



Review Article

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## DETAILED REVIEW ON AYURVEDIC PERSPECTIVE OF *VACHA* (*Acorus Calamus* Linn.)

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### Abstract

*Vacha* is a significant and well-known drug in the Ayurvedic classics. It is botanically identified as *Acorus calamus* Linn. and commonly known as sweet flag. Detailed description of the drug along with its immense therapeutic potential is available in Ayurvedic literature. Rhizome of the drug is therapeutically used and *choorna* (powder) is the commonly used dosage form. This literature review aims to explore Ayurvedic perspective of *Vacha* (*Acorus calamus* Linn.) and provide an insight into its therapeutic potential which can be a lead for future researches.

**Key words:** *Vacha*, *Acorus calamus* Linn.

### INTRODUCTION

*Vacha* is a significant and well-known drug in the Ayurvedic classics. The drug *Vacha* is botanically identified as *Acorus calamus* Linn. It is commonly known as sweet flag and called *vayambu* in Malayalam. It is a semi aquatic, strongly aromatic, gregarious and

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perennial tall herb belonging to the family Acoraceae.<sup>1,2</sup> Rhizome of the drug is therapeutically used and *choorna* (powder) is the commonly used dosage form. The description and application of the drug commences from the *Vedic* period. In the *Samhita period*, it is described as a *rasayana* (rejuvenation therapy) drug having cognition-enhancing potential. It has appreciable therapeutic applications and is frequently recommended as anti-epileptic drug on account of its efficacy against *apasmara* (epilepsy).<sup>3</sup> The drug and its uses as *medhya* (promoting grasping and retention of knowledge) are described in *Samhitas*. Synonyms appertaining to the identification of the drug, its therapeutic properties, actions and indications are documented in various *Nighantus*. This literature review aims to explore Ayurvedic perspective of *Vacha* (*Acorus calamus* Linn.) and provide an insight into its therapeutic potential which can be a lead for future researches.

## **MATERIALS AND METHODS**

A systematic review of Ayurvedic *Samhithas* and *Nighantus* for acquiring references related to *Vacha* was done and arranged based on chronology.

## **RESULTS**

### **I. Historical background**

#### **A. Vedic period**

As stated in *Atharva Veda*, *Vacha* has been used as *praashana* (confection) and as an amulet worn in neck region for wellbeing of a person. Acharya Sayana, an influential commentator of *Vedas* explains that this drug improves the intelligence and speech of an individual.<sup>4</sup> *Vacha* is described as *krimihara* (antihelminthic) and *sanjnasthapaka* (resuscitative) drug.<sup>5</sup> *Vacha* is also quoted in *Atharva Parishista*, the supplementary text appended to *Atharva Veda*.<sup>6</sup>

#### **B. Samhita period**

Systematic classification of *Vacha* under various *gana* and *varga* can be noted. Some single drug medications and polyherbal remedies of *Vacha* that have potential to increase *medha* (grasping and retention of knowledge) and *smriti* (memory) are described in contexts of *navajata sishu praashana* (confections to new born) and *rasayana* (rejuvenation

therapy).<sup>7,8</sup> Acharya Caraka includes *Vacha* as an ingredient of the formulation *Prathama Brahma rasayana* which can promote *medha* (grasping and retention of knowledge) and *smriti* (memory), and another formulation *Dwitheeya Brahma rasayana* which can promote *dhaarana* (retention of knowledge).<sup>9</sup> In the context of management of *apasmara* (epilepsy), several drugs having *rasayana* (rejuvenative) and *medhya* (promote grasping and retention of knowledge) property are advocated. *Vacha* finds an important place among such drugs.<sup>10</sup> Acharya Susruta mentions use of *Vacha* as a single drug to promote *smriti* (memory).<sup>11</sup> Acharya Vagbhata includes *Vacha* as an ingredient of multiple formulations like *Sarawatharishta* which confer *medha* (grasping and retention of memory) and *smriti* (memory).<sup>12</sup>

