

**SHRUNGVER HERBAL DRUG: A REVIEW****Mali Sandip Matu<sup>1</sup>, N V Borase<sup>2</sup>**

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**ABSTRACT**

*Shrungver* Sanskrit name derived from *Shrung* means horn and *Ver* means body. An herbaceous, rhizomatous, and perennial and height up to 90cm. under cultivation. It is cultivated worldwide in China, Rio-De-Janero, Japan, Africa and India. In India it is cultivated in Kerala, Andhra Pradesh, Assam, West Bengal, Gujarat and Maharashtra. It has types as Jamaican, Indian, African and Chinese. It contents protein, starch, vitamins and essential oils as zingiberene, gingerol, shogaol. It has many domestic and therapeutic uses. It acts as Analgesic, Anti-inflammatory, Antioxidant, and Carminative. This review will help to gain the information about the past scientific research and the necessary information about pharmacological actions of *shrungver* which will insist researchers for future research on *shrungver* on various diseases of human being. It also help in evaluation of *shrungver* as a natural remedy on various diseases.

**Keywords:** *Shrungver*, *Zingiber Officinale roscoe*, Analgesic, Anti-inflammatory, Shogaol.

**INTRODUCTION**

Latin name: *Zingiber officinale roscoe*, Family: *Zingiberaceae*. *Shrungver* is one of the reputed drugs of the Ayurveda and is employed in indigenous system of medicine for very long period. Three scholars of Ayurveda viz. Charaka, Sushruta and Vagbhata mentioned its use in *Udarroga*, *Shotha*, *Karnashoola*, in *Kapha* and *Vataroga*. Various properties and uses have been mentioned in different Nighantu such as Raj Nighantu, Shaligram Nighantu, Dhanwantari Nighantu, Bhavaprakash, Nighanturatnakar and Sarangdhara. Etymological derivation of *Zingiber*-Sanskrit word *Shrungver* *apabhransha*, *Officinale*-Sold at shops. Synonyms based on habit, soil, external morphological character as *Katugranthi*, *Sauparna*, *Viswa* *Bheshajam*, *Katubhadram*, *Nagaram*. Ayurvedic

properties wet state (*Ardrak*)-*Ras:katu*(pungent), *Veerya:katu*, *Veepak:Us hna*(hot). Dry state (*Shunthi*) *Ras :katu*, *Veerya: Madhur*(sweet), *Veepak:Ushna*<sup>(1)</sup>.

An herbaceous, rhizomatous, perennial height up to 90cm. under cultivation. Rhizomes are aromatic, thick lobed, pale yellowish, differing in shape and size in the different cultivated types. The herb develops several lateral shoots in clumps which begin to dry when the plant matures. Leaves are narrow, subsessile, linear-lanceolate, dark green in color<sup>(2)</sup>.

It requires a warm, humid climate and rainfall 150cm.-300cm. Sandy or clayey loam, red loam and laterite loam soil are ideal for cultivation. Usually cultivated as a monsoon crop mostly from April-May to Dec.-Jan. It is propagated vegetative by means of rhizome. Crop is

ready for harvest in about eight months time when leaves begin to turn yellow and gradually dry up. In commercial market, it is known by the name of locality in which it is produced or name of the port from which it is exported<sup>(3)</sup>. Jamaican type is best quality, more demand in USA and European countries. Rio-De-Janero type gives very high yield of fresh rhizomes. Ta-Kuang and Chu-Chinang are popular types from Taiwan, for soft, almost fibreless. In India several commercial types are recognized in cultivation. The types with less fiber, which varies from 1.7-9%, have higher demand. Prominent types include Khuruppampadi, Thodupuzha, Wynad Mantoddy (all from Kerala), Narsapattam (Andhra Pradesh),

Maran (Assam).Wynaad local contains comparatively higher percentage (3.58 as against an average of 2.1) of volatile oil but has higher content of fiber. Karkali (South Kanara) is famous for low content of fiber (1.8%). Ernad has smaller sized rhizomes, is more fibrous and drought resistant. Chirnad (Malabar) has big rhizomes and less fibrous. Dolka (Gujarat) has big rhizomes, less fibrous and has peculiar pungent taste. Burdwan and Nadia (West Bengal) has large rhizomes. Mizo-Mizoram and Garo hills-Meghalaya has very low fibers<sup>(4)</sup>.

