*Indian J. Applied & Pure Bio.* Vol. 40(3), 1863-1873 (2025). **ISSN: 0970-2091**
**A web of Science Journal**

# A comprehensive Review of *Sorghum* Samp and Poly herbal tea – Drug Review

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**Abstract**

Diabetes Mellitus Type 2 (DMT2) is a chronic metabolic disorder characterized by elevated blood glucose levels due to insulin resistance and inadequate insulin secretion. There is no medicine in this universe, which is equivalent to food. *Yavanala* (*Sorghum*) is one such diet explained in *Kshudradhanya* which shows *lekhaneeya* property. It is fiber rich diet with less glycemic Index. It is tall, robust annual plant. Flowers born in panicled spikelets. Panicle decompound, usually thyrsiform with crowded whorls of erect branches. Branchlets and spikes rarely subeffuse. Spikelets usually neuter, pedicles short. *Sorghum* is also a good source of protein, iron, vitamin B, and antioxidants. *Sorghum* is rich in Alkaloid, Carbohydrate, Saponins and Resin. Its richness in carbohydrate will helpful to regulate blood sugar levels and normalize the insulin and sugar levels in blood stream. *Trikatu – Shunti, Pippali* and *Maricha* are acts as Medohara that is reduces excess fat and improves metabolic activity.

The Poly Herbal Tea of *Dhanyaka, Shunti, Ela* and *Lavanga* will be helpful in improving metabolic activity and reduces the residue deposition in the body. This inturn leads turns into reducing the lipolysis, gluconeogenesis and glucogenolysis.

**Key words :** *Yavanala, lekhaneeya,* Saponins, Resin, lipolysis.

Diabetes Mellitus Type 2 (DMT2) is a chronic metabolic disorder characterized by elevated blood glucose levels due to insulin resistance and inadequate insulin secretion. It poses the significant global health challenge, affecting millions worldwide and causing numerous complications if not managed effectively.

Health and disease will evolve from either proper or improper diet.[1] *Ahara* (Diet) is one among the three pillars (*Trayopas-thamba*).[2]

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which is responsible in the maintenance of the health through promoting growth, repairing the tissues etc.[16] There is no medicine in this universe, which is equivalent to food.[15] Diet is supplied through the medium of eatables, drinkables, lickables etc. for proper nourishment of the body. [1]

*Yavanala* is explained in Kshudradhanya[8] which is having *lekhaneeya* property[10], having less glycemic index and rich fiber content[11] and rich fiber content[12]. This *Yavanala* (Sorghum vulgare) along with *Trikatu* and *Saindhavalavana* made into course powder, to use as an instant Sorghum Samp (*Yusha*)[15].

When it comes to the tea, it is the most popular beverages in the world, consumed by over two third of the global population, Indians are no exception in it[4]. The *Dhanyaka*[17], *Ela*[17], *Shunti*[17], and *Lavanga*[14] are explained under the heading of *prameha*, so These drugs are selected and powdered and made into herbal tea bags. People with diabetes will definitely get benefited by herbal tea which contains phytochemicals which has the properties of anti-diabetic and immune modulation[11].

*Yavanala :*[13]

*Botanical Description :*

It is tall, robust annual plant. Flowers borne in panicled spikelets. Panicle decompound, usually thyrsiform with crowded whorls of erect branches. Branchlets and spikes rarely subeffuse. Spikelets usually neuter, pedicles short. Flowering and fruiting occurs between September – October. Cultivated throughout the warmer parts of India.

| | |
|---|---|
| **Botanical Name** | *Sorghum vulgare* L. |
| **Family** | Poaceae |

*Sanskrit Synonyms :*

Devadhanya, juhvoli, juhvala, Anala[13] Nadeeja, Drudhatwak, Vaari sambhava, Yavanalanibha and Kharapatra[5], Shikara Vritta tandula, Dheerghanala, Dheerghashara, Ikshupatraka[5] Dhavala Yvanala, Panduara taaratandula, Nakshalakriuti Vistara, Vritta, Moulika Tandula, Joornahvaya, Deva dhanya, Joornala, Beejapushpaka, Joonala, Pushpagandha, Sugandha and Segurundhaka[3]

