

## ROLE OF *THIRITHODA SAMA PORUTKAL* IN DIET - A SIDDHA PERSPECTIVE

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### ABSTRACT

Diet is essential for the maintenance of physical and mental health of individuals; the growth, functioning of the body depends upon the type of food intake. Ancient Siddha literature explained about the *Suvai*, *Gunam* and *Veeriyam* of food items; designed the dietary pattern according to the seasonal and geographical variation, body constitution of the subjects. A Diet is balanced when it comprises of all the basic nutritional requirements of the body and also the caloric requirements of an individual. According to Siddha literature, the diet plays an important role in balancing the 'Trithoda'-the three basic humours of the body namely *Vali*, *Azhal* and *Iyyam*; any imbalance in the intake of '*Thirithodasamaporutkal*' mentioned in Siddha literature causes the disorder in body metabolism; the *udal* and *uyirathukkal* gets affected. The spices and grains are the backbone of Indian diet. They are also used in the treatment of common ailments as they are having healing and rejuvenation properties. The "*Thirithoda Sama Porutkal*" mentioned in Siddha literature "Pathartha Guna Cinthamani" are *Elam*, *Manjal*, *Seeragam*, *Perungayam*, *Chukku*, *Venthayam*, *Poondum* and *Milagu*. This manuscript reveals the '*Thirithodasamaporutkal*' i.e, the dietetics balancing three humours their characteristics and the method of application in daily routine life. Their chemical constituents, pharmacological actions and healing properties are also well discussed in this manuscript. Moreover this paper explains the scientific reason behind the usage of these '*Thirithodasamaporutkal*' in daily routine life.

**KEYWORDS:** *Thirithoda* Sama Porutkal, *Suvai*, *Gunam*, *Veeriyam*, Spices.

### INTRODUCTION

Diet plays a major role in the health of Individuals. A balanced diet comprises of all the basic nutritional requirements of the body. Diet acts as a source of vital nutrients to gain energy and it builds our body. The action of diet varies with the *Suvai*, *Gunam* and *Veeriyam* of them; in Siddha literature the essential methods in food intake and the seasonal; and environmental impact on the diet are explained in detail. One part of the literature dealing with the balancing of three humours of the body i.e, *Vali*, *Azhal* and *Iyyam* is the core of this Manuscript.

According to Siddha literature, the diet plays an important role in balancing the '*Trithodam*'- the three basic humours of the body namely *Vatha*, *Pitha* and *Kapha*. Improper diet habits cause disturbances in equilibrium of the three humours (*Uyirathukkal*) in turn causing several diseases. A typical diet that balances the three humours (*Thirithodasamaporutkal*) is concerned with the prevention of disease and maintenance of health.

This Manuscript primarily explains about the inter-relationship between the taste (*Suvai*) of diet, *Panchapootham* and *Uyirathukkal* namely *Vali*, *Azhal*, *Iyyam* mentioned in Siddha literature.



Fig. 1: Thirithoda Sama Porutkal in Diet.

**Inference between Bootha, Suvai and Uyirthathukkal**  
 This table denotes the combination of boothas for each and every taste and the impact of them on the three humours of Individuals.<sup>[1]</sup>

**Table 1: Inference of Bootha, Suvai and Uyirthathukkal.**

Bootha	Taste	Impact on Three Vital Humours
Earth + Water	Sweet	↑ Kabha
Earth +Heat	Sour	↑ Vatha
Water +Heat	Salt	↑ Pitta, Kabha
Air +Space	Bitter	↑ Vatha
Air +Heat	Pungent	↑ Pitta, Vatha
Earth + Air	Astringent	↑ Kabha, Vatha

**Thirithoda Sama Porutkal**

The substances which neutralize the three basic humours of the body are known as *Thirithoda Sama Porutkal*. In Siddha literature “*Pathartha Guna Cinthamani*” the *Thirithoda Sama Porutkal* is denoted by the following quotes.<sup>[2]</sup>

“ஒன்றியவாதிபித்தகபம்இவையுயராவண்  
 ணம்  
 நன்றுறுகறிகளள்லாம்நாளுமேசமைப்பர்  
 ஆய்ந்தோர்  
 தின்றிடுமிளகுமஞ்சள்சீரகம்உயர்ந்தகாயம்  
 வென்றிகொள்சக்கோடேலம்வெந்தயம்உள்  
 ளிசேர்த்தே”

பதார்த்தகுணசிந்தாமணி

The “*ThirithodaSamaPorutkal*” mentioned in Siddha literature are *Milagu*-Black Pepper, *Manjal*- Turmeric, *Seeragam*- Cumin, *Perungayam*- Asafoetida, *Chukku*-Dried Ginger, *Elam*- Cardamom, *Venthayam*- Fenugreek, and *Poondu*- Garlic.

