

Thaalisapaththiri Chooranam (Poly Herbal Formulation) in Siddha Medicine - A literature review

Review Article

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Abstract

Thaalisapaththiri chooranam (T.C) is a poly herbal formulation and used to treat a wide variety of respiratory tract conditions such as *kaasam*, *shayam*, *eilai* and *pitha* diseases in Siddha Medicine. It has different ingredients which are having a wide range of therapeutic uses. Although the method of preparation of the T.C is mentioned in the eight text books, same variety of ingredients (eighteen) is mentioned in only two books. Therefore, the preliminary step was to develop the documentary evidences for the medicinal ingredients those are using to prepare the T.C. Data for the review on 18 ingredients from 13 families were collected from relevant text books and research sources from October to December 2019. The characteristics of the ingredients that were identified for the review were morphology; native; parts used; siddha properties such as taste, potency and efficacy; pharmacological actions and phytochemicals. Among these ingredients, all were identified as herbal materials and 2(11.1%) of the species were found in *Umbelliferae*, *Myristicaceae*, *Piperaceae*, *Combretaceae* and *Compositae* families. Based on the morphology 8(44.44%) and 6(33.33%) plants were trees and herbs respectively; 8 species (44%) were used as dry fruits. Among these ingredients, 11(39.2%) were pungent in taste, 15(83.3%) hot potency and 12(66%) pungent efficacy. Based on pharmacological actions such as carminative [12(27%)] and stimulant [11(23%)]; phytochemicals such as volatile oil 8(23%) were found in these ingredients. Although this review provides useful documentary evidences for T.C in health management further extensive scientific studies should be carried out to justify in future.

Key Words: *Poly herbal formulation, Ingredients, Preparation, Review, Siddha medicine, Thaalisapaththiri chooranam.*

Introduction

Traditional system of healing that originated in south India and considered to be one of Indian's oldest systems of medicine. The siddha system is based on a combination of ancient medical practices and spiritual discipline. Siddha Medicine appears as part of Tamil culture, Practitioners of Siddha Medicine are known as *Siddhas*. Siddhas possessed *asthma siddhi*, the eight great supernatural powers. Many of the ancient philosophical tenets of the siddha system continue to be relevant to modern practitioner (1, 2).

According to the Siddha system, there are five elements that exist in nature: earth, water, fire and ether, three of the elements (air, fire and water) are emphasized in Siddha Medicine because they are believed to form the three fundamental components that

make up the human constitution. These three components (*vata*, *pitta* and *kapha*) are known as humours, and their inharmonious interaction produces various pathological states (2-4).

The world health organization said that the sum total of the knowledge, skill and practices based theories, beliefs and experiences indigenous to different cultures, whether explicable/not, used in the maintenance of health as well as in the prevention, diagnosis, treatment of physical and mental illness. In the world 80% of the total population is using herbal medicine (5, 6).

In Siddha Medicine, there are 32 internal and 32 external medical preparations are available for the treatment (7). *Chooranam* is a mixture of powdered herbs and or minerals used in Siddha Medicine. It is made by grinding single ingredient or numerous of ingredients such as dry root, rhizome, bark, wood, flower, resin, leaf, seed, fruit and etc. (8).

Thaalisapaththiri chooranam (T.C) is a poly herbal formulation and used to treat a wide variety of diseases such as *kaasam* -5 (cough related conditions), *shayam*-4 (TB), *eilai* (asthma), *pitha panndu*, *pitha vettai*, *asthi suram*, *perum suram* (fever), *asthi vettai*, *kaikal erivu* (burning over the limbs), *thakam* (thirst), *kirakani* (diarrhoea) and *vikkal* (hiccough) (9,10).

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This T.C has different ingredients which are having a wide range of therapeutic uses. Although the method of preparation of the T.C is mentioned in the eight text books, same variety of ingredients (eighteen) is mentioned in only two books. Therefore, attention should be considered in this aspect (8-15).

Aim and objective

The preliminary step was to develop the documentary evidence for the medicinal ingredients those are using to prepare the *Thaalisaopaththiri Chooranam* which is commonly mentioned in selected text books.

Materials and Methods

Study Design

It is a Literature review related study.

Place and Duration of the Study:

Libraries at Unit of Siddha Medicine and University of Jaffna from October to December 2020.

