

## ***REVIEW ON THE TRADITIONAL AND CONTEMPORARY USES OF SUNTHI (Zingiber officinale Rosc.) AND ITS MEDICINAL IMPORTANCE IN AYURVEDA***

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### ABSTRACT

In Indian cuisine ginger (*Sunthi*) is a key ingredient of many dishes. It has a vast role in traditional ayurvedic medicine. The details description of *sunthi* has briefly mentioned in ayurvedic *Nighantus* and other *Ayurvedic* text in scientific manner. This review study has more information about *sunthi* including traditional, modern as well as botanical description, cultivation, trade and commerce and also therapeutic – pharmacological contribution.

**Keywords:** *Sunthi, Nighantu.*

### INTRODUCTION

Is it possible – a single herb can cure much disease? The answer is ‘yes’ because our traditional system of medicine is reach of such type of herbs, *sunthi* <sup>[1]</sup> (*Zingiber officinale Rosc*) is one of them. It is a rhizome belonging to *zingiberaceae* family. The plant has green, erect reed like stem near about 60 cm high with characteristic aromatic odour. Recent many study proven that *sunthi* has anti-platelets, anti-fungal, anti-inflammatory, anti-bacterial and anti-oxidative activity. Apart

from these it has hypolipidemic, anti-carcinogenic and anti-thrombolytic activity. *Sunthi* is a rich source of minerals, vitamins. It has versatile use as a medicine, adjuvant (*anupan*) and also in some Para surgical procedure. It is used from kitchen to clinic and eye to toe. In ayurveda so many preparations are present of *sunthi* with specific indications. Thus, the present article provides more information including traditional, modern aspect about *sunthi* (*Zingiber officinale Rosc.*).

**Table 1: Sanskrit Synonyms of Sunthi (*Zingiber officinale Rosc.*) in Different Nighantus**

Synonyms	BPN <sup>2</sup>	DN <sup>3</sup>	KN <sup>4</sup>	MPN <sup>5</sup>	SGN <sup>6</sup>	RN <sup>7</sup>	PN <sup>8</sup>	SN <sup>9</sup>	NA <sup>10</sup>
<i>Sunth</i>	+	+				+	+	+	+
<i>Mahausad</i>	+	+	+	+	-	+	+	-	+
<i>Viswa</i>	+	+				+	+		+
<i>Katubhadra</i>	+	+	+		+	+			
<i>Katuyaka</i>	+								
<i>Nagara</i>	+	+	+			+			+
<i>Sringavera</i>	+	+		+	+	+			+
<i>Visvabhesaja</i>	+	+	+			+		+	+
<i>Sonth</i>			+						+
<i>Rahubhadra</i>			+		+				
<i>Vishya ousad</i>		+				+			
<i>Adrak</i>				+	+				
<i>Katugranthi</i>						+			
<i>Katu usnam</i>						+			

**BPN:** Bhav prakash Nighantu; **DN:** Dhan-wantar Nighantu; **KN:** Kaidev Nighantu; **MPN:** Madanpala Nighantu; **SGN:** Shaligram

**Nighantu;** **RN:**Raj Nighantu; **PN:**Priya Nighantu; **SN:**Sankar Nighantu; **NA:**Nighantu Adarsha.

**Table 2: National and International Name Of Sunthi (*Zingiber officinale Rosc.*)**

National Name <sup>[11]</sup>	International Name <sup>[11]</sup>
Sanskrit: <i>Srangavera</i> ,English:Ginger,Hindi:Sonth Bengali:Suntha,Gujrati:Sundh,Kanada:Sunthi Malyalam:Ckukku,Marathi:Sunth,Punjabi:Sund Tamil:Sukku,Telegu:Sonthi,Assamese:Adasuth Oriya: Sunthi.	Arab:Zanjibile-yabis,Pers:Zanjabile khashk,Sing:Velicha-nguru,Urdu:Sonth