If these substances are consumed daily in every meal, the three humours will be neutralized.

**Table 2: Taste, potency and division of Thirithoda Sama Porutkal.**

Sl. No.	Common name Tamil	Taste	Potency	Division
1	<i>Milagu</i>	Pungent, Bitter	Heat	Pungent
2	<i>Manjal</i>	Bitter, Pungent	Heat	Pungent
3	<i>Seeragam</i>	Pungent, Sweet	Cold	Sweet
4	<i>Perungayam</i>	Pungent, Bitter	Heat	Pungent
5	<i>Chukku</i>	Pungent	Heat	Pungent
6	<i>Elam</i>	Pungent, Sweet	Heat	Pungent
7	<i>Venthayam</i>	Bitter	Cold	Pungent
8	<i>Poondu</i>	Pungent	Heat	Pungent

**1. Milagu -Black Pepper**

Pepper has a multi- faceted roll of Siddha system of the medicine; hence it is briefly studied in pharmacology activities and other phytochemical activities in recent years. In our country, for pungent taste pepper was being used since long before using chillies. It eliminates the ill effects of all other substances in diet.

Problems with digestion are increasing in frequency, and black pepper seems to be effective in improving the digestion, probably due to the way in which black pepper stimulates the taste buds. This stimulation of the taste buds notifies the stomach to increase its secretion of hydrochloric acid, improving the digestion of food once it reaches the stomach. Insufficient production of stomach acid can lead to heartburn, indigestion, and

other eating problems. Black pepper has demonstrated impressive antioxidant and antibacterial effects--yet another way in which this wonderful seasoning promotes the health of the digestive tract. And not only does black pepper help you derive the most benefit from your food, the outer layer of the peppercorn stimulates the breakdown of fat cells, keeping you slim while giving you energy to burn. Pepper is a universal table condiment used to flavour all types of dishes in cuisines worldwide, when used externally it can treat skin and external diseases, poisonous snake or dog bites, and can also be used to remove poisonous quality of food.<sup>[3]</sup>

Pepper is the best antidote; Cures *Kapha* diseases and has Anti vatha activity.<sup>4</sup>It is fried, powdered or used as a whole in dishes. The scientific studies reveals the Immuno modulatory, anti inflammatory and anti oxidant activity of Pepper.

**This column reveals the nutritional facts of Piper nigrum.<sup>[5]</sup>**

**Table no 3: Nutrition Facts: *Piper nigrum*.**

<i>Amount per 100 grams</i>	<b>Calories 251</b>	<b>% Daily value</b>
Total fat	3.3 g	
Saturated fat	1.49	5%
Polyunsaturated fat	1g	7%
Monounsaturated fat	0.79	
Trans fat	09	
Cholesterol	0mg	0%
Sodium	20mg	0%
Potassium	1.329 mg	37%
Total carbohydrate	64g	21%
Dietary fibre	25g	
Sugar	0.69	
Protein	10g	20%

**Table 5: Nutrition Facts: *Curcuma longa*.**

<b>Nutrients</b>	<b>Amount</b>	<b>Nutrients</b>	<b>Amount</b>
<b>Basic Components</b>		<b>Vitamins</b>	
Proteins	7.8 g	Vitamin C	26 mg
Water	11.4 g	Vitamin E	3.1 mg
Ash	6 g	Vitamin K	13 mcg
Phytosterols	82 mg	Thiamine	152 mcg
<b>Calories</b>		Riboflavin	233 mcg
Total Calories	354	Niacin	5.1 mg
Calories From Carbohydrate	249	Vitamin B6	1.8 mg
Calories From Fat	83	Folate	39 mcg
Calories From Protein	22	Choline	49.2 mg
<b>Carbohydrates</b>		Betaine	9.7 mg
Total Carbohydrates	65 g	<b>Minerals</b>	
Dietary Fibre	21 g	Calcium	183 mg
Sugar	3.2 g	Iron	41 mg
<b>Fats &amp; Fatty Acids</b>		Magnesium	193 mg
Total Fat	9.9 g	Phosphorus	268 mg
Saturated Fat	3.1 g	Potassium	2.5 g
Monounsaturated Fat	1.7 g	Sodium	38 mg

