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Therapeutic effectiveness of Siddha formulation Thulasi Ennai: A Review

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Abstract

Siddha system is an unique system of Medicine because it is both medically and spiritually enriched. The medicine in this system prepared from raw drug from herbals, mineral, metals and animal products. 'Thulasi Ennai' is a purely herbal preparation with ingredients of 11 herbal ingredients. It is used to treat Childhood Asthma particularly for 'Sooli kanam'. This review is aimed to bring out scientific evidence for the therapeutic usage of Thulasi Ennai' and focused on the pharmacological activity responsible for the curative nature of the drug. Most of the drugs have anti-inflammatory, and antiasthmatic activity hence justifying its usage in above mentioned disease.

Keywords: Siddha medicine, Thulasi Ennai, Sooli kanam, Pharmacological activity.

Introduction

Siddha system is an unique system of Medicine because it is both medically and spiritually enriched. Siddha heritage is invaluable as it helps to acquire health for physique, peace of mind and purity for the soul. The Siddha system of Medicine has derived its name from the word "Siddhi" which means "Perfection" or "Eternal bliss". Siddhi refers to the eight supernatural

powers that are attainable by man. Those who attained these supernatural power or perfection or siddhi were called "Siddhars". They realised that if the body could be made strong and perfect, they could get rid of diseases and death. 'Thulasi Ennai' is classical Siddha compound drug which is mentioned in siddha text book of Bala vagadam. This drug used for childhood asthma particularly for 'Sooli kanam'. The drug review of 'Thulasi Ennai', a herbo mineral drug gives sound

evidence for its therapeutic action mentioned in literature. This review focused on the pharmacological activities of each ingredient which supports the traditional claim and the literature search is confined to that area.

Standard operating procedure for preparation of Thulasi Ennai:

Purification of raw drugs:

All the raw drugs are purified as per the methods mentioned in Siddha literature.

Preparation of drug 'Thulasi Ennai':

The mentioned ingredients in the table -1 are powdered separately and mixed well together then taken in a tightly closed container.

Table-1: Method of preparation of 'Thulasi Ennai'.

Sl.no	Tamil name	Botanical name/chemical name	Quantity
1	Chitramanakku nei	<i>Ricinus communis</i>	352 ml
2	Thulasi	<i>Ocimum sanctum</i>	160 ml
3	Nilathuasi	<i>Ocimum prostratum</i>	160 ml
4	Kanchakorai	<i>Ocimum canum</i>	160 ml
5	Thalisapathiri	<i>Taxus buccata</i>	160 ml
6	Vilvam	<i>Aegle marmelos</i>	160 ml
7	Eerulli	<i>Allium cepa</i>	160 ml
8	Chukka	<i>Zingiber officinale</i>	8 gm
9	Thippili	<i>Piper longum</i>	8 gm
10	Milagu	<i>Piper nigrum</i>	8 gm
11	Then		160 ml

Table-2: Information on herbal ingredients as per Siddha the text Gunapadam Mooligai Vaguppu

Sl. No	Tamil name	Botanical name	Family	Organoleptic Characters			Actions
				Taste	Potency	Pirivu	
1	Chitramanakku nei	<i>Ricinus communis</i>	Euphorbiaceae	Kaippu	Veppam	Kaarppu	Anti vatha Galactagogue
2	Thulasi	<i>Ocimum sanctum</i>	Lamiaceae	Kaarppu	veppam	Kaarppu	Stimulant Expectorant Diathoretic
3	Nilathuasi	<i>Ocimum prostratum</i>	Lamiaceae	Kaarppu	veppam	Kaarppu	Stimulant Expectorant Diathoretic
4	Kanchakorai	<i>Ocimum canum</i>	Lamiaceae	Kaarppu	veppam	Kaarppu	Digestive Stimulant Expectorant Diaphoretic
5	Thalisapathiri	<i>Taxus buccata</i>	Taxaceae	Kaarppu	veppam	Kaarppu	Stomachic Carminative Expectorant Tonic
6	Vilvam	<i>Aegle marmelos</i>	Rutaceae	Thubarppu, kaippu	Thatpam	Kaarppu	Diaphoretic Aphrodisiac Febrifuge
7	Eerulli	<i>Allium cepa</i>	Liliaceae	Kaippu	Veppam	Kaarppu	Stimulant Diuretic Expectorant Demulcent
8	Chukka	<i>Zingiber officinale</i>	Zingiberaceae	Kaarppu	veppam	Kaarppu	Stomachic Carminative Stimulant
9	Thippili	<i>Piper longum</i>	Piperaceae	Inippu	Veppam	Inippu	Stimulant Carminative
10	Milagu	<i>Piper nigrum</i>	Piperaceae	Kaippu, Kaarppu	Veppam	Kaarppu	Carminative Antiperiodic stimulant Antivatha Antidote
11	Then	-	-	-	-	-	Demulcent Expectorant Antiseptic Stomachic

