

A REVIEW OF LITERATURE OF KRISHNA TILA (SESAMUM INDICUM LINN.)

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ABSTRACT

During vedic period Krushna tila was mainly used as Food and for extraction of oil. Krushna Tila is mentioned by almost all Samhitas and Nighantus. In Charak Samhita Krushna tila mentioned in Swedopaga, Purishavirajaniya mahakashaya. In other Samhitas it is mainly mentioned in Dhanya Varga. Different properties of Krushna Tila as Madhur, Tikta, Kashaya, Katu rasa, Ushana Virya, Madhur Vipak etc. are explained by various Acharyas. Keshya activity of Krushna tila is explained by all the Samhitas. It is also mentioned in Bhagna, Atisar, Arsha, Vrana, Pratishtaya, Dantaroga, Dantaharsha chikitsa, Rasayan etc. Ashtang sangraha mentioned that Krushna tila is used in Akala palitya Chikitsa. Krushna Tila is also described in all the nighantus, it is mostly mentioned in Suvarnadi Varga ' Dhanyaguna varga ' Shalyadi varga, Dhanya varga ' etc. 14 synonyms of Krushna tila are showed in various Nighantu. Other medicinal indications of Krushna Tila are highlighted from the review include its action Udavarta, Yonishula, Gulma, Parasava shula, Amashula, Raktarsha, Gudabhrmsha, Vatarakta, Pradara, Ashmari, Nadi Vrana, Granthi, Vidaraka, Alasa, Khalitya, Palitya, Akshiroga, Vatika Mukharoga, Atidagdha, Pliharoga, Galaganda, Karnapali shotha etc properties.

KEYWORDS: Krishna tila, Samhita, Nighantu.**INTRODUCTION**

Ayurveda plays an important role in the industry of medicine and cosmetic products. In Ayurveda different type of herbs are mentioned which can prevent or treat all these hair Disorders such as Palitya, Khalitya, Darunaka and other hair disorders. These herbs are Amalaki, Musta, Bibhitaka, Brahmi, Japa, Bhringaraj, Krushna Tila etc. These herbs are mentioned in all hair disorder like Khalitya, Palitya, Darunaka and other hair disorder. Krishna Tila is one of the Drug used in Hair disorder, mentioned in Bhavprakash Nighantu Till now Krushna Tila is been studied for antioxidant, antihypertensive, kidney and liver promoting action but still not been tested for its Keshya karma from Ayurveda point of view. Amongst the different types of tila described in Ayurvedic Samhitas Krushna Tila are rich source of calcium, potassium, vit A D E K. In some country Krushna tila are used in regular diet. It is one of the important ingredients for most of the desert and cuisine. Sesame (Sesamum indicum L.) is one of the herbal remedy described in ancient text such as the Vedas. Sesame is used in villages for its religious and mythological importance. Apart from its religious significance sesame is used as medicine. In Ayurveda, it is an extremely beneficial and strong 3 medicine. The commonly cultivated varieties are mostly either black or white seeded. Krushna tila are easily available, cost effective and having reference as Keshya karma. There is

increase in demand of herbal cosmetics in the world market.

MATERIAL AND METHOD

References have been collected and relevant matter is compiled from various *samhitas*, journals and articles. Available commentaries of present era are also reviewed. All Compiled matter is reorganized and critically analyzed for the discussion and attempt has been made to draw some fruitful conclusion.

Conceptual review

Review of literature of Krushna tila was taken right from Vedic era till date from all Samhita and Nighantu Grantha. Update review regarding the work done on phytochemical constituents & pharmacological activity, Chemical composition of Krushna tila was taken from various journals and internet. Detail review of Hair disorder (Khalitya, Palitya, Darunaka) Ayurvedic and modern and detail information was taken.

Drug review krushna tila

Botanical Name: Sesamum indicum Linn. / Sesamum Orientale.

Sesamum – 'Sempsen' Egyptian name of plant 'Sossamon' Greek name of the plant.

Indicum – Of India.