<b>Vitamins</b>	<b>Percentage</b>	<b>Minerals</b>	<b>Percentage</b>
Vitamin A	10%	Iron	53%
Vitamin B6	15%	Calcium	44%
Vitamin B	12 0%	Magnesium	42%

## 2. *Manjal - Turmeric*

The use of turmeric dates back nearly 4000 years to the Vedic culture in India, where it was used as a culinary spice and had some religious significance. *Manjal* has a bitter and pungent taste and plays a vital role in Traditional culture and diet; it should be added in all dishes except sweet dishes. It neutralizes three humours and removes toxic substances from the body. Turmeric has been put to use as a foodstuff, cosmetic, and medicine.

Turmeric is used as an herbal medicine for rheumatoid arthritis, chronic anterior uveitis, conjunctivitis, skin cancer, small pox, chicken pox, wound healing, urinary tract infections, and liver ailments, In Ayurvedic practices, turmeric is thought to have many medicinal properties including strengthening the overall energy of the body, relieving gas, dispelling worms, improving digestion, regulating menstruation, dissolving gallstones, and relieving arthritis. Although modern medicine has been routinely used in treatment of various diseases, it is less than 100 years old. Traditional medicine, in comparison, has served mankind for thousands of years, is quite safe and effective.<sup>[6]</sup>

Curcumin is the potent immune-modulator and antibiotic and it can remove the toxic substances from the body.

This column reveals the nutritional facts of *Curcuma longa*.<sup>[7]</sup>

Polyunsaturated Fat	2.2 g	Zinc	4.4 mg
Omega-3 Fatty Acids	482 mg	Copper	603 mcg
Omega-6 Fatty Acids	1.7 g	Manganese	7.8 mg
		Selenium	4.5 mcg

### 3. Seeragam - Cumin seeds.

*Seeragam*, which has a pungent and sweet taste, increases appetite and reduces *Azhal* (Pitta humour). When *seeragam* is used with hot potency substances, it neutralises the negative impact of that substances. *Rasam* made with powdered *Seeragam* and *Milagu* relieves dullness (*mantham*) caused by the three fruits – Mango, Jackfruit, Banana (*Mukkani*)<sup>[8]</sup>

In traditional medicine, cumin was used to treat hoarseness, jaundice, dyspepsia and diarrhoea. Its seeds were used for stomachic, diuretic, carminative, stimulant, astringent and abortifacient properties. It has an anti microbial activity, anti cancer and anti inflammatory activity, mean while it has a weight reduction agent also.<sup>[9]</sup>

This column reveals the nutritional facts of *Cuminum cyminum*.<sup>[10]</sup>

**Table 6: Cumin Nutrition Facts Amount: 1 cup (Total Weight: 98 g).**

Nutrients	Amount	Nutrients	Amount
<b>Basic Components</b>		<b>Vitamins</b>	
Protein	18 g	Vitamin A	1250 IU
Water	7.9 g	Vitamin C	7.6 mg
Ash	7.4 g	Vitamin E	3.3 mg
Phytosterols	67 mg	Vitamin K	5.3 mcg
<b>Calories</b>		Thiamine	618 mcg
Total Calories	369	Riboflavin	322 mcg
Calories From Carbohydrate	126	Niacin	4.5 mg
Calories From Fat	183	Vitamin B6	428 mcg
Calories From Protein	59	Folate	9.8 mcg
<b>Carbohydrates</b>		Choline	24.2 mg
Total Carbohydrates	44 g	<b>Minerals</b>	
Dietary Fibre	10 g	Calcium	916 mg
Sugar	2.2 g	Iron	65 mg
<b>Fats &amp; Fatty Acids</b>		Magnesium	360 mg
Total Fat	22 g	Phosphorus	491 mg
Saturated Fat	1.5 g	Potassium	1.8 g
Monounsaturated Fat	14 g	Sodium	165 mg
Polyunsaturated Fat	3.2 g	Zinc	4.7 mg
Omega-3 Fatty Acids	173 mg	Copper	853 mcg
Omega-6 Fatty Acids	3.1 g	Manganese	3.3 mg
		Selenium	5.1 mcg

