



## Review Article

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### CONCEPTUAL REVIEW ON VIJAYA (*CANNABIS SATIVA* LINN.): A FORGOTTEN AMBROSIA

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#### ABSTRACT

*Vijaya (Cannabis sativa* Linn.) is associated with spiritual and medicinal aspect of Indian cultural heritage. Currently it is a controlled substance placed under Schedule-1 in the United Nations Convention on Psychotropic Substances due to its abusive & narcotic nature. Ayurveda, the science of life has details regarding *Vijaya* identification, cultivation techniques, collection method, purification process, formulations, indications, antidotes, specific dietetics, etc. According to Ayurveda *Vijaya*, an analeptic herb is originated from *amrita* (ambrosia) & having the properties of *Visha* (poison) requires *Sodhana* (purification) to be utilized as a medicament. Purification helps to detoxify the unwanted qualities & also improves the therapeutic value. Approximately fifty diseases have been cited in Ayurvedic classics which can be treated with single or compound preparations of *Vijaya*. Bioavailability & efficacy is very quick as it is an *ushna virya* (hot potency) herb having *Tikshna* (sharp), *Vyavayi* (bioavailability even before digestion) & *Yogavahi* (synergistic action) properties. In this twenty first century research in the therapeutic aspects of *Cannabis sativa* lead to an increase in the awareness & knowledge of the 'medical Cannabis' among the scientific community. Revalidation of the medicinal evidence of *Vijaya* present in the ancient Ayurvedic literature provides scope for more refined research.

**Key words:** *Vijaya*, *Cannabis sativa*, Ayurveda, Narcotic, Bhang, Tetrahydrocannabinol.

#### INTRODUCTION

*Vijaya (Cannabis Sativa)* is among the most primitive plants cultivated by man. The first evidence of the use of cannabis was found in China, where archaeological and historical findings indicate that that plant was cultivated for fibres since 4000 BC. Cannabis as a medicine by ancient Chinese was reported in the world's oldest pharmacopoeia, the "pen-ts'ao ching" which was compiled in the first century of this era, based on oral traditions passed down from the time of Emperor Shen-Nung, who lived during the years 2700 BC<sup>1</sup>. The earliest known facts regarding the medicinal status of cannabis in India come from the *Atharvana Veda* where it is mentioned cannabis as one of five sacred plants, referring to it as a source of happiness, joy and salvation<sup>2</sup>. The plant's psychoactive effects were well-known in Indian terrain, possibly due to the way it was used for traditional divine preparations made out of Bhang, Ganja and Charas. Out of these the weakest type, Bhang consists of only dry leaves from which flowers are carefully removed. A stronger type Ganja consists of female-plant's flowers & the strongest of them all is Charas, the resin that covers female flowers<sup>3</sup>. Beyond medical use it was also used as a chemical weapon in warfare. Yogaratnamala written by nagarjuna dated to the twelfth or early thirteenth century AD recommends the use of the smoke of cannabis (*matulani*) which makes one's enemies feel that they are possessed by evil spirits<sup>4</sup>.

Cannabis a narcotic & abusive herb is a controlled substance, illegal in India till date. It is placed under Schedule 1 in the Convention on Psychotropic Substances of 1971. It is a United Nations treaty designed to control psychoactive drugs. India signed the convention on 23<sup>rd</sup> April, 1975. In India it is placed in SCHEDULE-E(1) of poisonous substances of vegetable origin under Ayurvedic medicine in Drugs & cosmetics act, 1940 &

rules, 1945<sup>5</sup>. Support for legalization on Cannabis is growing worldwide following the increase in awareness of the medical benefits of Cannabis among the researchers. In this modern era there is a need to recollect & revalidate the medical evidence of Cannabis present in ancient Ayurvedic literature. Among the different hybrids of Cannabis, *Sativa*, *indica* & *ruderalis* are considered as first generation species. The Ayurvedic Pharmacopoeia of India identifies *Cannabis Sativa* as *Vijaya*.

#### MATERIALS AND METHODS

Verses Related to *Vijaya* were compiled from various classical Ayurvedic books along with electronic sources like E-Books and journals on internet viz. Charaka samhita, Susruta samhita, Sarangadhara samhita, Chakradutta, Bhavaprakasha, Bhavaprakasha nighantu, Amarakosa, Kaiyadeva nighantu, Dhanvantari nighantu, Madanapala nighantu, Madhava dravyaguna, Sabda chandrika, Saraswati nighantu, Shodala nighantu, classical Rasasastra manuscripts, etc.