Data collection

Data for the literature review were collected from related past and recent traditional text books, websites and research articles from Jaffna.

Although the method of preparation of the T.C is mentioned in the eight text books, same variety of ingredients (eighteen) is mentioned in only two books as *Anuboha Vaithiyam* and *Paramparai Vaithiyam* (9,10). This information was used to identify the medicinal ingredients those are being used in the preparation of T.C. For these purpose 18 medicinal ingredients from 13 families which were mentioned in the textbooks, websites and research papers were reviewed.

Data entry form was prepared by the researchers according to the characteristics of the identified medicinal ingredient species for the review were Scientific and selected vernacular (Tamil, English, Sinhala and Sanskrit) names; families; morphology (herb, shrub, climber, tree, creeper & aquatic); natives (natural, cultivated, & ornamental); the specific parts used; Siddha properties such as taste, potency and efficacy; pharmacological actions and phytochemical contents. Most of the information was obtained from the textbooks which were available in the Libraries at Unit of Siddha Medicine and University of Jaffna in Sri Lanka (16-27).

Statistical analysis

Collected data were processed and statistically analyzed by simple statistical method using MS. Excel 2010.

Results and Discussion

Scientific and Selected Vernacular names of the medicinal ingredients

Among the 18 ingredients of the T.C, all were identified as herbal materials. These eighteen (18) plant species belonging to 13 families which had been documented as ingredients for the preparation of T.C were used for this review. The botanical names are used worldwide, and are established by the “International Code of Botanical Nomenclature” (28). The botanical name is unique to a specific plant. No other plant in the world will have the same botanical name. Common names for a plant, by contrast, will be different in different languages, may differ by region within a country or may be applied to several different plants (29). Therefore, the scientific name is important to the correct ingredient identification. The scientific and selected vernacular names of the individual plants are summarized in Table 1.

Table 1: Scientific and Selected Vernacular Names of the Medicinal Ingredients

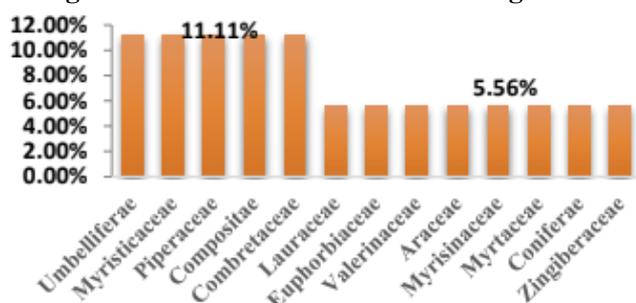
No	Botanical Name	Tamil Name	English Name	Sinhala Name	S a n s k r i t Name
1	<i>Abies webbiana</i> , Lindle.	<i>Thalisa patra</i>	Himalayan silver	<i>Talispaturu</i>	<i>Talispatra</i>
2	<i>Elettaria cardamomum</i> , Maton	<i>Elakkai</i>	Cardamomum	<i>Ensal</i>	<i>Trutih, Ela</i>
3	<i>Eugenia caryophyllata</i> , Thunb.	<i>Kirambu</i>	Clove	<i>Karabu</i>	<i>Lavanga</i>
4	<i>Piper cubeba</i> , Linn. F.	<i>Val-milaku</i>	Cubeb	<i>Walga-miris</i>	<i>Kankola</i>
5	<i>Myristica fragrans</i> , Houttuyn. Nat. Hist.	<i>Sadikkay</i>	Nutmeg	<i>Sadikka</i>	<i>Jati</i>
6	<i>Anacyclus pyrethrum</i> , (L) Linn.	<i>Akkirakaram</i>	Pellitory	<i>Akkarakara</i>	<i>Akallaka</i>
7	<i>Cinnamomum verum</i> , Presl.	<i>Lavanga-pattai</i>	Cinnamon	<i>Kurudu</i>	<i>Bahugandha</i>
8	<i>Terminalia chebula</i> , Retz., Obs.	<i>Kadukkaai</i>	Chebolic myrobalan	<i>Aralu</i>	<i>Abhaya</i>
9	<i>Phyllanthus emblica</i> , Linn, Sp, Pl.	<i>Perunelli</i>	Emblic myrobalan	<i>Awsada nelli</i>	<i>Amala, Adipahala</i>
10	<i>Terminalia bellirica</i> (Gaertn) Roxb, Pl, Corom.	<i>Thanrika</i>	Belleric myrobalan	<i>Bulu</i>	<i>Bahuvirya</i>

