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A CRITICAL REVIEW OF SHUNTIBALADI KASHAYA IN AVABAHUKA

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ABSTRACT

Ayurveda is a science of life and medicines have been widely used in this science. In *Āyurveda, Auśadha* is considered as one among the *Ćatuśpāda*. For initiation of any treatment, *Dravya* is considered for attaining specific pharmacological action. *Śuṇṭībalādi Kaṣāya* comprises Shunti, Bala, and Atibala as the main ingredients. It is an Ayurvedic formulation mentioned under *Kaṣāya Prakarana* and is indicated in all types of Vatavyadhi, suptavata, general weakness, and general debility. It is Sarva Vatahara in nature. *Avabāhuka* is considered one among Vatavyadhi mainly *Vātakaphaja*. It occurs in *Aṁsa* or *Bāhu Pradesha*. *Avabahuka* is a *Shūla* and *Stambha Pradhāna Vyādhi.* The meaning of *Avabāhuka* is the dysfunction or decreased mobility of the arm. Shuntibaladi Kashaya acts on Avabahuka which has the properties of *Vāta Hara, Kapha Hara, Shula Hara, Brimhana,* and *Balya* in nature which also helps in regulating Vata. It acts as an antioxidant, analgesic, anti-inflammatory, immunomodulator, and anti-hyperglycemic. In this article, an attempt is made to critically review the ingredients of the Shuntibaladi Kashaya and its mode of action on the disease Avabahuka.

KEYWORDS: Avabahuka, Balya, Kashaya, Shuntibaladi, Vatahara.

INTRODUCTION

Ayurveda is the epitome of traditional medicine and has a vast knowledge of drugs. Shuntibaladi Kashaya is a formulation mentioned in Kashaya Prakarana and consists of Shunti, Bala, and Atibala in equal quantity and is prepared according to Ayurvedic classics.

It's indicated in Sarva Vata rogas, and Suptavata and can be given in all diseases of Vatavyadhi. It works on Vata and Kapha Dosha due to its shula hara, balya, and Vatakapha hara properties. *Avabāhuka* is one of the shoulder diseases that hampers an individual's regular activities. It is discussed in *Vātavyādhi* chapters**.** The *Sleshmadhara Kala, Śleshaka Kapha, Sirā,* and *Snāyu* play an important role in *Avabāhuka* along with the *Sandhi.* It is *Vāta* and *Kapha* predominant disease. *Avabāhuka* is the constriction of *Sirā* in *Aṁsa* region leading to *Aṁsabandana Śoṣa*, *Stambha*, *Shūla,* and *Bāhupraspanditahara*. In contemporary science adhesive capsulitis can be related to Avabahuka as it affects the glenohumeral joint and normal activities are hampered due to pain, stiffness, and restricted range of movements. Hence this article gives an insight into the review of Shuntibaladi Kashaya based on various literature and also its mode of action on Avabahuka and adhesive capsulitis.

MATERIALS AND METHODS

The materials are taken from various texts, Samhitas, articles, and books.

Literature review

1. Shunti

It is one among *Trikaṭu* which is placed under *Audbhida Ganāh*. *Śuṇṭhī* is a dry variety and it differs from *Ārdraka* in its *Guṇa*, *Karma*, and *Rasa Pañcaka*. *Śuṇṭhī* is prepared from *Ārdra Nāgaram* according to *Kaiyadeva Niġantu.*

Botanical name: Zingiber officinale Rose,

Family name: Zingiberaceae

Sanskrit name: *Śuṇṭhī*

Synonyms

Table No. 1: Synonyms of *Shunti* by various *Nighantus.*

Name	R. N.[1]	B. P. N.[2]	M. P. N.[3]	D. N.[4]	K. N.[5]	P. N.[6]
Śuṇṭhī	+	+	+	+	+	+
Mahausadhaṁ	+	+	+	+	+	+
Viśvā	+	+	+	+	-	+
Nāgaram	+	+	+	+	+	-
Viśwa bhēṣajam	+	+	+	+	+	-
Viswausadham	+	-	+	+	+	-
Sṛṅgvera	+	-	+	+	-	-
Kaṭu badram	+	+	+	+	+	-
Ārdrakam	+	-	-	+	-	-
Kaṭutkatam	-	-	+	-	+	-
Kaṭugranthi	+	-	-	-	-	-