#### RESULTS

##### Modern Taxonomy & description

Scientific name of *Vijaya* is *Cannabis sativa* Linn. included in family Cannabinaceae. It is an annual, erect, dioecious herb, growing about one to two meters high. Leaves palmately compound, leaflets linear, lanceolate with serrate margins, 5-20 cm long, pointed, narrow at base, upper surface dark green and rough, lower pale, downy, leaves of female plants longer than the male, odour, strong and characteristic, taste, slightly acrid. Transverse section of leaves and bracts, shows dorsiventral surface, upper epidermis with unicellular, pointed, curved,

conical trichomes with enlarged bases containing cystoliths of calcium carbonate, mesophyll contains cluster crystals of calcium oxalate in many cells consisting of usually one layer of palisade cell and spongy tissue, trichomes on lower epidermis conical, longer, 340-500 $\mu$  but without cystoliths, numerous glandular trichomes, sessile or with a multicellular stalk and a head of about eight radiating, club-shaped cells secreting oleo-resin, present in the lower epidermis especially on mid-rib, bracteoles with undifferentiated mesophyll and on lower surface bear numerous glandular trichomes. Main chemical constituent is Resin (Cannabinols, particularly tetrahydrocannabinol). Its identity, purity and strength are foreign matter not more than 2 per cent, total Ash not more than 15 per cent, acid-insoluble ash not more than 5 per cent, alcohol-soluble extractive not less than 10 per cent and water soluble extractive not less than 13 percent<sup>6</sup>.

THC (delta-9-tetrahydrocannabinol) (isolated in 1964) & CBD (Cannabidiol) (isolated in 1940) are the main ingredients of the sixty phytocannabinoids present in *Cannabis Sativa*. The endocannabinoid system (ECS) refers to a collection of cell receptors & corresponding agonist/ antagonist ligands involving in a unique cell-signalling system. ECS present in humans and animals naturally synthesize the chemical compounds called endocannabinoids (EC's) that activate the same receptors as the active phytocannabinoids of *Cannabis Sativa*. The first EC identified was N-arachidonylethanolamine (AEA) in 1992 also called as Anandamide which is derived from the Sanskrit word ananda (joy/ bliss) & amide. Later second EC 2-Arachidonoyl glycerol (2-AG) was discovered in 1995. Other EC's identified are 2AG Ether, N-arachidonoyl dopamine & O-Arachidonoyl ethanolamine also called Virodhamine named from the Sanskrit word virodha(opposition). CB1-R (Cannabinoid binding

receptor-1) & CB2-R (Cannabinoid-binding receptor-2) are G protein-coupled receptors (GPCR). CB1-R receptors are abundant in the brain, specifically the mesocorticolimbic system, the spinal cord & the peripheral neurons. CB2-R receptors are located peripherally in the gastrointestinal tract, immune-modulating cells, hematopoietic systems & also including microglia in the brain. ECS holds therapeutic promise in a wide range of disparate diseases and pathological conditions, ranging from mood and anxiety disorders, movement disorders such as Parkinson's and Huntington's disease, neuropathic pain, multiple sclerosis and spinal cord injury, to cancer, atherosclerosis, myocardial infarction, stroke, hypertension, glaucoma, obesity/metabolic syndrome, and osteoporosis, etc<sup>7</sup>.

### Ayurvedic Taxonomy & description

The morphology of *Vijaya* was only mentioned in Anandakanda, a classical Rasasastra text among Ayurvedic treatises. *Vijaya* is a dioecious herb<sup>8</sup> with numerous leaves resembling a *trishula*<sup>9</sup> (trident) and has 1, 3, 5, 9, 10, 11 & 13 *parna* or *dala* (digitate)<sup>10</sup>. It has a very specific strong odour, hence called *Uragandhini*<sup>11</sup>. Therapeutic useful parts of *Vijaya* are leaves, seeds & stem<sup>12</sup>. Dosage has been mentioned as 250 to 500 mg (Approx.)<sup>13</sup>. Anandakanda enumerated the types of *Vijaya* basing upon colour of appearance in relation to the four era are arranged in table 1. Synonyms of *Vijaya* are tabulated in table 2 & 3. The literal meaning of synonyms were also clearly explained in table no. 4. *Rasapanchaka* (Ayurvedic pharmacological properties) & pharmacological actions of *Vijaya* are listed in table 5 & 6 respectively. Dosage forms & route of administration are also specifically cited in Ayurveda which are tabulated in table 7.

