.50-51.
63. Shri Candraraja Bhandari, Vanausadhi Chandrodaya, 10th ed., Chowkhamba Sanskrit Sansthan; Varanasi, 2000, p.157.
64. Sharma PV. Dravyaguna vijnana, Vol.2. Chaukhamba Bharti Academy, Varanasi; 1999, p. 28-30.
65. Sastry JLN. Dravyaguna Vijnana, Vol-II. 3rd ed., Chaukhamba Orientalia; Varanasi; 2008, p. 545-550.
66. The Ayurvedic Pharmacopea of India, part-I, vol.-II, edi-I, AYUSH, Delhi.
67. Kirthikar KR, Basu BD. Indian Medicinal Plants, vol-IV, 2nd ed. International book distributors; p.2626-2628.
68. https://en.wikipedia.org/wiki/Acorus_calamus, cited at date 03/09/2017 at time 11.45 am
69. Dravyaguna Vijyana, Dr.Gyanendra Pandey, vol.III, Chowkhamba Krishnadas Academy, Varanasi, 2004.

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