Pharmacological activities of ingredients of Thulasi Ennai

Sitraamanakku nei (Castor oil)

Ricinus communis seeds contain fixed oil 45 -52 %. The oil chiefly consists of ricinoleate glycerol or tri – ricinoleate of glycerol or triricinolein, a small quantity of palmitin, stearin. The glycerides of ricinoleic acid are mainly responsible for the purgative effect. It has analgesic activity³, antimicrobial activity⁴ and anti inflammatory activity⁵.

Thulasi (*Ocimum sanctum*)

Fresh leaves and stem of *Ocimum sanctum* extract yielded some phenolic compounds (antioxidants) such as cirsilineol, circimaritin, isothymusin, apigenin and rosameric acid, and appreciable quantities of eugenol. The leaves of *Ocimum sanctum* contain 0.7% volatile oil comprising about 71% eugenol and 20% methyl eugenol. Anticancer activity- It has been found that ethanolic extract of *Ocimum sanctum* mediated a significant reduction in tumor cell size and an increase in lifespan of mice having Sarcoma-180 solid tumors. Antidiabetic activity- *O. sanctum* has been reported to possess very good anti diabetic properties. Hyperglycaemia was shown to be reduced in alloxan diabetic rats when administered ethanol extract of *O. sanctum* in both acute and long-term feeding studies.

Antibacterial activity of the aqueous, alcoholic, chloroform extract and oil obtained from leaves of *Ocimum sanctum* were studied against *E.coli*, *P. aeruginosa*, *S. typhimurium* and *S. aureus*. Extract obtained from *O. sanctum* were observed equally effective against pathogenic gram-positive and gram- negative bacteria.

Nila thulasi (*Ocimum prostratum*)

Fresh leaves and stem of *Ocimum prostratum* extract yielded some phenolic compounds (antioxidants) such as cirsilineol, isothymusin, apigenin, and appreciable quantities of eugenol.

Kanchankorai (*Ocimum canum*)

Fresh flowering herb yield essential oil containing small amount of estragol, eucalyptol, ocimene, linalool acetate, eugenol, 1-epibicyclosquiphellandrene, menthol, menthone, cyclohexanol, cyclohexanone, myrcenol and nerol. The leaves distilled with water yield about 1.56% of yellowish green oil, lighter than water which when kept in air, solidifies almost wholly, as crystallized from alcohol forms 4-sided prism, having a faint smell and taste. Crystallized from water, it forms white, transparent, nearly tasteless tetrahedrons. The green leaves contain high concentration of vitamins minerals and oils.

Thalisa pathiri (*Taxus buccata*)

Terpenoids, Hexahydrofamesyl acetone, Myrtenol, Hexenon, 3-methyl-2-butenic acid and Tricosane.

Vilvam (*Aegle marmelos*)

Bael is reported to contain a number of coumarins, alkaloids, sterols and essential oils. Roots and fruits contain coumarins such as scoparone, scopoletin, umbelliferone, marmesin and skimmin. Fruits, in addition, contain xanthotoxol, imperatorin and alloimperatorin and alkaloids like aegeline and marmeline identified as N-2- hydroxy-2-ethyl cinnamide. B- sitosterol and its glycoside are also present in the fruits. Roots and stem barks contain a coumarin - aegelinol. Roots also contain psoralen, xanthotoxin, 6,7- dimethoxy coumarin, tembamide, mermin and skimmianine. Leaves contain the alkaloids O-halfordinol, N-2-ethoxy-2 ethyl cinnamide, N-2-methoxy-2- ethyl cinnamide, N- 2- ethyl cinnamide, N-2-hydroxy-2- ethyl cinnamide, N-4-methoxy steryl cinnamide and N-2-hydroxy-2- ethyl cinnamide. Mermesinin, rutin and b-sitosterol - b- D-glucoside are also present in the leaves. A series of phenylethyl cinnamides, which included new compounds named anhydromarmeline, aegelinosides A and B were isolated from *Aegle marmelos* leaves as alfa-glucosidase inhibitors.