11	<i>Nardostachys jatamansi</i> , DC, Mem, Valer.	<i>Jatamashi</i>	Spikenard	<i>Jatamansa</i>	<i>Akasharansi</i>
12	<i>Acorus calamus</i> , Linn. Sp, Pl.	<i>Vashambu</i>	Sweet flag	<i>Wadakaha</i>	<i>Bhadra</i>
13	<i>Embelia ribes</i> , Burm, f., Fl.	<i>Vayvilangam</i>	Black-pepper	<i>Wal-embilla</i>	<i>Amogha</i>
14	<i>Coriandrum sativum</i> , Linn, Sp, Pl.	<i>Kotamalli</i>	Coriander	<i>Kottamalli</i>	<i>Ababika</i>
15	<i>Cuminum cyminum</i> , Linn, Sp.	<i>Seerugam</i>	Cumin	<i>Suda-duru</i>	<i>Ajaji</i>
16	<i>Saussurea lappa</i> , Clarke, Comp.	<i>Goshtam</i>	Kushta	<i>Godamahanel</i>	<i>Amaya</i>
17	<i>Myristica fragrans</i> , Houttuyn, Nat. Hist,	<i>Jathipaththiri</i>	Nutmeg flower	<i>Vasa-vasi</i>	<i>Jati</i>
18	<i>Piper longum</i> , Linn, Sp, pl.	<i>Tippili</i>	Long pepper	<i>Tippili</i>	<i>Chanchala</i>

Families of the medicinal ingredients:

The idea of plant families is that plant which has something in common can be grouped together. Users can identify an unknown plant to the correct family by reporting the visible details of the leaves, fruits, and other parts. The choice of information to report is entirely up to the user. The order in which information is entered does not be identification. Some families can be identified by single feature (30, 31 and 32). Families of the selected medicinal ingredients are shown in Figure 1. From these 18 ingredients, 2 (11.1%) of the species were found in *Umbelliferae*, *Myristicaceae*, *Piperaceae*, *Combretaceae* and *Compositae* families.

Figure 1: Families of the medicinal ingredients



Morphology of the medicinal ingredients:

It is the study of the various external features of the plants. This is usually considered distinct from plant anatomy, which is the study of the internal structure of plants, especially at the microscopic level. Plants morphology is useful in the visual identification of plants (33). Based on the morphology (Table 2) of ingredients were classified as trees 8 (44.44%) and herbs 6 (33.33%).

Table 2: Morphology of the medicinal ingredients

Morphology	Frequency	Percentage
Tree	8	44.44%
Climbers	2	11.11%
Herb	6	33.33%
Shrub	2	11.11%

Native of the medicinal ingredients:

This review indicated that natives of the plant species. A plant is considered native if it has occurred

naturally in a particular region, ecosystem, or habitat without human introduction (34). According to the figure 2, 13(36%) of the medicinal plants are from Sri Lankan native plants.

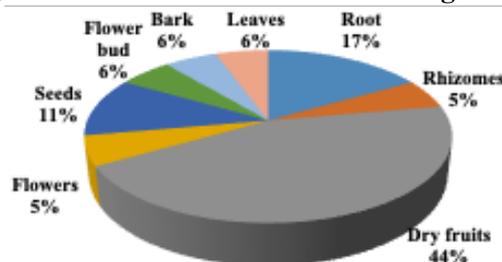
Figure 2: Natives of the medicinal ingredients



Parts of used of medicinal ingredients:

Medicinal properties derived from plants may come from many different parts of a plant including leaves, root, barks, seeds, fruits and flowers. The different part of these plants contain different active constituent (35). Important parts of plants used for the preparation of T.C are shown in Figure 3. This review revealed that parts used for medicinal ingredients were dry fruits 8(44%), roots 3(17%) and seeds 2(11%). However, the rhizome, flower bud, leaf and flower were also used.

