



**A CRITICAL REVIEW ON *DANTI (BALIOSPERMUM MONTANUM WILLD.)* WITH
SPECIAL REFERENCE TO AYURVEDIC *NIGHANTUS (LEXICONS.)***

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ABSTRACT

Plants have been stayed as an incredible source of medicines from the dawn of civilization. In today's era, the whole world is emphasizing upon the evidence-based researches. Nighantus, the Ayurveda lexicons, not only help enormously to know the meanings of cryptic names of medicinal plants but also describes their pharmacological properties, actions, and indications. Danti botanically identified as *Baliospermum montanum* Willd is a well-known medicinal plant, envisages to possess numerous medicinal properties. Informations pertaining to the drug Danti is also well depicted in all classical Nighantus. However, a single hand information regarding Danti, its properties and actions is not available. Hence, the present paper highlights the gathered evidences of Danti from available 24 nighantus. The study reveals that, about 78 synonyms were used to describe the botanical characters as well as its pharmacological properties like; leaves of this plant is sinuately toothed; Danti, leaves look like the leaves of *Ficus hispida* (Linn.); *Udumbaraparni*, roots are similar to the tusk's of elephant in colour and shape; Danti, flowers contain nectar gland (stipular gland); *Madhupuspa*, fruits are similar to those of castor with mottled seed; *Chitra*, *Upachitra*. It is being attributed with 7 *chikitsa upayogi* (useful in treatment) properties like *deepana* (appeizers), *pachana* (digestive), *virechana* (purgative), *bhedana* (emollient laxative) etc. It is also found that Danti has been indicated in 19 clinical conditions like *udara* (abdominal disorder), *kustha* (skin-disorders), *arsha* (piles), *krimi* (worm infestations) etc. Findings of this review may enrich to documentary research as well as act as an evidence-based information concerning Danti and its usages with reference to Ayurvedic Nighantus (lexicon).

KEYWORDS: *Baliospermum montanum*, Danti, Evidence, Nighantu, Nikumbha.

INTRODUCTION

Nighantus (Ayurvedic lexicons) have been remained as a great source of knowledge and information since time immemorial. The history of *Nighantu* literatures is as old as Ayurveda. The term *Nighantu* is derived from the word *nigama*, which literally means that *nigama*, is to bring out the concealed meaning of the terms denoting different synonyms of the vegetable kingdom. Highlighting the importance of *Nighantu*, various authors have quoted that a physician entering into practice without any knowledge on *Nighantus* is similar to a Pandit (literarian) argueing without knowledge of grammar or a warrior in war without prior practice with weapon.^[1] Meticulous review through all the *Nighantus* clearly envisages this fact that the evolution of all *Nighantus* occurred systematically with advancement of time and they are the source of literature where the

synonyms, properties, and actions of drugs have been described vividly.^[2] *Danti* has been botanically identified as *Baliospermum montanum* (Willd.) Muell.-Arg. belongs to family Euphorbiaceae, an erect herb - under shrub with perennial rootstock running horizontally and sending out new shoots is found throughout India from Kashmir eastwards to Arunachal Pradesh, upto an elevation of 1000 m and southwards into peninsular India, ascending to an altitude of 1000 m in the hills of Kerala.^[3] Etymological derivation of drug *Danti* reflects that it destroys diseases like piles and skin disease, so termed as *Danti*.^[4] It is well known drug available throughout India with various vernacular names like *Dantika* (Malayalam), *Hakun* (Bengali), *Ratana jot* (Gujurati), *Kondaamudamu* (Konkani), *Phelijelang* (Assami) etc.^[5] *Danti* has been explored phytochemically by various researchers and found to possess number of chemical constituents like montanin (C32H48O8 yield,

0.018%), baliospermin (0.003%), 12-deoxyphorbol-13-palmitate (0.021%), 12-deoxy-16-hydroxyphorbol-13-palmitate (0.001%), glycosides, terpenoids etc.^[6] *Nighantus* have attributed *Danti* with numerous *pariyaya* (synonyms), *guna karmas* (properties and actions), *prayoga* (indications) etc. However, a single-handed exclusive information pertaining to delineations regarding *Danti*, its synonyms, properties and its action on various ailments with special reference to *Nighantus* (lexicons) is unavailable, hence an attempt has been made to compile a comprehensive information on various aspects of classical drug *Danti* from available *Nighantus* (lexicon).