**Table 1: Types of *vijaya* based on colour specific to *yuga* (era)<sup>14</sup>**

S.No.	Yuga	Colour	Phytochemical
1.	<i>Kruta yuga</i>	Sweta (white)	Anthoxanthin
2.	<i>Treta yuga</i>	Sonita (red)	Lycopene
3.	<i>Dwapara yuga</i>	Pita (yellow)	Carotenoids
4.	<i>Kali yuga</i>	Nila (blue)	Anthocyanin

**Table 2: Synonyms of *vijaya* in different languages<sup>15</sup>**

S.No.	Language	Names
1.	Hindi	Bhaang, Bhanga
2.	Telugu	Ganjayi
3.	English	Indian Hemp
4.	Assamese	Bhan, Bhang
5.	Bengali	Bhang, Sidhi
6.	Gujrati	Bhang
7.	Kannada	Ganjagida
8.	Kashmiri	Pang, Bangi
9.	Malayalam	Kanchavu
10.	Marathi	Bhang, Ganja
11.	Oriya	Bhanga, Ganjei
12.	Punjabi	Bhang
13.	Tamil	Ganja
14.	Urdu	Qinaab, Bhang

Table 3: Synonyms of vijaya in Ayurvedic texts

S.No.	Synonym	Sa.S	A.K	R.T	B.P	A.Ko	K.N	D.N	M.P	M.D	S.C	Sa.N	So.N	RPS	R.C	Re.C	RSS
1	Bhanga	✓	-	✓	✓	✓	-	-	✓	✓	✓	✓	-	-	-	-	-
2	Bhangaja	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	-	-
3	Bhangi	-	✓	✓	-	-	-	✓	-	-	-	-	-	-	-	-	-
4	Bhangika	-	-	-	-	✓	-	-	-	-	-	-	-	-	-	-	-
5	Bhrungi	-	-	-	-	-	-	-	-	-	-	-	✓	✓	-	-	-
6	Chidahlada	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	Divya	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	Ganja	-	✓	-	✓	-	-	✓	-	-	-	-	-	-	-	-	-
9	Ganjayika	-	-	-	-	✓	-	-	-	-	-	-	-	-	-	-	-
10	Indrasana	-	-	-	-	-	-	-	-	-	✓	-	-	-	-	✓	-
11	Jaya	-	-	-	✓	-	✓	-	✓	-	✓	✓	-	✓	-	✓	-
12	Kalaghni	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	Maadu	-	-	-	-	-	-	✓	-	-	-	-	-	-	-	-	-
14	Madakari	-	-	-	-	-	-	-	-	-	-	✓	-	-	-	-	-
15	Madhu drava	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	Madika	-	-	-	-	-	-	✓	-	-	-	-	-	-	-	-	-
17	Madini	-	-	✓	✓	-	-	✓	-	-	-	-	-	-	-	-	-
18	Manonmani	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	Matika	-	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-
20	Matulani	-	-	✓	✓	✓	✓	-	✓	-	✓	-	-	-	-	-	-
21	Matuli	-	-	✓	-	-	-	-	-	-	✓	-	-	-	-	-	-
22	Mohi	-	-	-	-	-	-	-	-	-	-	✓	-	-	-	-	-
23	Mohini	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	-	-
24	Pasupasavinasini	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	Ranjika	-	-	-	-	-	-	✓	-	-	-	-	-	-	-	-	-
26	Sakrasana	-	-	-	-	-	-	-	-	-	-	-	-	-	✓	✓	-
27	Sarvarogaghni	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	Siddha	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	Siddha muli	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	Siddhida	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	Sivamuli	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	Vijaya	-	✓	✓	✓	-	✓	✓	✓	-	-	✓	-	✓	✓	✓	✓
33	Trailokya Vijaya	-	-	-	✓	-	-	-	-	-	✓	-	-	-	-	-	✓
34	Vimardini	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**Note:** Sa.S: Sarangadhara samhita<sup>16</sup>, A.K: Anandakanda<sup>17</sup>, R.T: Rasa tarangini<sup>18</sup>, B.P: Bhavaprakasha<sup>19</sup>, A.Ko: Amarakosa<sup>20</sup>, K.N: Kaihadeva nighantu<sup>21</sup>, D.N: Dhanvantari nighantu<sup>22</sup>, M.P: Madanapala nighantu<sup>23</sup>, Madhava dravyaguna<sup>24</sup>, S.C: Sabda chandrika<sup>25,26</sup>, Sa.N: Saraswati nighantu<sup>27</sup>, So.N: Shodala nighantu<sup>28</sup>, RPS: Rasaprakasha sudhakara<sup>29-31</sup>, R.C: Rasa cintamani<sup>32,33</sup>, Re.C: Rasendra cintamani<sup>34-36</sup> & RSS: Rasendra sara sangraha<sup>37,38</sup>

Table 4: List of vijaya synonyms with meanings<sup>39</sup>

S.No	Synonym	Meaning
1	Sivamuli	Mythologically originated from Lord Shiva
2	Vijaya	Victory from six desires of mind
3	Bhangi	Treats taapa traya (3 basic types of diseases)
4	Ganja	Causes intoxication like alcoholism
5	Vimardini	Processing is done by pounding
6	Divya	Causes exhilaration, pleasure
7	Siddha	Itself is a holy herb
8	Siddida	bestows enlightenment
9	Siddha muli	Ascetics named the herb
10	Manonmani	accomplishes the problems of mind
11	Madhu drava	Stimulates sudha drava (hormones) in bramha randra (a part of brain)
12	Chidahlaada	gives happiness & joy
13	Pasupasavinasini	restores health from non-human behaviour
14	Kalaghni	Provides victory from death
15	Sarvarogaghni	Cures all diseases