Figure 3: Parts of used of medicinal ingredients



Siddha properties of the medicinal ingredients:

The drugs used in Siddha Medicine are classified on the basis of 5 properties such as taste, character, potency, class or efficacy and action (36). Taste plays a vital role in Siddha Medicine. The dynamics of Siddha preparations are based on six taste parameters. Those are sweet, sour, salty, pungent, bitter and astringent. Potency is described as an active constituent of the drug. The drug has cold and hot

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potency, class [bio transformation] is said to be the post absorption (efficacy) which also is considered to the drug after absorption which also considered being an important aspect (37). Table 3 shows, these ingredients

that contain: Siddha properties such as pungent taste 11(39.2%); hot potency 15 (83.3%) and pungent efficacy 12 (66%).

Table 3: Siddha properties of the medicinal ingredients

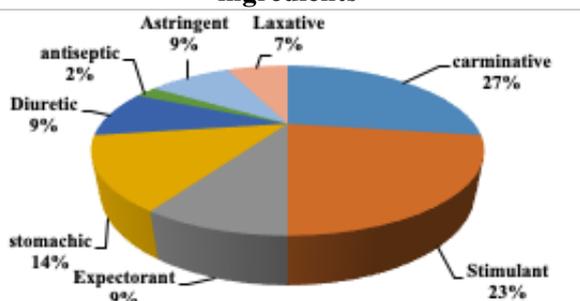
No	Taste	Fq.	%	Potency	Fq.	%	Efficacy	Fq.	%
1	Pungent	11	39.2%	Hot	15	83.3%	Pungent	12	66%
2	Astringent	6	21.4%	Cold	3	16.6%	Sweet	6	33%
3	Sweet	5	17.8%						

Fq: Frequency, %: Percentage.

Pharmacological action of the medical ingredients:

Action is the function of drug which mentions the outcome effect of the drug like expectorant, tonic, carminative, stimulant, diuretic, etc. An ingredient can have more than one action. Based on the Figure 4, pharmacological actions such as carminative [12(27%)] stimulant [11(23%)] and stomachic [6(14%)] were present in these ingredients.

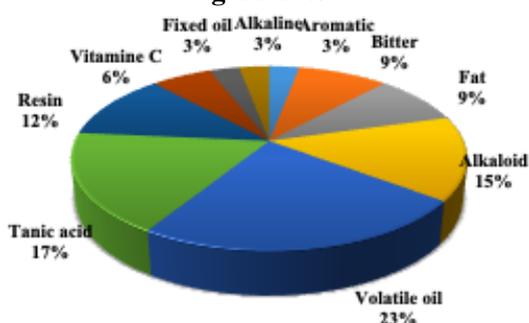
Figure 4: Pharmacological actions of the medicinal ingredients



Phytochemical Contents:

Phytochemicals also called phytonutrient. Any of various bioactive chemical compounds found in plants, as antioxidants, considered to be beneficial to human health (38). It is well-known that plants produce these chemicals to protect themselves but recent researches demonstrate that they can also protect humans against diseases. There are more than thousand known phytochemicals (39). Therefore, the phytochemical contents seen in these selected ingredients are reported in Figure 5. Phytochemicals such as volatile oil 8 (23%) and tannic acid 6 (17%) were found to be high in these ingredients. This was followed by alkaloid 5(15%).

Figure 5: Phytochemical contents of the medicinal ingredients



Conclusion

Thaalispauththiri chooranam (T.C) is a poly herbal formulation and used to treat a wide variety of respiratory tract conditions such as *kaasam*, *shayam*, *eilai* and *pitha* diseases in Siddha Medicine. Although the method of preparation of the T.C is mentioned in the eight text books, same variety of ingredients (eighteen) is mentioned in only two books. This preliminary literature review related research provides useful documentary evidences for medicinal ingredients those are commonly using to prepare the T.C for health management in the Siddha Medicine. However, there is a need for further reviews related to the chemical composition, elemental analysis, qualitative & quantitative analysis of phytochemicals, physicochemical properties and toxic substances. Further extensive scientific studies also should be carried out to justify in future.

