



Therapeutic Potential of *Trinapanchamool*: Review Study

Awanish Pandey^{1*} and Hari Shanker Mishra²

¹*Department of Dravyaguna, SAS Ayurvedic Medical College, Varanasi, India.*

²*Department of Dravyaguna, LHSPG Ayurveda College and Hospital, Pilibhit, Uttar Pradesh, India.*

Authors' contributions

This work was carried out in collaboration between both authors. Author AP designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors AP and HSM managed the analyses of the study. Author HSM managed the literature searches. Both authors read and approved the final manuscript.

Article Information

DOI: 10.9734/JOCAMR/2019/V7i330104

Editor(s):

(1) Dr. Francisco Cruz-Sosa, Metropolitan Autonomous University, Iztapalapa Campus, Av. San Rafael, Atlixco, Mexico.

Reviewers:

(1) Shailja Puri, India.

(2) Wilson Obidah, Modibbo Adama University of Technology, Yola, Nigeria.

(3) K. D. Mini, Mahatma Gandhi University, India.

Complete Peer review History: <http://www.sdiarticle3.com/review-history/49990>

Review Article

**Received 03 May 2019
Accepted 12 July 2019
Published 31 July 2019**

ABSTRACT

The present review determines the potentiality of therapeutic activity of *Trinapanchamool*, a group of five native grasses namely- *kush*, *kaas*, *nala*, *darbha*, *ikshu*; all belonging to family Poaceae which is an important therapeutic formulation widely used in *Ayurveda*. The Grasses are underestimated medicinal repository. A large number of Grasses have been indicated for the treatment of various ailments in classics. Which are least affected by the climatic change and natural calamities. These herbs have been used in social rituals in day today life, meditation purposes and in therapeutics. In spite of environmental changes this group of herbs remain unaffected where as various other herbs have entered in to Red Data Book due to environmental adversity and other exploitation. Herbs under study possess diversified therapeutic potential which is time tested right from the dawn of human civilization. Therapeutic potential of these herbs discussed in ancient Ayurveda classics have been experimentally and clinically verified in modern era. In spite of well established therapeutic potential and easy availability, this group of herbs has least therapeutic application in modern Ayurveda. From

*Corresponding author: E-mail: avi24hr4u@gmail.com;

the study it may be concluded that *Trinapanchamool* is important group of therapeutically potential herbs. There is need towards judicious use of these herbs in therapeutics for the well-being of ailing humanity.

Keywords: *Therapeutic potential; Trinapanchamool; meditation; ayurveda; red data book.*

1. INTRODUCTION

Acharya Charaka has rightly said that there is no substance in the universe which cannot be used as drug on the condition that they are used rationally and with definite objectives [1].

Herbs have been the prime source of therapeutic agents in *Ayurveda*. The Grasses are underestimated medicinal repository. A large number of *Grasses* have been indicated for the treatment of various ailments in classics. Which are least affected by the climatic change and natural calamities. *Trinapanchamool*, a group of five native grasses namely- *kush, kaas, nala, darbha* and *ikshu*; all belonging to family *Poaceae* which is an important therapeutic formulation widely used in *Ayurveda*. It is believed that the first attempt to organize and explain plants was made in the *Vedic Period* (*Oshadhi Sukta* of *Rigveda*). In *Sankhayan grihyasutra*, water with *Kush* has been indicated in *dakshin nasaput* for *Punsavan karma*. *Kush* and *Darbha* are extensively used in Hindu rituals because of their highly protective and conducting properties. *Kush* ring is called as *Pavitram* and used in all *Vedic Karmas*. In *Atharvaveda*, *Darbha* is used to control anger. (AV.10.1.13). and *Jalodar Chikitsa*.^{1/4}*Shayan Bhashya* on *Atharva Veda* 1.1.10. *Nala* has been indicated in *Yakshma Chikitsa*. (A.V. 19/39/2) [2].

During literary study I found that about 91 medicinal grasses have been described in *Brihatrayi* (*Charaka Samhita, Sushrut Samhita* and *Ashtanga Hridaya*) [3]. Among them some are still unidentified and some are controversial. Present study is an attempt to explore therapeutic potential of group of grasses collectively known as *Trinapanchamool* which is a group of five *Trina* (Grass) herbs with root as therapeutically used parts appear for the first time in *Charaka Samhita Rasayana Chikitsa* [4].

