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ILLUSTRATED STUDY OF DRUG *TIL TAILA* FROM DIFFERENT *AYURVEDIC* AND MODERN TEXTS

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ABSTRACT

This article deals with whole description about the drug *TilTaila*. In this regard detailed classical review, classification of the drug in the different Samhita and Nighantu, synonyms of *Til* and their interpretation is described. Also *rasapanchaka*, effect on *dosha-dhatu*, systemic action, *rogghnata*, therapeutic utilities; parts used, adulteration of the drug are also mentioned. Modern review of *Sesame indicum* Linn, different vernacular names of the drug, pharmacological activities,chemical constituents of sesame oil also find their place in detail in this paper.

KEYWORDS: *Til Taila, sesamumindicum, Rasapanchaka, dosha.*

INTRODUCTION

Acharya Charaka states that "There is no substance in the universe which cannot be used as a medicine, subject to rational use with a definite objective.[1] Drug as defined by WHO is a substance or product that is used or intended to be used to modify or explore the physiological systems or pathological states for the benefits of the recipient. Drug is the medium for treatment to a physician, as a sword is to a warrior. When used with prudence, poison also acts as a drug but application without lucid thoughts, nectar also proves to be a poison.

In *Ayurveda* 'Drug' is called as *'Aushadhi",* one of the four constituents of *Chikitsachatushpada*[2] *& Trisutra*[3] *i.e. Hetu, Linga and Aushadha.* It is derived from the word *"osh"* means *'rasa'*. The great effect of any drug is abide of its therapeutic value which can be marked out by inspecting the synonyms of *Bhesaja*[4] given by *Charaka* as *Chikitsa*

(that which alleviates disorders), *Vyadhihara* (destroyer of diseases), *Pathya* (beneficial for the channels), *Sadhana* (that which is instrument for performance), *Aushadha* (that which is prepared from herbs), *Prayaschita* (expiation), *Prashamanam* (pacification), *Prakritisthapanam* (that which helps recovery) and *Hita* (wholesome).

Til Taila

The word *"Taila"* is derived from Sanskrit word *"Tilodbhavam"* means, one which is derived from til. *Taila* is considered for all oils. Specifically, *tiltaila* means oil extracted from the seeds of *sesame indicum*.

Classification[5]

Latin name- *Sesame indicum* Linn

Family- Pedaliaceae

Varga- Bhavaprakasha & Sushruta: Taila varga

Synonyms

***Hindi*:** Tila, Teel, Tili

***Sanskrit*:** Tilaja, Tilasamhava, Snehottama, Abhyangaja, Mardanaka

English: Sesame, Gingelly-oil Seeds

Parts used-Seeds, oil

Swarupa- It is a Kshup having 1'-3' height. Its flowers are ill smelling, white or pink with yellow marks, axillary, solitary, forming a false raceme at the end of branches. Fruits are quadrangular, oblong, compressed capsules. There are many seeds that are obovoid, compressed, black or white.

Habitat-All over India upto an altitude of 1200 m.

Properties[6]

- ***Rasa*** - *Madhura*
- ***Anurasa*** - *Tikta, kashaya*
- ***Guna*** - *Guru, Snigdha*
- ***Virya*** - *Usna*
- ***Vipaka*** - *Madhura*
- ***Doshaghnata*** - *Vatashamaka, Kaphapittashamaka*

Chemical composition

Moisture (4.1- 6.5%), Fixed oil (43.0- 56.8%), Carbohydrates (9.1 – 25.2%), Protein (16.6 – 28.4%), Fibers (2.9 – 8.6%), Minerals (4.1 – 7.4%), Phosphorus (0.47–0.62%), Calcium (1.06 – 1.45%), Vitamins (A, B, C, in abundance).

Actions and uses[7]

Prinana, vrisya, twakprasadana, mardavakara, sthairyakara, balya, garbhasajasodhka, bhagnasandhanakara, Medhavardhaka, yoni-shiro-karnshulaprasamana.

