

Review Article

www.ijrap.net



DANTI (BALIOSPERMUM MONTANUM WILLD.) AND ITS EXTERNAL APPLICATIONS REPORTED IN VARIOUS AYURVEDIC PHARMACOPOEIA: AN EVIDENCE BASED REVIEW

Siba Prasad Rout *1, Shibani Dash 2, Rabinarayan Acharya 3

¹M.D. Scholar, Department of Dravyaguna, IPGT & RA, Gujarat Ayurved University, Jamnagar, Gujarat, India ²M.S. Scholar, Department of Stree Roga and Prasooti tantra, All India Institute of Ayurveda, New Delhi, India ³Professor, Department of Dravyaguna, IPGT & RA, Gujarat Ayurved University, Jamnagar, Gujarat, India

Received on: 11/05/17 Accepted on: 12/06/17

*Corresponding author E-mail: drrout.sibaprasad@gmail.com

DOI: 10.7897/2277-4343.083169

ABSTRACT

Ayurvedic pharmacopoeia describes both external and internal uses of various parts of the *Danti (Baliospermum montanum* Willd.) in multi dosage forms to combat different disease conditions. Single-handed information regarding the exclusive external usage of *Danti* upon various anomalies is not available till now. Hence, an attempt has been made to gather information pertaining to external usage of the drug *Danti* from different classical texts consisting of treatise and compendia. In this study, sixty Ayurvedic pharmacopoeia consisting of treatise and compendia were scrutinized and external applications of *Danti* were compiled and presented in systemic manner. Evidence based researches carried out till date on *Baliospermum montanum* were collected from various research journals and web based search engines. This review depicts that about 132 formulations, containing *Danti* as an ingredient, found to be indicated in almost 28 varied diseased conditions. Among these, *Danti* has been included as major content in 30 formulations. As regards to dosage forms, *Kalka* (paste) counts for 38, followed by *taila* (oil) 36 and *gutika* (tablet) 49. Findings of the present study researchers to revalidate all these evidences scientifically.

Key Words: Danti, External application, Formulation, Palatability, Dosage form.

INTRODUCTION

Ayurveda describes drug as an essential patient management tool in the hand of a physician¹. This tool needs to be handled judiciously, if not done so, it is likely to prove injurious or sometimes lethal to the life of the patient who is receiving it². The information related to drugs and its formulations along with diagnosis and management of disease plays a significant role in treating various ailments. Delineations pertaining to the usefulness of all these drugs as an ingredient of various formulations are evident at various disease contexts in all classical Chikitsa granthas as well as Rasa Shastra granthas. Ayurveda advocates to use these useful formulations in different dosage forms. These versatile dosage forms are intended to increase the shelf life as well as more activeness of the drugs to make it palatable to patients³. External application is one among the frequently used mode of application of these drugs. It conveys about local effect resulting in minimization of overall effect. Danti (Baliospermum montanum Willd. Family Euphorbiaceae) is known as Red Physic Nut⁴. It is one of the most important herb of Ayurveda being used for millennia as a purgative along with its wide-ranging health benefits against various disorders like Arsha (Piles)⁵, Kamala (Jaundice)⁶, Amavata (Rheumatic pain)⁷ etc. Danti has been delineated in various classics as a major as well as minor ingredient of various formulations used in various ailments. Single-handed information on the external application of usage of Danti is not available. Hence, the present article aims to gather information pertaining to external usage of the drug Danti from different classical texts consisting of treatise and compendia

In this review, Information's pertaining to *Danti* as an ingredient of various formulations from 60 classical texts including 30

Chikitsagranthas in alphabatical order like Astanga Hridaya,8 Astanga Samgraha⁹, Bhaisajya Ratnavali¹⁰, Bhava Prakasha¹¹, Bhela Samhita¹², Chakradutta¹³, Charaka Samhita¹⁴, Chikitsa kalika¹⁵, Gada Nigraha¹⁶, Harita Samhita¹⁷, Kashyapa Samhita¹⁸, Raja Martanda¹⁹, Saharshayoga²⁰, Sharangadhara Samhita²¹, Sidha Bhaisajya Manimala²², Sidha Yoga Sangraha²³, Samhita²⁴, chamaktara Sushrut Vaidva Jeevana²⁶. Chintamani²⁵, Vaidya Vaidya Rahashva²⁷, Vangasena²⁸, Vasavarajeeyam²⁹, Vrinda Madhava³⁰, Yoga Chandrika³¹, Yoga Chintamani³², Yoga Ratnakara³³, Vaidya Manorama³⁴, Kakachandiswara Kalpa Tantra³⁵, Vaidya Chintamani³⁶, Sidha Sara Samhita³⁷ and 30 Rasashastra granthas like Abhinava Nava Jivana³⁸, Anandakanda³⁹, Arkaprakasha⁴⁰, Ayurveda Prakasha⁴¹, Bharata Bhaisajya Ratnakara⁴², Rasa Chintamani⁴³, Rasa Dipika⁴⁴, Rasa Hridaya Tantra⁴⁵, Rasa Jalanidhi⁴⁶, Rasa Kamadhenu⁴⁷, Rasa Kaumudi⁴⁸, Rasa Manjari⁴⁹, Rasa Padhati⁵⁰, Rasa Prakasha Sudhakara⁵¹, Rasa Ratna Samuchaya⁵², Rasa Raja Mahodadhi53. Rasa Sanketa kalika⁵⁴, Rasayogasagara⁵⁵, Rasamitra⁵⁶, Rasamrutam⁵⁷, Rasanrava⁵⁸, Rasatantrasara & Sidhayoga⁵⁹, Rasatarangini⁶⁰, Rasayana Sara⁶¹, Rasendra Chintamani⁶², Rasendra Chudamani⁶³, Rasendra Mangala⁶⁴, Rasendra Sambhava⁶⁵, Rasendra Sara Sangraha⁶⁶, Vrihata Rasa Raja Sundara⁶⁷ were critically reviewed. Danti as a single drug or as an ingredient of various formulations with respect to various parts of Danti i.e. root (R), seed (S), fruit (F), bark (Bk), leaf (L) used in those formulations, their dosage forms like kalka (Kl), taila (Tl) and lepa (lp), varti (Vrt), churna (Cr), kwatha (Kw), rasa (Rs), vati (Vt), arka (Ark), ghee (Ghe), nashya (Ns) etc. and its indications in various diseased conditions were compiled vividly. After that, adhikara (systemic indications) wise formulations were categorized and presented exclusively designed tables in accordance. Latest researches encompassing the evidence based ethnobotanical claims as well as experimental studies carried out till date on *Baliospermum montanum* were collected from various research journals and web based search engines and had been discussed in respective contexts.