✚ Historical review

- Sesamum indicum is one of the oldest cultivated plant in the world. Sesamum comes from Sossamon, a name given by Hippocrates, after the Arabic word Sesame meaning herb.
- The charred lump of sesame seeds is in the excavations of Mohenjo-Daro Harappa suggests that it was cultivated in the Indus Valley dated at about 2000 B.C. for a long time. The sesame went out of India very long time ago to various parts of the Middle East, being referred to as 'se-gis-i' in the clay tablets of the Sumerian civilization of about 3000 B.C.
- According to Hindu mythology Tila has been originated from Vishnu's sweat drops that fell on Earth.

✚ Krushna tila in vedic era

- The Atharvaveda mentioned Sesame as a tree and field manure crop. The Tila seeds were in use as far back 3000 B.C. The plant was major source of food & oil. During the Vedic ages, it was only seed used for extraction of oil by the Aryans. The plant Tila mentioned in the Atharvaveda and later in the Taittiriya Samhita, Satapatha Brahmana, as the sesame plant and its grains, from which a rich oil was extracted. As mentioned in the 8 Bruhadaranyaka Upanishad and Chhandogya

Upanishad Tila is mentioned in connection with Masha (Kidney bean).

- The Taittiriya Samhita attributes the bean and the Tila to the winter (Hemant) and the cold (Shishir) seasons.
- As described in Brahma Puranam, Tila was created by Yama, the 'King of death' after prolonged penance. The Gruhyasutra of Asvalayana described that in funeral rite in honor of the dead, Sesamum seeds be placed in the three sacrifice vessels containing Kusa grass and holy water.

Review from samhitas

Samhita kala is the period in which the drug was classified into various ganas according to their properties and action. The multi drug therapy and thus many yoga's have also been explained during Samhita period.

Charaka samhita (1000 B.C)

In Charaka Samhita Tila is described in Swedopaga (C.Su.4/22) and Purishavirajaniya mahakashaya (C.Su.4/32) and in shamidhanya varga(C.Su.27/30). It is used as food in day to day life. It is used as vataghna, Keshya, balya etc. It is also mentioned as best for Snehana in Snehnadhyaya (C.Su13/10) seed are used for tail preparation which is widely used as base in other taila formulation.

Table no. 1: References of krushna tila in charaka samhita.

| Sr No. | Reference | Page no. | Adhikara | Rogghnata | Formulation |
|--------|---------------|----------|--------------------|-----------------------|-----------------------------------|
| 1 | C.Chi. 3/267 | 126 | Jwarachikitsa | Sheetjwar | Agurvadi tail |
| 2 | C.Chi. 5/91 | 175 | Gulmachikitsa | Yonishool Udavarta | Nagradiyoga |
| 3 | C.Chi. 14/210 | 376 | Arshachikitsa | Raktajarsha | Tiladi yoga |
| 4 | C.Chi. 19/34 | 488 | Atisarachikitsa | Pravahika | Bilva+Krushana Tila yoga |
| 5 | C.Chi. 19/83 | 495 | Atisarachikitsa | Raktaatisara | Krushna Tila prayoga |
| 6 | C.Chi. 25/79 | 623 | dvivraniyachikitsa | Vrana | Upanaha KrushnaTila+mudagpayas |

2. Sushruta samhita (1000 B.C.)

Acharya Sushruta has mentioned Tila in Mudgadi varga. Tila is include Dhanya varga (S.Su.45/38) and Artavajanak dravyas. In Dhanya varga Tila is mentioned as Keshya, Medhajanana, pathya, balistha, etc (S.Su.46/39-40).

Sushruta being a surgeon mainly specifies Vranashodhana & Vranaropana action of Tila. After most of surgical processes, lepa of Tila along with ghee is suggested.

Tila is also specifically mention as food for patients of Atisara and for normal individuals in Hemant Rutucharya.