MATERIALS AND METHODS

Twenty four *Nighantus* available in the library of Gujarat Ayurved University and online source of E-nighantu (Available from: <http://www.nimh.nic.in/ebooks/e-Nighantu>) namely *Ashtanganighantu*,^[7] *Paryayaratnamala*,^[8] *Madanadi nighantu*,^[9] *Dhanvantari nighantu*,^[10] *Shabdachandrika*,^[11] *Shodhala nighantu*,^[12] *Abhidhanaratnamala*,^[13] *Nighantushesha*,^[14] *Siddhamantra nighantu*,^[15] *Madhava Dravyaguna*,^[16] *Hridaya Deepaka nighantu*,^[17] *Madanapala nighantu*,^[18] *Kaiyadeva nighantu*,^[19] *Raja nighantu*,^[20] *Rajavallabha Nighantu*,^[21] *Bhavprakasha nighantu*,^[22] *Saraswati nighantu*,^[23] *Shalligrama nighantu*,^[24] *Priya nighantu*,^[25] *Abhidhanamanjari*,^[26] *Amarakosha*,^[27] *Nighantuadarsha*,^[28] *Saushruta nighantu*,^[29] *Siva kosha*^[30] have been scrutinized chapter by chapter by the authors. The delineations pertaining to *Danti*, its synonyms, properties, actions, and indications on various diseased conditions have been compiled vividly and obtained informations have been presented in a precise tabular format in systematic manner. Standard dictionaries were referred for the interpretation of classical ayurvedic terminologies for their probable English equivalent terms.^[31,32] The probable English equivalent technical terminologies were prepared referring API.^[33]

RESULTS AND DISCUSSION

Synonyms

In *Ayurveda*, traditionally various names known as *Paryaya* (synonyms) have been attributed to a single plant to describe its morphological as well as pharmacological characters and these can be traced in various texts known as *Nighantus*, *Kosha* and *Samhitas*.^[34] It is observed that about 78 synonyms have been depicted to describe the properties of *Danti*. On critical analysis of synonyms attributed to drug *Danti*, it can be summarized that the plant whose leaves having a sinuate toothed margin (*Danti*); leaves of whose look like the leaves of *Ficus hispida* (Linn.) (*Udumbaraparni*); roots of whose similar to the tusk's of elephant in colour and shape (*Danti*); flowers of whose contain nectar gland (*Madhupuspa*); fruits of whose are comparable to those of castor (*Erandaphala*); fruits with mottled seed (*Chitra*, *Upachitra*); useful as drastic

purgative (*nikumbha*) is considered as *Danti*. All the above described botanical as well as pharmacological characters matches with the plant *Baliospermum montanum* Willd. of the family Euphorbiaceae. The detailed lists of interpretations of these synonyms of *Danti* have been enumerated in Table.1.

Table 1: Important synonyms with its interpretation.

Synonyms	Interpretations
Pharmacognostical comparison	
Root	
<i>Danti</i>	The roots are like those of elephant's tusks in their colour and shape.
Leaf	
<i>Udumbaraparni</i> , <i>Udumbaradala</i>	Leaves look like leaves of <i>Ficus hispida</i> . (Linn.)
<i>Erandapatrika</i>	The lowest leaves are similar to those of <i>Ricinus communis</i> (Linn.)
Flower	
<i>Madhupuspa</i>	Flowers contain nectar gland
Fruit	
<i>Erandaphala</i>	Fruits are similar to those of castor with mottled seed.
<i>Nikumbha</i>	Its fruit is similar to a pot
Seed	
<i>Upachitra</i> , <i>Chitra</i>	Seeds are mottled
Based on Karma (Pharmacological property)	
<i>Danti</i>	It destroys the <i>arsha</i> (piles) and <i>kustha</i> (skin diseases)
<i>Nikumbha</i>	It clears the bowl
<i>Vishalya</i>	It expels out bowl in <i>vadhagudodara</i> .
Based on Actions	
<i>Vishodhini</i>	The roots are being used as purgative
<i>Makulaka</i>	It is used to enhance the beauties of body by destroying all skin disorders like <i>kandu</i> (itching) , <i>kustha</i> (obstinate skin disorder) etc.
Others	
<i>Ghunapriya</i>	Its roots are favorites to insects
<i>Shambara</i>	It is considered as wholesome.