On keen observation, it is noted that *Danti* has been used in a total of 132 formulations as external applications.

Parts

Various parts of *Danti* i.e. root (R), seed (S), fruit (F), Bark (Bk), leaf (L) have been used in all these formulations. Out of these, root contributes maximum i.e. 125, seed 04, bark 02, fruit 01, and leaf 01. (Table 1 to 12)

Dosage forms

It is observed that *Danti* has been incorporated in total 11 dosage forms. The dosage form of formulations for external applications include *kalka* (Kl) (38), *taila* (Tl) (36) and *lepa* (27) followed by *varti* (Vrt) 09, *churna* (Cr) 08, *kwatha* (Kw) 04, *rasa* (Rs)04, *vati* (Vt) 02, *arka* (Ark) 02, *ghee* (Ghe) 01, *nashya* (Ns)01. (Table 1 to 12)

Indications

Arsha (Hemorrhoids)

Haemorrhoidal disease is the consequence of distal displacement of the anal cushions, which are normal structures with an important role in continence. The causes of hemorrhoidal disease are unknown; constipation and abnormal bowel habit are commonly blamed despite largely contrary evidence. Total 16 formulations have been found to be indicated in the context of arsha. Among these formulations, Danti has been used in the form lepa (05), kalka (05), taila (05), vati (01) in numbers. Among the parts used, root has been evidenced maximum in number and in dosage forms in management of Arsha. (Table 1). Paste made out of Baliospermum montanum root is used in getting relief from piles, jaundice, and fever⁶⁸. Ethno medicinal claims suggests that the oil prepared with the help of seed of Baliospermum montanum and other ingredients like saindhava lavana, kaneera, kalutumba (Momordia dioca) etc. are being used in inflammatory conditions of hemorrhoids among traditional healers of srilanka⁶⁹. Root decoction prepared from Baliospermum montanum is reported to be used extensively in inflammatory conditions of hemorrhoids among tribals of Aurangbad district, Maharastra⁷⁰.

Bhagandara (Fistula-in-ano)

It is one among the ano-rectal disorders, which consists of formation of a fistular tract that makes the condition highly painful. On vivid review, it is revealed that total thirteen formulations, with *Danti* as an ingredient, has been indicated which includes 05 *lepas* (Lp), 04 *tailas* (Tl), 03 *kalkas* (Kl), 01 *kwatha* (Kw). The parts used include root only in particular. (Table 2). Anti-inflammatory, analgesic drugs mainly do management of wound associated with fistula in ano. *Danti* is experimentally proved to possess anti-inflammatory and analgesic property, which decreases the symptoms of hemorrhoids as well as help in reducing the inflammation and pain due to wound⁷¹.

Gandamala (Lymphadenopathy)

The treatment of *Gandamala* peculiarly has external *Lepa* as dosage form and *Danti* root has been used maximum in six formulations. (Table 3). Ethyl extract of *B. montanum* leaf was found to be effective in Phytohaemagglutinin (PHA) induced peripheral blood mononuclear cells (PBMC) cells. The study demonstrates that the ethyl acetate extracts of *B*.

montanum leaves contains effective anti-inflammatory agents, which could ultimately be used as functional material and traditional remedy against any type of inflammation⁷². The Ethanolic extract of root of *Baliospermum montanum* at a dose of 200 mg/kg resulted in 42% inhibition in carrageenan – induce rat paw oedema method and at 400 mg/kg resulted in 58%. Inhibition in carrageenan – induce rat paw oedema in albino rats⁷³. Ethyl extract of leaf of *Baliospermum montanum* is proved experimentally to produce more anti-inflammatory activity in albino rats⁷⁴.

Jwara (Fever)

Six formulations in the treatment context of *Jwara*, mainly include *rasa* (metallic preparations) as dosage forms. *Sannipataanjana Rasa* and *Tridoshaharirasa* contain *Danti* seed as an ingredient. *Garudaagada* rasa 1 & 2 are two formulations where fruit of *Danti* has been used as an ingredient. These two formulations are used for both internal and external purpose. (Table 4)

Kustha (Skin disorders)

Ayurveda considers various skin disorders like *vicharchika*, *pama* etc under a single disease condition namely *kustha*. *Danti* has been mainly indicated in *kustha* (12), among the parts used, *Danti* root has been used maximum in skin disorders in the form of oil (08) and *lepa* (02) followed by *kalka* and *churna* one each. (Table 5) Oil made out of *Baliospermum montanum* Muell. Arg seed is applied externally to have relief from skin diseases⁷⁵. Experimental study revealed that ethanolic extract of leaf of *Baliospermum montanum* Muell. Arg at the dose of 10, 20, and 40 mg/ ml showed significant antibacterial activity but found ineffective against fungal strain used in the study in the mice⁷⁶.

