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Insight on *Tinduka* - A Classical Medicinal Plant

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ABSTRACT

Background: Drug research is the growing trend in the present era which enhances the importance of thorough knowledge of the information of drug through literary sources. The details of drug are in scattered form in the literatures. Hence there is the need to compile that information in systematic way to draw a proper conclusion of any drug. *Tinduka* is one such classically mentioned medicinal herbal drug. To know and understand the appropriate therapeutic usage in various ailments an attempt was made to collect information from various literatures for better utility of this drug in present society. **Methodology:** The literary review was carried out by collecting the relevant matter from Vedas, Samhitas, and Nighantus and recent day relevant textbooks, journals. **Results:** *Tinduka* is botanically considered as *Diospyros malabarica* (Desr.) Kostel by majority of recent standard reference books, is belonging to Ebenaceae family. It is explained under *kashayaskandha*, *udardaprashamanadashemani*, *sarasavayoni*, *phalavarga* etc. 39 synonyms are mentioned in the literatures. *Guna-karma* is described in general as well as for *pakwa* and *apakwaphala*. The drug is having *kashaya*, *tikta*, *madhurarasa*, *sheetavirya*. It is also used in the preparation of many formulations. **Conclusion:** *Tinduka* is mainly used in management of diarrhoea, wound and ulcers. The current review certainly encourages further study on this drug in different perspective and thus helps in better utility in future treatment.

KEYWORDS

Tinduka, Ayurveda, *Diospyros malabarica*, *Udardaprashamana*



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INTRODUCTION

All over the world, herbal drug research strategies are increasing day by day due to increased demand on herbal drug based medicine. Therapeutic utility of around 1700 herbal drugs are described in the Ayurvedic literature. Most of the research works on these drugs are already carried out and some studies are in progress and some are yet to be done to prove the information mentioned by our ancestors in classics and also invent new information of old drug as well as new drugs. Gathering details of the drug from all possible available sources is the need of present era before initiating any new studies on that particular drug, to have approximate idea of its different method of usage in various situations, mode of action and to avoid repetition of already proven study. *Tinduka* is one such classically mentioned medicinal herbal drug, thus to know and understand the appropriate therapeutic usage in various ailments there is need to collect information from various literatures for better utility of this drug in present society. Hence this initiative step is taken up for review of literary information on the drug *Tinduka*.

MATERIALS AND METHODS

The information of the drug *Tinduka* was collected by referring samhitas like

Bruhatrayis and Laghutrayis. The properties and action of the drugs were compiled from nighantus such as Dhanvantari nighantu, Bhavaprakasha nighantu, Raja nighantu, Nighantu Adarsha, Kaiyadeva nighantu, Shodala nighantu etc. Recent books are referred for considering the botanical identity of *Tinduka*.

RESULTS

Tinduka is mentioned in classics since from Vedic period. In Purana, Ramayana, Buddhism, Jainism it is told that this is a fruit bearing tree which is edible^{1,2,3}. As per Vishnu Dharmasutra, usage of *Tinduka* is contraindicated as toothbrush². Reference of *Tinduka* is available in all samhita except madhava nidana. Word *Tinduka* is also a synonym of one *karsha*⁴. Classical category in which *Tinduka* is mentioned is tabulated in Table.1. In various nighantu, synonyms of *Tinduka* along with *guna-karma* in general as well as *guna-karma* of unripe and ripe fruit are explained. On tracing various literatures, 39 synonyms were found for the drug *Tinduka*. These synonyms are as tabulated in Table.2. Among these, 8 synonyms are related to its bark morphology such as *kaalaskandha*, *shitisaraka*, *nilasara*, *kalasara*,



krishnatwak, krishnasara, asitakaraka and anilasara.