Katuṣṇam	+	-	-	-	-	-
Viśvam	-	+	-	-	-	-
Ūṣaṇam	-	+	-	-	-	-

Rasa pañćaka

Rasa *– Kaṭu, Pittalam (K.N)*

Guṇa *– Snigdha, Laghu*

Vīrya *-Uṣṇa*

Vipāka *– Madhura*

Doṣakarma *- Kaphavāta Hara*

Chemical constituents[7,8]

- ✓ It contains gingerol and oily resinous as an active principle. The phytochemical constituents of ginger are tannins, proteins, essential oils, phenolic compounds, alkaloids, saponins, flavonoids, terpenoids, etc.
- ✓ Various studies have proved that 6- shogaol has anti-inflammatory and anti-oxidant properties which can be attributed to alpha, beta saturated ketone. Gingerol and shogaol inhibit the synthesis of inflammatory cytokines such as IL-1, IL-8, and TNF-α.

Classification based on *vargas*

Table No. 2: Classification of *Shunti* based on the *Vargas* by different N*ighantus.*

Varga/ Gana	***Name of the nighaṇṭu/ saṁhitā***
Satapushpadi varga	*Dhanvantari nighaṇṭu*
Pippalyādi gana	*Suśruta saṁhitā*
Pippalyādi varga	*Priya nighaṇṭu*
Dīpanīya gana, tṛptighna gana, arśoghna, śūla praśamana, śīta praśamana, sthanya sodhana, tṛśna nigrahana	*Charaka saṁhitā*
Pippalyādi varga	*Rāja nighaṇṭu*
Śuṇṭyadi varga	*Madanpāla nighaṇṭu*
Harītakyādi varga	*Ḅāvaprakāśa nighaṇṭu*
Pippalyādi varga	*Kaiyadeva nighaṇṭu*

Properties and Action

- ***Karma*** *- Dīpana, Pācana, Śulapraśamana, Vātānulomana, Vṛṣya – Uttejaka, Śothahara, Kaphaghna, Śvāsahara, Kāsaghna, Vedaṅāsthāpana, Jvaraghna, Śitapraśamna, Balya*
- ***Rogaghnata*** *– Sandhiśotha, Āmavāta, Śotha, Vedanā, Vātavyadhi, Agnimāndya, Kāsa, Śvāsa, Hikkā, Pratiśyaya, Śotha, Dourbalya, Pāndu, Kāmalā, Ajīrna, Śūla, Śītapitta, Katiśūla, Arśa, Jvara*

2. Bala

In Siddha, *Āyurveda* system of medicine, *Balā* has been used widely since ancient days for its multipurpose uses. Balā is also grouped as one of the drugs in *Madhura Skanda*, *Maḋyama Panchamula*, *Bṛhmana Daśyaimāniya*, *Vātaśāmaka* and *Balya Daśamāniya*