Erulli (*Allium cepa*)

Quercetin, Bioflavanoid, Anthocyanin, Myricetin. It has nutritional value as it contains ferulic acids, vitamin B&C, carbohydrates. It has stimulant, diuretic, anti-spasmodic, antimicrobial action. It is used as expectorant in Pediatric cough and also used in fever, flatulence, Indigestion and eczema.

Chukku (*Zingiber officinale*)

Beta-sitosterol palmitate, isovanillin, glycol monopalmitate, hexacosanoic acid 2,3-dihydroxypropyl ester, maleimide-5-oxime, p-hydroxybenzaldehyde, adenine, 6-gingerol, 6-shogaol, and 1-(omega-ferulyloxygeranyl) glycerols. Ginger is known as a popular remedy for nausea during pregnancy. Ginger is also used to treat various types of other GI problems like morning sickness, colic, upset stomach, gas, bloating, heartburn, flatulence, diarrhea, loss of appetite, and dyspepsia. Besides these, ginger has been reported as a pain relief for arthritis, muscle soreness, chest pain, low back pain, stomach pain, and menstrual pain. It can be used for treating upper respiratory tract infections, cough, and bronchitis. As an anti-inflammatory agent, it is recommended for joint problems.

Thippili (*Piper longum*)

Main chemical components are piperine, rutin, beta-caryophyllene piperine, piperoleines, piperamine, sabinene, chavicol, pinene, phellandrene, pentadecane, beta-bisabolene, linalool and limonene.

Piperine :

It is an N-methyl-d-aspartate (NMDA) receptor antagonistic, which contributes to its anti-convulsant property.

It causes decrease in total lipid contents by inhibiting enzymes involved in fat synthesis.

It is inhibitor of hepatic and intestinal glucuronidation.

It lowers the serum levels of both the thyroid hormones, thyroxin, triiodothyronine and glucose concentrations with a concomitant decrease in hepatic 5'D enzyme and glucose-6-phosphatase (G-6-Pase) activity.

It increases gastric acid secretion.

Rutin:

It enhances the metabolic rate of body thus act as thermogenesis.

It increases the plasma concentration of coenzyme Q10.

It is a strong inhibitor of UDP-glucose dehydrogenase (UDP-GDH)

It exerts stronger effects on intestinal glucuronidation.

It stimulates the digestive enzymes of pancreas, enhances the digestive capacity and significantly reduces the gastrointestinal food transit time.

It protects against oxidative damage by inhibiting or quenching free radicals and reactive oxygen species.

Milagu (*Piper nigrum*)

Black pepper has been found to contain piperine, alkaloids, piperidine, wisanine, dipiperamide D, and dipiperamide E.

Antibacterial effects: In an in vitro study using 12 different genera of bacterial populations isolated from the oral cavity of 200 individuals, an aqueous decoction of black pepper (*Piper nigrum* L.) exhibited 75% antibacterial activity as compared to aqueous decoction of bay leaf (53.4%) and aqueous decoction of aniseed (18.1%), at the concentration of 10ml/disc.

Conclusion

From this literature review it is evident that the most of the ingredients of Thulasi ennai has pharmacological activity like anti allergic, immunomodulatory, anti-inflammatory activity, anti microbial activity which is responsible for its therapeutic activity claimed in literature. Phytochemical analysis of the trial drug Thulasi Ennai reveals presence of certain phyto-compounds. They are named as alkaloids, steroids, triterpenoids, phenols, tannins, saponins. These constituents are enhancing the activity of Thulasi Ennai. In GCMS analysis report which is presence of 18 unknown component in these TO reveals most significant components like eugenol, naphthalene, oleic acid, ricinoleic acid derivatives. Above components are contains the actions of broncho dialator, anti-inflammatory, anti-tussive, anti-asthmatics, anti-oxidant, anti-viral, antibiotics etc. So it gives better relief in childhood asthma cases. With these benefits Thulasi Ennai can be deemed as an effective Medicine for Sooli kanam (Childhood Asthma)¹.

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