In some other references *Trinapanchamool* has been used which slightly modified name. *Acharya Sushrut* has been described *.Kush, Kasa, Nala, Darbh* and *Kandekshiu* as *Trinasangya* [5], *Trinakha* by *Acharya Vagbhata* [6] and *Sharadipanchamool* by *Acharya Charaka* [7].

Bhavamishra [8] has used the following roots of grasses which are used in different combinations for different clinical conditions selecting five in each. These Grasses are *Darbha, Ikshu, Ikshubaalika, Kaas, Kush, Shaali* and *Shar*. *Acharya Vangsen, Bhava Mishra* and *Yogratnakar* have considered five different *Trina Dravya* in *Trinapanchamool* in various references in their same text.

According to the *Bhaishajya Ratnavali Mutrakrichra Rogadhikara* the *Trinapanchamool* can be described in Sanskrit as follows:

*kuśa: kāśa: śaro darbha ikṣuśceti
tṛṇodbhavam |*

*Pittakcchraharam pañcamūlam vasti
viśodhanam ||*

- ❖ On the basis of literary review total number of herbs included in *Trinapanchamool* by different *Ayurveda* texts are nine viz. *Kusha, Kaas, Shar, Darbha, Shali, Ikshu, Nala, Kandekshu* and *Ikshubalika*. (Table 1).

2. LITERARY REVIEW OF Trinapanchamool IN AYURVEDA CLASSICS

2.1 Mutravirechaniya (Diuretic): [9]

- The drugs increasing the flow of urine are called "*Mutravirechaniya*" and are also known as *Bastivishodhan* or *Mutrala*. *Mutra* is *Apyagneya* (predominance of *Jala* and *Agni Mahabhuta*) by nature. So the drugs commencing or increasing urination are also *Sheet (Apya)* and *Ushna (Agneya)*. *Apya Dravyas* increase the water content of urine and obstructing the reabsorption of water in uriniferous tubules enhance the quantity of urine while *Agneya Dravyas* increase blood pressure inside Bowman's capsule (Nephrons) and creating irritation in kidneys increase urination. Grasses possess substances which increase the flow of urine due to 'osmosis'. Due to *Samanya Vishesh Siddhant*, these grasses increase urine formation. *Mutravirechaniya Dravyas* are used in some disease conditions to expel out

the excess water content from the body: In disorders of lung and heart where urination is reduced, these drugs are used, otherwise oedema develops. These drugs are used in loss of urine to expel out the poisonous substances and impurities present in blood. To remove accumulated fluid in body or body parts i.e. in ascites and pleurisy etc. To alleviate the disorder of urine as in pelvic diseases diuretics are used. Example: *Kusha, Kaas, Shar, Darbha* and *Ikshu*. *Trinapanchamoola* has diuretic properties and increases sodium and potassium excretion.

2.2 Ashmari Bhedan (Urinary lithotriptic): [9]

- The drugs breaking calculi accumulated in urinary system are called *Ashmari Bhedana*. Some of the drugs due to sharpness break the calculi; while some being diuretic do not allow its formation (accumulation) which are called *Ashmari-pratishedhan* (Antilithic) i.e. *Kaas, Kusha*. These drugs are used in *Ashmari* to break down and flush out garvels (*Sharkara*) and to stop its recurrence.

Table 1. Herbs described in *Trinapanchamool*

S.N.	Trina herbs	Latin name	Family
1	<i>Darbha</i>	<i>Imperata cylindrica</i> Beauv	Poaceae
2	<i>Ikshu/ Kandekshu/ Ikshubalika</i>	<i>Saccharum officinarum</i> Linn.	Poaceae
3	<i>Kaas</i>	<i>Saccharum spontaneum</i> Linn.	Poaceae
4	<i>Kush</i>	<i>Desmostachya bipinnata</i> Stapf.	Poaceae
5	<i>Shar</i>	<i>Saccharum munja</i> Roxb	Poaceae
6	<i>Nala</i>	<i>Aundo donax</i> Linn.	Poaceae
7	<i>Shali</i>	<i>Oryza sativa</i>	Poaceae