Botanical name: Sida cordifolia Linn

Family name: Malvaceae

Sanskrit name: *Balā*

Synonyms

Table No. 3: Showing the synonyms of *Bala* according to various *Nighantus.*

Name	R. N.[9]	B. P. N.[10]	M. P. N.[11]	D. N.[12]	K. N.[13]	P. N.[14]
Vātyā	-	+	-	-	-	-
Prahasa	-	-	-	-	-	+
Motabati	+	-	-	-	-	-
Kalyānini	+	-	-	-	-	-
Samamsā	-	-	+	-	-	-
Samangā	+	-	+	+	+	-
Vāti	-	-	-	+	-	-
Vātyayani	-	-	-	-	-	+
Udakīka	+	-	-	-	-	-
Kharayashtika	+	-	+	+	+	-
Vātyālikā	-	+	-	-	-	-
Mahāsamnga	-	-	-	+	-	-
Ōdanāvha	-	-	-	+	-	-
Kanaka	-	-	-	-	-	+
Ōdanika	-	-	-	+	-	-
Vātyālaka	-	+	-	-	+	-
Balādyaya	+	-	-	-	-	-
Bhadrabalā	+	-	-	-	-	-
Balini	-	-	-	-	+	-
Bhadrodani	+	-	+	+	+	-
Śītapāki	-	-	+	+	+	-

***Rasa pañćaka*[15,16]**

Table No. 4: *Rasa Panchaka* of *Bala* according to various *Nighantus.*

Rasa panchaka		Name of the nighaṇṭu					
		R. N.	B. P. N.	M.P. N.	D.N.	K. N.	P. N.
Rasa	*Atitikta*	+	-	-	-	-	-
	Madhura	+	+	+	+	+	+
Guṇa	*Laghu*	+	-	-	-	-	-
	Snigdha	-	+	+	+	+	+
Vīrya	*Śīta*	+	+	+	+	+	+

Vipāka	*Madhura*	+	+	+	+	+	+
Doṣagna	*Vātapittahara*	-	+	+	-	-	+
	Tridoṣahara	+	-	-	+	+	-

Chemical constituents

- ✓ Sida cordifolia has a hypoglycemic effect and pain tolerance capacity. It includes proteins, mucin, resin, potassium nitrate, carbohydrate, fat, vasicinol, vasicine, alkaloids, and pseudoephedrine.
- ✓ According to various studies, *Balā* has anti-inflammatory, adaptogenic, anti-microbial, wound healing, antioxidant, hypoglycemic, and pain tolerance activity.

Classification based on *vargas*

Table No. 5: Classification of *Bala* based on the *Vargas* by different *Nighantus.*

Varga/ Gana	***Name of the nighaṇṭu/ saṁhitā***
Guḍūcyādi Varga	*Dhanvantari Nighaṇṭu*
Vātasaṁśamana Gana	*Suśruta Saṁhitā*
Śatapuśpādi Varga	*Priya Nighaṇṭu*
Balya Gana, Brṁhanīya Gana, Prajāsthāpana, Madhuraskanda	*Charaka Saṁhitā*
Śatahvādi Varga	*Rāja Nighaṇṭu*
Guḍūcyādi Varga	*Ḃāvaprakāśa Nighaṇṭu*
Oṣadhi Varga	*Kaiyadeva Nighaṇṭu*

Properties and Action

- ***Karma*** **-** *Anulomana, Snehana, Mūtrala, Rasāyana, Vātahara, Balya, Ojovardhaka, Nāḍibalya, Śukrala, Kāntivardhaka, Kṛmighna, Jvaraghna, Grāhi, Hṛdya, Raktapittaśāmaka, Prajāsthāpana*.
- ***Rogahnata*** **–** *Netraroga, Vranaśotha, Dourbalya, Pakṣāghāta, Ardita, Vibandha, Adhmāna, Kāntikṣaya, Vātavyadhi, Prameha, Pradara, Garbhāśaya Dourbalya, Vātarakta, Rājayakṣmā, Kāsa, Śukrameha, Dhātukṣaya, Mūtrakṛccha, Jvara, Raktapitta, Hṛddourbalya, Uraḥkṣata, Avabāhuka, Svarabheda, Raktārśas*.

3. Atibalā

Atibalā is also known as Indian mellow and has a wide variety of actions like anti-inflammatory, antioxidant, anti-diabetic, digestive, laxative, etc. *Atibalā* is considered one among *Balādvaya.*

Botanical name: - Abutilon indicum G. Don.

