

KRISHNA TIAL A DRUG REVIEW

Archan¹, Thosar Chandrashekhar S.², Bagewadi Shantinath S.³

1. MD (Ayu) , Shree Sai Baba Clinic, Degaon
 2. MD(Scholar) , Shree Sai Baba Clinic, Degaon
 3. Asst Prof, SGR Ayurvedic Mahavidyalaya, Solapur
- Email: archanachougule7@gmail.com

ABSTRACT

Ayurveda views that the human body when healthy is in harmony. It views to help the individual strength, mind & body to prolong life & prevent illness. *Krishna tila* (Sesamum indicum, Linn) is one of the plant origin drugs which had been mentioned for its rasayana properties in classical literature of Ayurveda. So the review on the drug was done by keeping in mind its utility & its wonderful uses to the human mankind.

Key words: *Krishna tila*, review of the drug

INTRODUCTION:

Ayurveda, the knowledge of life science bestowed health and longevity in the form of preventive and curative measures. The curative aspects are mainly covered by Dravyachikitsa (treatment using drugs). As diseases are born with human, there is always a search for safest curative drugs. Acharya Charaka identified the necessity of complete knowledge on herbs and their utility in therapeutics. He gave the simile between the poisons within discriminately used drugs. On the other hand, drugs used with perfect knowledge can act as nectar and very good drug can become a deadly poison, if the knowledge is properly and improperly. *Krishna tila* possesses properties like twacha, ushna, sthirakara & yonishodhana. Among all the *taila*, *Tila* is considered as the best. *Tilataila* possesses madhurakasha rasa, ushnavirya, madhuravipaka, sara, vishada, vikashi, sukshmagunas, balya, varnya,

vrushya, raktapittahara, lekhana, shodhana, deepana, vrunaropana etc properties.

DRUG REVIEW: Sesamum is one of the most ancient of cultivated crops in India. Sesamum seed has been an essential article in Hindu religious ceremonies & has been referred to as homadhyana & pitrutarpana in ancient scripts. Atarvaveda & other vedic literature quoted this herb extensively. *Tila* is considered as a cereal of winter (hemanta & shishiradhanya). oil extraction procedure from its seeds is known during vedic period. *Tila* is described with three colour viz, shweta, krishna & goumutravarna. Keshavapadhatti quoted about the rice prepared with *tila* is useful for keshavruddhi, keshadhikarana & kesharanjana. hounakiyaatharvasamhitamenioned it as 'tira'. It was one of the wild and cultivated sacrificial grains. In fire the outer covering of the seeds was disorganized & then increased the flame.¹

SAMHITA KALA: In charaksamhitaSutrasthana *Tilais* explained under swedopaga&purishavirajaniyavarga& under vegetable source(shakavarga) of unction substance[group of shamidhanya (legumes)].² In Chikitsasthana, it is said that sesame acts as rasayana&vajikara. Tilataila is beneficial in vatavyadhi& is also used as application in khalitya.³

In sushruta Sutra sthana, *tila* is explained under mudghadivarga& in the context of samyogaviruddhaie, tilashuskuli (paste of tila fried in oil/ghee) & taken along with other eatables. Also described as ita tila.⁴ In Sharirasthana, it is said as balopachara-powder of tila should be sprinkled all around the child.⁵ In Kalpasthana, it is said that after snehana&swedanasesamum diet should be given to excite kapha [madanaphala yoga]. In Uttaratantratila is prescribed as hemanatarutucharya. Sushruta prescribes the leaves in the treatment of snake bite & scorpion sting but the seeds are not antidote to either snake venom or scorpion venom.⁶ In AstangHrudayaSutrasthana, it is said that *tila* causes little quantity of urine. It also promotes intelligence, digestive function & actuates kapha& pitta. Explained under shamidhanyavarga&sadhyosneha yoga.⁷ He who roams constantly searching for food prepared from sesame is said to be possessed by nishada graham. The effect of poison increases from smelling the flowers & fruits of tila. He who consumes one prakuncha(pala) of *Krishna tila* followed by drinking cold water everyday gets his body nourished well & his teeth becomes firm till death.⁸

HABITAT:⁹ This small bush is indigenous to India & extensively cultivated in the warmer regions. Sesame is cultivated in the plains as well as at elevations up to 1,200m at temperature of 21° & above. It requires a

warm climate & can't withstand frost, continued heavy rain or prolonged drought.

NIGHANTU KALA: Table no 1

COLLECTION:¹⁷ It grows on a light well drained soil, which is capable of retaining 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 Andrapradesh& 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 in order to prevent loss of seeds due to dehiscence of capsules. The average yield of sesamum is reported to be 157 kg/ha.

It is sown in varsharutu& collected in sharad rutu.¹⁸

Pushpakala- at the end of the varsharutu, Phalapakakala- at the end of the sharadrutu.

CULTIATION: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.