Priya Nighantu by Acharya P. V. Sharma has considered group of five herbs *Kusha, Kaas, Shar, Darbha* and *Ikshumool* as *Trinapanchamool* which have galactagogue and diuretic properties [10]

Table 2. Charaka Samhita (1000 B.C.TO 4TH century A.D.) [11]

S.N.	Therapeutic indications	Forms/Formulations	References
1.	<i>Rasayana</i>	<i>Brahmarasayana</i>	CS.Ci.1.1.42-45
2.	<i>Pittaj Kasa</i> (cough)	<i>Sharadipanchamool Ksheer-paka</i>	CS.Ci.18.100
3.	<i>Daha</i> , (burning), <i>Atisara</i> (diarrhea), <i>Pradar</i> (leucorrhea) and <i>Pittaj</i> diseases.	<i>Chandanadi Niruha Basti</i>	CS.Si.3.48

[CS.-Charaka Samhita, Ci.-Chikitsa sthan, Si.-Siddhi sthana]

Table 3. Sushrut Samhita (1000 B.C.to 5th century A.D.) [12]

S.N.	Therapeutic Indications	Forms/Formulations	References
1.	<i>Raktapitta</i> (Epistaxis) <i>Mutradosh</i> (Urinary disorders)	<i>Trinapanchmool Kwath</i>	SS.Su.38.76-77
2.	<i>Pittashmari Bhedan</i> (calculi)	<i>Trinapanchamool Kwath</i>	SS.Ci.7.9-12
3.	Alleviates <i>Pitta</i>	<i>Trinapanchamool</i>	SS.Su.39.8
4.	<i>Pittaj Mutrakriccha</i> (Dysurea)	<i>Trinapanchamool Ghrita</i>	SS.U.59.20
5.	<i>Pittaj Mutrakriccha</i>	<i>Trinapanchamool Kwath Uttar Basti</i>	SS.U.59.21

(SS.-Sushrut Samhita, Su.-Sutra sthan, Ci.-Chikitsa sthan, U.-Uttar Tantra)

Table 4. Ashtang Hridaya (7th century A.D.) [13]

S.N.	Therapeutic uses	Forms/Formulations	References
1	<i>Raktapitta Chikitsa</i>	<i>Trinakhya Yoga</i>	AH.Su.6.171
2	<i>Trishna</i> and <i>Mutraghat Chikitsa</i>	<i>Darbhaapoorvapanchamool.</i> <i>Darbhaapanchak</i>	AH.Ci.6.62,11.6
3	<i>Pittaj Gulma Bhedan</i>	<i>Trinapanchamool Kwath</i>	AH.Ci.14.62-63
4	<i>Daha, Pradar, Raktapitta, Atisara, Hridayoga</i> (cardiac disease)	<i>Trinapanchamool Kwath Niruh Basti</i>	AH.Ka.4.13-16

(AH.-Ashtanga Hridaya, Su.-Sutra sthan, Ci.-Chikitsa Sthan, Ka.- Kalpa sthan)

Table 5. Chakradatta (11th Century A.D.) [14]

S.N.	Therapeutic uses	Forms/Formulations	References. (Verses)
1	<i>Mutrakriccha Chikitsa</i>	<i>Sukumar Kumar Ghrita</i>	<i>Mutrakriccha 29-34</i>
2	<i>Mutrakriccha, Ashmari Chikitsa</i>	<i>Trikantakadya Ghrita</i>	<i>Mutrakriccha .28</i>
3	<i>Mutrakriccha, Raktamutra (hematurea)</i>	<i>Trinapanchamool Siddha Ksheer (milk preparation)</i>	<i>Mutrakriccha 9; 5</i>
4	<i>Ashmari, Mutrakriccha Chikitsa</i>	<i>Sharpanchamuladi Ghrita</i>	<i>Ashmari 40</i>
5	<i>Mutrakrachha</i>	<i>Trikantakadya Kwath</i>	<i>Mutrakriccha 23</i>

Table 6. Chikitsa saar samgraha by Vangsen (12th Century A.D.) [15]