### C. Nighantu Period

The drug *Vacha* is extensively described along with its synonyms, properties and uses in various *Nighantus*. Synonyms regarding the morphology of rhizome, fruit and leaves, peculiar smell of the plant and pharmacological actions are noteworthy. The authors of *Dhanwantari Nighantu*,<sup>13</sup> *Kaiyyadeva Nighantu*,<sup>14</sup> *Nighantu Adarsha*<sup>15</sup> and *Priya Nighantu*<sup>16</sup> describe *Vacha* as a drug possessing *medhya* (promote and grasping and retention of knowledge) action. In conformance with *Priya Nighantu*, the drug which induces speech is called *Vacha*. The author of *Priya Nighantu* specifically points out *choorna* (powder) as the dosage form of *Vacha*.<sup>16</sup>

## II. Vargeekarana (Classification)

The drug *Vacha* is included under categories such as *skanda*, *gana* or *varga*.

**Table 1. Vargeekarana (Classification) of Vacha**

Sl. No.	Name of the text	Skanda/ Varga/ Gana
1	<i>Caraka Samhita</i>	<i>Lekhaneeya varga</i> , <sup>17</sup> <i>Triptighna varga</i> , <sup>18</sup> <i>Arsoghna varga</i> , <sup>18</sup> <i>Asthapanopaga varga</i> , <sup>19</sup> <i>Seethaprasamana varga</i> , <sup>20</sup> <i>Sanjnasthapana varga</i> <sup>21</sup>
2	<i>Susruta Samhita</i>	<i>Pippalyadi gana</i> , <sup>22</sup> <i>Vacadi gana</i> , <sup>23</sup> <i>Mustadi gana</i> <sup>24</sup>

3	<i>Ashtanga Sangraha</i>	<i>Lekhaneeya varga</i> , <sup>25</sup> <i>Triptighna varga</i> , <sup>26</sup> <i>Arsoghna varga</i> , <sup>27</sup> <i>Seethasamana varga</i> , <sup>28</sup> <i>Samjnada varga</i> , <sup>29</sup> <i>Vatsakadi gana</i> , <sup>30</sup> <i>Vacaharidradi gana</i> , <sup>31</sup> <i>Mustadi gana</i> , <sup>32</sup> <i>Pippalyadi gana</i> , <sup>33</sup> <i>Tikta skandha</i> <sup>34</sup>
4	<i>Ashtanga Hridaya</i>	<i>Tikta skandha</i> , <sup>35</sup> <i>Chardana gana</i> , <sup>36</sup> <i>Niruha gana</i> , <sup>37</sup> <i>Vacha Haridradi gana</i> , <sup>38</sup> <i>Mustadi gana</i> <sup>39</sup>
6	<i>Dhanwantari Nighantu</i>	<i>Satapushpadi varga</i> <sup>13</sup>
7	<i>Sodala Nighantu</i>	<i>Satapushpadi varga</i> <sup>40</sup>
8	<i>Madhava Dravyaguna</i>	<i>Vividoushadi varga</i> <sup>41</sup>
9	<i>Madanapala Nighantu</i>	<i>Sundyadi varga</i> <sup>42</sup>
10	<i>Raja Nighantu</i>	<i>Pippalyadi varga</i> <sup>43</sup>
11	<i>Kaiyyadeva Nighantu</i>	<i>Oushadi varga</i> <sup>14</sup>
12	<i>Bhavaprakasa Nighantu</i>	<i>Harithakyadi varga</i> <sup>44</sup>
13	<i>Saligrama Nighantu</i>	<i>Harithakyadi varga</i> <sup>45</sup>
14	<i>Nighantu Adarsha</i>	<i>Vachadi varga</i> <sup>15</sup>
15	<i>Abhidhana manjari</i>	<i>Vatsakadi gana</i> , <sup>46</sup> <i>Madanadi gana</i> , <sup>47</sup> <i>Madanakutajadi gana</i> , <sup>48</sup> <i>Vachadi gana</i> , <sup>49</sup> <i>Mustadi gana</i> <sup>50</sup>
16	<i>Priya Nighantu</i>	<i>Satapushpadi varga</i> <sup>16</sup>