***Vernacular Names :***[4]

| | |
|---|---|
| English | Broom Corn, Great Millet, Indian Millet, Sorghum Millet |
| Hindi | Javar, Jenora, Joar, Choti jonhari, Masuriya |
| Bangali | Juvaara, Janaara[5] |
| Kannada | Jola |
| Malayalam | Chavela, Chonnal |
| Marathi | Jondhala, Jogala |
| Tamil | Alangara cholam, Cholam |
| Telugu | Jonnalu |

***Properties :*** [5]

| | |
|---|---|
| Rasa | Madhura Rasa |
| Veerya | Sita veerya |
| Dosha karma | Tridoshanashaka |
| Karma | Trishnagnam, Bala Vardhaka, Veerya Vardhaka, Ruchiprada, Arshanashaka, Pathya and Gulma Vranapaha |
| Part used | Seeds/ Grains |
| Therapeutic Uses | Vrusya, Mutrala, Balya, Arshogna etc. |

***Chemical Constituents :***

Protein, Glutelin, Prolamine, Aspartic acid, Glutamic acid, Lecithin, Biotin, Glucosidase I & II, *Sorghum,* Oxynitrilase, Luteoferol etc.

*Trikatu churna :*

*"Tri"* means three; "*Katu"* means pungent taste. *Trikatu* comprises of *Pippali (Piper longum ), Maricha (Piper nigrum* L.*), and Shunti (Zingiber officinal* Roscoe*)* in equal proportion. It benefits in curing *kapha* and *medo dhatu* vitiated disease, *prameha, kushta, pinasa, gulma and mandagni*[2]. It possesses the *katu rasa, ushna veerya, laghu, and ruksha guna, deepana, and amapachaka* effect and *kapha-vatahara* properties.

*Shunti* [7] *:*

Shunti consists of dried rhizome, widely cultivated in India, rhizomes dug in January- February, buds and roots removed, soaked overnight-in water, decorticated, and sometimes treated with lime and dried.

***Description :***

| | |
|---|---|
| Botanical Name | *Zingiber officinale* Roscoe |
| Family | Zingiberaceae |

***Sanskrit synonyms :***

*Nagara, Visva, Mahousadha, Srngavera, Vishvabheshaja, Aushadha, Muhaushadha, Nagara, Vishva, Vishwavabheshaja, shrungavera, Vishwaushadha*

***Gana Vargikarana :***

| | |
|---|---|
| *Charaka* | *Dipaniya, Trptighna, Arsoghna, Sulaprasamana, Trsna nigrahana* |
| *Susrutha* | *Pippalyadi, Trikatu* |
| *Vagbhata* | *Pippalyadi* |
| *Bh Pr Ni* | *HarikyadiVarga 44-52* |

**Vernacular names:**

| | |
|---|---|
| English | Ginger root, Ginger |
| Hindi | Sonth |
| Bangali | Suntha, Sunthi |
| Kannada | Shunthi |
| Malayalam | Chukku |
| Marathi | Sunth |
| Tamil | Sukku, Chukku |
| Telugu | Sonthi, Sunti |
| Gujrati | Sunth, Sundh, Suntha |

***Botanical description :***

Perineal herb, rhizome stout, tuberous with erect leafy stem, 60- 90cm tall. Leaves sessile, linear-lanceolate, 10-25×1.5-3cm, narrowed to the base, acute or acuminate; sheath 10-15cm long. Flowers are greenish with a small dark purple lip, in oblong, cylindric spikes unsheathed in a few scarious, glabrous bracts, 4 to 7 cm long. Fruits oblong capsules.

***Habitat :*** It is cultivated throughout the Sub-Himalayan tracts of Uttar Pradesh, Madhya Pradesh, Deccan and Gujarat, Karnataka and Kerala and also in some places in Western Ghats.

Constituents: Essential oil, pungent constituents (gingerol and shogaol), resinous matter and starch, Thionine, serine, glycine, cysteine, valine, leucine, isoleucine, arginine etc.

***Properties and action :***

| | |
|---|---|
| Rasa | *Katu* |
| Guna | *Laghu, Snigdha* |
| Veerya | *Ushna* |
| *Vipaka* | *Madhura* |
| Karma | *Anulomana, Deepana, Hridya, Pachana, Vatakaphapaha, Amadoshahara* |
| Part Used | Rhizome |
| Therapeutic Uses | *Agnimandya, shwasa, Adhmana, Amavata, Pandu, Udararoga* |

*Pharmacological activities :*

Anti-Inflammatory, Hypolipidemic, Anti-atherosclerotic, Anti-emetic, Anti-ulcer, Antiplatelet, Anti-pyretic, Cardio vascular, Anti-oxidant, Anti-bacterial, Anti-fungal, Analgesic, Hypo-glycemic, Anti-rhinoviral, Anti-fungal, Molluscicidal, Antidepressant, Hepatoprotective, Inotropic, carbonyl reductase activity, cholagogue.