Table 1 Classical categorization of *Tinduka*

TEXT (with abbreviation)	GANNA/ VARGA
Charaka samhitha (C.S)	<i>Udardaprashamana Dashemani¹ Phalavarga⁴ Kashayaskandha⁵</i>
Susruta samhitha (S.S)	<i>Nyagrodadi gana.² Phalavarga⁵</i>
Astanga Sangraha (A.S)	<i>Udardaprashamana gana.³ Kashayaskandha dravya.⁴</i>
Dhanvantari Nighantu (D.N)	<i>Amradi varga¹</i>
Raja Nighantu (R.N)	<i>Amradi Varga</i>
Kaiyadeva Nighantu (K.N)	<i>Oshadhi varga</i>
Shodala Nighantu (So.N)	<i>Amradi varga</i>
Madanapala Nighantu (M.N)	<i>Phaladi Varga</i>
Bhavaprakasha Nighantu (BP.N)	<i>Amradiphala varga</i>
Shaligrama Nighantu (Sh.N)	<i>Phalavarga</i>
Nighantu Adarsha (Ni.A)	<i>Tindukadi varga</i>
Saraswati Nighantu (Sa.Ni)	<i>Mahavrikshadi varga</i>
Madhava Dravyaguna (M.D)	<i>Phalavarga</i>
Priya Nighantu (P.N)	<i>Haritakyadi varga</i>
Sadrasa Nighantu (Sad.Ni.)	<i>Kashaya Skandha</i>
Amarakosha (A.K)	<i>Vanaushadhi varga</i>

The derivation of some of synonyms such as *kalaskandha, Tinduka, kshitisaraka, sphurjaka* is as follows⁵:

- कालस्कन्धः - कालस्कन्धोयस्यसः।-Its branches and stem are dark brown coloured.
- तिन्दुकः - तिम्ब्यति आर्द्राभवति इति तिन्दुकः। 'तिम्ब्यति तिम् आर्द्रत्वे'। - It contains

Table2 Synonyms of *Tinduka*

more moisture or it produces moisture or it grows in moist area (wet lands).

- शितिसारकः- शितिः कालः सारो मज्जाऽस्येति शितिसारकः। शितिसारोवा। -Its inner part is black coloured.

- स्फूर्जकः- स्फूर्जति इति। स्फूर्जा वज्रनिर्घोषे। - It makes a roar like clouds and jumps into cure diseases like *prameha*.

The *rasapanchaka* of *Tinduka* in general is tabulated in Table.3.The *rasapanchaka* of *amaphala* of *Tinduka* is tabulated in Table.4.The *rasapanchaka* of *Pakwaphala* of *Tinduka* is tabulated in Table.5.*Doshaghnatha* of *Tinduka* is tabulated in Table.6.The general *karma* of *Tinduka* is tabulated in Table.7. The *karma* of *amaphala* of *Tinduka* is tabulated in Table.8. The *karma* of *pakwaphala* of *Tinduka* is tabulated in Table.9. *Amayika prayoga* of *Tinduka* are tabulated in Table.10. Bark, leaves, flowers, fruits, seed, seed oil are the useful part⁶.

Tinduka is indicated in diseases such as *Udara, Kushta, Twagvikara, Visphota, Granthi, Sadyavrana, Kshata, Mukhapaka, Raktapradara, Shwetapradara, Garbhashayashotha, Upajhivikashotha, Atisara, Pravahika, Agnidagdha, Karnasrava, Balakajahikka, Vishamajwara, Shukrameha, Prameha,*