### III. Paryayas (Synonyms) and interpretations

Synonyms referring to the morphology, properties and actions of *Vacha* can be traced out from various *Nighantus*. The synonyms pertaining to the habit of the plant, features of rhizome, shape of leaves and fruits aid in easy identification of the drug. The interpretations of the synonyms are available in *Amarakosha*,<sup>51</sup> *Nighantu Adarsha*<sup>15</sup> and *Namarupajnanam*.<sup>52</sup>

#### A. Based on morphological characters

##### a. Rhizome

**Table 2. Paryayas (Synonyms) of Vacha based on morphology of rhizome**

Synonyms	D.N. <sup>13</sup>	So. N. <sup>40</sup>	M.P.N. <sup>42</sup>	R. N. <sup>43</sup>	K. N. <sup>14</sup>	B. P.N. <sup>44</sup>	Sa. N. <sup>45</sup>	Ni. A. <sup>15</sup>	Ab.M. <sup>46</sup>	P.N. <sup>16</sup>
<i>Golomi</i>	+	+	+	+		+	+	+	+	
<i>Jatila</i>	+	+	+	+		+	+		+	
<i>Lomasa</i>	+	+	+	+	+	+			+	
<i>Shadgrantha</i>			+		+	+	+	+		+
<i>Shataparvika</i>			+		+	+	+			
<i>Deerarakta</i>					+					
<i>Pararuna</i>					+					
<i>Rakta</i>									+	

*Golomi* : Hairs on rhizomes resemble hair of cow

*Jatila* : Rhizome is hairy

*Lomasa* : Rhizome is hairy

*Shadgrantha* : Rhizome has six nodes on it

*Shataparvika* : Rhizome has numerous nodes

*Deerarakta* : Rhizome has reddish colour

*Pararuna* : Rhizome has reddish brown colour

*Rakta* : Rhizome has Reddish colour

#### b. Fruit

**Table 3. Paryayas (Synonyms) of Vacha based on morphology of fruit**

Synonyms	D.N. <sup>13</sup>	So. N. <sup>40</sup>	M.P.N. <sup>42</sup>	R. N. <sup>43</sup>	K. N. <sup>14</sup>	B. P.N. <sup>44</sup>	Sa. N. <sup>45</sup>	Ni. A. <sup>15</sup>	Ab.M. <sup>46</sup>	P.N. <sup>16</sup>
<i>Khudraphala</i>		+								

*Khudraphala* : Fruits are small

#### c. Leaf

**Table 4. Paryayas (Synonyms) of Vacha based on morphology of leaf**

Synonyms	D.N. <sup>13</sup>	So. N. <sup>40</sup>	M.P.N. <sup>42</sup>	R. N. <sup>43</sup>	K. N. <sup>14</sup>	B. P.N. <sup>44</sup>	Sa. N. <sup>45</sup>	Ni. A. <sup>15</sup>	Ab.M. <sup>46</sup>	P.N. <sup>16</sup>
<i>Kshudrapatri</i>						+				

*Kshudrapatri* : Leaves are small or linear

**C. Based on Properties****Table 5. Paryayas (Synonyms) of Vacha based on properties**

Synonyms	D.N. <sup>13</sup>	So. N. <sup>40</sup>	M.P.N. <sup>42</sup>	R. N. <sup>43</sup>	K. N. <sup>14</sup>	B. P.N. <sup>44</sup>	Sa. N. <sup>45</sup>	Ni. A. <sup>15</sup>	Ab.M. <sup>46</sup>	P.N. <sup>16</sup>
<i>Ugragandha</i>	+	+	+	+	+	+	+	+	+	
<i>Ugra</i>	+	+		+		+		+	+	
<i>Mangalya</i>		+		+		+	+			
<i>Shuba</i>					+					
<i>Teekshna</i>							+			
<i>Teekshnagandhika</i>										+