Classifications

Plants have been classified into various sections by *nighantus* basing on their morphological, pharmacological, and therapeutic properties. The signature and simile is perceived while going through these classifications certifying the scientific approach of *nighantus* behind this classification. Among these, in one system of the classification, the section has been named after one of its important plant present like *Guduchyadi varga*, *Haritakyadi varga*, *Amalakyadi varga* etc. About 29 *vargas* (sections) are there under which the properties, actions and indications of *Danti* have been found to be described in *nighantus*. Among these *vargas*(sections), *nikumbhadi varga* was found to be maximum i.e. 5, followed by *guduchyadivarga* (04) and *shyamadigana*

(03). The *varga* “*nikumbhadi varga*” has been named after “*nikumbha*” (one of the most frequently used synonym of *Danti*) indicating the occupied importance of *Danti* in *nighantus*. Based on its action, *Danti* has been placed under *shyamadigana* indicating its *recana* and

adhobhagahara properties as the combined effect of *shyamadigana* is reported as *adhobhagahara*.^[35] The details of classifications have been enumerated in Table.2.

Table 2: Classification of *Danti* under different *vargas* (sections) of *nighantus* (lexicons).

Sl. No.	Varga (Classifications/ sections)	References
Based on first drug		
1.	<i>Nikumbhadi varga</i> ,	10,12,19,26,28,
2.	<i>Guḍuchyadi varga</i>	10,12,22,24
3.	<i>Amalakyadi varga</i>	08,28
4.	<i>Abhayadi varga</i>	18
5.	<i>Madanadigaṇa varga</i> ,	26
6.	<i>Pippalyadi varga</i>	20
7.	<i>Shatapuspadī varga</i>	25
8.	<i>Simhadi varga</i>	20
Based on Dosha Karma		
9.	<i>Kaphapittaghna varga</i>	17
10.	<i>Kapha-vataghna varga</i>	15
Based on Rasa (Taste)		
11.	<i>Kaṭuskanda</i>	13
Based on Guna(characters)		
12.	<i>Guṇasamgraha (dvitiyabhaga)</i>	12
Based on Karma (Actions)		
13.	<i>Shyamadigaṇa</i>	07,26,29
Based on Part used		
14.	<i>Phaladi varga</i>	18
Based on Habit		
15.	<i>Gulmakanda</i>	14
Based on Numbers		
16.	<i>Prathama gaṇa</i>	09
17.	<i>Saptartha varga</i>	20
18.	<i>Tatrih – tryaksharamtantra</i>	30
19.	<i>Dvitiyagaṇa</i>	09
20.	<i>Anekarthanamaganasamgraha (dvyarthakavarga)</i>	20
Based on Use		
21.	<i>Vanouṣadhi varga</i>	27
22.	<i>Vividhaauṣadhi varga</i>	16
23.	<i>Auṣadhi varga</i>	19,21
Based on use as Drava varga		
24.	<i>Paniyadi varga</i>	18
25.	<i>Taila varga</i>	16
Miscellaneous		
26.	<i>Vrikshadi varga</i>	11
27.	<i>Suvarnadi varga</i>	10
28.	<i>Ulpa varga</i>	23
29.	<i>Mishra prakaraṇa</i>	22

Rasadipanchaka of *Danti* (Ayurvedic Pharmacodynamic properties)

Danti has been attributed with *katu-tikta rasa*, *tikshna-sara-vikashi guna*, *ushnavirya*, *katuvipaka* and *Kaphavata nasana* property. Almost all *nighantus* have the same opinion for it. *Bhavaparakasha nighantu* and *Kaiyadeva nighantu* have exclusively attributed *Danti* with the properties of *vikashi-tikshna*. *Kaiyadeva nighantu* is the first *nighantu*, which has claimed *Danti*

to possess *Vikashiguna*. Among all these properties, *Vikashi guna* is the most contributing factor for which *Danti* has been considered to produce deleterious effect inside body.^[36] *Acharya Charaka* has recommended a specific pharmaceutical procedure to reduce this *vikashi* property of *Danti* root.^[37] The detailed inference regarding the ayurvedic pharmacodynamics of drug *Danti* has been presented in Table-3.

Table 3: Rasadipanchaka of Danti as reported in various Nighantus (lexicons).

Sl. No	List of Nighantus	Rasa	Guna	Virya	Vipaka	Dosha Karma
01	Paryayaratnamala	Katu	Tikshna, Guru	Ushna	Katu	Kapha-vata nasana
04	Dhanwantari nighantu	Katu	Tikshna	Ushna	Katu	Kapha-vata nasana
05	Shabdachandrika					
06	Shodhala nighantu	Katu	Tikshna, Sara	Ushna	Katu	Kapha-vata nasana
07	Siddhamantra nighantu	--	-	-	-	Kapha-vata nasana Kaphapitta nasana
08	Madanapala nighantu	Katu	Tikshna	Ushna	Katu	Pitta-rakta-kapaha nasana
09	Kaiyadeva nighantu	Katu	Vikashi, Sara, Laghu, Tikshna	Ushna	Katu	Kaphapitta nasana
10	Raja nighantu	Katu		Ushna	Katu	-
11	Bhavaprakasha nighantu	Katu	Vikashi, Tikshna	Ushna	Katu	Pitta- rakta nasana
12	Priya nighantu	Katu	Tikshna	Ushna	Katu	Kapha-pitta nasana