SI NO	SYNONYMS	A.K	SKD	D.N	R.N	K.N	So.N	M.N	BPN	Sh.N	Ni.A	Sa.Ni	Sad. Ni
1	<i>Tinduka</i>	+	+	+	+	-	+	+	+	+	+	+	-
2	<i>Nilasara</i>	-	+	+	+	-	+	-	-	-	-	-	-
3	<i>Kalaskandha</i>	+	+	+	+	+	+	-	+	+	+	+	+
4	<i>Atimuktaka</i>	-	+	+	+	-	+	-	-	+	-	-	-
5	<i>Sphurjaka</i>	+	+	+	+	-	+	-	+	+	+	+	-
6	<i>Ramana</i>	-	+	-	+	-	-	-	-	-	-	-	-
7	<i>Sphurjana</i>	-	+	+	+	+	+	-	-	+	-	-	-
8	<i>Syandana</i>	-	-	-	+	-	-	-	-	+	-	-	-
9	<i>Tushta</i>	-	-	-	-	-	+	-	-	-	-	-	-
10	<i>Spandana</i>	-	-	-	-	+	+	+	-	-	-	-	-
11	<i>Ravana</i>	-	-	-	-	+	+	+	-	+	-	-	-
12	<i>Rava</i>	-	-	-	-	-	+	-	-	+	-	-	-
13	<i>Kalasarā</i>	-	+	-	-	+	-	+	-	-	-	-	-
14	<i>Tanuka</i>	-	-	-	-	+	-	-	-	-	-	-	-
15	<i>Dirghanakhi</i>	-	-	-	-	+	-	-	-	-	-	-	-
16	<i>Spandita</i>	-	-	-	-	+	-	-	-	-	-	-	-
17	<i>Sphurja</i>	-	-	-	-	+	-	-	-	-	-	-	-
18	<i>Vara</i>	-	-	-	-	+	-	-	-	-	-	-	-
19	<i>Visphurjani</i>	-	-	-	-	+	-	-	-	-	-	-	+
20	<i>Vikarāni</i>	-	-	-	-	+	-	-	-	-	-	-	+
21	<i>Tinduki</i>	-	-	-	-	+	-	-	-	-	-	-	+
22	<i>Virala</i>	-	-	-	-	+	-	-	-	-	-	-	-
23	<i>Krishnatwak</i>	-	-	-	-	-	+	-	-	+	-	-	-
24	<i>Madhura</i>	-	-	-	-	-	+	-	-	-	-	-	-
25	<i>Grahi</i>	-	-	-	-	-	+	-	-	-	-	-	-
26	<i>Krishnasara</i>	-	-	-	-	-	+	-	-	+	-	-	-
27	<i>Virupaka</i>	-	-	-	-	-	+	-	-	+	-	-	-
28	<i>Sphurjya</i>	-	-	-	-	-	-	+	-	-	-	-	-
29	<i>Asitakaraka</i>	-	-	-	-	-	-	-	+	-	-	-	-
30	<i>Anilasara</i>	-	-	-	-	-	-	-	-	+	-	-	-
31	<i>Srushta</i>	-	-	-	-	-	-	-	-	+	-	-	-
32	<i>Susara</i>	-	-	-	-	-	-	-	-	+	-	-	-
33	<i>Shitisaaraka</i>	+	+	-	-	-	-	-	-	-	+	+	-
34	<i>Kendu</i>	-	+	-	-	-	-	-	-	-	-	-	-
35	<i>Tindu</i>	-	+	-	-	-	-	-	-	-	-	-	-
36	<i>Tindula</i>	-	+	-	-	-	-	-	-	-	-	-	-
37	<i>Tindooki</i>	-	+	-	-	-	-	-	-	-	-	-	-
38	<i>Tindookee</i>	-	+	-	-	-	-	-	-	-	-	-	-
39	<i>Syandanahvaya</i>	-	+	-	-	-	-	-	-	-	-	-	-

Table 3 General Rasapanchaka of *Tinduka*

BOOK	RASA	GUNA	VEERYA	VIPAKA
Charaka Samhitha	Kashaya, Madhura	Laghu	-	-
Raja Nighantu	<i>Kashaya</i>	-	-	-
Kaiyadeva Nighantu	<i>Tuvara, Tikta</i>	<i>Snigdha, Ushna</i>	-	-
Shaligrama Nighantu	<i>Tuvara, Tikta</i>	<i>Snigdha, Ushna, Guru</i>	-	-
Nighantu Ratnakara	<i>Tuvara, Tikta</i>	<i>Snigdha, Ushna</i>	-	<i>Madhura</i>
Nighantu Adarsha	<i>Kashaya, Madhura</i>	-	<i>Shita</i>	<i>Katu</i>
Madhava Dravyaguna	<i>Kashaya, Madhura</i>	<i>Guru</i>	-	-

Table 4 Rasapanchaka of *Amaphala of Tinduka*

BOOK	RASA	GUNA	VEERYA	VIPAKA
Sushruta	<i>Kashaya</i>	-	-	-
Dhanvantari Nighantu	<i>Kashaya</i>	-	-	-



Kaiyadeva Nighantu	<i>Svadhu, Kashaya</i>	<i>Laghu</i>	-	-
Shodala Nighantu	<i>Kashaya</i>	-	-	-
Madanapala Nighantu	-	<i>shitala, laghu</i>	-	-
Bhavaprakasha Nighantu	-	<i>Shitala, Laghu</i>	-	-
Shaligrama Nighantu	<i>Kashaya</i>	<i>Snigdha, Laghu, Sheeta, Ruksha</i>	-	-
Nighantu Ratnakara	<i>Kashaya, Tikta</i>	<i>Sheeta, Ruksha, Laghu</i>	-	<i>Swadhu</i>
Madhava Dravyaguna	-	<i>Shitala, Laghu</i>	-	-
Priya Nighantu	-	<i>Shitala, Laghu</i>	-	-