Following table no. 1: Shows ash extractible and crude fiber of the different varieties<sup>(5)</sup>.

Variety	Crude fiber %	Total Ash %	Acid Soluble Ash %	Alcohol Soluble Extract %	Water Soluble Extract %
<b>Cochin</b>	4.90	4.61	0.61	11.00	16.80
<b>Calicut</b>	5.10	4.50	0.23	10.00	10.60
<b>Jammu hill</b>	0.30	8.40	2.40	11.50	20.70
<b>Himachal</b>	7.20	8.40	0.94	13.00	15.00

Following table no.2: Shows Physical Constant<sup>(6)</sup>.

<b>Fresh rhizome</b>	<b>Total Ash</b>	<b>Not more than 8%</b>
	Acid insoluble Ash	Not more than 1%
	Alcohol soluble extract	Not less than 5%
	Water soluble extract	Not less than 2%
	Moisture content	Not more than 90%
<b>Dried rhizome</b>	Total ash	Not more than 6%
	Water soluble ash	Not less than 1.5%
	Alcohol soluble extract	Not less than 3%
	Water soluble extract	Not less than 10 %

**CHEMICAL COMPOSITION:**

Composition according to type and agro-climatic condition under which it is grown. Moisture: 8.5-16.5% (Average value-10.9%), Crude protein: 10.3-15%(12.4%), Crude fiber :4.8-9.8%(7.2%), Starch :40.4-59%(53%), Volatile oil :1-2.7%(1.8%), Vitamins: Thiamine-0.06, Riboflavin-0.03, Niacin-0.60, Vit.C-6.0, Carotene-

40micrograms/100grams. It contains small quantities of glucose, fructose, sucrose, and raffinose. Principal carbohydrate is starch. It also contains pentosans (7.6% on dry basis), 1.60-2.44% nitrogen on dry basis, of which non protein nitrogenous accounts for one third. Extraction of freeze-dried and powdered rhizome by the conventional protein solvents showed that

albumin, globulin, prolamine and glutelin formed respectively 35.6%, 16.9%, 11% and 17.6% of total protein. 18.6% of total protein remained unextracted. The free amino acids present are glutamic acid, aspartic acid, serine, glycine, alanine, threonine, arginine, valine, phenylalanine, lysine, cystine, leucines, proline<sup>(7)</sup>.

**Essential oil:** Characteristic pleasant and aromatic odor of *shrunger* is due to essential oil. Oil is greenish to yellowish in color, mobile (viscous on ageing) with aromatic odor.

Oil contains sesquiterpene hydrocarbon (50% or more), sesquiterpene alcohols, monoterpenoids. The predominant sesquiterpene hydrocarbon is zingiberene; others are ar-curcumene (17.7%), farnesene (9.8%), and relatively smaller amount of  $\beta$ -bisabolene,  $\gamma$ -selinene,  $\beta$ -elemene and  $\beta$ -sesquiphellandrene. The sesquiterpene alcohol, Zingiberol ( $C_{15}H_{26}O$ ), which is a mixture of  $\beta$ -endesmol stereoisomer. Monoterpene hydrocarbon present in oil include camphene, cumene, mercene, limonene, p-lymen and  $\beta$ -phellandrene. The oxygenated monoterpenes and associated compounds present are 2-heptanol, 2-nonanol, n-nonanol, n-decanal, methyl heptanone, 1,8-cineole, borneol, bornyl acetate. Pungent principles of *shrunger* are oxymethyl phenols. Commercial preparation of oleoresin contains gingerol, shogaol, zingerone. Gingerol is obtained from oleoresin by hexane extraction as highly pungent, optically active, light brown viscous oil. Shogaol ( $C_{17}H_{24}O_3$ ) is pale yellow, optically inactive and pungent oil<sup>(8)</sup>.