*Ugragandha* : Rhizome has very strong odour

*Ugra* : Its strong qualities cause burning sensation of tongue

*Mangalya* : It is regarded as an auspicious drug

*Shuba* : It is an auspicious plant

*Teekshna* : It has strong smell and quick action

*Teekshnagandhika* : It has strong smell

**D. Based on Pharmacological actions****Table 6. Paryayas (Synonyms) of Vacha based on pharmacological actions**

Synonyms	D.N. <sup>13</sup>	So. N. <sup>40</sup>	M.P.N. <sup>42</sup>	R. N. <sup>43</sup>	K. N. <sup>14</sup>	B. P.N. <sup>44</sup>	Sa. N. <sup>45</sup>	Ni. A. <sup>15</sup>	Ab.M. <sup>46</sup>	P.N. <sup>16</sup>
<i>Bhodaneeya</i>		+								
<i>Shoolagni</i>		+								
<i>Smarani</i>		+								
<i>Rakshogni</i>		+		+						
<i>Vijaya</i>		+		+						
<i>Karshani</i>					+					

*Bhodaneeya* : That which arouses consciousness

*Karshani* : It reduces weight

*Rakshogni* : It destroys organisms or protects from diseases

*Shoolagni* : Relieves colic pain

*Smaarani* : It promotes memory

*Vijaya* : It helps to overcome diseases

#### IV. Rasa Panchaka (Ayurvedic pharmacological properties)

The *rasa panchaka* of the drug comprised of *rasa* (taste), *guna* (property), *veerya* (potency), *vipaka* (post-digestive state) and *karma* (action) are tabulated below.

**Table 7. Rasa Panchaka (Ayurvedic pharmacological properties) of Vacha**

<i>Samhita and Nighantu</i>	<i>Rasa</i>	<i>Guna</i>	<i>Veerya</i>	<i>Vipaka</i>	<i>Karma</i>
<i>Dhanwantari Nighantu</i> <sup>13</sup>	<i>Katu, Tikta</i>	<i>Ruksha, Laghu</i>	<i>Ushna</i>	-	<i>Medhya</i>
<i>Madanapala Nighantu</i> <sup>42</sup>	<i>Katu, Tikta</i>	-	<i>Ushna</i>	-	-
<i>Raja Nighantu</i> <sup>43</sup>	<i>Katu</i>	<i>Teekshna</i>	<i>Ushna</i>	-	-
<i>Kaiyyadeva Nighantu</i> <sup>14</sup>	<i>Tikta, Katu</i>	-	<i>Ushna</i>	<i>Katu</i>	<i>Medhya</i>
<i>Bhavaprakasa Nighantu</i> <sup>44</sup>	<i>Katu, Tikta</i>	-	<i>Ushna</i>	-	-
<i>Saligrama Nighantu Bhooshana</i> <sup>45</sup>	<i>Katu, Tikta</i>	<i>Teekshna</i>	<i>Ushna</i>	-	-
<i>Nighantu Adarsha</i> <sup>15</sup>	<i>Katu, Tikta</i>	-	<i>Ushna</i>	<i>Katu</i>	<i>Medhya</i>
<i>Priya Nighantu</i> <sup>16</sup>	<i>Katu, Tikta</i>	-	<i>Athyushna</i>	-	<i>Medhya</i>
<i>The Ayurvedic Pharmacopoeia of India</i> <sup>2</sup>	<i>Katu, Tikta</i>	<i>Laghu, Teekshna</i>	<i>Ushna</i>	<i>Katu</i>	<i>Medhya</i>

#### V. Karma (Ayurvedic pharmacological actions)

The drug *Vacha* elicits its action on *dosha* (regulatory functional factors of body) viz *vata*, *pitta* and *kapha*, *dhatu* (fundamental structural components), *mala* (excretory products), *agni* (digestive, metabolic factors), and *avayava* (a body part or organ). The drug may show affinity on a *sthana* (specific site) or *sarvasareera* (whole body).