Karma (Actions or indications of drug Danti)

It is observed that *Danti* has been indicated in 19 varied diseased conditions and has been attributed with 07cikitsaupayogi karmas like *deepana* (appetizers), *virecana* (purgative), *pacana* (digestive) etc. *Kaiyadevanighantu* has reckoned *Danti* in maximum

diseased conditions i.e 10 followed by *Bhavaprakasha nighantu*(10) and *Dhanvantari nighantu*(07). The detailed *chikitsaupayogi karmas* (useful in treatment) along with the indications of *Danti* in various diseased conditions have been enlisted in Table -4.

Table 4: Ayurvedic Karmas (Pharmacodynamic) of Danti as described in Nighantus.

Sl. No	Actions	References
1.	<i>Deepana</i> (Appetizers)	09,10,19,20
2.	<i>Pachana</i> (Digestive)	19
3.	<i>Sramsani</i> (Bulk purgative)	26
4.	<i>Sruthavinmutra</i> (Laxative)	22
5.	<i>Virecana</i> (Purgative)	09,10,22,24
6.	<i>Adhobhagahara</i> (Cathartics)	10,12,20.
7.	<i>Bhedana</i> (Emolient laxative)	13
Indications		
1.	<i>Adhmana</i> (Tympanitis)	21
2.	<i>Anaha</i> (Obstruction of bowel and urine)	09
3.	<i>Arsha</i> (Piles)	10,12, 19,20,22
4.	<i>Ashmari</i> (Calculi)	10,19,20,22
5.	<i>Asthila</i> (BPH)	21
6.	<i>Dadru</i> (Tinea infections)	24
7.	<i>GaraVisha</i> (Artificial poison)	22
8.	<i>Gulma</i> (Tumour)	19,21
9.	<i>Kandu</i> (Itching)	12,19,22,24
10.	<i>Krimi</i> (Worm infestation)	10,12,17,18,19,22,24
11.	<i>Kustha</i> (Obstinate skin diseases)	10,20,22,24
12.	<i>Pama</i> (Scabies)	12,24
13.	<i>Pleeha</i> (Splenomegaly)	09,19
14.	<i>Shoola</i> (Colicky Pain)	09,10,19,20,22
15.	<i>Shopha</i> (Inflammation)	12,18,19,22,25
16.	<i>Udara</i> (Abdominal disorder)	09,10,18,19,22,21,25
17.	<i>Vrana</i> (Wound)	10,20
18.	<i>Kamala</i> (Jaundice)	09,18
19.	<i>Vidaha</i> (Burning sensation)	19,22

CONCLUSION

Danti is one of the potent and useful drug in Ayurveda pharmacopoeia. Based on the synonyms depicted in *nighantus* (lexicons), it can be proclaimed that the plant whose leaf possess a serrated margin, look like the leaf of

Ficus hispida Linn, roots of whose are quite similar to the tusk's of elephant in colour and shape, fruits of whose are comparable to those of castor with mottled seed, plant useful in piles, skin diseases can be used as identifying characteristic features for *Danti*

(*Baliospermum montanum* Willd.). Ayurvedic pharmacodynamics of *Danti* unveils that it possesses *ushna*, *tikshna* property, as well as *kaphavata samana* property. This work also reveals that *Danti* has been attributed with 07 *chikitsaupayogikarmas* like *deepana* (appeizers), *pachana* (digestive), *virechana* (purgative), *bhedana* (emollient laxative) etc. ascribed by all *Nighantus* and has been delineated in 19 varied clinical conditions like *udara* (abdominal disorder), *kustha* (skin disorders), *arsha* (piles), *krimi* (worm infestations) etc. This review also justifies its validation as documentary proofs with its delineation pertaining to all its synonyms, ayurvedic pharmacodynamics and its usefulness in various clinical conditions with reference to all *Nighantus* (lexicons). Hence, this review may steer as a direction to further scientific research to explore all the pharmacological properties of *Danti* delineated in these *Nighantus* (lexicons) and may be referred as a document based research for further researches.

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CONFLICT OF INTEREST

The author declares no conflict of interest.

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