*Pippali* [14] *:*

*Pippali* consists of the dried, immature, catkin-like fruits with bracts a slender, aromatic climber with perennial woody roots, occurring in hotter parts of India from central Himalayas to Assam up to lower hills of West Bengal and ever green forests of Western Ghats as wild, and also cultivated in North East and many parts of the South.

*Description :*[7]

It is ascending or prostrate climber. Stem numerous, stout, 60-90 cm, cylindrical thickened above the nodes. Leaves 6-9 cm long, lower leaves are broadly ovate, very cordate along with broad rounded lobes at base, all sub acute, entire, glabrous, thin. Inflorescence spike, pedunculate. Fruit small ovoid and completely sunk in solid fleshy spike which is 2.5 to 4 cm long, and blackish green. Useful part: Fruit. Root transverse section is 0.5 to 1 cm thick, branched, with characteristic odor and pungent taste.

| | |
|---|---|
| Botanical Name | *Piper longum* L. |
| Family | *Piperaceae* |

***Gana Vargikarana :***

| | |
|---|---|
| *Charaka* | *Dipaniya, Kantya, Asthapanopaga, Sitaprasamana, Sulaprasamana, Sirovirecanopaga, Trptighna, Kasahara, Hikkanigrahana* |
| *Susrutha* | *Pippalyadi, Trikatu,* |
| *Sirovirecana,* | *Amalakayadi, Urdhvabhagahara* |
| *Vagbhata* | *Pippalyadi* |
| *Bh Pr Ni* | *Haritakyadi Varga (53-65)* |

***Synonyms :***

*Magadha, Krishna, shaundi, Kana, Magadhi*

***Vernacular names:***

| | |
|---|---|
| English | Long Pepper |
| Botanical name | *Piper longum* L. |
| Hindi | Pipar |
| Kannada | Hippali |
| Malayalam | Pippali |
| Marathi | Pimpali, Lendi Pimpali |
| Tamil | Arisi Tippali, Thippili |
| Telugu | Pippalu |

*Botanical description :*

A slender, aromatic climber with-perennial woody roots. Stems creeping jointed. Leaves ovate, cordate, sub acute, entire, glabrous. Spikes cylindrical, pedunculated, male larger and slender, female 1.3-2.5cm long. Fruits ovoid, yellowish orange, sunk in fleshy spike. Distribution: It occurs in hotter parts of India from central Himalayas to Assam, Khashi and Mikir hills, lower hills of Bengal and evergreen forests of Western Ghats from Konkan to Travancore.

*Constituents :*

Essential oil and Alkaloids

***Properties and action :***

| | |
|---|---|
| Rasa | *Madhura, Katu, Tikta* |
| Guna | *Laghu, Snigdha* |
| Veerya | *Anusna* |
| *Vipaka* | *Madhura* |
| Karma | *Deepana, Hridya, Kaphahara, Ruchya, Tridoshahara, Vatahara, Vrushya, Rasayana, Rochcana* |
| Part Used | Fruit, Root |

*Pharmacological activities :*

Anti-bacterial, Anti-inflammatory, Insecticidal, Antimalarial, CNS stimulant, Anti-tubercular, Anthelmintic, Hypoglycemic, Antispasmodic, Cough suppressor, Anti-giardial, Immuno-stimulatory.

*Maricha* : [14]

***Description :*** *Maricha* consists of fully mature dried fruit, cultivated from Konkan Southwards, especially in North Konkan Kerala, and also in Assam; fruits ripen from December to March, depending upon climatic conditions; fruits harvested from December to April.

| | |
|---|---|
| Botanical Name | *Piper nigrum* Linn. |
| Family | Piperaceae |

***Sanskrit synonyms :*** *Sakanga, Vellaja, Krsna, Usana.*

***Gana Vargikarana* :**

| | |
|---|---|
| *Charaka* | *Dipaniya, Krmighna, Sulaprasamana, Sirovirecanopaga* |
| *Susrutha* | *Pippalyadi, Trikatu* |
| *Vagbhata* | *Pippalyadi* |

*Vernacular names :*

| | |
|---|---|
| English | Black Pepper |
| Hindi | Kalimirch |
| Kannada | Karimenasu, Menasu |
| Malayalam | Kurumulaku |
| Tamil | Milagu |
| Telugu | Miriyalu, Marichamu |

*Botanical description :*

Marica is a branched climbing shrub, rooting at the nodes. Leaves simple, Alternate, Cordate, broadly ovate, 5-9 nerved, dark green. Flowers minute, in spikes of variable length. Fruits ovoid or globose, one seeded, bright red when ripe. Seeds globose, testa thin, perisperm hard and white.