**Table 8. Karma (Ayurvedic pharmacological actions) of Vacha**

Action on <i>dosha</i>	<i>Kaphahara</i> (pacify <i>kapha</i> ) <sup>15,43,45</sup> <i>Kaphavatahara</i> (pacify <i>kapha</i> and <i>vata</i> ) <sup>13,14,16,41,45,2</sup> <i>Vatanulomana</i> (restore normal movement of <i>vata</i> ) <sup>16</sup> <i>Vatahara</i> (pacify <i>vata</i> ) <sup>15,42,44,45</sup>
Action on <i>mala</i>	<i>Mala mutra visodhani</i> (cleanses excretory products) <sup>13,14,15,44,45,2</sup>

Action on <i>agni</i>	<i>Deepana</i> (stimulate digestive fire) <sup>13,14,45,2</sup> <i>Vahnivardhini</i> (stimulate digestive fire) <sup>16,42,44,45</sup>	
Action on <i>ama</i>	<i>Amapacana</i> (aid digestion of undigested food) <sup>13,15,41,43,45</sup>	
Action on <i>avayava</i>	<i>Kanda</i> (throat)	<i>Kandya</i> (promote health and functioning of throat) <sup>13,45,2</sup>
	<i>Vak</i> (eloquence)	<i>Vaksaktivardhana</i> (enhance eloquence) <sup>16</sup> <i>Vakprada</i> (enhance eloquence) <sup>14,45</sup>
	<i>Swara</i> (voice)	<i>Swaraprada</i> (improve voice) <sup>14</sup> <i>Swarakrit</i> (improve voice) <sup>42</sup>
Action on <i>buddhi</i>	<i>Buddhi vardhana</i> (cognition enhancer) <sup>41</sup>	
Action on <i>smriti</i>	<i>Smriti vardana</i> (memory enhancer) <sup>41,45</sup>	
<i>Sodhana</i> (purificatory) action	<i>Vamaka</i> (induce emesis) <sup>13,42,14,43,44,45,15,16,2</sup>	
Action on <i>sarvasareera</i>	<i>Jeevani</i> (vivify life) <sup>14</sup> <i>Rakshogna</i> (protective) <sup>14</sup> <i>Rujapaha</i> (relieves pain) <sup>13,41</sup> <i>Ayushya</i> (increase life span) <sup>41,45</sup>	
Action on <i>krimi</i>	<i>Krimihara</i> (antihelminthic), <sup>13,15,16,2</sup> <i>Janthugna</i> (antihelminthic), <sup>13,14,44,45,15</sup>	

## VI. *Rogagnatha* (Therapeutic indications)

The therapeutic indications of *Vacha* are mentioned by many authors. The indications comprise of both *swatantra rogas* (independent diseases) and *roga avastha* (disease conditions). Diseases affecting both body and mind on the basis of affected *srotas* (channels or conduit) of body are elaborated here.

**Table 9. *Rogagnatha* (Therapeutic indications) of *Vacha***

Indications	D.N. <sup>13</sup>	M.P.N. <sup>42</sup>	R.N. <sup>43</sup>	K.N. <sup>14</sup>	B.P.N. <sup>44</sup>	Sa.N. <sup>45</sup>	Ni.A. <sup>15</sup>	P.N. <sup>16</sup>	API. <sup>2</sup>
<b><i>Pranavaha srotas</i> (channels carrying vital life force)</b>									
<i>Kasa</i> (cough)									+
<i>Svasa</i> (dyspnoea)									+
<b><i>Udakavaha srotas</i> (channels carrying water)</b>									
<i>Trishna</i> (morbid thirst)						+			



<i>Athisara</i> (diarrhoea)			+	+		+	+		
<b><i>Annavaaha srotas</i> (channels carrying food)</b>									
<i>Adhmana</i> (abdominal distension)	+			+	+	+	+	+	+
<i>Soola</i> (abdominal colic)	+	+		+	+	+	+	+	+
<b><i>Rasavaha srotas</i> (channels carrying primary product of digestion)</b>									
<i>Vata Jwara</i> (fever due to vitiated <i>vata</i> )			+			+	+		
<b><i>Raktavaha srotas</i> (channels carrying blood)</b>									
<i>Sopha</i> (oedema)			+			+	+		
<i>Karna srava</i> (otorrhoea)									+
<i>Kanda roga</i> (diseases of throat)	+								
<i>Asya roga</i> (diseases of oral cavity)	+								
<b><i>Mamsavaha srotas</i> (channels nourishing muscle)</b>									
<i>Granthi</i> (nodular swelling, cyst)			+			+	+		
<b><i>Purishavaha srotas</i> (channels carrying faeces)</b>									
<i>Vibandha</i> (constipation)	+				+	+	+	+	+
<b><i>Manovaha srotas</i> (channels of mind)</b>									
<i>Apasmara</i> (epilepsy)		+		+	+	+	+	+	+
<i>Kaphaja unmada</i> (psychosis due to vitiated <i>kapha</i> )		+			+	+	+		
<i>Mada</i> (intoxication)							+		
<i>Smriti daurbalya</i> (poor memory)									+
<i>Unmada</i> (psychosis)			+	+		+	+	+	+

