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

Review Article

Musthafa Mufaza1*, Hasim Nisra1, Kalaichelvi Sounthararajan2, Vinotha Sanmugarajah2

1. Undergraduate Student, Unit of Siddha Medicine, University of Jaffna, Sri Lanka.
2. Senior Lecturer, Unit of Siddha Medicine, University of Jaffna, Sri Lanka.

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 astha 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 on 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 pandu, pitha vettai, asthi suram, perum suram (fever), asthi vettai, kaikal erivu (burning over the limbs), thakam (thirst), kirakani (diarrhoea) and vikkal (hiccough) (9,10).

* Corresponding Author:
Musthafa Mufaza
Undergraduate Student,
Unit of Siddha Medicine,
University of Jaffna, Sri Lanka.
Email id - doctormufaza@gmail.com
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 Thaalisapaththiri 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.

| No | Botanical Name                  | Tamil Name  | English Name | Sinhala Name | Sanskrit Name  |
|----|--------------------------------|-------------|--------------|--------------|----------------|
| 1  | Abies webbiana, Lindle.         | Thalisa patri | Himalayan silver | Talispaturu   | Talispatra     |
| 2  | Elettaria cardamomum, Maton     | Elakkai     | Cardamomum   | Ensal        | Truthi, Ela    |
| 3  | Eugenia caryophyllata, Thunb.   | Kirambu     | Clove        | Karabu       | Lavanga        |
| 4  | Piper cubeba, Linn. F.          | Val-nilaka  | Cubeb        | Walga-miris  | Kankola        |
| 5  | Myristica fragrans, Houttuyn. Nat. Hist. | Sadikkay | Nutmeg       | Sadikka      | Jati           |
| 6  | Anacyclus pyrethrum, (L) Linn.  | Akkirakaram | Pellitory    | Akkarakara   | Akallaka       |
| 7  | Cinnamomum verum, Presl.       | Lavanga-pattai | Cinnamon   | Kurudu       | Bahugandha     |
| 8  | Terminalia chebula, Retz., Obs.| Kadukkaai   | Chebulic myrobalan | Aralu       | Abhaya         |
| 9  | Phyllanthus emblica, Linn, Sp, Pl. | Perunelli | Emblic myrobalan | Awsada nelli | Amala, Adipahala |
| 10 | Terminalia bellirica (Gaertin) Roxb, Pl, Corom. | Thanrika | Belleric myrobalan | Bulu       | Bahuvirya     |
Families of the medicinal ingredients:
The idea of plant families is that plants 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](image)

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%).

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

| Table 2: Morphology of the medicinal ingredients |

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](image)

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](image)

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
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%).

| 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% |

Table 3: Siddha properties of the medicinal ingredients

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
_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. 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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27. *APPENDIX*