Table 5 *Rasapanchaka of PakwaphalaofTinduka*

BOOK	RASA	GUNA	VEERYA	VIPAKA
Sushruthasambhitha	Madhura	Guru	-	-
DhanvantariNighantu	<i>Madhura</i>	-	-	<i>Guru</i>
Raja Nighantu	<i>Madhura</i>	<i>Guru, Snigdha</i>	-	-
KaiyadevaNighantu	<i>Swadhu</i>	<i>Guru, shitala, Ruksha</i>	-	<i>Swadhu</i>
ShodalaNighantu	<i>Kashaya, Madhura</i>	<i>Shitala, Guru, Ruksha</i>	-	-
MadanapalaNighantu	-	<i>Vishada, Guru</i>	-	-
BhavaprakashaNighantu	<i>Madhura</i>	<i>Guru</i>	-	-
ShaligramaNighantu	<i>Madhura</i>	<i>Guru, Samsnigdha</i>	-	<i>Madhura</i>
NighantuRatnakara	<i>Swadhu</i>	<i>Guru, Snigdha</i>	-	<i>Madhu</i>
MadhavaDravyaguna	-	<i>Vishada, Guru</i>	-	-
PriyaNighantu	<i>Madhura</i>	<i>Guru</i>	-	-

Table 6 *Doshaghnaof Tinduka*

BOOK	General	AMA PHALA	PAKWA PHALA
C.S	Kaphapittaghna	-	-
S.S	-	Vatakopana	Kaphapittajit
D.N	-	Vatakopana	Kaphapittajit
R.N	<i>Vatakrit</i>	-	<i>Shleshmala</i>
K.N	<i>Vataha</i>	-	<i>Vatakrit, Balasapittaghna</i>
So.N	-	Vatakopana	<i>KaphapittaghnaVatakopahrit</i>
M.N	<i>Vataghna</i>	<i>Vatala</i>	<i>Pittashleshmaghna</i>
BPN	-	<i>Vatala</i>	<i>Pittashleshmaghna</i>
Sh.N	<i>Vataha</i>	<i>Vatakrit</i>	<i>Pittaghna, Vatanashana</i>
N.R	<i>Vatahara</i>	<i>Vatakrit</i>	<i>Kaphakrit, Pittaghna, Vatanashaka</i>
Ni.A	<i>Kaphapittahara</i>	-	-
M.D	<i>Vataghna, Pittakaphapaha</i>	<i>Vaatala</i>	<i>Pittashleshmaghna</i>
P.N	-	<i>Vatala</i>	<i>pitta shlemaghna</i>

Table 7 *General Karma of Tinduka:*

KARMA	R.N	K.N	M.N	Sh.N	N.R	M.D
<i>Sangrahi</i>	+	-	-	+		
<i>Vranahavranaghna / Vranahara</i>	-	+	+	+	+	+
<i>pittarogaghna (itskastasara)</i>	-	-	+	-	+	-
<i>Durjaro</i>	-	-	-	+	-	-
<i>Jihvajaadyakari</i>	-	-	-	+	-	-
<i>Jado</i>	-	-	-	+	-	-



Svitarogajit (its sara)	-	-	-	-	-	-	-	-	-	-	+
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Table 8 Karma of Amaphalaof Tinduka

KARMA	S.S	D.N	K.N	So.N	M.N	BPN	Sh.N	N.R	M.D	P.N
Sangrahi	+	+	-	-	-	-	+	-	-	-
Lekhana	-	-	+	-	-	-	+	+	-	-
Grahi	-	-	-	+	+	+	-	+	+	+
Vibandha	-	-	-	-	-	-	+	-	-	-
Aruchi	-	-	-	-	-	-	+	+	-	-
Malasthambha	-	-	-	-	-	-	-	+	-	-