Table 5: Ayurvedic pharmacological properties of vijaya

Rasapanchaka	Properties
Rasa (taste)	Tikta (bitter) <sup>40</sup> Katu (pungent) <sup>11</sup>
Guna (qualities)	Laghu (light) <sup>40</sup> Tikshna (sharp) <sup>40</sup>
Vīrya (potency)	Ushna vīrya (hot potency) <sup>40</sup>
Vipaka (post digestive taste)	Katu (pungent) <sup>41</sup>
Effect on Dosha (biological entity)	Pittala (Vitiating Pitta dosha) <sup>40</sup> Vata hara (pacifies Vata dosha) <sup>42</sup> Kapha hara (pacifies Kapha dosha) <sup>40</sup>

Table 6: Ayurvedic pharmacological actions of vijaya

Actions	Related system/ function	Related actions
<i>Samanya Karma</i> (General action)	Gastro intestinal system	<i>Grahi</i> (absorbent) <sup>42</sup> <i>Pachana</i> (digestive) <sup>40</sup> <i>Dipana</i> (appetiser) <sup>43</sup> <i>Ruchya</i> (improves taste) <sup>42</sup>
	Reproductive system	<i>Kamada</i> (increases libido) <sup>28</sup> <i>Vajikarana</i> (aphrodisiac) <sup>41</sup>
	Central nervous system	<i>Tandra</i> (lassitude) <sup>18</sup> <i>Murcha</i> (syncope) <sup>11</sup> <i>Moha</i> (confusion) <sup>40</sup> <i>Nidrajanaka</i> (induces sleep) <sup>28</sup>
	Metabolism	<i>Karshani</i> (causes weigh loss) <sup>42</sup> <i>Vyavayi</i> (bioavailability even before the digestion) <sup>44</sup>
<i>Prabhava</i> (Specific action)	Central nervous system	<i>Medhya</i> (increases intellect) <sup>45</sup> <i>Vak vardhini</i> (increases talking capacity) <sup>40</sup> <i>Mada</i> (High/ excited by CNS stimulation) <sup>11</sup> <i>Sukham</i> (happiness) <sup>11</sup> <i>Satwa</i> (goodness) <sup>11</sup>
	Metabolism	<i>Yogavahi</i> (synergistic action) <sup>11</sup> <i>Rasayana</i> (rejuvenative) <sup>45</sup>

Table 7: Part used, typical dosage form &amp; route of administration of vijaya in Ayurveda

S.No.	Part used	Typical dosage form	Route of administration
1	Leaves	<i>Putapaka swarasa</i> (juice) <sup>46</sup>	Oral
2	Leaves & seeds	<i>Churna</i> (Powder) <sup>32</sup>	Oral
3	Leaves & seeds	<i>Churna</i> (Powder) <sup>47</sup>	<i>Nasya</i> (nasal)
4	Seeds	<i>Taila</i> (oil) <sup>48</sup>	<i>Nasya</i> (nasal)
5	Leaves	<i>Kashaya</i> (Decoction) <sup>49</sup>	Oral & external rinse
6	Stem	fresh stem free from nodes <sup>50</sup>	Tooth brushing

### Sodhana (purification) of Vijaya

*Sodhana* is the process which removes the impurities and helps in enhancing the therapeutic values of the drugs<sup>51</sup>. Total four methods of purification of *Vijaya* were explained in Ayurvedic literature. Among them, the first method of purification of *Vijaya* was explained in the text *Rasamrtam* is that by keeping the *Vijaya* in a muslin bag and washed in water till it is free from turbidity and later dried under sun shade. This technique was uniquely identified & mentioned in The Ayurvedic Pharmacopoeia of India<sup>52</sup>. The 2<sup>nd</sup> method of purification is explained in *Rasaprakasha sudhakara*, where *Bhrungi* (*Cannabis*) is processed with cow's milk<sup>30</sup>. The 3<sup>rd</sup> & 4<sup>th</sup> methods were explained in *Rasa tarangini*. The 3<sup>rd</sup> method is by dipping dry leaves of *Vijaya* in water later dried under sun shade and fried in cow's ghee under

mild flame<sup>53</sup>. 4<sup>th</sup> method is done by *swedana* (fomentation) process with *Babool* (*Acacia arabica* SENSU BAKER Var. *vediana* COOKE) bark decoction for *ardha Ghati* (24 minutes Approx.) over mild flame then later pounded with cow's milk<sup>54</sup>. This procedure is considered as *uttama sodhana* (best purification). 5<sup>th</sup> method proposed by P.V.Sharma is by *swedana* (fomentation) process with cow's milk for one *Yama* (3 hours) over mild flame followed by cleaning with water then dried under sun shade and fried in cow's ghee under mild flame<sup>55</sup>. An experimental study was conducted in Ghaziabad (2015) on some of these purification procedures with respect to their tetrahydrocannabinol (THC) content. In the first method of purification THC reduced was minimal (26%) in comparison to third method where the percentage of THC was markedly reduced (85%).

