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# A LITERARY REVIEW OF KAKKANAM MATHITRAI FOR PEDIATRIC ILLNESS

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## ABSTRACT

Ancient Siddha System of Medicine is well known for its good therapeutic value. It is most commonly used in Southern region of India. Siddhars Ancient Saints classified the diseases into 4448 in number. Its uniqueness is showed by the best medicines for the betterment of an individual in a diseased condition. Besides Toxicology, Gynecology, Special medicines, Siddhars also concentrated in the Pediatric illness. They are classified into two types of Aga karana noigal and Pura karana noigal. Where maantham (Gastro Intestinal Disturbances) is one of the Aga karana noigal. It occurs because of improper Post natal care, creates Aamam within mother's body which is simultaneously transferred into infant and showed as a Maantham. Kakkanam mathirai Siddha a Herbomineral pill which has a therapeutic value in treating Maantham and Kirumi (worm infestation). This paper deals with the nature of the diseases, symptoms, types, treatments for maantham in siddha aspect compared to modern aspect.

**KEYWORDS:** Siddha medicine, Kakkanam mathirai, Maantham, Kirumi.

## INTRODUCTION

Awareness towards Siddha medicine is getting increased day by day amongst people. Siddhars explained about Pediatric illness in a classical literary Siddha text Balavagadam. Aga kaarana noi is a Congenital diseases and Pura karana noigal is a non congenital diseases.[1] Siddha text deals with the chapter Maantham and classified into 21 types, various worms and treating it with Kakkanam mathirai. Kirumi noi (Worm infestation) is denoted in siddha text in various places, to treat this condition Anthelmintic is given.[2] In Siddha text

Pillai Pini Maruthuvam worms are classified into 27 types.[1] A plant Senna is used as an mild laxative is so called Kirumi naasi, Adathoda is used for worm infestation called as Kirumi nayagam is Siddha texts. Kirumi oomam an ingredient used for killing worm infestation.[3] Various Gastro Intestinal Disturbance and worm infestation are discussed.

## GASTROINTESTINAL DISTURBANCES IN PEDIATRIC CASE

### Peptic diseases

It occurs due to the erosion of the soft mucous lining layer of the oesophagus, stomach, duodenum by an acid attack with injury. H.pylori may be the causative agent in the case of low socioeconomic status and poor sanitation. Nausea, pain, bloating, early satiety of such abdominal discomforts are present in case of nonulcer dydpepsia.

### GER: Gastro Esophageal Reflux

An effortless upward movement of an acidic abdominal content resulting in the inflammation of the mucous lining of the GIT. It is normal in the age between 8-12 months it is called physiological GER (spitting up) due to less development of lower sphincter of oesophagus. It is accompanied by pain, breathing abnormalities, dysphagia, esophagitis.

## HELMINTHIASIS

### Hook worm infestation

Ancylostoma duodenale and Necator americanus are responsible for the hook worm infestation. These larvae present in the soil with fecal contamination and improper soil conditions it is transmitted via penetrating the skin. It enters lung, trachea by swallowing it enters intestine. It is characterized by intense itching, abdominal pain, indigestion, diarrhea, anorexia, fullness and anemia.

### Ascariasis

Ascaris lumbricoides a common larva affecting among children World Wide. They are ingested via swallowing or by penetration reaches intestine, lodged and hatches egg, passed out through stools, it causes abdominal distension and abdominal pain.

### Enterobiasis

It is also called pin worm. The causative organism is Enterobius vermicularis present World Wide. Larva is ingested slowly reaches colon. Eggs are layed in peri-anal area it is alive for two days present with a symptoms of pruritis ani, sleeplessness.

**Schistosomiasis**

Schistosoma haematobium, Schistosoma mansoni, Schistosoma japonicum, Schistosoma intercalatum and Schistosoma mekongi are the causative organism causing schistosomiasis. Penetrate via skin the source is from contaminated water. Some organisms are with specific site lodgement like messentric and bladder plexus. Katama fever an inflammatory type with eosinophilia, splenomegaly, weight loss.

**Neurocysticercosis**

Taenia solium is the causative organism it is also called as a pork worm. It is with minimal symptoms and majorly affects the Central Nervous System. It provokes inflammatory response and produces seizure sometimes. Prevalence is in Asia, Africa, America.