*Distribution :*

It is mostly found cultivated in the hot and moist parts of India, Sri Lanka, and other tropical countries. The plant is wild in Travancore and Malabar, found cultivated in west Bengal, Konkan, Western Ghats and

south India at 500-1600 m in evergreen forests.

*Constituents :*

Alkaloids (Piperine, Chavicine, Piperidine) and Essential Oil.

***Pharmacological activities:*** Antioxidant, Anticonvulsant, Sedative, Analgesic, Insecticidal, Pesticidal, CNS depressant, Muscle relaxant, Antipyretic, Anti -inflammatory, Antifungal, Hepatoprotective, Antimicrobial, Antiulcer, Antibacterial, Lipolytic, Cyclooxygenase inhibitory activity.

*Properties and action :*

| | |
|---|---|
| Rasa | *Katu, Tikta* |
| Guna | *Laghu, Ruksha, vikasi* |
| Veerya | *Ushna* |
| *Vipaka* | *Katu* |
| Karma | *Shleshmahara, Deepana, Medohara, Pittakara, Ruchya, Kaphavatajit Vatahara, Chedana, Jantunghana, Chedi, Hridroga, Vataroga* |
| Part Used | Seed |
| Therapeutic uses | *Shwasa, Krimiroga, Tvakroga* |

***Saindhava Lavana :*** [3,9]

*Lavana varga* are used as a medicine and as well as food since ancient times. A number of salts are explained in ancient text books. There are many common terms explained in ayurveda which includes like, *pancha lavana, lavana tritaya, lavana chaturtha* etc. *Pancha lavana* includes *saindhava lavana, samudga lavana, vida lavana, saurchala lavana, romaka lavana.*

*Saindhava lavana* is a mineral which is obtained from Punjab mines. Two varities of Saindhava are available *i.e.* white and reddish/ red. According to charaka saindhava is considered best amongst all the salts for internal use.

*Saindhava lavana* is a tonic for Liver, Gallblader and Urinary Disorders, is also an Immune booster. It regulates the Liver function and increases the flow of digestive enzymes.

| | |
|---|---|
| Chemical Name | Sodium Chloride (NaCl) |
| English Name | Rock Salt or Halite |

*Sanskrit synonyms :*

Saindhava, Sindhu lavana, Sindhutta, Sindhu deshaja, Sindhupala, Sindhubava, Sindhumanthaja, Shitashiva, Nadeya, Silatmaka, Siva, Sitasiva, Vasira.

*Vernacular names :*

| | |
|---|---|
| Hindi | Sendha namak, Sendhanona, Lahauri namak |
| Bengali | Saindhava lavana, Saindhava nun |
| Marathi | Sende lona |
| Gujarathi | Sindha luna |

*Properties :*

| | |
|---|---|
| Rasa | Lavana |
| Guna | *Laghu, Snigdha* |
| Veerya | *Sheeta* |
| Karma | *Tridoshashamana, Dipana, Pachana, Hridyam, Vrishyam, Netrayam, Ruchipradam, Avidahi, Sukhada* |
| Therapeutic uses | Aruchi, Netra roga, Vrana and Vibhandha |

*Dhanyaka* [14]

Dhanyaka is cultivated throughout India; it is under crop farming on commercial as well as domestic scale for production of fruits being a major spice. This is used in every Indian kitchen as condiment. This Dhanyaka is have its role in fever and indigestion.

| | |
|---|---|
| Botanical Name | *Coriandrum sativum* Linn. |
| Family | Umbelliferae |

*Sanskrit synonyms :*

*Kustumburu, Vitunnaka, Chatra*

***Gana Vargikarana* :**

| | |
|---|---|
| *Charaka* | *Trishnaprashamana, sitaprashamana* |
| *Susrutha* | *Guduchyadi* |
| *Vagbhata* | *Guduchyadi* |
| *Bh Pr Ni* | *HarikyadiVarga 44-52* |

