

Review on Concept of Potency (*Veerya*) and its diversity in Ayurveda

Chaithra S. Hebbar^{1*} and Lalitha B.R.²

¹Department of Dravyaguna, SDM College of Ayurveda, Udupi, India

²Department of Dravyaguna, Government Ayurveda Medical College, Bengaluru, Karnataka, India

Abstract

The present communication details the concept of the Potency in Ayurveda. Potency certifies the applicability of the drug to be used in various conditions of the body both in healthy and unhealthy status. Any drug to act as a medicine essentially should be potent. Potency is an expression of the activity of a drug in terms of the concentration or amount of the drug required to produce a defined effect, whereas clinical efficacy judges the therapeutic effectiveness of the drug. Potency is a good preclinical marker of the therapeutic potential of a drug. Ayurveda mentions a term '*Veerya*' in context of modus operandi of a drug which indicates the 'Potency of the drug'. The review establishes that the concept of *veerya* (potency) in Ayurveda is not just limited to indicate the strength of the drug. The variants in *veerya* namely *mrudu* (slow/dull) *teekshna* (quick/sharp), *guru*(heavy), *laghu* (light), *snigdha* (unctuous), *ruksha* (dry), *Ushna* (hot) , *sheeta* (cold) making it as octa potency (*ashtaveerya*) or focusing only on *ushna* (hot) and *sheeta*(cold) making it as the dual potency (*dwividhaveerya*) or even in some contexts considering it as 15 types as per *Acharya Nimi* or even widening the concept of *veerya* (potency) by viewing it responsible for the 19 *karma* (pharmacological activities) as per *Sushruta* opens the diversity or multiplicity in the drug action.

Keywords

Potency, Veerya, Ayurveda, Action, Effectiveness



Greentree Group

Received 08/02/16 Accepted 20/02/17 Published 10/03/17



INTRODUCTION

Subsistence and Globalization of Ayurveda has been possible only due to a strong core, which is provided through its own fundamental principles. *Dravyaguna Vijnana* is one of the indispensable subjects in Ayurveda, which has put a limelight to every aspect of the drug actions in the body through a configuration called ‘*Rasa panchaka*’ (the five units of the drug). This includes the various attributes linked with the drug entering the body namely, *Rasa* (taste), *Guna* (attribute), *Vipaka* (final state of transformation), *Veerya* (Potency) and *Prabhava* (specificity in action)¹.

The reason and the capacity of a dravya to perform an action is *Veerya* (potency)². It is a property (*karmuka shakti pradayaka guna*) in the *dravya* (drug), which makes the drug capable of exhibiting the therapeutic effectiveness in the body³. *Veerya* (potency) is considered to be one among seven *padartha* (matter of priority) in *Dravya Guna Vijnana*, namely *Dravya* (substance), *Guna* (attribute), *Rasa* (taste), *Vipaka* (final state of transformation), *Prabhava* (specificity in action) and *Karma* (drug action)⁴.

The present paper aims to collect the information about the view of potency in

Ayurveda and also its diversity which helps in clinical application thus defining the modus operandi of the drug.

MATERIALS AND METHODS

Etymology (*Nirukti*) of the word *veerya*:

The etymology of the word *veerya* is from “*Veera vikrantau dhatu*”. The strength or energy which is performing an activity via drug is *Veerya* (potency) of the drug⁵. The word ‘*Veerya*’ in a noun form also represents manliness, valor, strength, power, energy, heroism, vigor, virility, efficacy^{6,7}.

Etymology of word Potency:

The term *veerya* may be equivalent to the term ‘Potency’ in modern pharmacology which is a word derived from latin term *Potentia* meaning the strength/force/power.⁸

Characteristics of the *Veerya* (*Veeryalakshana*)

Veerya (potency) is characterized by a *Karma* (drug action)⁹. It is also considered as one of the *guna* (property) in the drug similar to *rasa* (taste), *gurvadi guna* (attributes like heaviness), *vipaka* (final transformative state) and *Prabhava* (specific action)¹⁰. *Karma* (drug action) is a resultant performance of the drug. The property or



unit of the drug which acts as an initiative and potential power for achieving a desired effect in the body is its potency¹¹. Thus *Veerya* does not just stand for any one entity, instead symbolizes the initiating force present in totality of a *dravya* (***karmuka shakti pradaya guna tatva***). The term *veerya* (potency) signifies the *shakti* (energy), or *utsaha* (active participation) and the properties like *snigdha* (unctuousness), *ruksha* (dry) etc., possessed by the drug, thus indicating that *veerya* (potency) is a physical as well as biochemical energy in the drug responsible for the action of the drug and its effectiveness in the body. It is also said as essence of the drug which is either depressed after a certain period¹² or is accentuated by certain processes.¹³