Vrana (Wound)

Wound is an injury, usually involving division of tissue or rupture of the integument or mucous membrane, due to external violence or some mechanical agency rather than disease. A total of 22 formulations possess Danti in treatment of vrana (wounds). The main dosage forms used are oil, lepa and decoction. The use of root of *Danti* is distinctly mentioned in wound healing. It is found that Danti has been used in vrana-11, nadivrana-05, vranashotha-04, nadivrana utsadana 01, vranashodhana 01. (Table 6) Evidence based researches reveals that seed Paste of Baliospermum montanum Muell. Arg are being used externally by Kondarredis tribal community of (A. P) in swelling conditions aroused due to wound⁷⁷. Leaf paste of Baliospermum montanum is also used externally in wound by Jalgaon district tribal community Maharastra⁷⁸. Root paste of Baliospermum montanum Muell. Arg is found to be used externally among tribal of North-Cenral western Ghat India in bone fracture case⁷⁹. The ethanolic and petroleum ether extract of root of Baliospermum montanum Muell. Arg is reported to produce significant wound healing activity but the effect is more pronounced in ethanolic extract treated animal⁸⁰.

Vatavyadhi (Neuro-muscular anomalies)

These include 07 references of *Danti* usage in *vatavyadhi* which includes 5 in the form of oil and 02 in the form of *kalka*. The parts used have *Danti* root. (Table 7) Seed oil and seed poultice externally applied in rheumatic pain and facial paraplegia⁸¹. External use of seed paste of *Baliospermum montanum* is reported to be used in rheumatism case among konda reddish tribes in Andra pradesha⁸². Seed oil of *Baliospermum montanum* is evident to be used externally in rheumatism by tribals belong to East of Sutlej (Calcutta)⁸³. Seed oil is found to be used in pain due to rheumatism among Bhilal tribal (Buldhana)-Maharashtra⁸⁴. Latex of *Baliospermum montanum* is evident to be used externally in body ache and pain in joints among certain

areas of rajastana⁸⁵. Aqueous extract of root of *Baliospermum montanum* at the dose of 25, 50,100mg/ml produced stimulation of chemotactic phagocytic and intracellular killing potency of human neutrophils showing the evidence of immune stimulatory activity⁸⁶.

Vidradhi (Abscess)

Total four formulations were found where *Danti* has been incorporated as an ingredient. Interestingly two formulations were found to possess *Danti* as major ingredient in the dosage form of *lepa* while two contain *Danti* as minor ingredient in the dosage form of *kalka*. (Table 8)

Visha (Poison)

Total 05 formulations have been indicated in the context of *visha* roga. Among these, one formulation is indicated in *Karnikavisha*, one in *Sarvavisha*, one in *mushikavisha*. *Nagadantyadi* ghrita is the only formulations where bark of *Danti* has been used as an ingredient. (Table 9) Aqueous extract of root of *B. montanum* showed remarkable and concentration-dependent free radical scavenging activity comparable to that of

a standard such as ascorbic acid in the studied albino rat models $^{\rm 87}.$

Shalakya disorders (E.N.T)

Danti has been advocated in E.N.T disorders in the form of 13 formulations as an ingredient. Among these, it has been indicated in 03 nasa Rogas, 02 in pratisyaya, 01 in putinashya, 03 in siroroga, 02 in netra, 02 in danta. Among the dosage form, it has been used in arka form i.e. 02, varti 03, kalka-04, taila-02, and nashya-02. (Table 10)

Stree roga (Gynaecological Disorders)

Danti has been found to be useful in *streerogas* too. One formulation is found to be useful in *Yonikandu*, 03 in *yonivyapada*, 02 in *yonishola*, 01 in *Nasthakushuma*. (Table 11)

Other Conditions

Other indications include anaha 01, granthi 02, apachi 01, palitya 01, arvuda 01, grahani 01, gulma 01, vridhi-02, visuchika-01, visharpa 01, varnya 01, vala 01, udara 01, mushikavisha 01, kshudraroga 01, krimi 01, gulma 01, svitra 01. (Table 12)

 Table 1: Danti as an ingredient of various formulations indicated in Arsha (Haemorrhoides)

Yoga (Formulation)	Rogadhikara (Contexts)	Form	Part	I/E	M/m	Reference
Arkadi Lepa-1	Arsha	Lp	R	Е	Mi	35,53
Danti Kalka	Arsha	Kl	R	Е	Mj	17
Dantyadi Lepa	Arsha	Lp	R	Е	Mj	30
Dantyadi Shaka	Arsha	Kl	L	Е	Mj	07
Dantyadi Taila	Arsha	T1	R	Е	Mj	09,21,35
Kashisadya Taila	Arsha	T1	R	Е	Mi	01,02,14,20.21,24,31,35
Katutumbadya Varti	Arsha	Vt	R	Е	Mj	09
Kshyara Sutra	Arsha	Kl	R	Е	Mi	35
Laghu Kashisadi Taila	Arsha	Tl	R	Е	Mi	35
Mahanimbadi Taila	Arsha	T1	R	Е	Mi	05
Nagaradi Kalka	Arsha	Kl	R	Е	Mi	35
Snuhyadi Lepa	Arsha	Lp	R	Е	Mi	22
Souvarchikadya Lepa	Arsha	Lp	R	Е	Mi	09
Swarchikadya Lepa	Arsha	Kl	R	Е	Mi	35
Swarjikadya Lepa	Arsha	Lp	R	Е	Mi	30
Vrihata Kashisyadi Taila	Arsha	T1	R	Е	Mj	03,04,34

Table 2: Danti as an ingredient of various formulations indicated in Bhagandara (Fistula -in-Ano)