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APPENDIX

Appendix I: Data Entry Form for medicinal ingredients of the *Thaalisapaththiri chooranam*

Botanical Name	Family Name	Morphology	Native	Part used	Siddha Properties			Pharmacological Action	Phytochemical Contents
					Taste	Potency	Efficacy		
<i>Abies webbiana</i>	Coniferae/ Pinaceae	Tree	Forest of in a Himalaya, India	Leaves	Pungent	Hot	Pungent	Carminative , Stimulant, Expectorant	Volatile oil, Resin
<i>Elettaria cardamomum</i>	Zingiberaceae	Herb	Sri Lanka, India, Malai	Seeds	Pungent	Hot	Pungent	Carminative , Stimulant	Bitter, Fat, Alkaloid
<i>Eugenia caryophyllata</i>	Myrtaceae	Tree	Sri Lanka India, Malai	Flower bud	Pungent	Hot	Pungent	Carminative , Stimulant, Stomachic	Volatile Oil, Tannic acid

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<i>Piper cubeba</i>	Piperaceae	Climbers	Sri Lanka,	Dry Fruits	Pungent	Hot	Pungent	Carminative, Stimulant, Diuretic, antiseptic	Volatile oil, Resin
<i>Myristica fragrans</i>	Myristicaceae	Tree	Sri Lanka, India, Malai	Seeds	Astringent	Hot	Pungent	Carminative, Stimulant, Stomachic	Fat Volatile oil
<i>Anacyclus pyrethrum</i>	Compositae	Herb	India	Root	pungent	Hot	Pungent	Stimulant	Alkaloid
<i>Cinnamomum zeylanicum</i>	Lauraceae	Tree	Sri Lanka, India, Malai	Bark	Sweet Pungent	Cold	Sweet	Carminative Stimulant	Tannic acid
<i>Terminalia chebula</i>	Combretaceae	Tree	Sri Lanka, Malai	Dry fruits	Sour, Bitter, Sweet, Pungent, Astringent	Hot	Sweet	Astringent Laxative	Tannic acid
<i>Phyllanthus emblica</i>	Euphorbiaceae	Tree	Sri Lanka, India	Dry fruits	Sweet Astringent Sour	Cold	Sweet	Astringent Diuretic Laxative	Vitamin C
<i>Terminalia bellirica</i>	Compretaceae	Tree	Sri Lanka India, Malai	Dry fruits	Astringent	Hot	Sweet	Laxative Expectorant Astringent	Fixed oil
<i>Nardostachys jatamansi</i>	Valerianaceae	Herb	India	Root	Pungent Astringent	Hot	Pungent	Carminative Stimulant	Aromatic Bitter
<i>Acorus calamus</i>	Araceae	Herb	Sri Lanka, India	Rhizomes	Pungent	Hot	Pungent	Carminative Stimulant	Bitter Tannic acid
<i>Embelia ribes</i>	Mirisinaceae	Shrub	Sri Lanka, India	Dry fruits	Bitter	Hot	Pungent	Carminative Stimulant	Embelin
<i>Coriandrum sativum</i>	Umbelliferae	Shrub	Sri Lanka, India	Dry fruits	Bitter	Hot	Pungent	Diuretic Stomachic	Vitamin C, Fat, Volatile oil
<i>Cuminum cyminum</i>	Umbelliferae	Herb	India	Dry fruits	Sweet Pungent	Cold	Sweet	Astringent carminative stomachic	Volatile oil
<i>Saussurea lappa clarke</i>	Compositae	Herb	India	Root	Bitter	Hot	Pungent	Expectorant Diuretic	Alkaloid Tannic acid, Resin
<i>Myristica fragrans</i>	Myristicaceae	Tree	Sri Lanka, Malai	Flowers	Pungent Astringent	Hot	Pungent	Carminative Stimulant	Alkaloid Tannic acid
<i>Piper longum</i>	Piperaceae	Climbers	Sri Lanka India, Malai	Dry fruits	Sweet	Hot	Sweet	Carminative Stimulant	Alkaloid, Volatile oil, Resin

Appendix II: Medicinal Ingredients of the *Thaalisapaththri chooranam*



Abies webbiana



Elettaria cardamomum



Eugenia caryophyllata



Piper cubeba



Myristica fragrans



Anacyelus pyrethrum



Cinnamomum zeylancum



Terminalia chebula



Phyllanthus emblica



Terminalia bellirica



Nardostachys jatamansi



Acorus calamus



Embelia ribes



Coriandum sativum



Cuminum cyminum



Saussurea lappa clarke



Myristica fragrans



Piper longum