**Common causes for diarrhea**

Salmonella, Campylobacter, Shigella, E. coli O157:H7, Yersinia, Listeria monocytogenes, V. cholera, Bacilu aureus, S.aureus are some of the causative organism. Diarrhea may also occur due to food contamination like fishes, Shell fish, mushrooms etc. with the symptoms of diarrhea, abdominal cramps, vomiting. Diarrhea is also present in IBS, toxins, infections, Gastro intestinal allergy.

**Viral diarrhea**

Vomiting, dehydration, bloody stool or watery stool, low grade fever are the characteristic features.

**Dysentry**

Ful smelling stool ith mucus it it, inflammates colon and rectum, shigella, E.histolytica (amebic dysentery), C jejuni, Y.enterocolitica are some of the causative organisms.

**Antibiotic associated Diarrhea**

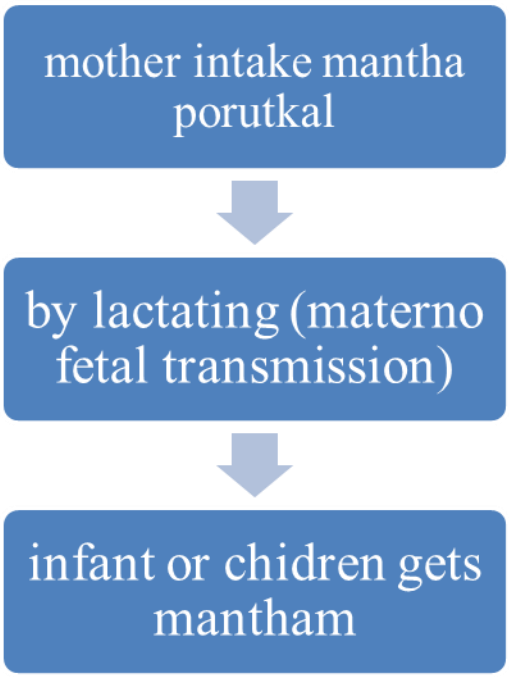
Clostridium difficile is the causative organism. Spores are air borne spread from one person to another person easily.[4]

**MAANTHAM (GASTRO INTESTINAL DISTRBANCES) IN SIDDHA ASPECT[2]**

Nature of the diseases

It occurs between 3-12 years of age.

**MILK INTAKING PERIOD**




**Causes for mother**

- Mother intakes food which produces mantham
- Drinking impure water
- Foods that produce mantham
  - Buffalo milk and ghee,
  - sour butter milk,
  - mango,
  - banana,
  - tender coconut,
  - jaggrey,
  - bitter guard,
  - urad dhal,
  - bottle guard,
  - pork meat,
  - vaalai meen (Trichiurus lepturus),
  - viral meen (Murrel fish),
  - kendai meen (Carp fish) etc.
- Fasting,
- Anger,

- Stress,
- Worrying,
- Fear.

**FOOD AND MILK INTAKING PERIOD**

- It occurs by intake of food which induces maantham by mother and infant.

**FOOD INTAKING PERIOD**

- Alteration in food
- Unclean character of children
- Not taking food in a proper time
- Eating unhealthy foods
- Loss in natural strength of the body

**SYMPTOMS**

- Redness of the eyes
- Paleness of the eyes and face
- Half lid closed sleep
- Thinning of the neck
- Low in voice
- Dry mouth
- Accumulation of phlegm in chest
- Hesitate to drink milk from mother

**KAKKANAM MATHIRAI**

**Table 1: Represent the ingredients of Kakkanam mathirai.**[5, 6, 7]

| Ingredients | Botanical name/metallic name | Family | Phytochemicals /actions | Uses in Siddha |
|---|---|---|---|---|
| Kakkanam ver | Clitoria ternaetea | Fabaceae | Cinnamic acid/ demulcent | Eye diseases, fever |
| Thippili | Piper lngum | piperacear | Piperine/ carminative | Anemia, Gastric ulcer |
| Chukku | Zingiber officinale | Zingiberaceae | Gingerol/ stomachic | Cough, asthma |
| Kandakathiri | Solanum surratense | Solanaceae | Carpesterol/ carminative | Tuberculosis, Vatha disorder |
| Nervaalam | Croton tiglium | Euphorbiaceae | Oleic acid/ purgative | Diabetes, Tridoshas |

| | | | | |
|---|---|---|---|---|
| Pooram | Hydragyrum subchloride | - | Anthelmintic | Dryness of mouth |
| Lingam | Red sulphide of mercury | - | Stimulant | Pitha paandu |

**Method of preparation of tablet[8]**

4 parts of Clitoria ternaetea, 1 part of Piper longum, 1 part of Zingiber officinale, 1 part of Solanum surratense, 2 parts of Croton tiglium, 2 parts of purified Hydragyrum subchloride, 2 parts of purified Red sulphide of Mercury all are triturated with lemon juice for 1½ Saamam, made into payar alavu.