Table 9 Karma of pakwaphalaof Tinduka

KARMA	R.N	K.N	So.N	M.N	BPN	Sh.N	N.R	M.D	P.N
Durjara	+	-	-	-	-	+	+	-	-
Sangrahi	-	+	-	-	-	-	-	-	-
Vibandhakrit	-	+	-	-	-	-	-	-	-
Aruchikrit	-	+	-	-	-	-	-	-	-
Lekhana	-	-	+	-	-	-	-	-	-
Sthambhana	-	-	+	-	-	-	-	-	-
Vibandhaadhmanajanam	-	-	+	-	-	-	-	-	-
Asthimarmadi lekha	-	-	+	-	-	-	-	-	-
Pramehaghna Pramehahara Mehaghna	-	-	-	+	+	+	+	+	+
Asraghna	-	-	-	+	+	+	+	+	+
AsraVikaranashaka Raktavikaranashana	-	-	-	-	-	+	-	-	-
Ashmaghna	-	-	-	-	-	-	+	-	-
RukNashana	-	-	-	-	-	-	-	+	-

Table 10 AmayikaPrayogaof Tinduka

Diseases	Form of usage
Yoniroga chikitsa	Taila prepared from Dhataki, Amalaki, Tinduka etc, is used as Yoni pichu, basti(enema) and yoni prakshalana (vaginal douche) which is effective in condition such as Picchila Sravini Yoni (Slimy discharge), Viplutha and Upaplutha associated with Utthana, Chonnatha, Shuna (vaginal swelling), Sasphota (eruptions) & Shulini (pain)
Sadyovrana treatment	Oil prepared from fruits of Tinduka along with other drugs such as samanga, rajani, padma etc is used.
Treatment of Shonitameha	Decoction of Guduchi, Tinduka (Seeds) kashmarya and kharjura – all mixed with honey.
Treatment of hastimeha	Decoction of Tinduka , Kapittha, Shirisha, Palasa, Patha, Murva and Duralabha sweetened with honey
Shukadosa/ Guhyaroga namely Kumbhika chikitsa	After cleaning, the wound is made to heal using oil prepared with Triphala, lodhra, Tinduka and amrataka.
Shukadosa/ Guhyaroga namely Avamantha	After cleaning the wound is anointed with oil cooked with Dhava, asvakarna, pattanga, sallaki and Tinduka.
Karnasrava chikitsa	Karnapurana is done using Tinduka, Abhaya, Rodhra, Samanga and amalaka mixed with honey and Kapittha rasa.
Treatment of Revathi graham	Sarpi prepared by Dhava, asvakarna, kakubha, dhataki and tinduki and Kakolyadhigana should be used for drinking.
Amatisara treatment	Formulation prepared from barks of Aralu, Tinduka, Dadima, kutaja and shami.
Shleshmaja Artavadushti	Yoni prakshalana is advised with decoction of Lodhra and Tinduka.
Ksheeralasaka treatment	Mother is given with decoction of leaves of jambu, amra, Tinduka, kapittha



<i>Sandhisitaasitaroga</i> namely <i>Shuddha shukra chikitsa</i>	<i>Anjana</i> prepared with <i>Samudraphena</i> , <i>Sankha</i> , <i>Kharpara</i> , bone of parrot, hairs of <i>khara</i> (ass), <i>naga</i> (elephant), <i>aswa</i> (horse) and <i>go</i> (cow)- all macerated in the decoction of <i>Tinduka</i> .
<i>Lancchana</i> , <i>Vyanga</i> and <i>Nilikachikitsa</i>	After doing <i>siravyadha</i> , the area is covered with paste of tender fruit of <i>Kapittha</i> , <i>Tinduka</i> and <i>Rajani</i> .
<i>Prameha</i>	<i>Raga</i> and <i>Shadava</i> which is prepared out of <i>Kapittha</i> , <i>Tinduka</i> and <i>Jambu</i> is given.
<i>Gulmachikitsa</i>	<i>Tinduka</i> is used for doing <i>Agnikarma</i> .
<i>Savarnikara</i>	<i>Tindukakalka</i> prepared from its own <i>swarasa</i> is used for <i>lepa</i> .
Treatment of <i>hikka</i> of <i>shishu</i>	<i>Jambu</i> and <i>Tinduka pushpa</i> or <i>phala churna</i> is made leak along with <i>gritha</i> or <i>madhu</i> .