Family name: - Malvaceae

Sanskrit name: - Atibalā, Kaṅkatikā, Ṛṣyaproktā

Synonyms

Table No. 6: Showing the synonyms of *Atibala* according to various *Nighantus.*

Name	R. N.[17]	B. P. N.[18]	M. P. N.[19]	D. N.[20]	K. N.[21]	P. N.[22]
Balika	+	-	-	+	-	-
Bālaka	-	-	+	-	-	-
Balyā	+	-	-	-	-	-
Bārvājī	-	-	+	-	-	-
Vatyapuṣpikā	+	-	-	+	-	-
Bhuṛibalā	+	-	-	+	-	-
Kaṅgitāphalā	-	-	-	-	-	+
Kangatā	-	-	-	+	+	-
Atibalā	+	+	+	+	+	+
Kaṇgatikā	-	+	-	-	-	-
Petāri	-	-	-	-	-	+
Vikangatā	+	-	-	-	-	-
Vṛṣyagandikā	+	-	+	+	-	-
Vṛṣyaproktā	-	+	-	+	+	-
Gaṇtā	+	-	-	-	-	-
Śītā	+	-	-	-	-	-
Śītapuṣpikā	+	-	-	-	-	-

***Rasa pañcaka*[23]**

Table No. 7: *Rasa Panchaka* of *Atibala* by various *Nighantus.*

Rasa panchaka		Name of the *nighanṭu*					
		R. N	B. P. N	M.P. N	D.N	K. N	P. N
Rasa	*Tikta*	+	-	-	-	-	-
	Madhura	-	+	+	+	+	+
	Kaṭu	+	-	-	-	-	-
Guṇa	*Snigdha*	-	+	+	+	+	+
Vīrya	*Shīta*	-	+	+	+	+	+
Vipāka	*Madhura*	-	+	+	+	+	+
Doṣaghna	*Vātahara*	+	-	-	-	-	-
	Vātapittahara	-	+	+	+	-	+
	Tridoṣahara	-	-	-	-	+	-

Classification based on *vargas*

Table No. 8: Classification of *Atibala* based on the *Vargas* by different *Nighantus.*

Varga/ Gana	*Name of Nighantu/ Samhita*
Guḍūcyādi Varga	*Dhanvantari Nighaṇṭu*
Madhura, Vātasaṁśamana Gana	*Suśruta Saṁhitā*
Śatapuśpādi Varga	*Priya Nighaṇṭu*
Balya, Bṛṁhaṇīya, Madhuraskandha	*Charaka Saṁhitā*
Śatāhvādi Varga	*Rāja Nighaṇṭu*

Abhayadi Varga	*Madanpāla Nighaṇṭu*
Guḍūcyādi Varga	*Bāvaprakāśa Nighaṇṭu*
Auṣadhi Varga	*Kaiyadeva Nighaṇṭu*

Properties and Action

- ***Karma*** **–** *Balya, Bṛṁhana, Vedanāsthāpana, Rasāyana, Vajikarana, Śothahara, Dāhapraśamana, Vayaḥsthāpana, Kledaśamana, Ojovardhana*
- ***Rogaghnata*** **–** *Granthi, Vedanā, Śothapradhāna, Kṛmiroga, Sóthahara, Vraṇahara. Vātavikāra, Jvara, Kṛmiroga, Prameha, Pradara, Kāsa, Svāsa, Bastiśotha, Dourbalya, Pūyameha, Śurameha, Kṛśata, Śukra Doṣa, Mūtrakṛccha*

DISCUSSION

Shuntibaladi Kashaya includes *Shunti*, *Bala*, and *Atibala* in equal quantity and is mentioned in *Sahasrayoga* in *Vatahara Kashaya Prakarana.*[24] It is considered as *Sarva Vata Hara* and indicated in all Vata rogas, Suptavata, and general debility.