Yoga	Rogadhikara	Form	Part	I/E	M/m	Reference
(Formulation)	(Contexts)					
Abhayadi Lepa	Bhagandara	Lp	R	E	Mi	22
Bhagandara Nasana Taila	Bhagandara	Tl	R	E	Mj	30
Bhunagadi Lepa	Bhagandara	Lp	R	E	Mi	03
Dantyadi Lepa	Bhagandara	Lp	R	E	Mj	12
Dantyadi Lepa 3	Bhagandara	Kl	R	E	Mj	35
Jyotismatyadi Lepa	Bhagandara	Kl	R	E	Mi	35
Karaviradi Taila	Bhagandara	Tl	R	E	Mi	03,04,06,09,14,20,,2126,29
Kusthadi Lepa	Bhagandara	Lp	R	E	Mi	06,9,26,29
Rasanjanadi Kalka	Bhagandara	Kl	R	E	Mi	26
Rasanjanadi Lepa	Bhagandara	Lp	R	E	Mi	27
Trivritadi Danti Taila	Bhagandara	Tl	R	E	Mj	17
Vidangadi Yoga	Bhagandara	Kw	R	E	Mi	09
Visyandana Taila	Bhagandara	Tl	R	Е	Mi	22

Table 3: Danti as an ingredient of various formulations indicated in Gandamala (Lymphadenopathy)

Yoga	Rogadhikara	Form	Part	I/E	M/m	Reference
(Formulation)	(Contexts)					
Dantimooladi Lepa	Galaganda	Lp	R	Е	Mj	03,35
Bhallatakadi Lepa	Gandamala	Lp	R	Е	Mi	26,29
Dantyadi Lepa	Gandamala	Lp	R	Е	Mj	20,40,41
Gandamala Lepa	Gandamala	Lp	R	Е	MJ	18
Sarshapadi Lepa	Gandamala	Lp	R	Е	Mi	35
Bhalatakadi Yoga	Gandamala	Kl	R	Е	Mi	18,20

Siba Prasad Rout et al / Int. J. Res. Ayurveda Pharm. 8 (Suppl 3), 2017

Yoga	Rogadhikara	Form	Part	I/E	M/m	Reference
(Formulation)	(Contexts)	FOIII	1 41 1	1/12	191/111	Kelefence
Dantyadi Lepa	Jwara	Lp	R	Е	Mj	35
Garuda Agada Rasa	Jwara	Rs	R	В	Mi	40
Garuda Agada Rasa-2	Jwara	Rs	F	В	Mi	48
Sannipata Anjana Rasa	Jwara	Rs	S	E	Mi	44
Tridoshahari Rasa	Jwara	Rs	S	E	Mi	40,48
Danti Kalka	Sannipata	Kl	R	E	MJ	26

Table 4: Danti as an ingredient of various formulations indicated in Jwara (Fever)

Table 5: Danti as an ingredient of various formulations indicated in Kustha (Skin Disorder)

Yoga	Rogadhikara	Form	Part	I/E	M/m	Reference
(Formulation)	(Contexts)					
Aragwadhadi Sadalepa	Kustha	Kl	R	Е	Mi	16,23
Danti Pradeha	Kustha	Cr	R	Е	Mj	07
Eladi lepa	Kustha	Lp	R	Е	Mi	26
Kanakaksheeri taila	Kustha	T1	R	E	Mi	07
Kusthanashaka Lepa	Kustha	Lp	R	Е	Mi	06
Mahamarichyadi taila	Kustha (Dadru)	Tl	R	E	Mi	04
Marichadi Taila-Dwitiya	Kustha	Tl	R	E	Mi	24
Marichyadi Taila	Kustha	T1	R	Е	Mi	03
Tritiya marichyadya Taila	Kustha (Switra)	T1	R	Е	Mi	21
Vrihata Marichyadi Taila	Kustha	T1	R	Е	Mi	16,23,25,26
KachurakshyasyaTaila	Pama-Kachu	T1	R	Е	Mi	03
Lakshyadi taila	Switra	T1	R	E	Mi	45

Table 6: Danti as an ingredient of various formulations indicated in Vrana (Sinus)									
Yoga	Rogadhikara	Form	Part	I/E	M/m	Reference			
(Formulation)	(Contexts)								
Jatyadi Varti	Nadi Vrana	Vrt	R	Е	Mi	03,06,22,26,35			
Trivrutadi Utsadana	Nadi vrana (Utsadana)	Kl	R	Е	Mi	09			
Chiravilwadi Lepa	Nadivrana	Lp	R	Е	Mi	14,22,35			
Nadivrana nasana Yoga	Nadivrana	Lp	R	Е	Mj	30			
Nadivrana Varti	Nadivrana	Vt	R	Е	Mi	09			
Swarjikadya Taila	Nadivrana	Tl	R	Е	Mi	03,06.16,21,23,35			
Dantimuladi Lepa	Vrana	Lp	R	Е	MJ	20,21,29, 35,52,56			
Dravantyadi Taila	Vrana	Tl	R	Е	Mi	35			
Dusthavranaprasaman Lepa	Vrana	Kl	R	Е	Mi	14			
Karnika Patana	Vrana	Kl	R	E	Mi	02			
Patoladi Lepa	Vrana	Lp	R	E	Mi	45			
Sadyovrana Chikitsa	Vrana	Kl	R	Е	Mi	09			
Shodhana Lepa	Vrana	Kl	R	Е	Mi	02			
Trivrutadi Taila	Vrana	Tl	R	Е	Mi	02			
Trivrutadi Varti	Vrana	Vrt	R	E	М	35			
Vranadarana Yoga	Vrana	Kl	R	Е	М	30			
Vranashodhanakaraka Yoga	Vrana	Cr	R	E	Mi	01			
Abhayadi Vartika	Vrana (Shodhana)	Vrt	R	Е	Mi	06			
Dantyadi Darana	Vranashotha	Kl	R	Е	Mj	26			
Nimba Patradi Darana	Vranashotha	Lp	R	Е	Mi	26			
Vranashodhanakara Lepa	Vranashotha	Kl	R	Е	Mi	06			
Vranashothe Darana Yoga	Vranashotha	Kl	R	Е	Mi	06			

Table 7: Danti as an ingredient of various formulations indicated in Vatavyadhi (Neuromuscular Disorder)