Concept of Veerya in Veda

The knowledge about the concept and applications of *rasa* (taste) *guna* (attribute) *veerya* (potency), *Vipaka* (final transformative state) and *prabhava* (specific action), of a *dravya* (substance) was established during the *Veda kala*¹⁴. Even in the vedic period, it was thought that drug acts because of its inherent power. This was termed as *Veerya* (potency)¹⁵.

Concept of Veerya in Samhitha:

The practitioners of Ayurveda in ancient times have tried to analyze the concept of *Veerya* and its types in their own way. A detailed discussion by the commentators ensures about its practicability. Following are some points discussed as *Veerya vada* (theories about the concept of potency). The aims and objectives of all the proposed *Veerya vada* is not to create any controversy, but was an attempt made by the scientists of Ayurveda working in the field to decode the concept of *veerya* and project its relation with the drug so that its identity and applicability is clear.

I. Guna Veerya Vada (Theory proposing attributes are potency):

Two schools of thoughts are proposed under *Guna Veerya Vada* (Theory proposing attributes are potency). *Shakti matra Veerya Vada* (Theory proposing Energy is potency) by *Acharya Charaka* and *Paaribhashika Veerya Vada* (Theory proposing defined property of the substance is its potency) by *Acharya Sushruta* as well as *Acharya Vagbhata*. *Vridha Vagbhata* opines that *Shakti veerya vada* (Theory proposing Energy is potency) is *Shastriya* (theoretical) and the *Paribhashika veerya vada* is *Laukika* (practical)¹⁶.



A .Shakti veerya vada (Theory proposing Energy is potency):

In this school, potency is expressed as power. That power which enables action by the drug is the *veerya* of that *dravya*, and this power may be in form of *rasa* (taste), *vipaka* (final transformative state) etc. any among the five units of the *dravya* (drug). Among these factors singly or in combination dominate, become expressive and then be responsible for the drug action. *Utkrishtha shakti sampanna guna* (Highly powered qualities) in the drug is considered as *veerya*. To add on, this theory also established one more data termed as *Bahu veerya vada* that the drug possesses infinite potency and thus multifold actions is performed by a drug when in action. *Acharya Charaka* is supportive to this theory¹⁷. *Acharya Chakrapani* upholds the individuality of the concept of *veerya* (potency) and opines that it is something which is different from *rasa* (taste) *Vipaka* (final transformative state) or the *Prabhava* (specific activity) of a *dravya* (drug). Thus *Shakti rupa* (Form of power) of *veerya* is (potency) supported by *Acharya Chakrapani*¹⁸. As per the variation in the *shakti* (power) of the *dravya veerya* (drug potency) can be categorized as three grades

namely *teekshna* (highly potent /sharp), *Madhya* (medium/moderate) and *Mrudu* (less potent/mild). The grade of power and energy in the *dravya* decides the posology of the *dravya*¹⁹. Prof. *Dwarakanath* opines that *veerya* (potency) conveys the idea of energy. The energy of a body is its capacity to do a work and total measure of energy is work. Energy may be potential or kinetic²⁰.

B. Paaribhashika veerya vada (Theory proposing defined property of the substance is its potency):

In this school potency is viewed as those physical properties in the drug which get active and be responsible for the activity in the body leading to therapeutic effectiveness in the drug. *Acharya Sushruta* and *Acharya Vagbhata* support this theory. This school has two opinions about the dominant properties in action. One opinion is named as *Dwividha veerya vada* (Theory proposing the supremacy of dual qualities-hot and cold) where only *Sheeta* (cold) and *Ushna* (hot) qualities are emphasized as potency and another opinion popular is called *Astavidha veerya vada* (Theory proposing the supremacy of eight qualities) where *Guru* (heavy), *Laghu* (light), *Snigdha* (unctuous), *Ruksha* (dry), *Mridu* (mild/slow), *Teekshna*



(sharp/quick), *Sheeta* (cold), *Ushna* (hot) qualities are emphasized as potency²¹

B.1 Dwividha veerya vada: (Theory proposing two diverse potencies)

As per the principle of *Agnisomeeya tatva* (Theory establishing the Predominance of Fire and water elements in Universe) even though the Universe is accepted to be *panchabhautika* (made up of the five primordial elements), *Agni* (fire) and *Soma* (water) *tatva* (elements) are considered to be more powerful. *Soma* (water element) has a role in helping in growth and development, and *Agni* (fire element) is the reason for the transformations occurring in it²².