S.N.	Therapeutic uses	Forms/Formulations	References (Verses)
1	<i>Raktapitta Chikitsa</i>	<i>Trinapanchamool Ksheer</i>	<i>Raktapitta Rogadhikar V.92</i>
2	<i>Shool (pain) Chikitsa</i>	<i>Kushaadya Ghrit</i>	<i>Shool Rogadhikar V.36</i>
3	<i>Ashmari Chikitsa</i>	<i>Kushaadya Ghrit</i>	<i>Ashmari Rogadhikar V.22-25</i>
4	<i>Ashmari, Mutrakriccha, Chikitsa</i>	<i>Kushaadya Tail (Paan, Basti, Abhyang)</i>	<i>Ashmari Rogadhikar V.56-59</i>
5	<i>Shool Chikitsa</i>	<i>Kushaadi mool Siddha Ksheer</i>	<i>Shool Rogadhikar V.35</i>
6	<i>Paittik roga, Raktamutra Mutrakriccha Chikitsa</i>	<i>Trinapanchamool</i>	<i>Mutrakriccha Rogadhikar V.17-18</i>
7	<i>Ashmari, Mutrakriccha</i>	<i>Trikantakadya Ghrita</i>	<i>Mutrakriccha Rogadhikar V.23</i>
8	<i>Mutrakriccha Chikitsa</i>	<i>Trinapanchamool Kwath</i>	<i>Mutrakriccha Rogadhikar V.42</i>
9	<i>Mutrakriccha Chikitsa</i>	<i>Trinapanchamool</i>	<i>Mutrakriccha Rogadhikar V.43</i>
10	<i>Mutrughat Chikitsa</i>	<i>Bhadravaha Ghrit</i>	<i>Mutrughat Rogadhikar V.41-45</i>
11	<i>Mutrakriccha, Katishool Chikitsa</i>	<i>Sukumar Kumarak Punarnavadi Leha</i>	<i>Mutrakriccha Rogadhikar V.49-55</i>
12	<i>Ashmari, Mutrakriccha</i>	<i>Trinapanchamooladya Ghrit</i>	<i>Ashmari-Rogadhikar V.52-54</i>
13	<i>Mutrughat Chikitsa</i>	<i>Vidari Ghrit</i>	<i>Mutrughat Rogadhikar V.46-50</i>
14	<i>Raktapitta Chikitsa</i>	<i>Trinapanchamool siddha Ksheer</i>	<i>Raktapitta Rogadhikar V.91-92</i>
15	<i>Ashmari Chikitsa</i>	<i>Varuna Ghrit</i>	<i>Ashmari Rogadhikar V.79-83</i>
16	<i>Ashmari Chikitsa</i>	<i>Sharadipanchamool Ghrit</i>	<i>Ashmari Rogadhikar V.79-83</i>

Table 7. Classical pharmacological properties of *Trinapanchamool* herbs [16]

S.N.	Trina	Rasa	Guna	Virya	Vipaka	Dosh Karma
1	<i>Darbh</i>	<i>Madhur, Kashaya</i>	<i>Snigdha Laghu</i>	<i>Sheet</i>	<i>Madhur</i>	<i>Tidosh shamak</i>
2	<i>Ikshu</i>	<i>Madhur</i>	<i>Guru, Snigdha</i>	<i>Sheet</i>	<i>Madhur</i>	<i>Vata- Pitta Shamak</i>
3	<i>Kaas</i>	<i>Madhur, Kashaya</i>	<i>Laghu, snigdha</i>	<i>Sheet</i>	<i>Madhur</i>	<i>Vata- Pitta Shamak</i>
4	<i>Kush</i>	<i>Madhur, Kashaya</i>	<i>Snigdha, Laghu</i>	<i>Sheet</i>	<i>Madhur</i>	<i>Tridosh Shamak</i>
5	<i>Nala</i>	<i>Madhur, Kashaya, Tikta</i>	<i>Laghu, Snigdha</i>	<i>Sheet</i>	<i>Madhur</i>	<i>Tridosh Shamak</i>
6	<i>Shar</i>	<i>Madhur, Tikta</i>	<i>Laghu, snigdha</i>	<i>Sheet</i>	<i>Madhur</i>	<i>Tridosh Shamak</i>

Table 8. Classical therapeutic potential of *Trinapanchamool* Herbs [16]