### 4. Perungayam - Asafoetida

Asafoetida is used as a flavouring agent and forms a constituent of many spice mixtures. It is used to flavour, curries, meatballs, dal and pickles. The whole plant is used as a fresh vegetable. Ancient texts describe it as hingu and several centuries of its constant use have bestowed upon it the peculiarity of a tempting spice and trusted medicine. Hing is bitter and pungent in taste and light, sharp, unctuous and hot in effect. It is used in popular household remedies and its components are used for many prescriptions in traditional healing. The herb is also used as an antidote of opium.<sup>[11]</sup>

It cures worm infestation and indigestion. A little amount of Asafoetida is enough to remove the ill effects of pulses. When used in excess it causes polydipsia, vertigo

and stupor. It should be fried, powdered and then used. Asafoetida has been held in great esteem among indigenous medicines from the earliest times in India. It is reputed as a drug which expels wind from the stomach and counteracts any spasmodic disorders. It is also a nerve stimulant, digestive agent and a sedative.<sup>[11]</sup>

**Table 7: Nutritional facts of Asafoetida is mentioned in the table.<sup>[12]</sup>**

<b>Nutrition Facts</b>	
For a Serving Size of 100 grams (100g)	
Fibre 4.1g	17%
<b>Vitamins and minerals</b>	
Calcium 690mg	69%
Iron 39.4mg	493%
Magnesium 80mg	23%
Phosphorus 50mg	5%
Zinc 0.8mg	6%
Copper 0.4mg	22%
Manganese 1.1mg	57%
Riboflavin 0mg	3%
Niacin 0.3mg	2%
Fatty acids	
Amino acids	
* The Percent Daily Values are based on a 2,000 calorie diet, so your values may change depending on your calorie needs.	

### 5. Chukku - Dried ginger

It is one of the major ingredients of many Siddha formulations. It cures indigestion, rheumatism, etc. It can also be used as raw ginger. It is added with curd, butter milk, tubers and other *Vatha* substances to eliminate the ill effects. The outer skin should be peeled off; crushed or cut into pieces and then used.

Dry ginger powder together with sugar cane juice is used to cure stomach irritation. Consume this mixture everyday early in the morning to get relief from stomach irritation. Dry ginger powder contains thermogenic agents that are useful to burn fat and treat obesity. Intake of this powder is useful to increase metabolism rate that will burn off stored fat in the body. This is also useful to reduce cholesterol and triglyceride levels in the body.<sup>[13]</sup>

**Table 8: Nutrition Facts *Zingiber officinale*.<sup>[14]</sup>**

<i>Amount per 100 grams</i>	<b>Calories 80 %</b>	<b>Daily value</b>
Total fat 0.89		1%
Saturated fat	0.29	1%
Polyunsaturated fat	0.29	
Monounsaturated fat	0.29	
Cholesterol	0 mg	0%
Sodium	13mg	0%
Potassium	415mg	11%
Total carbohydrate	18g	6%
Dietary fiber	2g	8%
Sugar	1.79	
Protein	1.89	

**Table 9: Nutrition Facts *Zingiber officinale*.<sup>[14]</sup>**

<b>Vitamins</b>	<b>Percentage</b>	<b>Minerals</b>	<b>Percentage</b>
Vitamin B6	10%	Calcium	1%
Vitamin B12	0%	Magnesium	10%
Vitamin C	8%	Iron	3%

### 6. Elam - Cardamom

It is an aromatic substance that balances the temperature. It should be added in sweet dishes and non-vegetarian food. Ground cardamom is an ingredient in many Indian curries and is a primary contributor to the flavour of *masala chai*. Cardamom is called king of spices, it has strong unique taste and fragrance cardamom is used to indigestion nausea vomiting and to expel out of the phlegm of the body as well as it is used in various infectious condition also. Cardamom seeds are useful for sexual dysfunction and premature ejaculation also, it is used to pacify the vatha and kabha diseases. As per Siddha material medica it is considered as a stimulant, carminative, and stomachic.<sup>[15]</sup>