**Table 3: Properties of Sunthi (*Zingiber officinale Rosc.*) in different Nighantus:**

Properties	BPN <sup>2</sup>	DN <sup>3</sup>	KN <sup>4</sup>	MPN <sup>5</sup>	SGN <sup>6</sup>	RN <sup>7</sup>	PN <sup>8</sup>	SN <sup>9</sup>	NA <sup>10</sup>
<i>Rasa</i>	<i>Katu</i>	-	<i>Katu</i>	<i>Katu</i>	<i>Katu</i>	<i>Katu</i>	-	-	-
<i>Guna</i>	<i>Guru,</i> <i>Tiksna</i>	<i>snigdha</i>	<i>Snigdha,</i> <i>Laghu</i>	<i>Guru</i>	<i>Snigdha,</i> <i>Laghu</i>	<i>snigdha</i>	-	<i>snigdha</i>	<i>Snigdha.</i> <i>Laghu</i>
<i>Virya</i>	<i>Usna</i>	<i>Usna</i>	<i>Usna</i>	<i>Usna</i>	<i>Usna</i>	<i>usna</i>		<i>usna</i>	<i>Usna</i>
<i>Vipak</i>	<i>Madhura</i>	<i>Katu</i>	<i>Madhura</i>	-	<i>Madhura</i>			<i>Madhura</i>	<i>Madhura</i>

### Distribution<sup>17</sup>:

It is cultivated almost throughout India mainly sub-Himalayan tracts of Uttar Pradesh, occasionally cultivated in Bihar and Orissa, West Bengal, Himachal Pradesh, Madhya Pradesh,

Gujarat, Karnataka and Kerala and run wild in some places in Western Ghats.

### Botanical Descriptions<sup>[12]</sup>:

**Leaves:** Simple alternate distichously narrow oblong lanceolate leaves. Leaves are long and

2 - 3 cm broad with sheathing bases, the blade gradually tapering to a point.

**Flowers** Flowers are rare, rather small, calyx superior, gamosepalous, three toothed,

**Seed:** Oblong.

**Macroscopic** <sup>[13]</sup>: Drug occurs as entire rhizome or in pieces, rhizome laterally compressed bearing flattish ovate, oblique branches on upper side, each having a depressed scar at its apex, pieces 5-15 cm long, 1.5-6.5 cm wide (usually 3-4 cm) and 1-1.5 cm thick, fracture short with projecting fibres, transversely cut surface shows a wide central stele having numerous greyish cut ends of fibres and yellow secreting cells. Odour, ginger taste – pungent.

**Microscopic** <sup>[13]</sup>: Rhizome shows a few layered, irregularly arranged, tangentially elongated, brown cells of outer cork and 6-12 rows of thin-walled, colourless, radially arranged cells of inner cork, secondary cortex consisting of hexagonal to polygonal, isodiametric, thin walled, parenchymatous cells containing numerous circular to oval starch grains with striations and hilum at one end with clear concentric striations, measuring 5-25 in dia, idioblasts containing large yellowish to brownish globules of oleo-resin walls of oil cells submersed, numerous closed, collateral, cortical fibro – vascular bundles scattered throughout cortical zone. Greater number occurring in inner cortical region, larger bundles consists of 2-7 vessels, small cells of sieve tube, polygonal cells of parenchyma and group of fibres, vessels showing reticulate, scalariform and spiral thickening, fibres septet with a few oblique pores on their walls, endodermis single layered, free from starch, pericycle sin-

gle layered enclosing central stele, fibro vascular bundles of two types, those arranged along pericycle in a definite ring, vessels 2-5 in number.

**Substitute and Adulterant** <sup>[12]</sup>:

There are several commercial varieties of ginger, derived from *Z. officinale*. Apart from these, some types are derived from other species. Japanese ginger is obtained from *Z. mioga* Rosc and Martinique ginger from *Z. zerumbet* Rosc. Ex.Sm.The rhizomes of *Z. casummar* Roxb are sometimes used as substitute to *Z. officinale*.

**Trade and Commerce** <sup>[12]</sup>:

India is one of the chief ginger producing countries. A considerable quantity of fresh as well as dry ginger is exported to West Asian countries, USA, Japan, UK, Germany, Netherland and several other countries. India also exported ginger oil to several countries like France, Japan, UK etc .Retail market price – Rhizome (dried) – Rs. 80/- per kg. (2001)