Rogaghnata

Vataroga, bhagna, yonikarna, shiroroga, keshapata, vrana.

Pharmacological activities[8]

Cholesterolemic, Antioxidant, hepatoprotective, nematicidal, antitumour, hypotensive, free redical scavenging activity.

Pharmaceutical uses

Sesame is the oldest oilseed crop of the world. Sesame seed has a high food value because of its higher contents of good quality edible oil and nutritious protein. Sesame oil has a long shelf life and is rich in linoleic acid.Its protein is rich in sulfur containingamino acid. The seed also is rich in useful carbohydrates, minerals and vitamins. The seedsare directly edible. Simple processes like roasting improve the palatability of seeds. It isused to garnish foods like bread, biscuits, snacks and sweetmeats.

Sesame seed

Sesame seeds are very small in size and are 4 mm long 2mm wide and 1mm thick. They are pearl shaped, ovate, small, slightly flattened and somewhat thinner at the hilum. The seed contains testa (hull), endosperm, cotyledons and embryo. The hull content ranges between 10 and 20%. It is responsible for the colour, bitterness, higher fibre and high oxalate contents of the seed. The seed colour ranges from white to brown. The white types generally contain more hulls.

Seed composition

Sesame seed has a high food value because of its higher content of oil and protein. In addition it has sufficient quantities of carbohydrates, fibre and minerals. The proximate composition of sesame seed is presented in Table.

Constituent Composition

Moisture	6-7%
Protein	20-28%
Oil	48-55%
Sugar	14-16%
Fibre	6-8%
Mineral	5-7%

Oil quality

Oil extraction is carried out either in Ghanis or in screw press followed by solvent extraction. Sesame oil is deep to pale yellow in colour. It has a pleasant odour and taste. Sesame oil has been valued for centuries as a table and cooking oil. It has exceptional stability as frying oil. The general characteristics of sesame oil are presented in Table.

Characteristics of sesame oil

Characteristic Range

Specific gravity	0.902-0.924
Refractive index 25°C	1.4760-1.4770
Acid value	1.0-2.2
Iodine value	103-113
Saponification value	186-200
Free fatty acids %	1-3
Unsaponifiables %	1-2
Smoke point	165°C

Sesame oil contains about 80% unsaturated fatty acids composed mainly of oleic (18:1) and linoleic (18:2) acids. The remaining 20% is composed of the saturated fatty acids namely palmitic and stearic acids. The fatty acid composition of sesame oil is presented in Table.

Fatty acid composition of sesame oil

Fatty acid Ranges

Palmitic	8-10
Stearic	4-8
Oleic	40-48
Linoleic	30-45
Arachidic	0.3-1.0

Ghani extracted sesame kernel oil is a premium oil. It finds wide use in pickle preparation. Apart from its use as anedible oil, the sesame oil finds use in pharmacy perfumery (as fixative), cosmetics, insecticide (synergist) and soap industries. It can be easily hydrogenated to a medium melting fat.

Minerals and vitamins

Sesame is a good source of minerals. The ash content ranges from 5-7%. It has 1% Ca and 0.7% P. Calcium is mostly present in the seed coat. The bioavailability of Ca is 65% as against 100% for $CaCo_3$. This is because of the binding effect of oxalic acid in the seed. Sesame is a good source of niacin, folic acid and tocopherols. The tocopherol level is 30-53 mg/100g oil. Its gamma tocopherol level is around 0.2 mg.

Antinutritional constituents

Sesame seed is normally considered to be free from anti-nutritional constituents. Because of this, it is used as a constituent of a wide variety of foods. However the seed coat contains oxalate and phytates. These components make the mineral elements like Ca and P unavailable. The oxalate content is around 2-5% while the phytate levels range from 20-45 mg per 100g seed. Dehulling is the simplest process to remove the anti-nutritional factors.

Antioxidants

Sesame oil has two constituents namely sesamin and sesamol. These are present in the unsaponifiable fraction of the oil. They are responsible for the very high stability of oil at room temperature and at frying temperatures. The sesamin content is 0.07 to 0.6% while sesamol is around 0.002 to 0.006%.