**Table 10: Spices, cardamom nutrition facts and analysis.<sup>[16]</sup>**

<b>Vitamins</b>		
<b>Nutrient</b>	<b>Amount</b>	<b>DV</b>
Niacin	1.102 mg	6 %
Riboflavin	0.182 mg	11 %
Thiamine	0.198 mg	13 %
Vitamin A	0.00 IU	0 %
Vitamin A, RAE	0.00 mcg	
Vitamin B12	0.00 mcg	0 %
Vitamin B6	0.230 mg	12 %
Vitamin C	21.0 mg	35 %
Vitamin D	0.00 IU	0 %

Minerals		
Nutrient	Amount	DV
Calcium, Ca	383.00 mg	38 %
Copper, Cu	0.383 mg	19 %
Iron, Fe	13.97 mg	78 %
Magnesium, Mg	229.00 mg	57 %
Manganese, Mn	28.000 mg	1400 %
Phosphorus, P	178.00 mg	18 %
Potassium, K	1119.00 mg	24 %
Sodium, Na	18.00 mg	1 %
Zinc, Zn	7.47 mg	50 %

Proteins and Amino acids		
Nutrient	Amount	DV
Protein	10.76 g	22 %

Carbohydrates		
Nutrient	Nutrient	Nutrient
Carbohydrate	Carbohydrate	Carbohydrate
Fibre	Fibre	Fibre

**Fats and Fatty Acids**



Nutrient	Amount	DV
Fat	6.70 g	10 %
Saturated fatty acids	0.680 g	3 %
Decanoic acid	0.000 g	
Dodecanoic acid	0.000 g	
Hexadecanoic acid	0.570 g	
Octadecanoic acid	0.060 g	
Tetradecanoic acid	0.030 g	
Monounsaturated fatty acids	0.870 g	
Hexadecenoic acid	0.020 g	
Octadecenoic acid	0.850 g	
Polyunsaturated fatty acids	0.430 g	
Octadecadienoic acid	0.310 g	
Octadecatrienoic acid	0.120 g	

**7. Venthayam– Fenugreek (Trigonellafoenum)**

Venthayam has a bitter taste it has been used in food items as a flavouring agent since ancient years. Fenugreek mostly used for weight reduction poor appetite and anorexia. Fenugreek seeds are roasted, powdered and mixed with curry powder and applied externally for ulcers,eczema and cellulitis; it also stimulates the milk secretion during the time of post natal care.<sup>17</sup>It reduces *Vatha* and *Pitha* humours. It helps in eliminating the ill effects of pungent taste foods. It should be slightly fried and used.

**Table 11: Nutritional value per 100 g.<sup>[18]</sup>**

<b>Energy</b>	<b>323</b>	<b>Electrolytes</b>	
Kcal	16%	Sodium	67 mg4.5%
Carbohydrates	58.35 g45%	Potassium	770 mg16%
Protein	23 g41%	<b>Minerals</b>	
Total Fat	6.41 g21%	Calcium	176 mg18%
Cholesterol	0 mg0%	Copper	1.110 mg123%
Dietary Fiber	24.6 g65%	Iron	33.53 mg419%
Vitamins Foliates	57 µg14%	Magnesium	191 mg48%
Niacin	1.640 mg7%	Manganese	1.228 mg53%
Pyridoxine	0.600 mg46%	Phosphorus	296 mg42%
Riboflavin	0.366 mg28%	Selenium	6.3 µg11%
Thiamin	0.322 mg27%		
Vitamin A	60 IU2%	Zinc	2.50 mg23%
Vitamin C	3 mg5%		

**8. Poondu - Garlic**

Garlic has been widely recognized as a valuable spice and a popular remedy for various ailments and physiological disorders. The medicinal effect of garlic and garlic extracts on cardiovascular diseases has been widely studied.<sup>[19]</sup> Garlic has a distinct odour; it balances *tridosha*. It should be included in the food stuffs prepared from tubers, pulses to remove their ill effects. It should be used by peeling off the skin.

The scientific studies reveal that Garlic has broad-spectrum therapeutic effect with minimal toxicity.