SANSKRIT NAME:²⁰

Tilais the Sanskrit word derived from 'Tila' – snehana(smooth/ oily). The other meaning of Tila is sesamumseeds. Usually the oil extracted from these seeds is known as *Taila* (oil). Because of the snigdha guna it brings snigdha to the whole body hence it is called as *tila*.

BOTANICAL NAME:²¹ *Sesamum indicum* Linn
Sesamum : 'sesamon' greek name of the plant *indicum*: Indian

PLANT CLASSIFICATION:²²

Kingdom: Plantae

Sub class: Asteridae
 Division: Angiosperms
 Family: Pedaliaceae
 Sub kingdom: Virilae
 Order: Scrophulariales
 Phylum: Magnoliophyta
 Sub order: Lamiales
 Sub phylum: Plantae euphyllophytina
 Genus: Sesamum

Class: Magnoliopsida

DISTRIBUTION: ²³ It is cultivated throughout India up to an altitude of 1200m. Cultivated all over India, Baluchistan, Waziristan- probably the native of tropical Africa.

ETYMOLOGICAL DERIVATION: ²⁴

- *Vanodbhava*: Herb which is found in the forests
- *Tailaphala*: The seeds from the fruit have oil in it
- *Snehaphla*: The seeds from the fruit have sneha in it
- *Snehapooraphala*: The seeds from the fruit are full of oil in it
- *Pootidhanya*: It comes under the dhan-yavarga & it has pooti (vishistagandha) in it
- *Homadhanya*: It is used in the homa during yagna karma
- *Snehapoorna*: Its seeds are full of oil
 - *Krishnatailaka*: The colour of the oil is bit blackish in nature

VARIETIES: Three varieties of sesamum seeds are found: black, white & red or brown. The black variety is the most common & yields the best quality of oil & is also the best suited for medicinal purposes.

MORPHOLOGY: ²⁵

- An erect glandular pubescent, annual herb upto 95 cm tall, branching from the base.

- Leaves: alternate or lower opposite & often deeply 3 lobed, lobes lanceolate, 3-15 X 1.5-6 cm, serrate, puberulous beneath, upper leaves entire, lanceolate much smaller, passing in to bracts.
- Roots: sesame has a tap root system with profuse lateral branches. Long seasonal types
- Occasionally treated as perennial have an extensive & penetrating root system & short season types have less extensive more shallow root.
- Flowers: ill smelling, white or pink with yellow marks, axillary, solitary, forming a false raceme at the end of the branches.
- Calyx: small, 5-partite.
- Corolla: 2-lipped, tube ventricose, lobes rounded, those of the upper lip usually rather smaller than the others.
- Stamens: 4, didynamous, included;
- Anthers: sagillate, the cells sub parallel, distinct.
- Ovary: 2-celled, the cells each soon divided in to 2 chambers by the intrusion of the false dissepiments from between the placenta, ovules numerous, 1-seriate in each chamber.
- Style: filiform.
- Stigma: 2-lobed.
- Capsule: oblong or ovoid, usually 4-angled & 4-grooved, loculicidally 2-valved, 4-chambered
- Fruits: glandular, oblong, compressed capsules, deeply 4-grooved dehiscent to half way down.
- Seeds: many, obvoid, compressed, black, foveolate
- Species – 15

PHARMACOGNOSY: ²⁶The 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 . The epidermis is characterized by a thin walled palisade, the anticline walls being more or less wavy, cells contain spherical mass of crystals of calcium

oxalate . The remainder of the testa consists of collapsed cells with yellowish membrane on the inside. The endosperm & cotyledons consists of cellulose, polygonal parenchyma containing fixed oil & small aleurone grains. Starch is absent.

PROPERTIES: Table no 4

Text	NA	BN	RN	KN	PVS
Rasa	Madhura, Katu, Tikta, Kashaya	Madhura, Katu, Tikta	Madura, Tikta, Kashaya	Katu, Tikta, Madhura, Kashaya	Madhura
Uparasa	-	-	-	-	Kashaya, Tikta
Guna	Guru, Snigdha	Guru, Snighda	Tikshna	Guru Snigdha	Guru Snigdha
Veerya	Ushana	Ushna	Ushna	Ushna	Ushna
Vipaka	Katu	Madura	Madhura	Katu	Madhura

In ayurvedic classics there is controversy on many things. Ex, in case of tila vagbhata said it has katuvipaka whereas sushruta said madhura. Hence regarding vipakait is not similar.

KARMA: Snehana, vedanasthapana, sandhaniya, vrunashodhana, vrunaropana, keshya, medhya ,dantya, deepana, grahi, shoolaprashamana, vajikara, artavajanana, balya, mootrajanana&rasayana.