*Vernacular names :*

| | |
|---|---|
| English | Coriander seeds |
| Hindi | Dhaniya |
| Kannada | Kothambari |
| Malayalam | Kothumpalari |
| Tamil | Kottamalli |
| Telugu | Dhaniyalu |
| Gujrati | Dhana |
| Bengali | Dhane |

*Description :*

An annual plant, 40-50 cm high and glabrous. Leaves of two kinds, the lower ones petioled imparipinnatisect into 2-3 pairs ovate-cuneiform, obtuse, incised dentate sements, the upper ones short-petioled on subsessile 2-3 pinnatisect into linear setaceous lobes. Umbels 5-10 rayed. Flowering and Fruiting time: Autumn towinter/spring seasons.

*Properties and action :*

| | |
|---|---|
| Rasa | *Kashaya, Tikta, Madhura, Katu* |
| Guna | *Laghu, Snigdha* |
| Veerya | *Ushna* |
| *Vipaka* | *Madhura* |
| Karma | *Tridoshahara, Dipana, Pachana, Grahi* |
| Part Used | Whole plant, Leaves, Fruits |
| Therap-eutic uses | Jwara, Daha, Trishna, chardi, Kasa, Svasa, Krimi, Arshas |

***Chemical Composition:*** Fresh and green plant has moisture 84 percent. Fruits contain a volatile oil 1 percent, fixed oil 13 percent, fat 13 percent, mucilage; tannin, malic acid and alkaline 5 percent. Coriander oil contains Coriandrol, Geraniol, and Baborneol. It contains an essential oil, coriandrol, oxalic acid and calcium content in fresh leaves. Leaves are rich source of Vitamin C and of carotene. Besides an essential oil, seeds contain 19-21 percent of fatty oil.

*ELA* [14]

*Ela* is one among the chaturjataka; it is cultivated in many parts of South Indian states like Karnataka, Tamil nadu and Kerala.

| | |
|---|---|
| Botanical Name | *Elettaria cardamomum* Maton |
| Family | Zingiberaceae |

*Vernacular names :*

| | |
|---|---|
| English | Cardamom |
| Hindi | Choti ilaychi |

| | |
|---|---|
| Kannada | Elakki |
| Malayalam | Ellakaya |
| Tamil | Yelakka |
| Telugu | Chinna elakulu |

**Synonyms** – *Korangi, Dravidi, Triputa, Triti, Nishkuti, Bahula, Upakunchika*

*Description :*

An annual herb, rootstock thick, leafy stem with pedicelled flowers, fruits are sub globose or oblong capsules. Seeds are aromatic, cooling, diuretic, digestive, carminative, cardiotonic, abortifacient, expectorant and useful in dyspepsia, cardiac disorders, anorexia, burning sensation, vitiated conditions of Vata.

*Properties :*

| | |
|---|---|
| Rasa | *Katu, Madhura* |
| Guna | *Laghu, Ruksha* |
| Veerya | *Shita* |
| *Vipaka* | *Katu* |
| Karma | *Kapha- Vatahara, Hrudya, Dipana, Rochana, Shukra Nashaka* |
| Part Used | Seed |

*Gana Vargikarana :*

| | |
|---|---|
| *Charaka* | *Shwasahara, Angamarda Prashamana, Katukaskanda, Shirovirechana* |
| *Susrutha* | *Pippalyadi Gana, Eladi Gana* |
| *Vagbhata* | *Eladi, Trijataka, Chaturjataka* |
| *Bh Pr Ni* | *Karpuradi varga (60-63)* |

*Phyto constituents :*

Volatile oil (2-8%), volatile oil contains cineole, Terpinyl acetate, Terpineol, Borneol, Terpinene, camphene, P—cymene, Geraneol, Seeds contain fixed oil( 10%), starch and proteins

*Lavanga* [14]*:*

*Lavanga* is the dried flower bud of *Syzygium aromaticum* (Linn). It is a tree cultivated in many parts of the world and also in south India. Flower bud is collected in the month of October and February, when they change color from green to crimson, dried.