**ADULTARANTS :** Exhausted *shrunger*, which is generally in the form of powder, when the drug is extracted using organic solvents, is used as adulterant; starch and histological structure of the rhizome will

not be altered by extraction hence yield to solvents can be used as a test to differentiate the authentic one from the extract.

#### THERAPEUTIC USES<sup>(9)</sup>:

- Topical application: If applied topically it acts as anti-inflammatory and analgesic, so used in arthritis (*amvat*), rheumatoid arthritis (*sandhi shoth*). For avoiding *shaitya* (coldness) dried rhizome (*Shunthi churna* and *erandtel abhyang*) is useful due to its thermogenic action. In excess sweating and hypothermia *sunthi churn* rub on skin.
- Juice of fresh rhizome (*Ardrak*) with onion juice is antiemetic.
- Its decoction is useful in all types of arthritis.
- It cures skin rashes if taken with jaggery.
- It is useful in cough if taken with honey.
- Warm juice of ginger should be dropped in ear for earache.
- Fresh ginger with small quantity of salt and lemon juice before meal is good appetizer.
- Dry ginger powder 2.5gm with warm water is useful in rheumatoid arthritis.
- It acts as a galactagogue.

#### PHARMACOLOGICAL ACTION<sup>(10)</sup>:

- **Analgesic effect:** Many studies have been evaluated for the analgesic effect of ginger and its constituents. It has a strong analgesic action which acts by cyclo-oxygenase-1 (cox-1) inhibition. Gingerol and their derivatives especially (8)-paradol, have been reported to be more potent antiplatelet and cyclo-oxygenase-1 (cox-1) inhibition than aspirin.
- **Anti-oxidant:** It possesses anti-oxidant property and may be added to edible

oils and fats to protect them against oxidative rancidity. The phenol constituents of the alcohol soluble fraction of spice are responsible for anti-oxidant effect.

- **In motion sickness:** The effects of powdered rhizome of *shunthi* on symptoms of motion sickness were compared with that of dimenhydrinate and placebo in 36 patients who reported very high susceptibility to motion sickness. *Shunthi* was found to be superior to dimenhydrinate in reducing motion sickness.
- **Antiemetic effect:** In a clinical study, effectiveness of ginger as an antiemetic agent was compared with placebo and metoclopramide in 60 women who had major gynecological surgery. The effect of ginger was found better as compared to metoclopramide.
- A clinical trial of *shunthi* was made on 111 patients of *grahani roga*. The effect of treatment was observed within a short period. The regulation of bowel habits, improvement in general health including anorexia and body weight was noted.
- Preliminary study of hypoglycemic action of ginger juice was conducted in diabetic and non diabetic rats and rabbits. It gave a significant hypoglycemic response in diabetic animals<sup>(11)</sup>.
- In laboratory animals, the gingerols increase the motility of G.I. tract and have antipyretic and antibacterial properties. Ginger has a sialagogue action, stimulating the production of saliva, which makes swallowing easier<sup>(12)</sup>.
- The extract of ginger has been extensively studied and it has been proved that it has hypocholesterolemic and hypotriglyceridemic effect. It also

increases HDL level and is an excellent cardio protective agent.

**CONTRAINDICATION:** It is *ushna* (hot) so contraindicated in anemia, urinary disorders, fever and wound.

## DISCUSSION

*Shringver* was known in China as early as 400 B.C. It was also used as a spice by the Greeks and Romans who considered it an Arabian product because it was received from India by the way of Red Sea. It has been under cultivation in India from times immemorial. In traditional medicine used extensively for its specific action in rheumatism, carminative, anti-inflammatory. According to Mustafa, it is reported in Ayurveda and Tibba system of medicine to be useful in neurological disorder. This herbal drug is very useful in nervous system, gastrointestinal system, circulatory system, respiratory system, reproductive system. It acts as an analgesic, antiemetic, anti-inflammatory, anti oxidant, antibacterial.

## CONCLUSION

From this study, it is concluded that *Shringver* is very useful in various body ailments. It is very cheap, easily available and rather no side effects on body. But time demand for new research on this drug for cure many diseases without side effects. It will be acts like gold in our environment.

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