Table 8: Percentage reduction in content after purification of vijaya<sup>56</sup>

Sample from purification method	Percentage of THC	Percentage reduction in THC
Standard	0.127	-
1 <sup>st</sup> method	0.094	26%
3 <sup>rd</sup> method	0.019	85%
4 <sup>th</sup> method	0.72	43%
5 <sup>th</sup> method	0.045	65%

Table 9: Important nine vikara (complications) in ati-sevana (overdose) of vijaya<sup>57</sup>

Vikara	Symptoms
1	Dryness of nose, difficulty in breathing & warm breath
2	Heaviness & halting of vision
3	Burning sensation in palms, soles, eyes & stammering sounds
4	Thirst, hunger & drowsiness of eyes
5	Stammering speech & short-term loss of memory
6	Become unconscious occasionally
7	Numbness of hands, affection towards own body, intermittent confusion & rejoicing
8	Sporadic Hallucinations, calmness, crying
9	Bellowing in ears, syncope & epilepsy

**Table 10: Treatment protocol of vijaya overdose<sup>58</sup>**

S.No.	Treatment	Procedure
1.	<i>Aushadha</i> (medicinal):	<i>Sodhana</i> (purification) <i>chikitsa</i> with <i>virechana</i> (medicated purgation) <i>Samana</i> (pacifying) <i>chikitsa</i> with Amla dravya (sour substance)
2.	<i>Ahara</i> (diet):	Chewing <i>Tambula</i> (medicated paan) Intake of milk mixed with sugar & ghee <i>Panaka</i> (syrup based liquids) prepared with sugar and honey Intake of <i>mamsa rasa</i> (meat soup) Soup prepared with <i>Mudga</i> ( <i>Phaseolus mungo</i> (L) MANT.)
3.	<i>Vihara</i> (activity):	Head bath with cold water External application of <i>Sita virya</i> herbal pastes Wearing aromatic <i>kashaya</i> (orange) cloths wearing of aromatic and <i>Sita</i> (cooling) <i>virya</i> herbal garlands See the moon light for two <i>muhurta</i> (96 minutes Approx.) A sound sleep alone is sufficient for <i>Vijaya</i> intoxication

**Table 11: Important indications of vijaya in Ayurveda<sup>59</sup>**

Name of the indication	
1) <i>Agnimandya</i> (weak digestive fire)	2) <i>Pandu</i> (anemia)
3) <i>Amavata</i> (rheumatism)	4) <i>Pitta</i> vitiation
5) <i>Apasmara</i> (epilepsy)	6) <i>Praseka</i> (excessive salivation)
7) <i>Arsas</i> (piles)	8) <i>Pratisyaya</i> (rhinitis)
9) <i>Asmari</i> (Calculus)	10) <i>Rakta Pradara</i> (menorrhagia)
11) <i>Atisara</i> (diarrhoea)	12) <i>Sandhivata</i> (osteoarthritis)
13) <i>Bhrama</i> (vertigo)	14) <i>Sannipata Roga</i> (vitiation of all dosha)
15) <i>Chardi</i> (vomiting)	16) <i>Shandatva</i> (impotent)
17) <i>Grahani</i> (malabsorption syndrome)	18) <i>Sighra sukra sruti</i> (premature ejaculation)
19) <i>Gulma</i> (abdominal tumor)	20) <i>Sirah sula</i> (headache)
21) <i>Hikka</i> (hiccups)	22) <i>Sitapitta</i> (urticaria)
23) <i>Jara</i> (oldage)	24) <i>Sula</i> (colic)
25) <i>Jwara</i> (Fever)	26) <i>Svayathu</i> (oedema)
27) <i>Kandu</i> (itching)	28) <i>Swarabheda</i> (hoarseness of voice)
29) <i>Kapha</i> vitiation	30) <i>Swasa</i> (swasa)
31) <i>Kasa</i> (cough)	32) <i>Sweta Pradara</i> (leucorrhoea)
33) <i>Kitibha</i> (psoriasis)	34) <i>Switra</i> (leucoderma)
35) <i>Kitibha</i> (psoriasis)	36) <i>Unmada</i> (insanity)
37) <i>Kshaya</i> (tuberculosis)	38) <i>Urustambha</i> (spasticity of the thigh)
39) <i>Mandala kushta</i> (dermatomycoses)	40) <i>Vali</i> (wrinkles)
41) <i>Medo roga</i> (hyperlipidemia)	42) <i>Vata</i> vitiation
43) <i>Meha</i> (set of urinary disorders)	44) <i>Vatarakta</i> (gout)
45) <i>Napumsaka</i> (infertility)	46) <i>Vidrathi</i> (abscess)
47) <i>Palita</i> (grey hair)	48) <i>Virya kshaya</i> (oligospermia)
49) <i>Pama</i> (eczema)	50) <i>Visha</i> (poisoning)