Table. 11 Different Forms of *Tinduka* in burn wound healing

Reference Book	Different Forms of <i>Tinduka</i>	Mode of application
Sushruta samhitha	<i>Tinduka twak churna</i> alone or along with <i>gritha</i>	<i>Pralepa</i>
Acharya Dalhana	Either <i>Tinduka twak churna</i> alone or <i>Tinduka twak churna</i> along with <i>gritha</i> or <i>Tinduka twak kwath</i> along with <i>gritha</i>	<i>Pralepa</i>
Acharya Bhavamishra Sharangadharasamhita Vangasena, Vrindamadhava Vaidya cintamani Basavarajiyam Bhaishajyaratnavali	<i>Tinduka twak kwatha</i> alone or along with <i>gritha</i>	<i>Pralepa</i>
Adamalla	Either <i>swarasa</i> , <i>kwatha</i> , <i>phanta</i> , <i>hima</i> and <i>kalka</i> of <i>Tinduka</i> alone or along with <i>gritha</i>	<i>Pralepa</i>
Kalyanakaraka	<i>Tinduka twak churna</i> for <i>agnidagdha vrana</i> treatment which is <i>shuddha vrana</i> .	dusting powder

Raktavikara, *Raktapitta*, *Kasa*⁶. Dosage of *Tinduka* in different forms are as follows- Decoction (Bark/Fruit) – 50 -100 ml, Seed powder – 1-3gm, Oil – 10 – 20 drops, Dry fruit pulp (powder) – 125 -625 mg.

Formulations of *Tinduka* are *Tindukaadi Kwatha*, *Udardaprashamana mahakashaya*, *Kapitthashtaka churna*^{6, 7}. The cultivation and propagation of *Tinduka* in ordinary type of land with the supply of water processed with rice and black gram was described in *Vrikshayurveda*⁸.

Kakatinduka is considered as variants of *Tinduka* according to *Dhanvantari Nighantu*, *Raja nighantu*, *Kaiyadeva nighantu*, *Shaligrama nighantu*^{9, 10, 11},

¹².*Vishatinduka* is taken as variants of *Tinduka* as per *Madanapala Nighantu*¹³. Different sources of *Tinduka* as per recent books are *Diospyros peregrina*, *Diospyros melanoxydon*, *Diospyros paniculata*, *Diospyros tomentosa*, *Diospyros crumenata*, *Diospyros montana*, *Diospyros kaki*, *Diospyros lotus*^{13, 14}. The various forms of usage of *Tinduka twak* and mode of application as per different textbooks in burn wound management^{15, 16, 17, 18} are tabulated in the Table 11

DISCUSSION

The literatures from Veda till date have provided the insight on the drug *Tinduka* in



different contexts. In Veda and Puranas, it has been mentioned that fruits of *Tinduka* are edible. Profuse utility of *Tinduka* were described in Samhita and Nighantu period. *Tinduka* drug was mentioned under fruit bearing tree in Ramayana in the context of Chitrakuta, besides, it is also mentioned under *amradivarga* / *oshadhi varga* / *phaladivrga* / *amradiphala varga* / *phalavarga*/ *tindukadi varga* /*haritakyadi varga* / *mahavrikshadi varga* / *vanaushadi varga* in various Samhita and Nighantu. This type of classification of the drug under various *varga* indirectly describes the habit of the drug as fruit bearing big tree.

Tinduka is mentioned under *kashaya skandha/varga/gana* in all brihattrayee. Usually *kashaya rasa pradhana dravya* possess *ropana karma* (wound healing property). Thus, from this it can be interpreted that the drug is having role in wound healing. It is mentioned under *udardaprasamana dashemani*, this suggests that the drug have action on *twacha* (skin) as well as act upon *rakta dhatu* which is being affected in the pathogenesis of *udarda*. It was mentioned in *Nyagrodadi gana*. Usually this *gana* has *vranya*(action in wound healing), *sangrahi*, *bhagnasadhaka* (union of broken tissues), *raktapittahara* (either it helps in subsiding *rakta* and *pitta* or is useful in *vyadhiraktapitta*), *dahaghna* (reduces

burning sensations) properties. In case of *nyagrodadi dravyas* it was advised to collect the *twak* for the preparation of any formulations as per Sharangadhara samhita which was highlighted in the context of *anuktaanga* in preparation of medicine. Thus it can be inferred that *twak* is useful part of *Tinduka*as it falls under *nyagrodadi gana*. The drug is having *rakshoghna* property, thus it is used in *rakshakarma vidhi* in *sutikaagara* and this gives evidence about anti- microbial action of the drug.