Yoga (Formulation)	Rogadhikara (Contexts)	Form	Part	I/E	M/m	Reference
Aswagandhadi Utsadana	Urusthamba	Kl	R	Е	Mi	07
Rasna Udvartana Yoga	Urusthamba	Kl	R	Е	Mi	05
Dwipanachamuladya Taila	Urusthmbha	Tl	R	Е	Mi	04,05
Narayana Taila	Prashutivata	Tl	R	Е	Mi	26
Dashamolla Marchyadaya Taila	Vatavyadhi	Tl	R	В	Mi	23,16
Mahalaxminarayana Taila	Vatavyyadhi	Tl	R	Е	Mi	26
Saindhavadya Taila	Amavata	Tl	R	Е	Mi	03

Table 8: Danti as an ingredient of various formulations indicated in Vidradhi (Abscess)

Yoga	Rogadhikara	Form	Part	I/E	M/m	Reference
(Formulation)	(Contexts)					
Dantyadi Lepa 1	Vidradhi	Kl	R	Е	Mj	35
Kaphaja vidradhi chikitsa	Vidradhi	Tl	R	Е	Mi	01
Kulathadi Taila	Kaphaja vidradhi	Tl	R	Е	Mi	17
Dantyadi Lepa 2	Vidradhi	Kl	S	Е	Mj	35

Siba Prasad Rout et al / Int. J. Res. Ayurveda Pharm. 8 (Suppl 3), 2017

Yoga (Formulation)	Rogadhikara (Contexts)	Form	Part	I/E	M/m	Reference
Karnikanashaka yoga	Visha	Kl	R	Е	Mi	07
Karnikapatana Vidhi	Visha (Karnika)	Cr	R	Е	Mi	01
Kshyara-agada	Visha (Sarva)	Cr	R	В	Mi	17
Nagadantyadi Ghreet	Visha	Gh	R,Bk	Е	Mi	07
Lavanadi Yoga	Visha Roga	Cr	R	В	Mi	35
Karnika Patana	Mushika Visha	Kl	R	Е	Mi	02

Table 9: Danti as an ingredient of various formulations indicated in Visha (Poisonous condition)

Table 10: Danti as an ingredient of various formulations indicated in Shalakya disorders (E.N.T)

Yoga (Formulation)	Rogadhikara (Contexts)	Form	Part	I/E	M/m	Reference
Dhupa vartika	Pratishyaya	Vrt	R	Е	Mi	07
Nashika Rogahara Yoga	Nasa	Ark	R	Е	Mi	33
Darvyadi Dhumavarti	Pratishyaya	Kl	R	Е	Mi	03
Darvyadi Varti	Pratishyaya	Vrt	R	Е	Mi	26
Dhupa Varti	Nasa Roga	Vrt	R	Е	Mi	06
Shigruwadi Taila	Putinashya	Tl	Se	Е	Mi	26
Valahwadi Taila	Netra roga	Tl	R	Е	Mi	21
Tambuladi Yoga	Netra (Netra kopa)	Kl	R	Е	Mi	09,35
Kriminasaka Nasya	Siroroga	Ns	R	Е	Mi	01
Twagadi Taila	Siroroga	Kl;	R	Е	Mi	07
Vyosadi Nashya	Siroroga	Kl	R	Е	Mi	20
Dantarogahara Arka	Danta	Ark	R	Е	Mj	33
Dantyadi Churna	Danta	Cr	R	Е	Mj	35

Table 11: <i>Danti</i> a	Table 11: Danti as an ingredient of various formulations indicated in Streeroga (Gynaecological Disorder)								
Yoga	Rogadhikara	Form	Part	I/E	M/m	Reference			
(Formulation)	(Contexts)								
Hayamaradi Taila	Yoni Kandu	Tl	R	Е	Mi	03			
Ikswaku vijadi Vartika	Yoni Vyapada	Vrt	R	E	Mi	06			
Yoni Dharana	Yoni Vyapada	Vrt	R	E	Mi	26			
Yoni Parisechana	Yoni Vyapada	Kw	R	E	Mi	03			
Yonisoola Chikitsa	Yonishoola	Kw	R	E	Mi	01			
Guduchyadi Kalka	Yonishoola	Kl	R	E	Mi	07			
Yonirogahara Yoga	Guhya Roga	Kw	R	E	Mi	24			
Kinwadi Varti	Stree Roga (Nasthakushuma)	Vrt	R	E	Mi	31,35			

Table 12: Other Conditions								
Yoga (Formulation)	Rogadhikara (Contexts)	Form	Part	I/E	M/m	Reference		
Dantyadi Varti	Anaha	Cr	R	Е	Mj	35		
Souvarchaladya Kalka	Apachi	Kl	R	Е	Mi	02		
Katambhyadi Taila	Apasmara	Tl	R	Е	Mi	07		
Arbudahara Lepa	Arbuda	Lp	R	Е	Mi	13		
Snuhyadi Lepa	Grahani	Lp	R	Е	Mi	32,35		
Dantyadi Kalka	Granthi	Kl	R	Е	Mj	02		
Dantyadi Lepa	Granthi	Lp	R	Е	Mj	06,18		
Yoni Pichu	Gulma	Kl	R	Е	Mi	24		
Danti Dhooma	Kaphaja Kasa	Kl	R	Е	Mj	35		
Yukapatana Yoga	Krimi (Yuka)	Kl	R	Е	Mi	26		
Chitrakadi Taila	Kshudra Roga (Kesha- Dadru)	Tl	R	Е	Mi	03,06,16,21,23		
Danti Taila	Udara (Dushya)	Tl	R	В	Mj	07		
Twagadi Taila	Vala Roga	Tl	R	Е	Mi	34,35		
Avasadana	Varnya	Kl	R	Е	Mi	02		
Dantyadi Lepa	Visharpa	Lp	RBk	Е	Mj	07		
Danti Kalka	Visuchika	Kl	R	Е	Mj	21		
Saindhavadi Taila	Vridhi	Tl	R	Е	Mi	03,16,23		
Vrihata Saindhavadi Taila	Vridhi	Tl	R	Е	Mi	06		
Palitahara Churna	Palitya	Cr	R	Е	Mi	31		