Darbha	<i>Mutrakriccha, Ashmari, Basti shool, Prameha, Mutravikara, Raktatisara, Pravahika, Trishna, Raktapitta, Raktapradar, Stanyakshaya, Daha, Vrana.</i>
Ikshu	<i>Mutrakriccha, Mutraghat, Ashmari, Jwar, Arsha, Shukradaurbalya, Stanyakshaya, Kasa, Shwas, Pratishyay, Kamla, Vibandha, Vatapaittika Roga, Yakshma, Apasmar, Grahani roga, Vatavyadhi, Visarp(Erysipelas).</i>
Kaas	<i>Mutrakriccha, Ashmari, Mutraghat, Urah-Kshat, Raktatisara (bleeding diarrhea), Raktarsh (bleeding piles), Stanyakshaya, Raktapradar, Daha, Arsha, Pravahika (dysentery), Jwar(fever), Gudabhransh (rectal prolapse), Vatavyadhi, Garbhapata Janya Upadrava.</i>
Kush	<i>Mutrakriccha, Mutraghat, Shoth, Raktapradar, Jwar, Visarp, Daha, Paittik Shool, Garbhini Shool, Prameha, Ashmari, Pandu, Arsha, Kamala, Raktapitta, Atisar, Pravahika, Hrida Roga, Apasmar, Vrana, Stanyakshaya.</i>
Nala	<i>Vata-Pitta Visarp, Jwar, Stanyakshaya, Mutraghat, Agnimandya, Ajirna (Indigestion), Visuchika, Shool, Udar Shhol, Krimiroga, Vatarakta, Twak-Roga, Vrana.</i>
Shar	<i>Mutrakriccha, Mutraghat, Raktapitta, Visarp, Pradar, Shukradaurbalya, Netraroga, Arsha, Stanyakshaya, Bastishool, Basti diseases (urinary bladder disorders), Rasayana and Vajikarana.</i>
<i>Trinapanchamoola have diuretic, Ashmari Bhedan (Urinary lithotriptic), Mutravishodhan (Urinary antiseptic) and Stanyajanana (Galactagogue) properties</i>	

Table 9. Phytochemistry of *Trinapanchamool* herbs [3]

Darbha	Crude protein 6.56%; ash value 7.92%; calcium 0.39%; nitrogen 1.05%; and phosphorus 0.22%; rhizomes furnished t: Total sugar 22.5%; reducing sugar 9.20%; and invert sugar 12.45%; Five triterpenoids - cylindrine, Arundoin, Fermentol, Isoarborinol and Semiarenol; Cylindrene and graminone B show inhibitory activity on the contraction of vascular smooth muscles and aorta of rabbit respectively while cylindol A exhibits 5- lipoxygenase inhibitory activity.
Ikshu	Sugarcane juice comprises of 70 - 75% water, 13 - 15% sucrose, and 10 - 15% fiber; chlorogenic acid, cinnamic acid, and flavones; phenolic acids such as hydroxycinnamic acid, Sinapic acid, and Caffeic acid, Asparagine and glutamine are prominent amino acids; Vitamins- thiamine, riboflavin, niacin, panththenic acid, biotin and Vitamin D; emzymes includes disastase, invertase, lactase, peroxidase, tyrosinase.
Kaas	Tannins, saponins, flavonoids, alkaloids, glycosides, steroids, terpenoids, coumarins, phenolic compounds, and carbohydrates, proteins, calcium, phosphorus and hydrocyanic acid; Leaves and stalks contain lignin, carbohydrates, proteins, amino acids, quinones, terpenes, alkaloids, saponins, tannins, steroids and phenolic compounds.
Kush	Crude protein, crude fibre; ether extract and total ash, 9.12%; Coumarins, sugars, amino acids, carbohydrates; flavonoids, glycosides, xanthenes.
Nala	Gremain, Donexeron and Lobelin alkaloids per 100 g, the green roughage is reported to contain on a zero moisture basis, 6.9 g protein, 1.3 g fat, 82.6 g total carbohydrate and 37.5 g fiber. The carbohydrates consisted of: rhamnose 0.15 %, mannose 0.35%, arabinose 2.00%, galactose 0.84%, xylose 33.88%, glucose 62.13 %, 4-O-methyl glucuronic acid 0.65%; The leaves yield sterols and triterpenoids, Bufotenidine; possesses anti acetylcholine properties, histamine release activity and it is a uterine stimulant.
Shar	Cellulose, lignin, pentosons and ash; Cyclotrisiloxane Hexamethyl was observed in highest concentration; Pentotanoic acid, Propanoic acid, 2,6-Pyridinediamine, Cyclotrisiloxane hexamethyl, alkaloids, flavonoids, glycosides, Terpenoids, Saponins, phytosterols, carbohydrates, proteins and tannins.