Tinduka grows in the moist region as per its word meaning. The cultivation and propagation of *Tinduka* in ordinary type of land with the supply of water processed with rice and black gram was described in Vrikshayurveda. In various Nighantu around 39 synonyms are available for *Tinduka*, out of which 8 synonyms are related to its bark morphology such as *kaalaskandha*, *krishnatwak*, *kaalasaara*, *krishnasaara*, *nilasara*, *anilasaara*, *asitakaraka*, *shitisaaraka* – all these meant for the black colour of outer bark as well as inner part of stem. *Kakatinduka* or *vishatinduka* is considered as variant of *Tinduka* by some of the Nighantu. According English translation of Raja nighantu and Dhanwantari nighantu, there was difference of opinion regarding exact consideration of botanical identity of *Tinduka*. But current standard reference



book such as API, Database etc have taken *Diospyros malabarica* (Desr.)Kostel., as the source plant for *Tinduka* which is belonging to Ebenaceae family. It is a small or medium- sized evergreen tree, with blackish bark, simple leaf which is bright red when young, with yellowish flower, fruits are brick red when young and yellow when ripe.

Overall, majority of nighantu mentions that *Tinduka* has *kashayatikta rasa*, *snigdhaushna guru guna* and *shitavirya*, but they have not specified the part of the *Tinduka*. We can find *rasapanchaka* of unripe and ripe fruit of *Tinduka* separately with difference of opinion. *Rasapanchaka* of bark is not specified in the classical books. Besides, in some of recent books it is given that taste of bark is astringent, bitter. Thus, through the reference available in recent books it can be said in bark *kashaya* and *tikta rasa* is present but *rasa* assessment is necessary for the confirmation. Majority of the nighantukaras opines that the drug is having *vatahara*, *kaphapittaghna* and *Vranahara karma*.

Usage of *Tinduka* in the management of *arshas*, *prameha*, *shonitameha*, *hastimeha*, *kaphaja arthava dushti*, *kaphaja yoni vyapat*, *karnasrava*, *amatisara*, *revati graha* etc can be traced from the literature of Samhita kaala. Besides it is also mentioned in the treatment of *agnidagdha*

vrana, *sadhyo vrana* as well as to insist healing of wound after excision in *guhyaroga* such as *avamantha* and *kumbhika*. Scattered reference are available in the classics related to usage of *Tinduka* in the management of wound healing especially in burn wound. The utility of *Tinduka* in the management of burn wound was first explained by Acharya Sushruta. Almost all literatures mentioned that bark has to be used in the management of burn wound. In total 8 forms of application of *Tinduka* in burn wound has been explained in the literature as follows:

- 1) *Tinduka twak churna*
- 2) *Tinduka twak churna with gritha*
- 3) *Tinduka twak kwatha*
- 4) *Tindukatwakkwatha with gritha*
- 5) *Tinduka twak swarasa*
- 6) *Tinduka twak kalka*
- 7) *Tinduka twak hima*
- 8) *Tinduka twak phanta*

Acharya Bhavamisra told its usage in all kinds of burn wound, but Acharya Susruta mentioned under in *atidagdha*.

CONCLUSION

Usage of *Tinduka* in the management of *arshas*, *prameha*, *shonitameha*, *hastimeha*, *kaphaja arthava dushti*, *kaphaja yoni vyapat*, *karnasrava*, *amatisara*, *revatigraha* etc can be traced from the



literature of Samhitakaala. Also, the usage of *Tinduka twak* in different dosage forms in the management of burn wound was described in the literature. *Tinduka* is botanically identified as *Diospyros malabarica* (Desr.)Kostel belonging to Ebenaceae family is mentioned in *kashaya skandha*, *udardaprashamana gana*, having *rakshoghna* property, *ropanakarma*, *vatapittahara*. The current review certainly encourages further study on this drug through retrospective and prospective study and thus helps in better utility in future treatment.



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