Table 12: Nutrition Facts of Garlic.<sup>[20]</sup>

Amount Per 100 grams		Vitamins	Amount
Calories	149kcal	Vitamin C	52%
Potassium 401 mg	11%	Calcium	18%
Total Carbohydrate 33 g	11%	Iron	9%
Dietary fiber 2.1 g	8%	Vitamin B-6	60%
		Magnesium	6%

Table 1: Information About *Thirithoda Sama Porutkal*.<sup>[21]</sup>

Sl. No.	Common name Tamil/English	Botanical name / Family	Phytochemistry	Actions	Healing Properties
1	<i>Milagu</i> / Black Pepper	<i>Piper nigrum</i> / <i>Piperaceae</i>	Alkaloids - Piperine, Piperitone; Essential oils; Volatile oils - Piperonal, Caryophyllene, Dihydrocarveol, Cryptone; Resin - Chavicin	Carminative, Stomachic, Antidote, Stimulant, Antispasmodic, Antivatha	Cures <i>Vatha</i> , <i>Pitha</i> , <i>Kapha</i> diseases, Indigestion, Diarrhoea, Cold, Fever, Anaemia, Jaundice, Ulcer
2	<i>Manjal</i> / Turmeric	<i>Curcuma longa</i> / <i>Zingiberaceae</i>	Alkaloids-Curcumin; Essential oils- Turmerone, Atlantone, Zingiberene	Carminative, Stimulant, Hepatic tonic	Neutralizes three humours, Cures Vomiting, Headache, Coryza, Venereal diseases, chronic ulcers.
3	<i>Seeragam</i> / Cumin	<i>Cuminum cyminum</i> / <i>Apiaceae</i>	Volatile oils- Myrcene, Limonene, Caryophyllene, p-cymene, Cuminaldehyde, Cuminy alcohol; Alkaloids - Coniine; Flavanoids - Quercitin, Lutein, Carotene; Saponins; Resins; Tanins	Carminative, Stimulant, Stomachic	Controls <i>Pitha</i> , Cures Vomiting, Ageusia, Gastric ulcer, Buccal diseases, Splenomegaly, Wheezing, Cough, Rheumatic diseases.
4	<i>Perungayam</i> / Asafoetida	<i>Ferula asafoetida</i> / <i>Umbelliferae</i>	Resin - Ferulic acid & its esters - Coumarins, Sesquiterpenecoumarins, and other terpenoids, Umbelliferone, Asaresinotannols, Farnesiferols A,B; Gum - Glucose, Galactose, Arabinose, Rhamnose; Volatile oils	Carminative, Stimulant, Antispasmodic, Laxative, Anthelmintic, Expectorant, Diuretic	Treats <i>Vatha</i> diseases, Indigestion, Worm infestations, Anti-peristalsis, Gastric ulcers ( <i>Ashtagunmam</i> ), Ascites, Amenorrhoea, Phlegmatic disorder
5	<i>Chukku</i> / Dried ginger	<i>Zingiber officinale</i> / <i>Zingiberaceae</i>	Oleoresin - Gingerols, Shogaol; Essential oil - Zingiberene, Zingiberole; Phenol- Zingerone, Gingeol; Volatile oils	Stimulant, Stomachic, Carminative	Treats Derangement of three humours, Indigestion, Heartburn, Dyspepsia, Diarrhoea, Piles, Rheumatic diseases
6	<i>Elam</i> / Cardamom	<i>Elettariacardamomum</i> / <i>Zingiberaceae</i>	Volatile oil - Cineole; Aromatic compounds - Terpeneole, Terpinyl acetate, Borneole, Terpinene; Fixed oils	Carminative, Stomachic, Stimulant	Prevent diseases of GIT, Relieves <i>Pitha</i> , Vomiting, Diarrhoea, Polydipsia, Sluggish digestion ( <i>Vithagam</i> ), Wheezing
7	<i>Venthayam</i> / Fenugreek	<i>Trigonella foenumgraecum</i> / <i>Leguminaceae</i>	Alkaloids - Trigocoumarin, Trigonelline, Gentianine, Carpaine; Steroidal saponin - Diosgenin; Polyphenols - Rhaphonticin, Isovitexin; Volatile oils	Carminative, Refrigerant, Laxative, Demulcent, Diuretic, Tonic	Cures <i>Kanakaichalin</i> children, Diarrhoea, Dysentery, Polydipsia, Chronic cough, Tuberculosis



8	Poondul Garlic	<i>Allium sativum</i> / <i>Lilliaceae</i>	Sulphur compounds - Alliin, Ajoene; Saponins; Flavonoids	Carminative, Stomachic, Stimulant, Tonic, Anthelmintic, Expectorant	Treats <i>Vatha</i> diseases, <i>Sanni</i> , Headache, Chronic cough, Rhinitis, Piles
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## DISCUSSION