## VII. *Prayojya anga* (Useful parts)

The useful parts of *Vacha* are rhizome<sup>2</sup> and *moola* (root).<sup>15</sup>

## VIII. *Matra* (Dosage)

The doses specified for internal administration are powder of rhizome : 60-120 mg for therapeutic administration and 1-2 g for inducing vomiting<sup>2</sup>

## IX. *Amayika prayoga* (Therapeutic uses) of *Vacha* for improving *medha* (grasping and retention of knowledge) and *smriti* (memory)

### A. Single drug administration

**a. Kalka (paste)**

Paste of *Vacha* (*Acorus calamus*) added with honey and ghee given to new born improves *medha* (grasping and retention of knowledge).<sup>7</sup>

**b. Kwatha (decoction)**

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Two *pala* of *Vacha* is made in to decoction and added with milk. After it gets digested, person should consume boiled rice added with ghee, along with milk for 24 days. The person becomes endowed with good *smriti* (memory).<sup>11</sup>

**c. Choorna (powder)**

*Vacha* is consumed either with milk, oil or ghee for a period of one month to obtain great *medha* (grasping and retention of knowledge), good and clear *vakya* (speech).<sup>53</sup>

**B. Polyherbal formulations**

**a. Choorna (powder)**

*Vacha*, *gritha* (ghee), *suvarna* (gold) and powder of *bilva* (*Aegle marmelos*) are mixed together and consumed. This bestows *medha* (grasping and retention of knowledge), long life, health, nourishment and increases auspiciousness.<sup>54</sup>

**b. Praashana (confection)**

*Kaidarya*, *kanaka* (gold) and *Vacha* (*Acorus calamus* Linn.) consumed with honey and ghee for a period of one year improve *medha* (grasping and retention of knowledge).<sup>55</sup>

**DISCUSSION**

Description regarding synonyms of *Vacha* from Nighantu literature helps to define the morphology of the drug and aid in its correct identification. Peculiar smell of the plant as evident from the synonyms *ugragandha*, *ugra* and *teekshna* are noteworthy. The effect OF *Vacha* on consciousness is stressed by the name *bhodaneeya* and influence on memory by the synonym *smaarani*. Most of the classics mention *medhya* action of the drug. Special affinity of *Vacha* in promoting eloquence and improving voice are described. It is also indicated in *kanda roga*. It is a cognitive enhancer that has positive influence on memory.

The protective and anti-helminthic/ anti-microbial potential of *Vacha* is well appreciated in the literature as it is called *rakshogna* and *janthugna*. It is indicated in respiratory disorders like *kasa* and *svasa* and digestive disorders like *athisara*, *admana*, *vibandha*. The pain - relieving effect of the drug may be responsible for its action against *soola*. The potential of the drug to influence *sapnja*, *smriti*, *buddhi* and *medha* may be the reason for indicating the drug in *apasmara*, *unmada*, *smriti daurbalya* and *mada*. The therapeutic potential of the drug should be explored through researches to revalidate the classical claims.

## CONCLUSION

*Vacha* is used from *vedic* period itself. The description regarding the therapeutic potential of the drug is available in *Samhithas*. *Nighantu* literature serves as a source for morphological as well as therapeutic description of the drug. It has immense therapeutic potential which paves way for extensive research.

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## CONFLICTS OF INTEREST

nil

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