Abbreviations	
Lp	Lepa
Kl	Kalka
Tl	Taila
KW	Kwatha
Vt	Vati
Cr	Churna
Rs	Rasa
Vrt	Varti
Gh	Ghreet
Ark	Arka
Ari	Aristha
Asv	Asava
Gu	Gutika
Md	Modaka
Gu	Guda
Gt	Gutika
Bhs	Bhasma
Ksh	Kshara
Avl	Avaleha
Md	Modaka
Ggl	Guggula
NS	Nasya
Agd	Agada
Mi	Minor
Mj	Major
Е	External use.
Sura	Sura
Vst	Vasti
Kse	Ksheera
R	Root
F	Fruit
S	Seed
Bk	Bark
L	Leaf
L	Leal

Abbreviations

CONCLUSION

Recent article portrays that Danti and its various parts are used as an ingredient in 132 formulations and is indicated in almost 28 disease conditions. Root has been used in maximum (125) formulations as an official part. Kalka(38), taila(36), lepa (27) has been recommended as major dosage form. Recent evidence based studies validates some of the classical therapeutic claims of external application of Danti. Validation of many formulations are yet to be scientifically explored in detail. This article may enlighten the aspects of classical information regarding the indications of external usage of Danti and inspire for more thorough extensive research to revalidate all the classical claims.

REFERENCES

- 1. Charaka. Charaka Samhita. Pt. Rajeswara Datta Shastri, Editor.Chaukhambha Bharati Academy, Varanasi,Reprinted 2011. Sutrasthana 09/03, pg no-191.
- 2. Charaka. Charaka Samhita. Pt. Rajeswara Datta Shastri, Editor.Chaukhambha Bharati Academy, Varanasi,Reprinted 2011. Sutrasthana 01/127-128, pg no-49.
- 3. Charaka Samhita. Ayurveda Deepika commentary by Chakrapani Datta: Chaukhamba Sanskrit Sansthan, Varanasi, India. 1994. Sutra sthana 04/07, pg no-66.
- 4. Gupta A, Gupta V, Goyal A, Kak A, Pandey C. Standardization of the tetrazolium test in Baliospermum montanum (Willd.) Muell.-Arg. Seed Science and Technology. 2010 Jul 1; 38(2):513-6.
- 5. Tripathi YC, Prabhu VV, Pal RS, Mishra RN. Medicinal plants of Rajasthan in Indian system of medicine. Ancient Science of life. 1996 Jan; 15(3):190.

- 6. Singh PB, Aswal BS. Medicinal plants of Himachal Pradesh used in Indian pharmaceutical industry. BMEBR. 1992, 13 (3-4): 172. 208.
- 7. Gopakumar K, Yoganarasimhan SN, Nair KV, Murthy KR, Shantha TR, Vijayalakshmi B. Plants used in Ayurveda from Chikmagalur district, Karnataka. J. Econ. Taxon. Bot. 1989; 13:367-75.
- 8. Vaghbhatt. Astanga Hridaya. Atrideva Gupta. Editor. Chaukhambha Prakashan, Varanasi, Rerprint 2012
- 9. Vaghbhatt. Astanga Sangraha. Atrideva Gupta. Editor. Vol. I & II, Chaukhamba Krishnadas Academy, Varanasi; Printed 2005.
- 10. Govindadasa. Bhaishajya Ratnavali. Ambikadatta Shashtri. Editor. Chaukhamba Prakashan, Varanasi; Reprinted 2011.
- 11. Bhavamishra. Bhavaprakasha Samhita. Bhramhashanankar Mishra Shashrina. Editor. Chaukhamba Sanskrit Bhawan, Varanasi; 2013.
- 12. Maharshi Bhela, BhelaSamhita. Prof.Priya vrat Sharma .Editor, Chaukhamba Visvaabharati, Varanasi, 2006.
- 13. Indradeva Tripathi. Editor. Chakradatta. Chaukhamba Sanskrit Bhawan, Varanasi: 2014.
- 14. Charaka. Charaka Samhita. Pt. Rajeswara Datta Shastri, Editor. Sutrasthana 26/12, Chaukhambha Bharati Academy, Varanasi, Reprinted 2011.
- 15. Tistacharya. Chikitsa kalika. Dr. Shri Vishal Tripathi. Editor.Chaukhamba Orientalia, Varanasi; 1st Edition 2000.
- 16. Shodhala. Gadanigraha. Indradeva Tripathi. Editor. Vol. I, II & III. Chaukhamba Sanskrit Sanstana, Varanasi; Edition 2012
- 17. Harihar Prasad Tripathi. Editor. Harita Samhita. Chaukhamba Krishnadas Academy, Varanasi; 2009.
- 18. Kashyapa. Kashyapa Samhita. P.V. Tewari. Editor. Chaukhamba Vishwabharti, Varanasi; 2008.
- 19. Bhojraja. Rajamartanada. Prof. Siddhi Nandana Mishrra. Editor.Chaukhamba Orientalia, Varanasi; 2009.
- 20. Dr.K.Nishteswar & Dr. R. Vidyanath. Sahasrayogam. Chowkhamba Krishnadas Academy, Varanasi; 2006
- 21. Sharandhara. SharandharaSamhita. Dr. Smt. Shailaja Srivastava. Editor. Chaukhamba Orientalia, Varanasi; Edition 2013.
- 22. Bhatta Siddhabheshaja Krishnarama. Manimala. Chaukhamba Krishndas Academy, Varanasi; 2008.
- 23. Vaidya Yadavji trikamji Sidha yoga samgraha, Vaidya Ramanarayana sharma editor shree vaidyanatha Ayurveda bhavana limited, Newdelhi:2013
- 24. Sushruta. Sushrutasamhita. Kaviraj Ambika Dutta Shashtri. Editor. Vol I & II, Chaukhambha Sanskrit Sansthan, Varanasi, Reprint 2012.
- 25. Lolimbaraja. Chamatkara Chintamani. Nirmal Saxena.Editor. Krishnadas Academy, Varanasi; 2001
- 26. Lolimbaraja. Vaidyajivan. Krishnaji Vishnu Joshi Vaidya, Prakashaka yageswara Gopal Dixit. Editor. Pune; 1930
- 27. Vidyapati. Vaidya Rahasya. Tripathi Indradeo. Editor.1st edition. Chaukhambha Krishnadas Academy, Varanasi; 2000
- 28. Vangasen. Vangasena. Pt. Harihar Prashada Tripathi. Editor, Chaukhambha KrishnaDas Academy, Varanasi; Edition 2009.
- 29. VasavarajaBasavaraja. Basavaraiivam. Pandeva Dnyaendra.editor. 1st edition. Chaukhambha Krishnadas Academy, Varanasi; 2010.
- 30. Tiwari P. Editor. Vrindhamadhav. Chaukhamba Vishwabharti, Varanasi; 2007.
- 31. Shri Laxmana Pandit Yoga Chandrika Tiwari P. Editor.Chaukhamba Vishwabharti, Varanasi; 2003.
- 32. Harsha kirti. Yogachintamani. First edition. Khemaraj Shrikrishnadas Prakashan, Mumbai; 2003