a) Probable mode of action of *Shuntibaladi Kashaya* on *Avabāhuka*

Shunti is Katu Rasa, Laghu, Snigdha in *Guna. Ushna Virya* and *Madhura Vipaka*. It is *Kapha Vata Hara, Vatanulomana, Sotha Hara, Shula Prshamana, and Vedanasthapana.* Due to its *Snigdha* and *Laghu Guna*, it does *shamana* of *Kapha Vata dosha* and it pacifies the vitiated *Doshas* and provides lightness to the body. *Katu Rasa* pacifies the *Kapha Dosha* and also controls the movement of *Vāta. The Ushna Virya* of *Shunti* pacifies *Kapha and Vata* and also acts as *Deepana Pachana* and removes the *Amatva.*

Bala is *Madhura Tikta Rasa, Laghu Snigdha Guna, Madhura Vipaka* and is *Sheeta* Virya in nature. It has *Balya, Brimhana,* and *Vatashamana* properties. It balances all three *Doshas* mainly *Vatapitta hara*. In *Avabahuka* there is *Vata* vitiation leading *Amsa Bandana Sosha* of *Kapha* and by its *Guna, Rasa* it acts as *Vata Hara* and gives *Bala. Bala* is said to be *"Sangrahika Balya Vatahara Naam"* and by its *Vedanasthapana* it alleviates *Shula* in *Avabahuka* and gives strength and nutrition to *Kapha Dosha.*

Atibala has *Madhura Rasa, and katu tiktarasa (R.N).* It also has attributes like *snigdha guna, sheeta virya,* and *Madhura vipaka.* It is *Tridosha Hara in nature. Rasayana, Balya, Dahashamaka, Kledashamaka, Dhatuvardhaka, and Śotha Hara properties* of *Atibala* help in reducing the *Shula*, and *Śotha* in *Avabahuka.*

Based on *dosha:* - *Shuntibaladi Kashaya* on observing the *Dosha* encounters *Vāta Dosha*. *Rūkśa* and *Chala Guna* of *Vāta* cause *Shūla*. *Vyāna Vāta* which helps in the proper functional activities and movements is affected in *Avabāhuka*. *Balā* reduces *Shūla* due to *Vāta Hara, Vedanāśāmaka* properties. The overall action of *Shuntibaladi Kashaya* is *Vātakapha Hara* in nature predominantly *Sarvavāta Hara*.

Based on *dushya:* - *Sirā, Snāyu, Maṁsa, Rakta*, and *Asthi Dhātu* are involved in *Avabāhuka. In Avabāhuka, there will be Sira Sankocha* which is caused by *Vāta Dosha in Sirā* and *Snāyu* leading to constriction of the vessels due to improper blood supply. *Sanga* leads to stiffness of the shoulder joint. In this *Kashaya, Shunti* due to its *Ushna Vīrya Pāchana Guṇa* and *Vātānulomana* property helps in removing the obstruction or *Sanga* and enhances the circulation, thereby improving the blood supply. In chronic Stages, there will be *Maṁsa Kshaya* in *Avabāhuka,* and *Balā Atibalā* drugs have *Madhura Rasa, Balya*, and it does *Dhātu Poshana*.

Based on *rasa*: - By looking at the drugs of the *Kashaya*, it is seen that *Madhura* and *Kaṭu Rasa* in the *Kashaya. Avabāhuka* is *Vāta Dosha* in *Kapha Sthāna*, and *Madhura Rasa has* been *Vātahara, Kaṭu Rasa has* been *Kapha Hara* helps in reducing the *Shūla, Stambha* in *Avabāhuka.* The *Balya* and *Brimhana* properties of *Balā* and *Atibalā* restore the *Vāta Dosha.*

Based on *virya:* - By looking into the drugs, it possesses both *Ushna Vīrya* and *Sheeta Virya* which balances both *Vāta* and *Kapha Dosha*. *Sheeta Vīrya* of *Balā,* and *Atibalā* can produce a relaxing effect and sleep is also improved.