Table no. 2: References of krushna tila in sushruta samhita.

| Sr No. | Reference | Page no. | Adhikara | Rogghnata | Formulation |
|--------|------------------|----------|-----------------------------|----------------------------------|---|
| 1 | S.Su.1 0/58 | 376 | Urdhav Masanmasik vakshayam | Dwitiya maas Grbhastrav chikitsa | Krushna Tila +Madhuk+Ashmant aka...Yoga |
| 2 | S.Chi 3/55 | 401 | Bhagna chikitsa | Bhagnaprasa dhakam | Pravakshami tail |
| 3 | S. Chi 10/14 | 441 | Mahakushta chikitsa | Sarva kushta, Smrutiman | Khadirvidhan |
| 4 | S. Chi 30/10 | 516 | Rasayan | Bram | Sarvopkrama |
| 5 | S. U. 26/ 39-40 | 703 | Shirorog pratishedha | Shirorog | Shatavari +durva+ Krushna Tila Lepa |
| 6 | S.U 40/123 - 124 | 752 | Atisara pratishedha | Sashool, raktapitta | Shatavari+Krushna Tila Lepa |

3. Ashtanga sangraha (600 A.D)

Tila is mentioned under Shimbidhanya Varga (A.S.Su 38/23).

Table no. 3: References of krushna tila in ashtanga sangraha.

| Sr No. | Reference | Page no. | Adhikara | Rogghnata | Formulation |
|--------|---------------|----------|--------------------------------|------------------------|---|
| 1 | A.S.Sh 4/44 | 298 | Garbhastrave garbhayapat | Garbhastrav | Madhuk+shakbeej+paya sya+Krushna Tila etc |
| 2 | A.S.Chi 11/21 | 502 | Raktaatisar proyoganta | Pitaatisar tridoshagna | Priyangu+Shalmali+Yashti+Krushna Tila etc |
| 3 | A.S.Chi 21/38 | 553 | Kushtachikitsa | Sarvkushta nashak | Vidangadipinda |
| 4 | A.S.K 3/9 | 592 | Vaman Virechan vyapadsidhirnam | parikartika | Krushna Tila+madhuk+madhu Picchabasti |
| 5 | A.S.U 19/14 | 721 | Prasadanaanjan | Naktyanadha, Rag | Drukprasadan anjan |

✚ Krushna tila in nighantu

Nighantu are the compilation of information about all the aspect of the drugs from there place of origin, Identification of the drug, there pharmacological action, Nomenclature, types, Properties, Action. This information is used in the management of diseases. Detail review of Krushna Tila has been taken from the Nighantus. The plants were classified into different Vargas during this period.

I. Dhanvantri nighantu6 (1000-1300 A.D)

In this nighantu all herbs are classified under 7 Vargas. In this Nighantu Krushna Tila occupies its place under description of the 'Suvarnadi Varga' in dhanya category. Various synonyms are used for it indicating its use in Homadi karma.

II. Siddhamantra nighantu (1300 A.D.)

Tila has been mentioned under in under Mishrak varga, Vataghana varga, Doshal varga, in Nighantu.

III. Madanpala nighantu (1400 A.D)

In this Nighantu, Tila is described in 'Dhanyaguna varga'. Along with various synonyms the specific attributes of Vanya Tila have been given.

IV. Kaiyadeva nighantu (Pathyapathyavibodhaka) (1500 A.D)

In this text, Krushna Tila is mentioned in 'Dhanya Varga' Along with various synonyms, type of Tila with its special action are mentioned

V. Raj nighantu (Pathyapathyavibodhaka) (1500 A.D)

Krushna Tila is described under 'Shalyadi Varga' in Raj Nighantu. Detailed pharmacological & therapeutic properties are described. Types of Tila are mentioned in mentioned in which Krushna Tila mentioned as Pathyapathy.

VI. Bhavaprakasha nighantu (1600 A.D)

Reference of Krushna Tila from Bhavaprakasha Nighantu are mentioned in the 'Shimbi dhanya varga' of dhanya varga. Varieties are also mentioned in details which are discussed further. Bhavmishra described Tila with its Matiprada, Tvachya, Balya, Keshya actions.

VII. Shaligrama nighantus (1900 A.D)

Krushna Tila is described under 'Dhanya varga' in this nighantu. It describes synonyms, types and various therapeutic applications.

Classification according to ayurvedic classics

The drugs having similar characteristic feature, properties, and action are classified into different group. Charaka has classified the plant based on

pharmacological action into 50 group and into 37 group on first ingredient by Sushruta. Most of the Nighantukaras named based on the first of that groups.