- 33. Shashtri Laxmipati. *Yogratnakara*. Bhrahmasankar Shashtri. Editor. Chaukhamba Prakashana, Varanasi; 2013.
- 34. Kalidasa. *Vaidyamanorama*, Dr. S. Sharma. Editor. Chaukhambha Orientallia, Delhi; 2012.
- 35. *Kakachandiswara Kalpa Tantra* Dr.C.P Pandey. Editor. Chaukhambha Orientallia, Varanasi; 2003.
- Vallabhacharya. Vaidya Chintamani. Sharma Ramnivas. Editor. First edition. Chaukhambha Sanskrit Pratishthana, Delhi; 2013.
- Ravi Gupta Sidhasarasamhita Acharya Balakrishna editor. Divyaprakasha Patanjali yogapitha, Haridwara; 2014.
- Mishra Siddhinandana. Editor. Abhinava Navajeevaniyama. Chaukhamba Orentalia, Varanasi; 2000.
- 39. Bhairavakta *Anandakanda*. Mishra Siddhinanda. Editor. Chaukhamba orientalia, Varanasi; 2008.
- 40. Lankapati Ravan. *Arkaprakasha*. Tripathi Indradev. Editor. Chaukhamba Krishnadas Academy, Varanasi; 2011.
- 41. Madhava. Ayurveda Prakasha, Mishra Gulrajasharma. Editor. Chaukhamba Bharati Academy, Varanasi; 2007.
- Shah Naginadasa Chhaganlal. Bharat Bhaishajya Ratnakar. Vol I to Vol V. First edition B. Jain Publishers, New Delhi; 1999.
- 43. Anantadev Suri. *Rasachintamani*. Mishra Siddhinanda. Editor. Chaukhamba Orientalia, Varanasi; 1990.
- 44. *Rasa Dipika*, Vajpayee Rameshwar Dayal. First edition. Chaukhamba Krishnadas Academy, Varanasi; 2003.
- Bhagvatpada Govinda. Rasa Hridaya Tantra, Rameshwar Daydlu Vajpayee. Editor. Krishnadas Academy, Varanasi; 1998.
- 46. *RasaJalaNidhi*. Bhudeb Mookerjee.Vol. 1,2,3,4& 5. Chaukhambha Publishers. Varanasi; 1999.
- Mishra Chudamani. Rasa Kamadhenu. Mishra Gulrajasharma. Editor. Chaukhamba Oriental, Varanasi; 1999.
- 48. Sharma Dnyanachandra. Rasa Kaumudi. Sharma Pavani Prasad. Editor. Sampadaka bhishajaratna Shri Bhramashankar Mitra, Chaukhamba Bharati Academy, Varanasi, 2003.
- 49. *Rasamanjiri*, Mukundaram NP. Editor. Chaukhamba Sanskrita Pratishtana, Delhi; 2004.
- Bindu. Rasapaddhati. Dr. Siddhinandan Mishra. Editor. Chaukhambha Orientalia, Varanasi; 1987
- 51. Yashodhara. *Rasa Prakasha Sudhakara*. Mishra Siddhinanda. Editor. Chaukhamba oriental Varanasi; 2013.
- 52. Vaghabhata. *Rasaratnasammuchaya*. Kapidev Giri. Editor. Chaukhambha Sanskrit Sansthan, Varanasi; 2012.
- 53. Dasa Bhagwana. *Rasaraj Mahodadhi*. Khemaraja Shri Krishna Dasa Academy. Mumbai; 2012.
- Kayasta Chamunda. Rasa Sanketa Kalika. Shastri Satyanarayan Pammi, Chaukhamba Krishnadas Academy; 2005.
- 55. Sharma Hariprapanna. *Rasayogasagara*. Vol. I & II, Chaukhamba Krishnadas Academy, Varanasi, I; 2010.
- 56. Sharma Trayambaknath. *Rasamitra*. Chaukhamba Sanskrita series, Varanasi; 2001.
- 57. Acharya Jadavji trikamji. *Rasmritama*. Joshi damodar. Editor. First edition. Chaukhmabha Sanskrit bhavan, Varanasi; 1998
- 58. Tripathi Indradeva. Editor. *Rasarnava Nama Rasatantra*. Chaukhamba Sanskrit series, Varanasi; 2012.
- 59. *Rasatantrasara* Kapidev Giri. Editor. Chaukhambha Sanskrit Sansthan, Varanasi; 2012.
- Mishra Sadanand. *Rasatarangini*. Shastri Kashinath.editor. 11th edition. Motilala banarasidas, Delhi; 2009.
- Vaishya shamsundaracharya. *Rasayanasara*. Vol I & II. First edition. Chaukhambha Krishnadas academy, Varanasi; 2005.