*Gana Vargikarana :*

| | |
|---|---|
| *Charaka* | Not mentioned in *Mahakashaya varga* |
| *Susrutha* | Not mentioned in *Gana* |

| | |
|---|---|
| Botanical Name | *Syzygium aromaticum* (Linn.) |
| Family | *Myrtaceae* |

*Vernacular names :*

| | |
|---|---|
| English | Clove |
| Hindi | Lavanga |
| Bengali | Lavang |
| Malayalam | Karayampoova |
| Tamil | Kirambu |
| Telugu | Lavangamu |

***Synonyms :*** *deva pushpa, Chandana pushpa, Deva kusuma, Grahani hara, Srisangnya, Sriprasun*

*Description :*[7]

*Lavanga* is a plant which requires 150-300 cm of rainfall, humus soil cultivated in Kerala, Coastal districts of Karnataka and

Coorg. An evergreen small tree, height of 20-30 feet, branches many, horizontal giving pyramid shape. Stem hard, pale yellowish or grey black, with smooth surface. Leaves simple, opposite, obovate, petiolate 7.5-12 cm long and 2.5-3.5 cm wide. Inflorescence axillary cymose, Flowers white, bisexual, corolla with four petals and it is free. Dried cloves nail shaped, reddish brown colour.1-2 cm long. Fruits fleshy, dark pink, drupes, 2,5 cm long and 1 cm thick.

*Properties :*

| | |
|---|---|
| Rasa | *tiktha, katu* |
| Guna | *laghu, teekshna* |
| Veerya | *Sheeta* |
| *Vipaka* | *Katu* |
| Karma | *dipana, pachana, ruchya, kapha pitta samaka, soolahara, kasahara* |
| Part Used | dried flower buds |

*Gana Vargikarana :*

| | |
|---|---|
| *Charaka* | Not mentioned in *Mahakasaya varga* |
| *Susrutha* | Not mentioned in *Gana* |
| *Bh Pr Ni* | *Karpuradi varga* 58-59 |

**Phytoconstituents** : 15-20% volatile oil, 10-13% tannin (Gallotanic acid), resin, chromone, eugenin.

Diabetes mellitus is a life style disorder, it manifests due to improper food and life style habits. The habits of improper diet will effect on gastro intestinal system and it provoke for irregular appetite. All these will in turn effects the immune system of the person. To combat these conditions diet or nutritive supplement plays a major role. Sorghum Vulgare is such which controls Diabetes Mellitus. Sorghum's rich fiber content will help to reduce its Glycemic index and prevent blood sugar spikes. Sorghum is also a good source of protein, iron, vitamin B, and antioxidants. Sorghum is rich in Alkaloid, Carbohydrate, Saponins and Resin. The Saponins will reduce cholesterol levels, works as anti-inflammatory, antiviral, cardioprotective, and anticancer effects. The presence of resin works as anti –inflammatory and anti microbial. The carbohydrate will helpful to regulate blood sugar levels as well as improves the digestive health. The *Trikatu - Shunti, Pippali* and *Maricha* are Katu rasa pradhana. They help in digesting Ama with its Deepan (appetizer) and Pachan (digestion) properties acts as agnivardhaka, this in turn improves metabolic activity and helps in release of incretin hormones like GLP -1 (glucagon-like peptide-1) & GIP (glucose-dependent insulinotropic polypeptide) in optimum level.

Saindhava lavana – with its diuretic properties helps in reutilization of glucose from kidneys and optimal expulsion of wastes from body.

Poly Herbal Tea – Dhanyaka, Shunti, Ela and Lavanga. The Tannins and Saponins presence indicates reducing cholesterol levels, anti-inflammatory, antiviral, cardioprotective, and anticancer effects. The presence of resin works as an anti –inflammatory and anti microbial. The carbohydrate aids in regulating blood sugar levels as well as improves the digestive health.

The *Sorghum* is very abundantly used in India especially Southern part of India. It is one among the staple foods of India. The staple

food is a statutory diet to a person, irrespective of body constituent / *prakriti*. That is why the Sorghum will full fill all the nutritional and energy values to all persons.

The hormones GLP -1 (glucagon-like peptide-1) & GIP (glucose-dependent insulinotropic polypeptide) are plays a vital role in proper utilization of glucose and helping to regulate blood glucose levels after eating food. Additionally, they have other effects like slowing gastric emptying (GLP-1) and promoting satiety (both), as well as potentially having neuroprotective effects. These hormones will balance the functions of microvascular and macrovascular. It helps in reverse the complicated stages of Diabetes as well as controlling the Diabetes. So the *Sorghum* samp and Poly herbal tea, both of them are helps in control of Diabetes.

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