The Scientific studies reveal that the alkaloid in Pepper - *Piperine* has bioavailability enhancing effects on many therapeutically important drugs and nutrients. Piperine increases the absorption of many drugs and nutrients from the gastrointestinal tract by various mechanisms. It alters the membrane dynamics and increases permeability at site of absorption. Piperine increases the serum half lives of some substances like beta-carotene and coenzyme Q10 and decreases metabolism of many drugs by inhibiting various metabolizing enzymes like cytochrome BS, CYP3A4, NADPH cytochrome, UDP glucuronyl transferase, UDP-glucose dehydrogenase (UDP-GDH), and aryl hydrocarbon hydroxylase (AAH). These enzymatic inhibition by piperine resulted in increased bioavailability of many drugs and nutrients e.g. beta-carotene, curcumin, gallic acid, etc by different types of mechanisms. Therefore, piperine is known as bioavailability enhancer and a potent drug's metabolism inhibitor.<sup>[22]</sup>

Hence Pepper is very essential in diet for the digestion, absorption, metabolism and detoxification of food items. Moreover Pepper can balance *Kapha* and *Vatha* humour and maintain the health of the individuals.

Curcumin is the potent immune-modulator and antibiotic and it can remove the toxic substances from the body. Curcumin has antioxidant, antimutagenic, antidiabetic, antibacterial, hepatoprotective, expectorant and anticancerous pharmacological activities.<sup>[23]</sup> Cumin seeds are antioxidants; balances the *Azhal* humour of subjects. Studies proved that the usage of Turmeric and Cumin seeds in routine diet is the very ideal concept in healthy life style.

Recently, antispasmodic and hypotensive, antinociceptive, antioxidant, anxiolytic, aphrodisiac, antiviral, antidiabetic, gastric anti-ulcer, antiseptic, nephroprotective, neuroprotective and anticancer properties of Asafoetida are proven pharmacologically and biologically in animal models and humans.<sup>[24]</sup> Hence the Asafoetida is very essential for healthy life.

The pharmacological studies of Ginger revealed that it has Antioxidant Effects, Immunomodulatory Effects, Radio Protective Activity, Antigenotoxic Activity, antiemetic, antipyretic, analgesic, antiarthritic, and anti inflammatory activities. The custom of Ginger in diet is the protective of human body from various ailments.<sup>[25]</sup>

The pharmacological study of Cardamom seeds illustrates the antioxidant, gastroprotective,

antihypertensive, antispasmodic, antibacterial, antiplatelet and anticancer properties in various animal studies. Hence the usage of *Elam* in diet is very essential for healthy life.<sup>[26]</sup>

Newer research has identified the hypocholesterolemic, antilipidemia, antioxidant, hepatoprotective, anti-inflammatory, antibacterial, antifungal, antiulcer, Immunomodulatory Activity, Fibrinogen and fibrinolytic activity antilithogenic, anticarcinogenic and other effects of fenugreek. Hence the usage of fenugreek in diet is very supportive for healthy life.<sup>[27]</sup>

The scientific studies reveal that Garlic has broad-spectrum therapeutic effect with minimal toxicity. Recent studies indicate that garlic extract has antimicrobial activity against many genera of bacteria, fungi and viruses. The role of garlic in preventing cardiovascular disease and anticarcinogenic effect has been acclaimed by several authors. Chemical constituents of garlic have been investigated for treatment of hyperlipidemia, hypertension, platelet aggregation and blood fibrinolytic activity. Recent researches in the area of pest control show that garlic has strong insecticidal, nematocidal, rodenticidal and molluscicidal activity.<sup>[28]</sup>

This is the rationale in the tradition of *Thirithoda Samaporutkal* in routine diet; that played the vital role in the maintenance healthy life in ancient years.

## CONCLUSION

The key to balance the body with diet is choosing foods that have the nutritional properties and the adding of substances with activities like neutralising of toxins and balancing of three humours i.e, the usage of antidote, bioavailability enhancers and immuno-modulators in diet is essential for the maintenance of health. The every time diet should be concerned with the implementation of proper combination and application in appropriate individuals. Conclusively, the usage of *Thirithoda sama porutkal* in diet regularly will provide the balance in three humours and healthy body condition.

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