**Table 12: Some formulations containing vijaya in Ayurveda**

S.No.	Name of the formulation	Main indication
1	<i>Indrasana churna</i> <sup>60</sup>	<i>Kushta roga</i> (all skin disorders)
2	<i>Jatiphaladi churna</i> <sup>61</sup>	<i>Grahani</i> (malabsorption syndrome)
3	<i>Jaya Putapaka</i> <sup>46</sup>	<i>Pratisyaya</i> (rhinitis)
4	<i>Kameswara modaka</i> <sup>62</sup>	<i>Vajikarana</i> (aphrodisiac)
5	<i>Layi churna</i> <sup>63</sup>	<i>Grahani</i> (malabsorption syndrome)
6	<i>Naradiya lakshmilasa rasa</i> <sup>64</sup>	<i>Rasayana</i> (rejuvenative)
7	<i>Somapani rasa</i> <sup>65</sup>	<i>Sannipata roga</i> (vitiation of all dosha)
8	<i>Vijaya lehya</i> <sup>66</sup>	<i>Atisara</i> (diarrhoea)
9	<i>Vijayeswar rasa</i> <sup>67</sup>	<i>Switra</i> (leucoderma)
10	<i>Viryastambhakar vati</i> <sup>68</sup>	<i>Virya stambha</i> (useful in premature ejaculation)

## DISCUSSION

Cannabis genus has numerous hybrids & sub species which makes it difficult to recognize the oldest strain. The phenotype of *Vijaya* has been described in Ayurveda which aids in identification of the species. The types/ varieties of *Vijaya* viz. male & female plant grow huge heights like a tree (*drumakruti*). *Vijaya* is a delicate plant which may appear as drooping due to its height and thin skinny stem. Apart from the height a flowering female plant presents raceme inflorescence, hence called *samvida manjari* (flower blooms in bunches)<sup>69</sup>. A dense fruiting pistillate flower enclosed within the leaf like bract composed of a thin

membranous perianth roughly appears like a whorl (*saphala valli*)<sup>8</sup>. *Cannabis Sativa* is the only oldest species indigenous to India which grows more than two meters height. Hence *Cannabis Sativa* can be considered as *Vijaya*.

The antiquity of *Vijaya* can be traced long back to *Atharvana Veda*. Among the four Vedic texts *Atharvana Veda* is considered as the youngest, but there is no accurate dating of the time period. In *Vedas* reference of Iron is mentioned only in *Atharvana Veda*. Since Iron is attested in the archaeological record in India from around 1000 BCE, many scholars have consequently dated *Atharvana Veda* around 1000 BCE<sup>70</sup>. 'Bhanga' word is cited in

*Atharvana Veda* among the five *Virudh* (herbs) including Soma which could alleviate 'amhas' (anxiety/distress)<sup>71</sup>. Arka prakasha, a text on *arka* (distillation) mentioned *Bhanga* & *Soma* in a preparation named *ummatta panchaka*, an aphrodisiac medicament which causes *matta* (soothing effect by CNS stimulation) like a *pisacha* (demon)<sup>72</sup>. On this basis it is concluded that herb *Bhanga* mentioned in *Atharvana Veda* could be *Vijaya*. In *Bruhatrayi* the term *Vijaya* is coined under eight *Mula Visha* (root poison) in *Susruta Samhita*<sup>73</sup> and decoction of leaves of *Bhanga* as an external medication for rinsing in *Sushka Arsas* (dry piles) is cited in *Charaka Samhita*<sup>49</sup>. These two herbs could be linked to *Cannabis* as the whole plant excluding seed is poisonous which can be classified under root poisons & due to its narcotic property can be used to subdue the pain & inflammation associated with piles. In *Laghutrayi* references of formulations containing *Vijaya* are cited in *Sarangadhara samhita*<sup>61</sup> & *Bhavaprakasha*<sup>74</sup>.

*Vijaya*, a *mahoushadi*<sup>75</sup> & *divyaushadi*<sup>76</sup> is an intoxicating<sup>77</sup> herb mentioned under *upavisha varga* (secondary poisons group) by *Rasendra chudamani*<sup>78</sup> text. *Rasaratna samucchaya*<sup>79</sup>, a *sangraha* (compilation) text of thirteenth century AD & *Rasa tarangini*<sup>80</sup>, a modern *Rasasastra* text of twentieth century AD included *Vijaya* in *upavisha* by taking the reference from *Rasendra chudamani* text of twelfth century AD. Mythologically *Vijaya* is said to be originated from *amrita* (ambrosia) spilled from the mouth of Lord *Shiva*<sup>81</sup>. *Ayurveda prakasha* did not include *Vijaya* in *Visha* or *Upavisha* considering it as *anischita* (unascertained) herb<sup>82</sup>.