USEFUL PART: Table no 5

Sl no	NIGHANTU	PART
1	NA	Beeje, patra, pushpa
2	RN	Seeds
3	PVS	Seeds, patra, pushpa
4	BN	Seeds
5	Ayurvedotkaoushadhiniruktamala	Patra, pushpa , phala

MATRA (DOSE): ²⁷Seed powder -5-10 gms Oil – 10-20ml

SHELF LIFE: Seeds- 2 years , Oil- long shelf life.

FORMULATIONS & PREPARATIONS:²⁸ Tiladigutika, Tiladilepa, Tilashtaka, Tilabhallatakadi yoga, Tilashtaka, Tiladiupanaha

USES: ^{29, 30, 31}

1. In Vatajavruna- Paste of tila&atasi is prepared & it should be boiled in the

milk & when it becomes solid that should be applied.

2. In Vatajashoola- Tila is made in to paste & ball is prepared & this is rolled over the abdomen.

3. In Indralutpa- Paste prepared from the equal quantity of gokshura, tilapushpa, madhu&ghruta is applied over the scalp it enhances hair growth.

4. In Netraroga- Netraprakshalana should be done with the qwatha of Krishna tila . It cures timira& irritation in the eyes.

5. In Padatoda- Abhyanga should be done with tilataila on the pada& then rinsed with ushnajala.
6. For Teeth- Daily about 1 anjali Krishna tila should be chewed & after that water should be consumed. It is nourishing & it makes teeth strong as diamond.
7. In Ashmari- Tilakshara along with madhu&dugdha is given to drink.
8. In Atisara- In Krishna tilakalkapan-chamamshasharkara&ajadugdha is given to consume.
9. As Vajikara- Krishna tila + gokshura-choorna mixed in ajadugdha along with that mishri should be mixed & given to drink . It cures shandyata.
10. As Rasayana- Krishna tila + bringaraja(equal quantity)along with milk given daily to drink. This helps in achieving

longevity , cures diseases & blackens hair.

CHEMICAL COMPOSITION: ³²

- Leaves- Pedalin
- Flowers- Neutral lipids, glycolipids & phospholipids
- Seeds- Glucopyranoside Sesamum oil is rich in oleic & linoleic acids, which together account for 85% of the total fatty acids. The different component acids are :myristic, palmitic, stearic, aralidic, hexadecenoic, oleic & linoleic , lignoceric acid is present in traces . Minor constituents present in the unsaponifiable fraction , such as sesamin , sesamol & phytosterols.³³

Specific gravity at 20° 0.916 – 0.919 →

Refractive index at 40° 1.4650 – 1.4 →

CHEMICAL COMPOSITION OF SESAME SEEDS(values in g/100g material) KRISHNA TILA : ³⁴ **Table no 6**

CONSTITUENT	Whole seed	Dehulled	Hull
Moisture	5.2	6.1	4.1
Fat	49.8	53.5	9.9
Protein	20.0	21.5	8.1
Crude fibre	3.3	1.3	19.5
Carbohydrate	14.7	14.9	15.9
Mineral matter	5.2	2.6	24.2
Oxalic acid	1.80	0.09	18.30
Calcium	1.21	0.06	12.10
Phosphorous	0.62	0.62	0.66

IDENTITY, PURITY & STRENGTH: ³⁵ **Table no 7**

Foreign matter	Not more than 2%
Total ash	“ 9%
Acid Insoluble ash	“1.5%
Alcohol soluble extract	Not less than 20%
Water soluble extractive	“4%
Fixed oil	“ 35%

ECONOMICAL IMPORTANCE:

1. Sesame oil is widely used as an ingredient of confectionary, soap, cosmetics, perfume, for making margarine & insecticides & pharmaceutical industry.

2. The oil is also used in formulations of antacids, ointments, hair oils, injectables as a vehicle for fat soluble substances. Sesamum seed is used as a nourishing food & as flavouring agent.

3. small quantities are used in the preparation of scented hair oils.
4. The oil is also used by tanners for oiling up tanned cow hides, goat & sheep skins.
5. Substitute as a sweet oil in salads

DISCUSSION

etailed description of Krishna tila is available in Samhita as well as Nighantus in which it was introduced for its varied benefits for curing ailments. The references found in Ayurveda texts provide firm foundation for determination of the drug. The Krishna tila is used therapeutically in different ailments like *vatashoola, amavata, netraroga, mastishkadourbalya, dantadourbalya, atisara, raktatisara, agnimandya, trushna, grahani, arsha, raktarsha, prameha, raktasrava, pravahika, vatarakta, hikka, shwasa, pooyameha, mutravarodha, rajorodh, kastartava, dourbalya, vruna,*

CONCLUSION:

1. Morphological characters of *Krishna tilabeeja* are found similar to the classical references.
2. Madhura, tikta, kashaya –rasa, madhura-vipaka, guru, snigdha- gunas, these qualities in Krishna tila acts as rasayana.
3. *Krishna tila* because of its vast uses as per classical texts can be utilized in day today life to conquer over many diseases
4. Easily available *Krishna tila* can be used safely as substitute over modern antioxidant drugs

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