

### **Therapeutic Potential of *Trinapanchamool*: Review Study**

#### **Abstract**

The present review determines the potentiality of therapeutic activity of *Trinapanchamool*. 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. 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 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

#### **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.<sup>1</sup>

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. 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*.¼*Shayan Bhashya* on *Atharva Veda* 1.1.10. *Nala* has been indicated in *Yakshma Chikitsa*. (A.V. 19/39/2).<sup>2</sup>

During literary study I found that about 91 medicinal grasses have been described in *Brihatrayi* (*Charaka Samhita*, *Sushrut Samhita* and *Ashtanga Hridaya*).<sup>3</sup> 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*.<sup>4</sup>

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*<sup>5</sup>, *Trinakha* by Acharya Vagbhatta<sup>6</sup> and *Sharadipanchamool* by Acharya Charaka.<sup>7</sup>

*Bhavamishra*<sup>8</sup> 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*, *Ikshubaalikaa*, *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).

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
Table 1. Herbs described in <i>Trinapanchamool</i>			

- ❖ *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.<sup>9</sup>

#### LITERARY REVIEW OF TRINAPANCHAMOOOL IN AYURVEDA CLASSICS:

**Table 2; CHARAKA SAMHITA (1000 B.C.TO 4<sup>TH</sup> CENTURY A.D.)<sup>10</sup>**

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> (diaorrhoea), <i>Pradar</i> (leucorrhoea) and <i>Pittaj diseases</i> .	<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 5<sup>th</sup> Century A.D.)<sup>11</sup>**

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 (7<sup>th</sup> century A.D.):<sup>12</sup>**

S.N.	Therapeutic uses	Forms/Formulations	References
1.	<i>Raktapitta Chikitsa</i>	<i>Trinakhya Yoga</i>	AH.Su.6.171
2.	<i>Trishna and Mutraghat Chikitsa</i>	<i>Darbhaapoorvapanchamool. 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, Hridaroga (cardiac disease)</i>	<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(11<sup>th</sup> Century A.D.):<sup>13</sup>**

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 (hematuria)</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 (12<sup>th</sup> Century A.D.):<sup>14</sup>**

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 8; CLASSICAL PHARMACOLOGICAL PROPERTIES OF TRINAPANCHAMOOL HERBS:**<sup>15</sup>

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>Tridosh 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 9; CLASSICAL THERAPEUTIC POTENTIAL OF TRINAPANCHAMOOL HERBS:**<sup>15</sup>

<b>Darbha</b>	<i>Mutrakriccha, Ashmari, Basti shool, Prameha, Mutravikara, Raktatisara, Pravahika, Trishna, Raktapitta, Raktapradar, Stanyakshaya, Daha, Vrana.</i>
<b>Ikshu</b>	<i>Mutrakriccha, Mutrughat, Ashmari, Jwar, Arsha, Shukradaurbalya, Stanyakshaya, Kasa,</i>

	<i>Shwas, Pratishtyay, Kamla, Vibandha, Vatapaikkita Roga, Yakshma, Apasmar, Grahani roga, Vatavyadhi, Visarp</i> (Erysipelas).
<b>Kaas</b>	<i>Mutrakriccha, Ashmari, Mutraghat, Urah-Kshat, Raktatisara</i> (bleeding diarrhea), <i>Raktarsh</i> (bleeding piles), <i>Stanyakshaya, Raktapradar, Daha, Arsha, Pravahika</i> (dysentery), <i>Jwar</i> (fever), <i>Gudabhransh</i> (rectal prolapse), <i>Vatavyadhi, Garbhapata Janya Upadrava</i>
<b>Kush</b>	<i>Mutrakriccha, Mutraghat, Shoth, Raktapradar, Jwar, Visarp, Daha, Paikk Shool, Garbhini Shool, Prameha, Ashmari, Pandu, Arsha, Kamala, Raktapitta, Atisar, Pravahika, Hrida Roga, Apasmar, Vrana, Stanyakshaya</i>
<b>Nala</b>	<i>Vata-Pitta Visarp, Jwar, Stanyakshaya, Mutraghat, Agnimandya, Ajirna</i> (Indigestion), <i>Visuchika, Shool, Udar Shhol, Krimi-roga, Vatarakta, Twak-Roga, Vrana</i>
<b>Shar</b>	<i>Mutrakriccha, Mutraghat, Raktapitta, Visarp, Pradar, Shukradaurbalya, Netraroga, Arsha, Stanyakshaya, Bastishool, Basti diseases</i> (urinary bladder disorders), <i>Rasayana and Vajikarana</i>

- *Trinapanchamoola* have diuretic, *Ashmari Bhedan* (Urinary lithotriptic), *Mutravishodhan* (Urinary antiseptic) and *Stanyajanana* (Galactogogue) properties.

#### **Mutravirechaniya (Diuretic):<sup>16</sup>**

- 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.

#### **Ashmari Bhedan (Urinary lithotriptic):<sup>16</sup>**

- 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.

#### ***Mutravishodhan* (Urinary antiseptic):<sup>16</sup>**

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

#### ***Stanyajanana* (Galactogogue):<sup>16</sup>**

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 *Apya* in nature so, *Stanyajana Dravyas* are *Madhur Rasa, Madhur Vipak, Snigdha Guna, Sheet Virya* also *Apya* and *Kapha* promoting.<sup>1</sup> *Trina* having *Stanyajanana* properties are *Kusha, Kaas, Darbha, Ikshu*.

**Table 10; PHYTOCHEMISTRY OF TRINAPANCHAMOOL HERBS:<sup>3</sup>**

<i>Darbha</i>	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 triterpinoids - 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.
<i>Ikshu</i>	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; enzymes includes disastase, invertase, lactase, peroxidase, tyrosinase
<i>Kaas</i>	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.
<i>Kush</i>	Crude protein, 6.75, crude fibre, 40.30; ether extract, 1.61 and total ash, 9.12%; Coumarins, sugars, amino acids, carbohydrates; flavonoids, glycosides, xanthene
<i>Nala</i>	Crude protein, 6.75, crude fibre, 40.30; ether extract, 1.61 and total ash, 9.12%; Coumarins, sugars, amino acids, carbohydrates; flavonoids, glycosides, xanthenes

<i>Shar</i>	cellulose, lignin, pentosons and ash; Cyclotrisiloxane Hexamethyl was observed in highest concentration; Pentanoic acid, Propanoic acid, 2,6-Pyridinediamine, Cyclotrisiloxane hexamethyl, alkaloids, flavonoids, glycosides, Terpenoids, Saponins, phytosterols, carbohydrates, proteins and tannins
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**Table 11; MODERN THERAPEUTIC POTENTIAL OF TRINAPANCHAMOOOL HERBS:<sup>3</sup>**

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

***Kusha and Darbha are two different herbs:*<sup>17</sup>**

- 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. .

**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.

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