Same principle is applied to the *Purusha* (Man) who is created by the combination of *Sukra* (sperm) with *saumya tatva* (predominant with water element) and *Artava* (Ovum) with *agneya tatva* (predominant with fire element). Similarly *Veerya* (potency) of a *panchabhauthika dravya* (substance formed by five primordial elements) too have a predominance of either fire or water elements and hence will reveal activities of either of the two, fire or water. *Agneya dravya* (Drug with fire predominance) is recognized to be possessed with *Ushna veerya* (hot potency) and *Soumya dravya* (Drug of water predominance) possesses

*Sheeta veerya*²³. This principle makes it easy to select the specific type of a *dravya* (drug) for the specific type of a *Purusha* (man) both in normal and diseased status as after determining *staana* (equilibrium), *vruddi* (increase) and *kshaya* (decrease) of the *dosha* (primary units of the body)²⁴. Substances with cold potency increase body strength, *Kapha*, *Vata* and are heavy for digestion. Substances with hot potency decrease the sperm activities, *Kapha* and *Vata*, increase *Pitta* and are light for digestion.²⁵ Drugs of hot potency can produce *bhrama* (giddiness), *kshut* (thirst); *glani* (bodily exhaustion and fatigue), *sweda* (perspiration), *daha* (burning sensation) and *asupakita* (accelerated reactivity or digestion). Drugs of cold potency, on the other hand, causes *hladana* (cheerfulness and pleasure of mind) *jeevana* (sustains life) *stambhana* (imparts strength, sturdiness and steadiness to the body) and cleanses (*rakta*) blood²⁶

B.2. Asta vidha veerya vada (Theory proposing eight diverse potencies)

*Acharya Charaka*²⁷ and *Acharya Vagbhata*²⁸ mention that during their times, the theory of viewing potency of a drug with eight diversities was also popular namely *Guruveerya* (heavy potency) for the drug composed of *prithvi* (earth element) and *jala* (water element), *Laghuveerya* (light



potency) for the drug composed of *agni*, *vayu* and *akasa* (elements of fire, wind and space) *Snigdhaveerya* (unctuous potency) for the drug composed of *jala* (water element), *Rukshaveerya* (dry potency) for the drug composed of *vayu* (wind element) *Mriduveerya* (mild/slow potency) for the drug composed of *jala* and *akasha* (elements of water and space) *Teekshna veerya* (sharp/quick potency) for the drug composed of *agni* (fire); *Sheeta veerya* (cold potency) for the drug composed of *prithvi* and *jala* (elements of earth and water) *Ushna veerya* (hot potency) for the drug composed of *Agni* (fire element).²⁹

Acharya Sushruta accepts *Picchila* (slimy potency) for the drug composed of *jala* (water elements) and *Vishada veerya* (potency of clarity) for the drug composed of *prithvi* and *vayu* (elements of earth and wind), in place of *Guru* (Heavy) and *Laghu veerya* (light potency)³⁰. The commentators *Chakarapani* and *Dalhana* have opined that it is because *Acharya Sushruta* has adopted the words *Guru* (heavy) and *Laghu* (light) in context of *Vipaka* (final transformative status). *Acharya Harana Chandra* feels that statement of *Acharya Sushruta* might be wrongly interpreted by the commentators. He also stated that no literatures have

recorded *Picchila* (slimy) and *Vishada* (clarity) as *Veerya*. Definitely *Acharya Sushruta* too had considered *Guru* (heavy) and *Laghu* (light) as *Veerya* (potency). Dr. P.V. Sharma, bridges the difference of opinion if any by mentioning that the *Picchila guna* (Sliminess) can perform the action of *guru* (heaviness) and similarly the *Vishada guna* (clearness) can perform the activities of *laghu* (lightness) in the body. Thus substantiation is done.³¹.