Some processed foods[9]

Dehulled seeds are directly used in different types of foods like halva, laddu and chikki. They are also eaten whole after roasting. Ready to eat instant foods have been prepared using sesame flour as an ingredient of other cereal, pulse and oilseed flours. Sesame seeds are directly used to garnish bakery products. Sesame flour is used as a methionine supplement. A nutritious beverage can be prepared using 70% soy protein and 30% sesame protein.

Action and uses

According to *Charakasamhita, tiltaila* has been indicated for those suffering from diseases due to vitiation of *Vata* and for the persons of *Vatika Prakriti.*[10] Further almost all the*Ayurvedic* scholars described it as *Vatakaphahara*and*Pittavardhaka* in general, but further they clarify that it destroys all diseases[11] due to *Samyoga (SnehaPravicharana)* and*Samskara* (processing with the drugs that causes addition of new properties). That is why it pacifies *Pitta* in combination with *Pittashamaka* drugs. It is nervine tonic, *Vatahara, Vatashamaka, Tridoshaghna, Artavajanana, Stanyajanana, Balya*. It possesses antioxidant

and synergistic properties. This oil is employed as a vehicle for drug delivery and also used as emollient and demulcent.

Pharmacodynamic properties of TilTaila

Text	Rasa	Guna	Veerya	Vipaka	Action on Doshas	Action & uses
Charaka	*Madhura, anurasaKashaya*	*Sukshma Vyavayi, Ushna*	-	-	*VK↓, P↑*	*Balya, Snehana, Yoni Vishodhana, Rajadosha, Vatavikara, Sarvarogahara*
Sushruta	*Madhura, Tikta, Anurasa Kashaya*	*Ushna, Tikshna, Vyavayi, Sukshma Vishada, Guru,Sara, Vikasi*	-	*Madhur*	*VK↓, P↑*	*Brimhana, Lekhana, Pachana, Yonikarnshiroshulnashaka, Garbhashaya Shodhana*
Dhanvantari Nighantu	*MadhuraKashaya*	*Sukshma Vyavayi*	*Ushna*	-	*V↓, P↑*	*Basti, Abhyanga*
Madanapal Nighantu	*Madhura*	*Guru, Vikasi, Vishada*	*Ushna*	*Madhur*	*KV↓*	*Garbhashaya Shodhana, Yoni*
Kaiyadeva Nighantu	*Tikta, Madhura Anurasa Kashaya*	*Guru, Sukshma Vikasi, Vishada*	*Ushna*	*Madhur*	*V↓, Raktapitta↑*	*Gabhashaya Vishodhana, Yonishoola↓, Brimhana etc.*
Raja Nighantu	*Madhura Tikta, Kashaya*	*Tikshna*	*Ushna*	-	*KV↓*	*Balya*
Bhavaprakas-ha Nighantu	*Tikta, Madhura Anurasa Kashaya*	*Snigdha, Guru, Sara, Vikasi, Sukshma Vyavayi, Tikshna, Mrudu*	*Ushna*	*Madhur*	*KV↓*	*Garbhashaya Shodhana, Yonishoola nashaka, Lekhana, Brimhana*
Dravyaguna Vigyana	*Madhura Anurasa Kashaya, Tikta*	*Guru, Snigdha*	*Ushna*	*Madhur*	*V↓ (acc. Samyoga and Samskara VPK↓)*	*Vedanasthapana Shodhana, Artavajanana, Stanyajanana, used in dysmenorrhoea, Rajorodha*

Modern View

Sesame oil is the most stable vegetable oil ever used. The oil is extracted from both the varieties of sesame seeds. viz. black and white. It is light yellow coloured oil with a pleasant odour of typical character and bland taste. Its density may vary between 0.916-0.920. It

solidifies at 5^0C and forms a buttery mass. It is soluble in ether, chloroform and carbon disulphide solutions. It is partially soluble in alcohol and insoluble in water.

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