- Dhundhukanatha. Rasendrachintamani. Mishra Siddhinanda. Editor. Chaukhhamba oriental, Varanasi; 2011.
- 63. Somadeva. *Rasendrachudamani*. Bajpai RD. Editor. Chaukhamba Krishnadas Academy, Varanasi; 2004.
- Nagarjuna. Rasendramangala. Sharma HS. Editor. Chaukhamba Oriental, Varanasi; 2003.
- 65. Dwivedi Vishwanath. *Rasendra Sambhava*. First edition, Krishnadas Academy, Varanasi; 1997
- 66. Rasendrasara Sangraha. Mishra Siddhinandan. Editor. Chaukhamba Oriental, Varanasi; 2010
- 67. Chaubhe Dattaram. *Brihat Rasaraja sunadara*. Third edition. Chaukhambha orientalia prakashan, Varanasi; 2000.
- Of AA, Alloxan CP, Rats ID. International Journal of Ayurvedic and Herbal Medicine 2: 5 (2012) 766: 670.
- 69. Weerasekera KR, Ediriweera S, Vidyashekera C. An Ethno medical Survey on the Traditional Medicines and Methods Using for the Treatment of Arshas (Hemorrhoids) in Sri Lanka. International Journal of Ayurvedic Medicine. 2013 Sep 13;4(3).
- 70. Mali PY, Bhadane VV. Ethno-medicinal wisdom of tribals of Aurangabad district (MS), India. Constipation
- 71. Weerasuriya WR, Ranasinghe DN, Kharel P, Shakya S, Ikuobase E, Magalhães JF, Cortinhas AJ, Leitão JC, Martins-Bessa BE, Bala M, Kumar D. Perfonnance analysis of system call intensive software application execution on server processor architectures: Opteron and xeon. In 2nd International Conference on Emerging Trends in Engineering and Technology (IETET) 2011.
- 72. Mali PY, Bhadane VV. Ethno-medicinal wisdom of tribals of Aurangabad district (MS), India.
- 73. Ibidem 73.
- 74. Gayathri R, Therese KL, Deepa P, Mangai S, Madhavan HN. Antibiotic susceptibility pattern of rapidly growing mycobacteria. Journal of postgraduate medicine. 2010 Apr 1; 56 (2):76.
- 75. Of AA, Alloxan CP, Rats ID. International Journal of Ayurvedic and Herbal Medicine 2: 5 (2012) 766: 670
- 76. Mahajan SG, Mali RG, Mehta AA. Anti-anaphylactic and anti-inflammatory activity of hydroalcoholic extract of leaves of Moringa oleifera. Planta Indica. 2006; 2:9-13.
- 77. Reddy KN, Reddy CS, Raju VS. Ethnomedicinal observations among the Kondareddis of Khammam District, Andhra Pradesh, India. Ethnobotanical leaflets. 2008 Oct 1;2008(1):124.
- Chopda MZ, Mahajan RT. Wound healing plants of Jalgaon district of Maharashtra state, India. Ethnobotanical Leaflets. 2009;2009(1):1.
- 79. Prasad AD, Shyma TB, Raghavendra MP. Plants used by the tribes for the treatment of digestive system disorders in Wayanad district, Kerala. Journal of Applied Pharmaceutical Science. 2013 Aug 1; 3(8):171.
- 80. Mali PY, Bhadane VV. Ethno-medicinal wisdom of tribals of Aurangabad district (MS), India
- 81. Of AA, Alloxan CP, Rats ID. International Journal of Ayurvedic and Herbal Medicine 2: 5 (2012) 766: 670
- 82. Reddy KN, Subbaraju GV. Ethnobotanic medicine for rheumatic diseases from Eastern Ghats of Andhra Pradesh. Recent Trends in Plant Sciences. 2005:128.
- Watt G. Economic Products of India Exhibited in the Economic Court, Calcutta International Exhibition, L883-84: Medicinal products. Superintendent of Government Print.; 1883.
- Korpenwar AN. Ethnomedicinal plants used by bhilala tribals in buldhana district (MS). DAV International Journal of Science. 2012; 1:60-5.
- http://herbs.indianmedicinalplants.info/, 2015.(last accessed 18/01/2017)

- Mukherjee K, Ray LN. Screening of some Indian plant species, IntJ Crude Drug Res 1980; 18:77-82
- Kumar SS, Mishra SH. Hepatoprotective activity of Baliospermum montanum (willd) Muell.-Arg. in rats treated with carbon tetrachloride: In vivo and in vitro studies. Pharmacognosy Magazine. 2009 Jul 1; 5 (19):196.

Cite this article as:

Siba Prasad Rout *et al.* Danti (*Baliospermum montanum* Willd.) and its external applications reported in various Ayurvedic pharmacopoeia: An evidence based Review. Int. J. Res. Ayurveda Pharm. 2017;8(Suppl 3):52-59 http://dx.doi.org/10.7897/2277-4343.083169

Source of support: Nil, Conflict of interest: None Declared

Disclaimer: IJRAP is solely owned by Moksha Publishing House - A non-profit publishing house, dedicated to publish quality research, while every effort has been taken to verify the accuracy of the content published in our Journal. IJRAP cannot accept any responsibility or liability for the site content and articles published. The views expressed in articles by our contributing authors are not necessarily those of IJRAP editor or editorial board members.