*Vijaya* is extensively described in *Anandakanda*<sup>83</sup> right from the sowing of seed, growing technique, nutrition supplements during growth, collection method, processing<sup>84</sup> & meaning of synonyms has also been illustrated. Collection method of *Vijaya* includes leaves & seeds having *Snigdha guna*<sup>12</sup> (smooth and greasy property) in the month of *phalguna*<sup>85</sup> (Feb-Mar). This *Snigdha guna* is due to the structures called trichomes, a unicellular & glandular outgrowth developed over flowering & fruiting plant. These trichomes predominantly emerge over the surface of raceme inflorescence and the leaves near them, hence called as sugar leaves. Traditionally these trichomes are used to make *Charas* or *hashish*, a highly abusive narcotic resin. After collection they are dried in mild heat waves of sun for 7 days<sup>12</sup>. Three types of *paka* (processing through heat) are mentioned for *Vijaya* viz. *agni* (fire) *paka*<sup>86</sup>, *surya* (sun) *paka*<sup>87</sup> & *chandra* (moon) *paka*<sup>88</sup>.

*Ayurvedic* scholars attributed specific colour to *Vijaya* in each *yuga* which can be correlated to present era with respect to the presence of a peculiar phytochemical in the chemical composition of the plant. Generally the colour of *Vijaya* is green due to the presence of chlorophyll. During flowering season mainly the inflorescence & leaves might change their colour owing to the levels of specific phytochemicals. Other factors include temperature & climate as chlorophyll is heat sensitive & also the colour spectrum varies in different climatic conditions. The colour of *Vijaya* in *Kruta yuga* is white, this is because of the presence of abundant *Anthoxanthin*, a flavonoid which attributes white colour. In *Treta yuga* *Vijaya* is in red colour due to rich in *Lycopene*, a tetraterpene. *Vijaya* is yellow in colour during *Dwapara yuga* due to *Carotenoid*, also called tetraterpenoid an organic pigment which imparts yellow hue. In *Kali yuga* *Vijaya* is blue colored due to the presence of *Anthocyanin*, a flavonoid pigment<sup>89</sup>.

Therapeutically leaves, seeds and stem of *Vijaya* have been utilized for medicinal preparations. Oral route is the common method of drug administration of *Vijaya* leaves & seeds. *Vijaya* leaf powder is used as *Nasya* in the treatment of *Apasmara*.

Brushing with the stem of *Vijaya* strengthens the teeth by cleansing the *mala* (dirt) present over the teeth & tongue<sup>90</sup>. External application of *Vijaya* decoction in piles is also cited. Now a day's *Vijaya* seed oil is extracted by cold press method. In *Ayurveda* *Vijaya* seed oil is prepared by a peculiar technique which is used as *nasya karma* (nasal medication) in *Urdhvajatrugata roga* (diseases above the neck). Seeds are kept in a *pottali* (bolus of seeds in a cloth) and boiled in cow's milk till it is reduced to half the quantity. Then the seeds are made into a fine paste with the leaf juice of *Aloe vera* (*Aloe barbadensis* Mill.). This paste is applied as a layer over *Kamsya patra* (Bronze vessel) & placed in intense sun rays. Due to the heat *Sneha* (oil) is extracted from the paste which is used as an aphrodisiac & rejuvenative medicament<sup>91</sup>.

Although mythological origin of *Vijaya* is from *amrita*, as per the properties it should be considered as a poisonous herb which requires purification before utilizing as a medicine. Purification helps to detoxify and further improve the therapeutic efficacy. The oldest reference regarding purification of *Vijaya* is cited in *Rasaprakasha sudhakara*, a classical *Rasasastra* text where cow's milk is used in the purification process. The procedure can be interpreted as *Swedana* (fomentation) or *Bhavana* (dipping) of *Vijaya* in cow's milk. Experimental study was conducted in *Ghaziabad* (2015) on different purification procedures of *Vijaya* with respect to their *THC* content. *THC* is the main compound among various *phytocannabinoids* of *Cannabis Sativa*. According to *Ayurvedic* classics purification helps to remove the impurities and enhance the therapeutic values. However reduction in the levels of *THC* of *Cannabis Sativa* after purification affects the medicinal properties negatively. Hence *API* has authenticated the purification process in which *THC* levels are less affected among the other procedures.