Asta veerya (eight potencies) had a wide popularity among physicians and the activity was illustrated as follows: *Ushna veerya* pacifies *kapha*, *vata*; aggravates *pitta*, causes-*Dahana*-heat; *Pacana*-digestion of food, assimilation of *dhatu*, (body tissue) healing of *vrana* (wound), *shopha* (inflammatory pathology). *Murchana*-loss of consciousness, *Swedana*-sweat/diaphoresis *Vamana*-emesis, *Virechana*-purgation, *Vilayana*-absorption, *Bhrama*-giddiness, *Trashna*-thirst *Glani*-exhaustion, *Laghuta*-lightness, *Avrashya*- decreases the virility/*Shukradhatu*. *Sheetaveerya* pacifies *pitta*, aggravates *kapha*, *vata*. Causes-*Vishyandana*-stopping the flow, *Sthirikarana*-stabilizing, *Prasadana*-purifying, *Kledana*-moistening, *Jeevana*-life promoting *Stambhana*-causing stasis, *Guru*-heaviness,



Balya-strengthening, *Snigdha veerya* pacifies *vata*. Causes-*Snehana*-oleation, *Brahmana*-bulk increasing, *Santarpana*-health promoting, *Vajeekarana*- increasing the sexual vigour, *Vayastaapana*- prevents aging. *Ruksha veerya* pacifies *kapha* and aggravates *vata dosha*. Causes- *Sangrahana*-accumulation, *Peedana*- pressing effect, *Virukshana*- dryness, *Upalepana*-coating/healing. *Guruveerya* pacifies *vata*. Causes- *Brahmana*- bulk increases, *Upalepana*-anointing, *Laghu veerya* pacifies *kaphadosha*. Causes-*Lekhana*-ematiating. *Mrudu veerya* pacifies *pitta dosha*. Causes- *Rakta mamsa prasadana*- saturates *rakta/mamsa*; helps in *Susparsha*-softening, *Teekshna veerya* pacifies *kapha*. Causes- *Sangrahacushana*- constipative, *Avadarana*-tearing, *Sravana*- secretion, *Vishadaveerya* pacifies *kaphadosha*. Causes- *Kledaacushana*-causing dryness *Virukshana*- drying *Uparohana*- promoting healing. *Picchilaveerya* pacifies *vata dosha*. Causes-*Upalepana*-anointing *Purana*-promoting healing, *Brahmana*- bulk promoting, *Samsleshana*- slimy, *Vajeekarana*- promoting sexual vigour.³²

Following are the statements substantiating the view of *astavidha veerya vada* where, out of twenty physical properties only the

eight properties stand up as potency in world of material medica³³:*Samagragunasarata*(essence): The eight physical properties if in a drug, they last longer not letting the destruction of their physical form even when they come in contact with the digestive enzymes; *Shaktutkarsha*(powerful) : The eight types of potencies are most powerful possessions of the drug; *Vyavahaara mukhyata* (Practicability): The high esteem of eight types of potencies are practically understandable and so clinically implementable; *Bahulata* (abundance) All among the eight type of potencies are capable of performing multiple or abundant activities in the body and thus effectiveness is appreciable; *Upayogita*(Utility): The clinical application of these eight type of potencies of drugs are utilized commonly in practice; *Prabhalata* (empowerment): The eight types of potencies can overpower the *rasa* (taste) etc. other qualities of a drug and show their performance; Eg. if there is *teekshna* (quick/sharp) potency in sweet tasting drug, the usual functions like *upalepa* (making a coating) and *kaphavardhaka*(increase in *kapha*) are not seen because here the sharpness wins over the taste *Madhura rasa yukta ikshurasa*



because of *sheeta veerya* supporting *vata vriddhi* (increase in vata) in the body; *Katu rasa yukta pippali* (pungent Piper longum) instead of increasing the *pitta* because of *mrudu sheeta veerya* helping in pitta shaman.