Table no. 4: Showing Gana-varga of krushna tila.

| Samhita/nighantu | Gana/Varga |
|----------------------|--|
| Charaka | Swedopaga mahakashaya & purishvirajniya mahakshaya |
| Sushruta | Mudagadi gana |
| Vagbhata | Simbi dhanya varga |
| Dhanvantari nighantu | Suvarnadih varga |
| Madanpala nighantu | Dhanyadi varga |
| Shaligrama nighantu | Dhanya varga |
| Raja nighantu | Salyadi Varga |
| Nighantu adarsha | Taila Varga |
| Bhavprakash nighantu | Dhanya varga |
| Kaiyadeva Nighantu | Dhanya varga |

✚ **Synonyms with its meaning:** Accordingly, the different synonyms were studied, and their illustration is given below.

- Tailphala** – The seeds from the fruit have oil in it.
- Vanodbhava** - Herb which is found in the forest.
- Snehaphala** - The seeds from the fruit have Sneha in it.
- Paapaghna** - Attributed the qualities of removing all the sins.
- Pitrutarpan** - It is used in Shraaddha for offering ancestors.
- Pavitra** - As it is considered that it removes all sins.

g) **Homaadhanya** - It is used in the Homa during yagna karma.

h) **Pootidhanya** – It comes under the dhanyavarga & it has pooti(vishistagandha) in it.

i) **Krushnatailaka:** The colour of the oil is bit blackish in nature.

✚ **Toxicomic position**

➤ **Botanical description**

Scientific name: Sesamum indicum Linn.

Family: Pedaliaceae /Fabaceae

Table no. 5: Showing the taxonomical classification of krushna tila.

| Kingdom | Plantae | Plantae, Planta, Vegetal, Plant |
|---------------|-----------------------|---------------------------------|
| Subkingdom | Viridiplantae | |
| Infrakingdom | Streptophyta | Land plants |
| Superdivision | Embryophyta | Vascular plant, |
| Division | Tracheophyta | tracheophytes |
| Subdivision | Spermatophytina | Spermatophytes, seed plants |
| Class | Magnoliopsida | |
| Subclass | Asteranae | |
| Order | Lamiales | |
| Family | Pedaliaceae | Pedaliiums |
| Genus | Sesamum | sesame |
| Species | Sesamum indicum Linn. | |

✚ **Geographical description:** It is an annual plant, most cultivated. It found primarily in the tropics region, jangle desha. It is grown in light well drained soil which can retain adequate moisture. It thrives best on sandy loams.

Morphology and Habitat (Sesamum indicum linn.)

A) Key characters of family pedaliaceae

- Habitat** – Mostly annual or perennial herbs, rarely shrub
- Roots** – Usually tap root system and branched root.
- Stem-** Erect, herbaceous, branched with mucilage containing glandular hairs.
- Leaves-** Opposite or sometimes alternate, simple, entire or lobed, exstipulate with mucilaginous glandular hairs, incised or petrified.

e. **Inflorescence:** - Flower is pedicellate or hermaphrodite, zygomorphic, irregular, complete, hypogynous with or without bracts having gamopetalous calyx 4-5 connate sepals. Usually 5 lobed gamopetalous, bilabiate corollas are with broad tube. Androecium is with 4-5 stamens having dithecous anther. Syncarps gynoecium is usually with 2-carple,2- locules having superior ovary and axial placentation.

f. **Fruit-** Hard, having loculicidal capsule or nut, often spiny, winged, hooked and thorny.

g. **Seed-** In the Indian species wingless, seed are aluminous with thin endosperm and small straight embryo.

✚ **Macroscopic characters of krushna tila**

The seeds are flattened, ovoid, pointed at one end, 3-4 mm long, 2mm broad & 1mm thick, buff colored or whitish or black, finely punctuate with 4 delicate, longitudinal ridges, hilum is located at pointed end. Seed black, one side slightly concave with faint marginal lines and an equally faint central line. The seeds are flattened, ovoid, pointed at one end, 3-4 mm long, 2mm broad & 1mm thick.