**Cultivation** <sup>[12]</sup>:

The plant is cultivated in all warmer and moister parts of India. Warm and humid climate is essential for its growth. It grows in the areas of heavy rainfall (150 to 300 cm) upto an altitude of 1400 meters. It can also be grown in areas of low or moderate rainfall as an irrigate crop. The ideal types of soil for its growth are sandy or clayey loam, red loam and late rite with rich humus. The crop is cultivated mostly as pure, or as an intercrop and also as a rotation crop with tapioca, chill-lies, arrowroot and sesame. The land is ploughed a number of times to bring the soil to a fine tilt. 20 to 30 tonnes/hectare of FYM is added to soil before planting. Raised beds of 3 to 6 m in length, 1

m broad and 15 cm high are prepared keeping 30 – 35 cm space for irrigation channels. Generally ginger is taken as a monsoon crop. Healthy rhizome 2.5 cm long with at least one good sprout is selected and planted 5 cm deep with spacing 22 × 15 cm and covered with soil and thick mulch of green leaves. The rhizomes sprout in 10 to 15 days. When the plant attains a height of 0.6 m, several lateral shoots are formed. When the crop matures after about 8 month, the lateral shoots show yellow and get dried. The crop is done by uprooting the rhizomes carefully. The average yield of the rhizome is approximately 5000 kg/hectare under optimum soil and climatic condition.

#### **PHARMACOLOGY:**

*Sunthi* (*Zingiber officinale* Rosc.) has anti-inflammatory activity. It is specifically used in Amavata where predominance of Ama in the pathology of arthritis seen. Patient receiving 3 – 7 gm of powder *Sunthi* daily for about 2 months shows significant reduction in pain and swelling associated with rheumatoid arthritis. *Sunthi* is good, considered as effective as acetylsalicylic acid in reducing carrageen induced oedema. *Sunthi* may act in a similar manner as NSAIDs which interfere with prostaglandin biosynthesis. It is found that 6-gingerol and 6-shagol have analgesic and antipyretic properties. Ginger oil is also known to suppress inflammation in arthritis. *Sunthi* has been proved to have anti platelet aggregation property. Dose of 10 gm of *Sunthi* daily for a long period reduces platelet aggregation. In addition to inhibit platelet aggregation, *Sunthi*

also reduces platelet thromboxane synthesis. This effect is seen by the consumption of 5 gm/day *Sunthi* powder. *Sunthi* is known to have antimicrobial and anti fungal activity. It is effective against both gram positive and gram negative bacteria. *Sunthi* exhibit antirhinovirus activity in the plaque reduction test. Rhinovirus in the virus associated with common cold. The effect is due to especially beta-sesquiphellondrene.

#### **ADVERSE EFFECT** <sup>[14]</sup>:

The rare side effects are increased bleeding tendency, rash, itching sensation, swelling of the tongue, lips or throat and irregular heartbeats. The common or usual side effects, which do not require any medicinal aid, are flatulence, abdominal distension and headache.

#### **CONTRAINDICATIONS** <sup>[16]</sup>:

*Sunthi* (*Zingiber officinale* Rosc.) being ushna and tikshna, it should not be used in *Pandu* (anaemia) *Mutrakricha* (dysuria) *Raktapitta* (bleeding disorders) *Vrana* (ulcer) *Jwar* (pyrexia) and in summer season and autumn. It is to be taken with caution in pregnancy, lactation, abnormal bleeding and allergy to ginger.

#### **DRUG INTERACTIONS** <sup>[16]</sup>:

*Sunthi* (*Zingiber officinale* Rosc.) can interact with anti inflammatory medications such as ibuprofen. It can also interact with aspirin, warfarin, heparin and other drugs that effect bleeding tendencies or platelet count.

**Table 4:** position of Sunthi (*Zingiber Officinale Rosc.*) in different Ayurvedic text:

Nighantus	Varga
BPN <sup>[2]</sup>	Harityakadi
DN <sup>[3]</sup>	Satapuspadi
KN <sup>[4]</sup>	Ausadhi
MPN <sup>[5]</sup>	Sunthyadi
SGN <sup>[6]</sup>	Harityakadi
RN <sup>[7]</sup>	Pippalyadi
PN <sup>[8]</sup>	Pippalyadi
SN <sup>[9]</sup>	-
NA <sup>[10]</sup>	Ardrakadi
Charak <sup>[17]</sup>	Triptighna, Arshoghna, Dipaniya, Trishnanigraha
Susruta <sup>[18]</sup>	Ausadhi
Vagbhat <sup>[19]</sup>	Pippalyadi

**BPN:** Bhav prakash Nighantu; **DN:** Dhan-wantar Nighantu; **KN:** Kaidev Nighantu; **MPN:** Madanpala Nighantu; **SGN:** Shaligram