Based on *guna*: - The overall *Kashaya* is *Laghu* in *Guna*. *Atibalā* does the *Kledashamana* relieving the *Kapha Dosha* and *Shunti* with its *Sótha Hara, Shūla Prashamana* property helps in reducing swelling.

In *Avabāhuka*, there is *Bāhu Praspandita Hara* which means loss of mobility or motion along with a restricted range of movements like *Prasarana, Ākuṇchana* will be affected in *Avabāhuka* which indicates vascular supply is damaged leading to *Karma Hāni* of the shoulder joint. *Lakshana* like *Stambha* is due to increased *Kapha Dosha*. *Shuntibaladi Kashaya* owing to *Vātahara, Balya* property corrects the *Vyāna Vāta* giving strength, improving the blood supply and proper flow along with *Pāchana* and removing *Āma.*

b) **The probable mode of action of *Shuntibaladi Kashaya* on Adhesive capsulitis**

In adhesive capsulitis, there is fibrosis of the glenohumeral joint which can be interpreted as *Vāta Vriddhi* and *Rūksha Guṇa* of *Vāt*a may cause fibrosis. *Shuntibaladi Kashaya*, having the properties of *Balya*, *Vātahara, Śotha Hara, Vedana Sthāpaka,* and *Shūla Hara* reduces the fibrosis of the joint.

Anti-inflammatory and Analgesic properties of Shuntibaladi Kashaya

The anti-inflammatory and analgesic properties of Shuntibaladi Kashaya are by Shunti, Bala. Inflammation of joints is a result of protein becoming denaturized and it may worsen the tissue inflammation. Bala Kashaya has the power to prevent both protein denaturation and activity of enzyme proteinase It also inhibits PG's and TXA2 production resulting in a reduction in the inflammatory process.[25]

In Avabahuka, diabetic patients are more prone so it helps to maintain the levels of HbA1C, and FBS in Type II DM. An increase in alarmin level causes inflammation and tissue fibrosis and through the activation of NF- Kb, the protein HMGB1 binds AGE and promotes inflammatory response in adhesive capsulitis. Hence, the Anti-inflammatory activity of ginger inhibits the NF- Kb signaling pathway which is involved in the pathology.[26] Inhibiting xanthine oxidase activity and preventing oxidative damage are two benefits of its antioxidant capability. Due to its propensity to influence adipocyte differentiation, it lowers insulin resistance.

CONCLUSION

Shuntibaladi Kashaya is indicated in all types of Vatavyadhi. In Avabahuka also it can be indicated due to its Shula Hara, VataKapha Hara, Balya, and Brimhana properties.

REFERENCES

1. Tripathi Dr I. Pandit Narahari, edited with Dravyagunaprakasika hindi commentary, Raja Nighantu, Pippalyadi varga. Varanasi: Krishnadas Academy, 1998; 2: 138–139.
2. Dr. Bulusu S. Bhavaprakasah of bhavamisra, Bhavaprakasa nighantu Bhaga, Haritakyadi varga, Varanasi: Chaukhambha Orientalia, 2020; 6,44: 136-137.
3. Madanapala Nighantu, hindi tika sahita, Shuntyadi varga, Mumbai: Khemraj Shrikrishnadas Prakarshana, 1998; 65,2: 2-4.
4. Sharma P. Dhanvantari Nighantuh, Shatapushpadi varga, Varanasi: Chaukhambha Orientalia, 1982; 85,2: 82-83.