Acharya Dalhana accepts that *veerya* (potency) denotes *Shakti* (power or energy) in the drug which is explainable by using terms like *sheetha –ushna* etc. He accepts the theory of multiple *veerya* enunciated by Acharya Charaka. Dalhana notes that although there is no third category but *sita* and *ushna* according to the predominance of *Soma* and *Agni* principle, practically there is a scholarly group telling that *Veerya* (potency) can be on the borderline which is termed as *sadharana* representing the *veerya* status as *anushna sheeta*. (common/intermediate)³⁴.

b.3. Shadvidha Veeryavada: (Theory proposing six diverse potencies)

Acharya Priyavrat Sharma proposed six potencies of the drug namely *Guru* (heavy), *laghu* (light), *Ushna* (hot), *snigdha* (unctuous) and *ruksha* (dry) which are instrumental in increase and decrease of *dosha*, *Guru* (heavy) is capable of *Bruhmana* (Bulk promoting), *Laghu veerya* for *langhana* (ematiating), *Snigdha*

veerya for *snehana* ((oleation), *rooksha veerya* for *rookshana* (drying) *sheeta veerya* for *sthambhana* (coagulation) and *Ushna veerya* for *svedana* (Sudation)³⁵.

II. Karma veerya vada: (Theory proposing exhibited activity of the substance is its potency):

Acharya Badantha Nagarjuna proposed that action itself is a character of its potency. He has not accepted the *Guna veerya vada* (Theory proposing attributes are potency). He observes that, if predominant of *rasadi* (five units of drug) or *guna* (physical property) is accepted as *veerya* (potency), in spite of presence of *rasa* (taste) and *guna* (property) in the drug, the action exhibited is different and not related to either taste or the property of the drug. Also, it is observed that though *rasa* (taste) and *guna* (property) are present in a drug, the *karma* (drug activity) may not be performed by the drug; instead when there is absence of *rasa* (taste) and *guna* (property) *karma* (drug activity) is performed -eg. *Mantra*. He believes that drug can perform an activity without having any relation to *rasadi* (five units of drug). Hence the activity exhibited by the drug has to be considered as *veerya* (potency). He has not enumerated the number of *veerya* (potency) with regards to its



karma (drug activity) but believes *veerya* present with many diversities.³⁶

This theory is supported by *Acharya Nimi*, diversities of *dravya veerya* (drug potencies) are fifteen in number, based on the drug action with relation to its basic combination. 1. *Adhobhagahara veerya* (purgation effect) of the drug predominant with water and earth elements, 2. *Urdhwabhaga veerya* (emesis effect) of the drug predominant with fire and wind elements; 3. *Ubhayatobhagahara veerya* (bidirectional effect where dosha move out both by emesis and purgation) of the drug predominant with elements of earth, fire and wind; 4. *Sangrahaikaveerya* (cumulative effect) of the drug with predominant elements of earth and wind; 5. *Samshamana veerya* (subsiding effect) of the drug with predominant with elements of wind, water and earth; 6. *Deepanaveerya* (appetizer effect) of the drug predominant with elements of earth and fire; 7. *Jivaneeyaveerya* (reliving effect) of the drug with predominant elements of earth and water. 8. *Pranaghna veerya* (life threatening effect) of a drug with predominant wind and fire; 9. *Madana veerya* (mind influencing effect) of the drug with elements of wind and fire; 10. *Shitikarana veerya* (chilling effect) of the drug with predominant water element. 11. *Shothakara veerya* (inflammatory effect) of the drug with elements of earth and water; 12. *Shotagna veerya* (anti-inflammatory effect) of the drug with predominant elements of ether and wind;

13. *Pachana veerya* (digestive effect) of the drug with predominant elements of fire; 14. *Darana veerya* (stabilizing effect) of the drug with predominance of wind and fire elements.; 15. *Ropanaveerya* (healing effect) of a drug with predominant elements of earth, water, wind.³⁷

Veerya (potency) with 19 diversities in form of actions:

Aushadha karmukatha of the *dravya*, in all circumstances is because of the *veerya* only. eg---*vamana* (emesis), *virechana* (purgation) *ubhayabhaga hara* (birectional movement of vitiated dosha) *karma*, *samshodhana* (purification), *samshamana* (pacification), *agnideepana* (appetizer) *sangrahana* (cumulative), *peedan* (pressing effect), *lekhana* (scraping effect) *brumhana* (bulk promoting effect), *Rasayana* (rejuvenating effect), *vajeekarana* (increase of libido), *swayathukara* (inflammatory effect), *swayathu vilayana* (anti-inflammatory effect), *dahana* (burning effect), *maadana* (confused and influencing brain) *darana* (stabilizing), *pranaghna* (life threatening), *vishaprashamana* (pacification of toxicity) etc. Also *Veerya* (potency) due to its power can dominate over *Rasa* (taste), *Guna* (property) etc factors in the *dravya* (drug), and thus exhibit its action.³⁸