**Nighantu;** **RN:** Raj Nighantu; **PN:** Priya Nighantu; **SN:** Sankar Nighantu; **NA:** Nighantu Adarsha.

**Table 5:** Therapeutic Indication of Sunthi (*Zingiber officinale Rosc.*) In Different Nighantus:

Disease	BPN	DN	KN	MPN	SGN	RN	PN	SN	NA
Swas	+	+	+	+	+	-	+	+	+
Kas	+		+	+	+	-	+	+	+
Chardi	+	-	+	+	+	-	-	+	-
Hikka	-	-	+	+	-	-	-	-	+
Vata kapha vikar	-	-	-	+	-	-	-	+	-
Vibandha	-	-	-	+	-	-	-	+	-
Udar roga	+	+	+	-	+	-	-	+	-
Arsha	-	-	-	-	+	-	-	+	-
Aruchi	-	+	-	-	-	-	+	-	-
Pratishyay	-	-	-	-	-	-	+	-	-
Pandu	-	+	-	-	-	-	-	+	-
Sangrahani	+	-	-	-	-	-	-	+	-
Soth	+	+	+	-	-	+	-	-	-
Sleepada	+	+	+	-	+	-	-	-	-
Sula	+	-	+	-	+	-	-	-	+
Gulma	-	-	-	-	-	-	-	-	+
Klaivya	+	-	-	-	-	-			
Hridroga	-	-	+	-	-	+	-	-	-
Kanthy roga	-	-	-	-	-	+	-	-	-
Agni dipak	-	-	-	-	-	+	-	-	-

❖ **General indication of Sunthi** <sup>[1]</sup>  
(*Zingiber officinale* Rosc.):

**External uses:** *Aamvata* (rheumatoid arthritis), *Sandhisotha* (joint swelling)

**Internal uses:** *Vatavyadhi* (neuromuscular diseases).

**Annavaḥa srota:** *Aruchi, agnimandya, adhman, chhardi, ajeerna, sula, kostavata, arsha* etc.

**Raktavaḥa srota:** *Hrididurbalya, hridichhul, sotha* etc.

**Pranavaḥa srota:** *Kasa, swas, hikka, pratisaya* etc.

**Sukravaḥa srota:** *Vajikarak.*

❖ **Dose** <sup>[5]</sup>:

**Fresh Juice:** 5 – 10 ml; **Powder:** 1-2 Gms, **Syrup:** 2-4 ml.

❖ **Parts Use** <sup>[5]</sup>:

Rhizome (wet and dry)

❖ **Properties** <sup>[13]</sup>:

**Rasa:** *Katu*; **Guna:** *Tiksna, Ruksha, Guru*; **Virya:** *Usna*; **Vipaka:** *Madhura*;

**Karma:** *Vatahara, Kaphahara, Rochak, Dipan, Bhedan, Hridya, Vrishya.*

**Dosha karma:** *Kaphavata shamak* due to *ushna virya.*

**Sangsthanic karma** <sup>[1]</sup>: *External- Sothahar, vedanasthapan.*

**Nadisangsthan karma:** *Vata shamak.*

**Pachan sangsthanic karma:** *Triptighna, Rochak, Deepak, Pachak, Vatanulomak, Sulaprasnamak, Arshaghna.*

**Raktavaḥa sangsthanic karma:** *Raktashodhak, sothahar and hridya*

**Swasan sangsthanic karma:** *Swasahar, kaphaghna due to katu and snigdha*

**Prajanan sangsthanic karma:** *Vrisya due to madhur vipak*

❖ **Identity, Purity and strength** <sup>[13]</sup>:

Foreign Matter: Not more than 0.5%

Total Ash: Not more than 8%

Acid insoluble ash: Not more than 1%

Alcohol soluble extractive: Not less than 5%

Water soluble extractive: Not less than 2%

❖ **Traditional preparations** <sup>[1]</sup>:

*Adrak khanda, Panchasama churna, Samasarkar churna, Rasnadi kwath, Soubhagya Sunthi, Trikatu churna, Sunthi sura* etc.

**CONCLUSION**

*Sunthi* is a potential herb having immeasurable beneficial quality in different aspects have been used by our ancestors. Diseases originated from any system, *sunthi* can be used as a medicine because it has a power to prevent disease-producing factors. *Sunthi* holds a unique place in the traditional herb-based remedies and also for the economical growth of the nation.

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