5. Sharma P, Sharma G. Kaiyadeva Nighantuh. Varanasi: Chaukhambha Orientalia, 1979; 213: 1.
6. Sharma P. Priya Nighantu, along with hindi commentary, Pippalyadi varga, Varanasi: Chaukhamba surabharati Prakashan, 1995; 58,2: 2-3.
7. Pandey Prof Dr G. Dravyaguna vijnana, dvitiya khandam. Varanasi: Chowkhamba Krishnadas Academy, 2005; 181: 3-1.
8. Sourbini, Kadibagil dr. Ardraka & Shunti -Mahoushadhis of Ayurveda, 2016; 1.
9. Tripathi Dr I. Pandit Narahari, edited with Dravyagunaprakasika hindi commentary, Raja Nighantu, Varanasi: Krishnadas Academy, 1998; 33: 1-2.
10. Chunekar. K.C, Pandey G.S, Bhavaprakasha Nighantu, Varanasi; Chaukhamba Bharati Academy, 2015; 351.
11. Madanapala Nighantu, hindi tika sahita. Mumbai: Khemraj Shrikrishnadas Prakarshana, 1998; 65.
12. Sharma P. Dhanvantari Nighantuh, Guduchyadi varga, Varanasi: Chaukhambha Orientalia, 1982; 66: 1-271.
13. Sharma P, Sharma G. Kaiyadeva Nighantuh, Aushadha varga Varanasi: Chaukhambha Orientalia, 1979; 1: 194.
14. Sharma P. Priya Nighantu, along with hindi commentary, Shatapushpadi varga, Varanasi: Chaukhamba surabharati Prakashan, 1995; 94,2: 3-2.
15. Dr. Nadkarni K.M. Indian Materia Media. Reprinted, 2002; 1. Mumbai - 400034: Popular prakashan PVT. LTD, 1976; 1134: 2297.
16. Ram S, Sharma N, Kotecha M, Joshi K. Ayurveda Medicinal Plant Bala (Sida Cordifolia Linn.) From Vedas, Samhitas and Nighantus: A Literary Review, 2021; 30: 3321.
17. Tripathi Dr I. Pandit Narahari, edited with Dravyagunaprakasika hindi commentary, Raja Nighantu, Satavhadi varga. Varanasi: Krishnadas Academy, 1998; 81: 2.
18. Dr. Bulusu S. Bhavaprakasah of bhavamisra, Bhavaprakasa nighantu Bhaga, Guduchyadi varga, Varanasi: Chaukhambha Orientalia, 2020; 142: 255-256.
19. Madanapala Nighantu, hindi tika sahita, Pitarininamaguna. Mumbai: Khemraj Shrikrishnadas Prakarshana, 1998; 33.
20. Sharma P. Dhanvantari Nighantuh, Guduchyadi varga, Varanasi: Chaukhambha Orientalia, 1982; 67: 1-276.
21. Sharma P, Sharma G. Kaiyadeva Nighantuh. Varanasi: Chaukhambha Orientalia, 1979; 1: 195.

22. Sharma P. Priya Nighantu, along with hindi commentary, Shatapushpadi varga, Varanasi: Chaukhamba surabharati Prakashan, 1995; 94: 2-2.
23. Ram S, Kotecha M, Joshi K. Review on Abutilon Indicum (Linn.) Sweet (Atibala) -An Important Herb in Ayurveda. International Research Journal of Ayurveda & Yoga, 2021; 31, 4: 172–8.
24. Sahasrayogam, Dr. Nishteswar K and Dr. Vaidyanath R, Chowkhambha Sanskrit series office, Varanasi, 2011; 3: 43.
25. Martins CAF, Campos ML, Irioda AC, Stremel DP, Trindade ACLB, Pontarolo R. Anti-Inflammatory Effect of Malva sylvestris, Sida cordifolia, and Pelargonium graveolens Is Related to Inhibition of Prostanoid Production. Molecules, 2017; 22(11): 1883.
26. Mao QQ, Xu XY, Cao SY, Gan RY, Corke H, Beta T, et al. Bioactive Compounds and Bioactivities of Ginger (Zingiber officinale Roscoe). Foods, 2019; 30, 8(6): 185.