Table 10. Modern therapeutic potential of *Trinapanchamool* herbs [3]

Darbha	Diuretic and aphrodisiac, indicated in the disease of blood and bladder, dysentery, gonorrhoea, biliousness, asthma, thirst, stranguary, jaundice, vaginal discharges, menorrhagia, vesical calculi, skin eruptions, vomiting, sedative to pregnant uterus.
Ikshu	Antioxidant, Immunotherapeutic effects, Anti-inflammatory, Analgesic, Antipyretic, Hepato-toxic, Diuretic, immunological, Anti-obesity, Anti-malarial.
Kaas	Antioxidant, antipsychotic, antimicrobial, cytotoxic, antiurolithiac, galactogogue, antibacterial; used in treatment of mental disease, abdominal disorders, dyspnoea, anemia, obesity, gynecological troubles, renal and vesical calculi.
Kush	Anti-microbial, Anti-inflammatory, Analgesic, Antipyretic, Hepatoprotective, Antiulcerogenic, Diuretic, Anti-urolithiasis, Anti-oxidant, Anti-diabetic, Immunological, Bronchodilator and Antihistaminic.
Nala	Anti-acetylcholine properties, Histamine release activity, Uterine Stimulant, Antidiabetic, Antifungal, Antibacterial, Deworming, Anti-Proliferative, Galactogogue.
Shar	Antibacterial, Antioxidant; effective in burning sensations, thirst, erysipelas, blood troubles, urinary complaints, eye diseases.

2.3 Mutravishodhan (Urinary anti-septic): [16]

- These herbs make urine clean by alleviating urinary sepsis and bacteria.

2.4 Stanyajanana (Galactogogue): [9]

The sweet essence of *Rasa* produced by digested food and having reached to the breast from the entire body is known as *Stanya* (Breast milk). The drugs producing or enhancing the secretion of *Stanya* are called *Stanyajajan*. *Stanya* is *Aapya* in nature so, *Stanyajana Dravyas* are *Madhur Rasa*, *Madhur Vipak*, *Snigdha Guna*, *Sheet Virya* also *Aapya* and *Kapha* promoting. [1] *Trina* having *Stanyajanana* properties are *Kusha*, *Kaas*, *Darbha*, *Ikshu*.

2.5 Kusha and Darbha are Two Different Herbs: 17]

- According to *Dalhana*, *Kusha* has smaller, softer and pointed leaves while *Darbha* has thicker, longer and scabrid ones.
- According to *Kaiyadeva Nighantu*, *Kusha* is a variety of *Darbha*. *Bhava Prakash* has described *Darbha* and *Kusha* as '*Darbha Dwaya*'. In *Saushrut Nighantu*, *Darbha* and *Kusha* have been described as '*Kusha Dwaya*'. In *Dhanvantari Nighantu* and *Sodhal Nighantu*, *Kusha* has not been described. *Raj Nighantu* has considered *Sita Darbha* and *Harita Darbha* as a type of *Kusha* and *Ashiri* as a variety of *Kaas*. According to *Madanpal Nighantu*, *Darbha* is synonym of *Kusha*.

- Now it has been confirmed that *Kusha* and *Darbha* are separate grasses and the source of *Darbha* is *Imperata cylindrical* Beauv.