III. Dravya veerya vada: (Theory proposing the substance in its form is its potency):

Most of the modern scholars of the field like Dr. Yadavaji Trikamji Acharya believe that *dravyautkrishtaamsha* (Active principle) is *veerya* (potency) and that is responsible for performance of an action³⁹. Acharya Priyavrata Sharma considers active principle as a seat of potency. He believes that the potency in active principle is transferred during the different procedures in pharmaceuticals. The process of transfer of the potency is called *veeryasankranthi* (transference of power).⁴⁰ As per Shivadasa Sen the *dravya* is *panchabhautic* and *dravyagata saratishaya rupaamsha* (the essence) is called as *veerya*⁴¹. He also considers *Veerya* (potency) may be *Sahaja* (natural form) or *Kritrima* (artificial form). Examples of *Guduci* (*Tinospora cordifolia*) and *Guduci Satwa* (concentrate), *Palasa* (*Butea monosperma*) and its *Kshara* (alkali) etc can be considered where the source of drug is transformed to a new form which is acquired by processing⁴². Also it is observed that whatever process is undertaken for the drug, like *kashaya* (decoction), *gritha* (ghee), *taila* (oil) etc, all those have a definite expiry time

mentioned in the classics after which it loses its potency and does not work up to the expectation. Selectivity of the part of the drug also is important issue as the selected part alone will contain maximum potency for specific karma (action). Eg., *Dashamoola* (ten roots), *Triphala* (three fruits), *Ashokatwak* (Bark of *Saraca asoka*) etc.⁴³

DISCUSSION

Whatever the substances do, whether by *dravya Prabhava* (virtue of their nature) or *guna prabhavat* (by virtue of their qualities) or by *Dravya-Gunaprabhavat* by (virtue of their substantive and qualitative nature) in any given time, in any given place (system or organ), having administered in a given mode, with a given result in view is their action, whereby they act is the potency, wherein they act is the place, when they act is the time, how they act is the mode, what they achieve is the result⁴⁴. There cannot be any action in the body in absence of *veerya* of the drug. The effectiveness of the drug may be wholesome or unwholesome, but the reason behind is potency of the drug. The documentation in literature since the times of Veda till date about the specificity of the time of collection of the herbs, use of

specific parts, the time of administration, different types of processing, preservation techniques, use of different utensils for storage⁴⁵preparation of different extracts, isolation of the active principles etc., all indicates the recognition of increased potency of the drug.

CONCLUSION

In spite of complimentary inclination of scholars of analyzing potency varies either in form of Guna(drug property), Karma(drug activity) or as dravya(drug) itself, they have a definite understanding that potency irrespective of its form is essential to reach the target in the body. To achieve the result in form of karma (therapeutic action), the very essential need is that the drug should be potent and thus the relation between the Veerya (potency) and Karma (activity) of the drug is established. Potency though diverse, is a deciding factor to achieve the drug action.



REFERENCES

1. S.C Dhyani, Rasa panchaka (Ayurvedic Principles of Drug Action), first edition, 1994, Chaukhambha Sanskrit series office, Varanasi, p 3.
2. Agnivesha, Charaka Samhita, Charaka and Dridabala Revisers, Chakrapani Dutta, Commentator Ayurveda Deepika Commentary, Yadavaji Trikamji Acharya, Editor, Chaukhambha Sanskrit Sansthan, Varanasi, 5th edition, 2001, pp 147-152/738
3. Dwivedhi Vishwanath, Aushadha Vijnana Shastra (Ayurvedic Pharmacology), Vaidyanath Ayurveda Bhavan ltd, Nagpur 2nd edition, 1980
4. Priyavrit Sharma, Dravyaguna Vijnanan, Vol. I, Basic Concepts, Chaukhambha Bharati Academy, Varanasi, Reprint -2004, Page 7/426
5. J.K Ojha, (2001) ,A Hand book of Dravyaguna, The Chaukhambha Sanskrit Pratishthan, Delhi, First edition, Pp49/407
6. Sir M. Monier Williams, A Sanskrit English Dictionary, Motilal Banarasidas Publishers Private Limited, Delhi, reprint 1999, 1006/133 3)
7. Raja Radhakantha deva ,4th Volume, Shabda kalpa druma, Nag Publishers, Delhi, reprint 1987 page 474.
8. Shastri, J.LN, Dravyaguna Vijnana, (Fundamental Principles of Pharmacotherapeutics in Ayurveda), Chaukhambha Orientalia, Varanasi, Reprint 2009, page 154/440.
9. Agnivesha, Charaka Samhita, Charaka and Dridabala Revisors, Chakrapani Dutta, Commentator,, Ayurveda Deepika Commentary, Yadavji Trikamji Acharya, Editor, Chaukhambha Sanskrit Sansthan, Varanasi, 5th edition, 2001, pp 138//738.
10. J.K Ojha, (2001) ,A Hand book of Dravyaguna, The Chaukhambha Sanskrit Pratishthan, Delhi, First edition, Pp50/407
11. K. Nishteshwar, Text of Dravyguna, Chapter Virya, Chaukhambha Surbharathi Prakashan, Varanasi, first edition 2007. page 53/670
12. Prof. D.S. Lucus Dravyaguna Vijnana (Basic principles of