The first line of treatment in the overdose of *Vijaya* is *Virechana* (medicated purgation) as it is a *Pitta* vitiating herb which is treated best with purgation. All types of cooling remedies are given as an antidote of *Vijaya* poisoning. In the circumstances of unavailability of antidotes, a sound sleep is enough to wear out the complications of overdose. *Arka prakasha* mentioned usage of *Amla dravya* (*Pitta* vitiating & *Ushna virya*) as the antidote for *Vijaya* intoxication<sup>92</sup>. It can be justified by the quality *mano bodhayati* (exhilarate or stimulate mind) of *amla rasa*<sup>93</sup>.

The *Rasapanchaka* of *Vijaya* is similar in most of the *Ayurvedic* classical texts having *Tikta rasa*, *Laghu guna*, *Tikshna guna*, *Ushna virya*, *Katu vipaka*, *Dipana*, *Pachana*, *Grahi*, *Pittala*, and *Kapha-Vata* pacifying properties. *Anandakanda* is the only text which specifically mentioned *Katu rasa* along with *Tikta rasa* to *Vijaya*. In *Saligrama nighantu Medhya & Rasayana* properties are attributed to *Vijaya*, basing on this it is therapeutically useful in *Unmada*, *Apasmara*, *Vali*, *Palitya*, etc. *Vyavayi* action is first cited in *Sarangadhara Samhita & Yogavahi* action in *Anandakanda*. Dietetics like *Lavana* (saline), *Amla* (sour), *Kshara* (base)<sup>94</sup> are said as *apathya* (unwholesome) & *Madhura* (sweet) *rasa* food stuff have been enumerated as *pathya* (wholesome) for certain formulations containing *Vijaya* to overcome its *Tikshna* & *Pitta* vitiating properties. *Karshani*, *Vata-Kapha* pacifying properties of *Vijaya* can be utilized to formulate anti-Obesity medications. Many clinical conditions have anorexia, indigestion as a common symptom. *Dipana* & *Pachana* qualities of *Vijaya* can be made use to treat such conditions. *Vyavayi* & *Yogavahi* properties give scope to improvise in pharmaceuticals to improve the action of any formulation. Every part of the *Vijaya* herb can be utilized in our daily life. Beyond medicinal benefits stem is a common source of fiber useful in making *Hemp ropes*, *fabrics*, *cloths*, *hemcrete*, etc & Seeds are a good source of nutrition in culinary preparations.

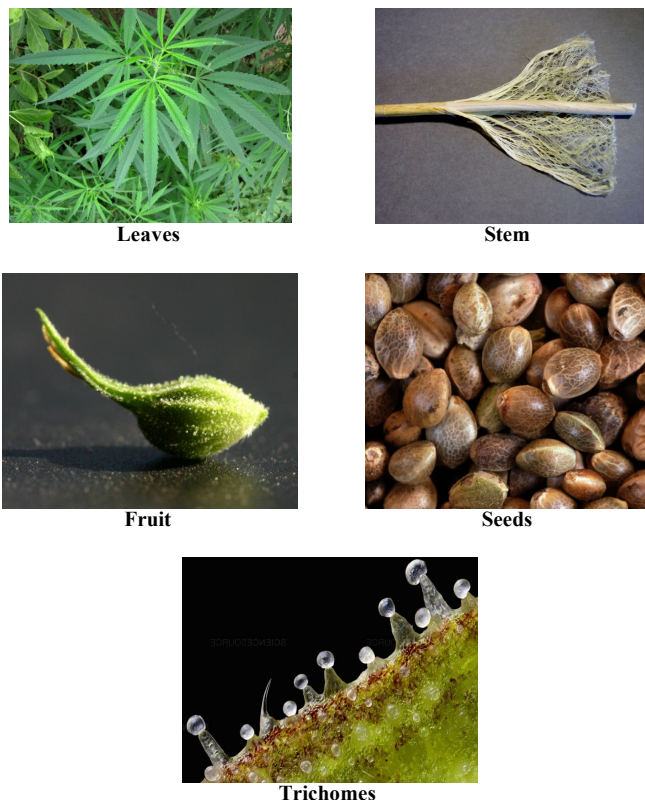


Image 1: *Cannabis sativa* plant parts

## CONCLUSION

Ayurvedic manuscripts gave vast knowledge regarding *Vijaya*. Formulations containing *Vijaya* show their respective pharmacological actions very quickly. It is considered as a rejuvenative & aphrodisiac herb. Exaggerations like *Amaratva*<sup>95</sup> (immortality) & *Sarva loka vasikara*<sup>96</sup> (subjugate entire world by charm) signify the high expectations of *Vijaya* as a medicament. There is a need to explore the therapeutic properties of *Cannabis Sativa* in this contemporary world of Ayurveda. Intense research is needed to standardize the purification method. Toxicology studies and clinical trials have to be investigated to fix the dose, dosage form & route of administration.

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