✚ **Substitutes and Adulterants:** Sesamum oil used as substitutes and adulterant Olive oil and Almond oil.

✚ **Propagation:** It grows on a light well- drained soil, which can retain adequate moisture. Sowing in rows is also practiced and this is done by seed drill. The rows are generally 30 cm apart. Row planted crop is thinned 2-3 week after germination. So that 15-20 cm is maintained between plants in rows for rainfed crop, and 30 cm for irrigated crop. Sesamum is harvested well before the plant are completely dry in order to prevent loss of seed due to dehiscence of capsules.

✚ **Habitat:** Habitat - This small bush is indigenous to India & extensively cultivated in the warmer region. Sesame is cultivated in the plains as well as an elevation up to 1,200m at temperature of 21degree & above. It requires a warm climate & can't withstand frost, continued heavy rain or prolonged drought.

✚ **Collection:** It grows on a light well drained soil, which can retain adequate moisture. It thrives best on typical sandy loams. Water lodging is highly detrimental to the crop. In India sesamum is cultivated on a variety of soils ranging from the sandy semi desert conditions in Rajasthan to the clayey fields in Andhra Pradesh & the heavy black soils of Mysore & Maharashtra. A few diseases & pests have been reported to attack this plant. Sesamum is harvested well before the plants are completely dry to prevent loss of seeds due to dehiscence of capsules. It is sown in Varsharutu, Phalpakakala – at the end of the Sharadrutu.

✚ **Cultivation:** 19 important districts contributing to the production of sesame in the different states in India are: Rajasthan, Uttar Pradesh, Madhya Pradesh, Orissa, Andhra Pradesh, Maharashtra, Gujrat & Karnataka.

✚ **Chemical constitutions**

✚ **Seed:** Neutral lipids, glycolipids and phospholipids(also in flower), arginine, cystine, histidine, isoleucine, leucine lysine, methionine, phenylalanine threonine, tryptophan, tyrosine, valine, alpha and beta globulins, P-aminobenzoic acid, biotin, choline, folic acid, inositol, niacin, nicotinic acid, pantothenic acid, pyridoxine,

riboflavin, sesamose, thymine, alpha & Beta tocopherols, galactose, .glucose, lychnose, plantiose, raffinose, sesamose, sucrose and pentosanes, 2-acetyl, 3- methyl furan, 2- acetyl pyrrole acetyl pyrazine, 2-ethyl pyrazine, 2,5diethya pyrazines,2-furfuryl alcohol, sesamol, sesamol, 3methylbutanal, octanal, phenol, 2,4-arachidic, linoleic phytic and stearic acid, astaxanthin, sitosterol, campesterol, pinoselinol, myristic acid, palmitic acid, olic acid, stearic acid.

Seed - Sesaminol 2'O-beta-D-glucopyranosyl (1 to 2) -O-beta Dglucopyranoside.

Leaves- Pedaliin

Plant: Pinoselinol, 3-H- furo furan, salicylate.

Flowers- Neutral lipids, glycolipids & phospholipids.

✚ **Classification of krushna tila**

Classification as per ayurveda

1. **Living-non-living** – Chetana Dravya
2. **Cause- Effect Relationship** – Karyadravya
3. **Constitution** –Jala prithavi,
4. **Origin** – Audbhida
5. **Usage** – Ahariya as well as Ausadhi dravya
6. **Morphology** – Kshup
7. **Life span** – Varshayu

Rasapanchaka (Pharmacodynamics)

- **Rasa:** Madhur, Tikta, Kashaya, Katu.
- **Vipak:** Madhur
- **Virya:** Ushna
- **Guna:** Guru, Snigdha

Part used: Root, Leaf, Seed, Oil.

Dosege: Powder 5-10 gm/day Oil – 10-20ml.

Formulations & Preparations: Narasimha Churna Jatiphaladi Churna, Haridradi Lepa, Bhallatakadi Modaka, Tiladigutika, Tiladilepa, Tilashataka, Tilabhallatakadi yoga, Tilashtaka, Tiladiupanaha.

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