- Dravyaguna, Vol.I , Chapter Virya vijana, Chaukhambha Vishwa Bharathi, Varanasi, First edition, 2006 ,p 210/455.
13. Priyavrat Sharma, Dalhana and his comments on drugs, Munshiram Manoharlal Publishers pvt.ltd. first edition, 1982 pp 95/293
14. Priyavrat Sharma Dravyaguna vijnana, Volume IV, vedic plants and history of Dravyaguna) , Chaukhambha Sanskrit Sansthan Varanasi reprint 2007,, page21/392.
15. Priyavrat Sharma, Editor, History of Medicine in India, Dravyaguna (Pharmacology): origin and development Indian National Science Academy, New Delhi, first print 1992. page 393/527.
16. Priyavrit Sharma, Dravyaguna Vijnanan, Vol I, Basic Concepts, Chaukhambha Bharati Academy,Varanasi, Reprint - 1998,Page 222/426
17. Shastry, J.LN, Dravyaguna Vijnana,(Fundamental Principles of Pharmaco-therapeutics in Ayurveda),Chaukhambha Orientalia,Varanasi, Reprint 2009,page 161/440.
18. Shastry, J.LN, Dravyaguna Vijnana,(Fundamental Principles of Pharmaco-therapeutics in Ayurveda),Chaukhambha Orientalia, Varanasi, Reprint 2009,page 159/440.
19. J.K Ojha, (2001) ,A Hand book of Dravyaguna, The Chaukhambha Sanskrit Pratishtan, Delhi, First edition, Pp52/407
20. K.Nishteshwar, Text of Dravyguna, Chapter virya Chaukhambha Surbharathi Prakashan, Varanasi, first edition 2007.page 55/670.
21. Shastry,J.LN, Dravyaguna Vijnana,(Fundamental Principles of Pharmacotherapeutics in Ayurveda),Chaukhambha Orientalia,Varanasi,Reprint 2009,page 162/440.
22. Priyavrat Sharma, Dravyaguna vijnana,part4, vedic plants and history of dravyaguna) , Chaukhambha Sanskrit Sansthan varanasi2nd edition 1977, page16
23. Prof.D.S. Lucus, Dravyaguna Vijnana (Basic principles of Dravyaguna, Vol.I , Chapter Virya Vijana, Chaukhambha Vishwa