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

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

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| Plant Name           | Family       | Habitat          | Part Used          | Taste       | Effect                  | Secondary Products          |
|---------------------|--------------|------------------|--------------------|-------------|-------------------------|------------------------------|
| Piper cubeba        | Piperaceae   | Climbers         | Sri Lanka, Malai.  | Pungent     | Hot, Pungent            | Carminative, Stimulant       |
|                     |              |                  | Dry Fruits         |             |                         | Diuretic, antiseptic         |
|                     |              |                  |                    |             |                         | Volatile oil, Resin          |
| Myristica fragrans  | Myristicaceae| Tree             | Sri Lanka, India,  | Astringent  | Hot, Pungent            | Carminative, Stimulant       |
|                     |              |                  | Malai.             |             |                         | Stomachic                     |
|                     |              |                  | Seeds              |             |                         | Fat                           |
|                     |              |                  |                    |             |                         | Volatile oil                 |
| Anacyclus pyrethrum | Compositae   | Herb             | India              | Pungent     | Hot, Pungent            | Stimulant                    |
|                     |              |                  | Root               |             |                         | Alkaloid                      |
| Cinnamomum zeylanicum| Lauraceae    | Tree             | Sri Lanka, Malai.  | Pungent     | Cold, Sweet             | Carminative                  |
|                     |              |                  | Bark               |             |                         | Stimulant                    |
|                     |              |                  |                    |             |                         | Tannic acid                   |
| Terminalia chebula  | Combretaceae | Tree             | Sri Lanka, Malai.  | Dry Fruits  | Hot, Sweet              | Astringent                   |
|                     |              |                  | Dry Fruits         |             |                         | Laxative                     |
|                     |              |                  |                    |             |                         | Tannic acid                   |
| Phyllanthus emblica | Euphorbiaceae| Tree             | Sri Lanka, India.  | Dry Fruits  | Cold, Sweet             | Astringent                   |
|                     |              |                  | Dry Fruits         |             |                         | Diuretic                     |
|                     |              |                  |                    |             |                         | Laxative                     |
|                     |              |                  |                    |             |                         | Vitamin C                     |
| Terminalia bellirica| Combretaceae| Tree             | Sri Lanka, Malai.  | Dry Fruits  | Hot, Sweet              | Laxative                     |
|                     |              |                  | Dry Fruits         |             |                         | Expectorant                  |
|                     |              |                  |                    |             |                         | Astringent                   |
|                     |              |                  |                    |             |                         | Fixed oil                     |
| Nardostachys jatamansi | Valerianaceae | Herb             | India              | Root        | Pungent, Astringent     | Hot, Pungent                 |
|                     |              |                  |                    |             |                         | Carminative                  |
|                     |              |                  |                    |             |                         | Stimulant                    |
|                     |              |                  |                    |             |                         | Aromatic                      |
|                     |              |                  |                    |             |                         | Bitter                        |
| Acorus calamus      | Araceae      | Herb             | Sri Lanka, India.  | Pungent     | Hot, Pungent            | Carminative                  |
|                     |              |                  | Rhizomes           |             |                         | Stimulant                    |
|                     |              |                  |                    |             |                         | Bitter                        |
|                     |              |                  |                    |             |                         | Tannic acid                   |
| Embelia ribes       | Mirisinaceae | Shrub            | Sri Lanka, India.  | Pungent     | Hot, Pungent            | Carminative                  |
|                     |              |                  | Dry Fruits         |             |                         | Stimulant                    |
|                     |              |                  |                    |             |                         | Embelin                      |
| Coriandrum sativum  | Umbelliferae | Shrub            | Sri Lanka, India.  | Pungent     | Hot, Pungent            | Diuretic                     |
|                     |              |                  | Dry Fruits         |             |                         | Stomachic                    |
|                     |              |                  |                    |             |                         | Vitamin C, Fat, Volatile oil |
| Cuminum cyminum     | Umbelliferae | Herb             | India              | Dry Fruits  | Sweet, Pungent          | Astringent                   |
|                     |              |                  | Dry Fruits         |             |                         | carminative, stomachic       |
|                     |              |                  |                    |             |                         | Volatile oil                 |
| Saussurea lappa clarke | Compositae  | Herb             | India              | Pungent     | Hot, Pungent            | Expectorant                  |
|                     |              |                  | Root               |             |                         | Diuretic                     |
|                     |              |                  |                    |             |                         | Alkaloid, Tannic acid, Resin |
| Myristica fragrans  | Myristicaceae| Tree             | Sri Lanka, Malai.  | Pungent     | Hot, Pungent            | Carminative                  |
|                     |              |                  | Flower             |             |                         | Stimulant                    |
|                     |              |                  |                    |             |                         | Alkaloid                      |
|                     |              |                  |                    |             |                         | Tannic acid                   |
| Piper longum        | Piperaceae   | Climbers         | Sri Lanka, Malai.  | Pungent     | Hot, Pungent            | Carminative                  |
|                     |              |                  | Dry Fruits         |             |                         | 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*

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