3. CONCLUSION

From the study it may be concluded that *Trinapanchamool* is important group of therapeutically potential herbs. These herbs have been used in social rituals in day today life, meditation purposes and in therapeutics. In spite of environmental changes this group of herbs remain unaffected where as various other herbs have entered in to Red Data Book due to environmental adversity and other exploitation. Herbs under study possess diversified therapeutic potential which is time tested right from the dawn of human civilization. Therapeutic potential of these herbs discussed in ancient *Ayurveda* classics have been experimentally and clinically verified in modern era. In spite of well established therapeutic potential and easy availability, this group of herbs has least therapeutic application in modern *Ayurveda*. There is need towards judicious use of these herbs in therapeutics for the well-being of ailing humanity.

CONSENT

It is not applicable.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Shastri Kashi Nath, Chaturvedi Gorakh Nath, (Ed.) Charaka Samhita - Vidyotini Hindi Commentary, Part 1, Chaukhambha Bharati Academy Varanasi, Reprint. 1996; page?
2. Bindu Shubh Shri, Dubey Satya Dev, Vedon Men Osadhiya Sutra (Medicinal Plants in Vedas), Chaukhambha Vishva Bharti, Varanasi, 1st Edition; 2010, page?
3. Pandey Awanish, *Extensive Studies on some Trina Dravya* (M.D. Thesis) awarded by MJPRU, Bareilly; 2018.
4. Shastri Kashi Nath, Chaturvedi Gorakh Nath, (Ed.) Charaka Samhita - Vidyotini Hindi Commentary Part 2, Chaukhambha Bharati Academy Varanasi, Reprint; 2007 page?
5. Shastri Ambika Dutta (Ed.), Sushrut Samhita - Ayurveda Tatvasamdeepika commentary, Part 1, Chaukhambha Sanskrit Sansthan, Varanasi, Reprint. 2011;189.
6. Gupta Atridev (Ed.), *Ashtanga Hridayam-Vidyotini Hindi Commentary*, Chaukhambha Prakashana, Varanasi, Reprint. 2009;88.
7. Shastri Kashi Nath, Chaturvedi Gorakh Nath, (Ed.) Charaka Samhita- Vidyotini Hindi Commentary Part 2, Chaukhambha Bharati Academy Varanasi, Reprint. 2007; 544.
8. Mishra Brahma Shankar. Bhava Prakash Chikitsa, vidyotani hindi commentary, Uttarardha, Chaukhambha Sanskrit Bhavan, Varanasi, Reprint - Vikram Samvat; 2071.
9. Anugrah Narain Singh, Satya deo Dubey,. Basic Concepts of Dravyaguna Vigyana Chaukhambha Visvabharati, First Edition. 2014;305-307,301.
10. Sharma PV, Priya Nighantu, Chaukhambha Subharti Prakashan Varanasi, Edition. 2004;91.
11. Shastri Kashi Nath, Chaturvedi Gorakh Nath, (Ed.) Charaka Samhita- Vidyotini Hindi Commentary Part 2, Chaukhambha Bharati Academy Varanasi, Reprint; 2007.
12. Shastri Ambika Dutta (Ed.), Sushrut Samhita - Ayurveda Tatvasamdeepika commentary, Part 1, Chaukhambha Sanskrit Sansthan, Varanasi, Reprint; 2011 and Shastri Ambika Dutta (Ed.), Sushrut Samhita - Ayurveda Tatvasamdeepika commentary, Part 2, Chaukhambha Sanskrit Sansthan, Varanasi, Reprint; 2012.
13. Gupta Atridev (Ed.), Ashtanga Hridayam - Vidyotini Hindi Commentary, Chaukhambha Prakashana, Varanasi, Reprint; 2009.
14. Tripathi Indra Dev (Ed.), Chakradatta, Vaidya Prabha Hindi Commentry, Chaukhambha Sanskrit Sansthan Varanasi, 1st Edition; 1992.
15. Vaishya Shaligram (Ed.), *Vangasen Samhita*, Chaukhambha Vidya Bhavan, Varanasi, Reprint; 1996.
16. Sharma PV. Dravyaguna Vigyana. Chaukhambha Bharti Academy, Varanasi, year. 2006;2.
17. Chunekar KC. Ph.d Thesis B.H.U. Varanasi 1975; Dubey SD. (1985); Jour. Ind. Mod. Yoga & Homeo.12.3. 1977;116-121.

© 2019 Pandey and Mishra; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Peer-review history:
The peer review history for this paper can be accessed here:
<http://www.sdiarticle3.com/review-history/49990>