- Bharathi, Varanasi, First edition, 2006 ,p 217/455.
24. Sushruta, Sushruta Samhita with Nibandha Sangraha commentary of Dalhanacharya , edited by Vaidya Yadavji Trikamji Acharya and Narayana ram Acharya kavyateertha, Chaukhambha orientalia,Varanasi,7th edition 2002. Page 183 /824,
25. Shastri ,J.LN,Dravyaguna vijnana,(Fundamental Principles of Pharmaco-therapeutics in Ayurveda),Chaukhambha Orientalia, Varanasi, Reprint 2009,page 164,165/440.
26. Vagbhata, Astanga Hridayam, Sutrastana, chapter 9, verse 18,19, Dr. Kanjiv Lochan, Traslator, Chaukhambha Publications, New Delhi, reprint 2011.page 134.
27. Agnivesha, Charaka Samhita, Charaka and Dridabala Revisors, Chakrapanidutta, Commentator,, Ayurveda Deepika commentary, Yadavaji Trikamji Acharya, editor, Chaukhambha Sanskrit Sansthan, Varanasi, 5th edition, 2001,pp 147-152/738
28. Vagbhata ,Astanga Hridayam, Sutrastana, chapter 9, verse 1, , Dr Kanjiv Lochan, Traslator, Chaukhambha Publications, New Delhi, reprint 2011.page 133/416.
29. Prof.D.S.Lucus, Dravyaguna Vijnana (Basic principles of Dravyaguna, Vol.I , Chapter viryavijana, Chaukhambha Vishwa Bharathi, Varanasi, First edition, 2006 ,p 219/455.
30. Sushruta, Sushruta Samhita with Nibandha Sangraha commentary of Dalhanacharya , edited by Vaidya Yadavji Trikamji Acharya and Narayana ram Acharyakavyateertha 41 chapter 41,Chaukhambha orientalia,Varanasi,7th edition 2002. Page 163 /824,
31. Priyavrit Sharma, Dravyaguna Vijnanan, Vol I, Basic Concepts, Chaukhambha Bharati Academy,Varanasi, Reprint - 1998,Page 226/426
32. Shastri,J.LN, Dravyaguna vijnana,(Fundamental Principles of Pharmaco-therapeutics in Ayurveda),Chaukhambha Orientalia, Varanasi, Reprint 2009,page 164,165/440.



33. Priyavrit Sharma, Dravyaguna Vijnanan, Vol I, Basic Concepts, Chaukhambha Bharati Academy, Varanasi, Reprint - 1998, Page 225/426
34. Priyavrat Sharma, Dalhana and his comments on drugs, Munshiram Manoharlal Publishers pvt.ltd. first edition, 1982 pp 96,97/293
35. J.K Ojha, (2001) ,A Hand book of Dravyaguna, The Chaukhambha Sanskrit Pratishthan, Delhi, First edition, Pp51/407
36. Prof.D.S. Lucas, Dravyaguna vijnana(basic principles of Dravyaguna, Vol.I , Chapter Virya Vijnana, Chaukhambha Vishwa Bharathi, Varanasi, First edition, 2006 ,p 212/455.
37. Prof.D.S. Lucas, Dravyaguna vijnana(Basic principles of Dravyaguna, Vol.I , Chapter Viryavijana, Chaukhambha Vishwa Bharathi, Varanasi, First edition, 2006 ,p 218/455.
38. Sushruta, Sushruta Samhita with Nibandha Sangraha commentary of Dalhanacharya , edited by Vaidya Yadavji Trikamji Acharya and Narayana ram Acharya, Kavyateertha, Chaukhambha Orientalia, Varanasi, 7th edition 2002. Page 175 /824,
39. Shastry, J.LN, Dravyaguna Vijnana, (Fundamental Principles of Pharmaco-therapeutics in Ayurveda), Chaukhambha Orientalia, Varanasi, Reprint 2009, page 154/440.
40. PV Sharma, Dravyaguna Sutram, Veerya prakarana, Chaukhambha Sanskrit sansthan Varanasi, reprint 2009, page 79/159.
41. Shastry, J.LN, Dravyaguna Vijnana, (Fundamental Principles of Pharmaco-therapeutics in Ayurveda), Chaukhambha Orientalia, Varanasi, Reprint 2009, page 161/440.
42. K. Nishteshwar, Text of Dravyaguna, Chapter virya Chaukhambha Surbharathi Prakashan, Varanasi, first edition 2007. page 58/670.
43. Prof. D.S. Lucas, Dravyaguna Vijnana(Basic principles of Dravyaguna, Vol.I , Chapter Virya Vijnana, Chaukhambha Vishwa Bharathi, Varanasi, First edition, 2006 ,p 210/455.

44. Agnivesha, Charaka Samhita, Charaka and Dridabala Revisor, Chakrapani Dutta, Commentator,, Ayurveda Deepika commentary, Yadavaji Trikamji Acharya, Editor, Chaukhambha Sanskrit Sansthan, Varanasi,5th edition, 2001,pp 138//738.
45. Dwivedhi Vishwanath, Aushadha Vijnana Shastra (Ayurvedic Pharmacology),Vaidyanath Ayurveda Bhavan ltd, Nagpur 2nd edition 1980,238-240/838.