Anubana: Ooma kudineer, Chukka kudineer

Administration: Maantham (GI disturbances), Kirumi (Worm infestation).

## EXPERIMENTAL ACTIVITY OF INGREDIENTS

### Kakanam - Anthelmintic activity

Khadatkar et al, studied the in-vitro anthelmintic activity of root of Clitoria ternatea. Linn. Roots are screened for its phytochemical activity showed the presence of tannins, resins, taraxerol and ternatins. In different ratios C.ternatea fractions are prepared by alcoholic extraction method, petroleum ether fraction, ethyl acetate fraction, methanol fraction, Piperazine citrate are choosen for testing. Each are taken in different concentrations in dose dependent manner to check its anthemintic activity in roots. All are subjected in earth worm (Pheretima posthuma) and studied for time taken for paralysis, death. Results are evaluated with the presence of tannin a major phytochemical constituent exhibited the anthelmintic activity in the study. It is used for various ailments all of its part are useful with curative property.[9]

### Thippili - Anthelmintic activity

Krishnaprasad et al, studied anthelmintic activity of fruit extract and fractions of Piper longum L. Invitro. To evaluate the larvicidal activity, methanolic extract, n hexane, and chloroform fractions are made with Piper longum. At the lowest concentration of 1.95mg/mL the mortality of the larvae are reduced to half of the percentage. when compared with the highest concentration of 500mg/ ml there is a complete mortality of larvas. By this study it is proven that methanolic extract are effective in larvicidal activity and chloroform fraction are used as a broad spectrum against strongyle ova, larva and adult amphistomes at the lowest value of $IC_{50}$.[10]

**Chukku – Anthelmintic activity**

Malvankar et al, studied anthelmintic activity of extracts of Trikatu churna and its individual ingredients on Indian earth worms. By macerating the trikatu churna and its ingredients for seven days the extract is prepared by distilled water in various concentration. A labelled beaker contained with standard Albendazole, Trikatu churna and its individual ingredient extracts, Indian earthworm then paralysis and death are noted in the time period. The study proves the Trikatu churna is equal in action with the standard Albendazole in the mortality of earth worm. Z.officinale is effective ingredient as an Anthelmintic one.[11] Singh et al, reviewed the Rhizome of Z.officinale is subjected to aqueous extract and treated with Indian earth worm and exhibited the anthelmintic activity At 100mg/ml. anthelmintic activity is observed in Z.officinale to methanol extract against the Haemonchus contortus worm and its activity is seen.[12]

**Kandankathri – Anthelmintic activity**

Bhabani et al, Evaluvated the comparative study of anthelmintic activity between aqueous and ethanolic extract of *solanum surattense* linn. Pheretima postuma, Indian earthworm is selected in equal size and healthy in nature in 15 groups (each group 5). S.surattense extract is prepared, treated with Piperazine citrate and Albendazole where saline water is a control. Both ethanolic and aqueous extracts are tested with various samples. As a result crude extracts showed a better result when compared with Piperazine citrate and Albendazole. Hence he proves that aqueous extract showed the better result in mortality of Indian earthworm in a various time period. But both the ethanolic and aqueous extracts possess the anthelmintic activity of S.surratense.[13]

**Nervalam – Anthelmintic activity**

Kaumudee Bodas et al, studied In-vitro evaluation of anthelmintic activity of Croton tiglium seed extracts. Phytochemicals like terpenoids, alkaloids, tannins, saponins are found out by petroleum ether extract method to demonstrate its anthelmintic property. Other contents like carbohydrate, proteins and flavanoids are also present in it. To determine the activity Pheretima posthuma - Indian earth worm are treated aqueous extract, petroleum ether extract, and a standard Albendazole treated in a different concentration and determined to check for the minimal time taken for paralyzing and death of the worm. At the concentration of 25mg/ml and 50 mg/ml time taken for death is 75.17 and 60.17. showed the better result

when compared to standard Albendazole, Petroleum ether extract. Hence C.tiglium is useful drug for the condition of anthelmintic.[14]

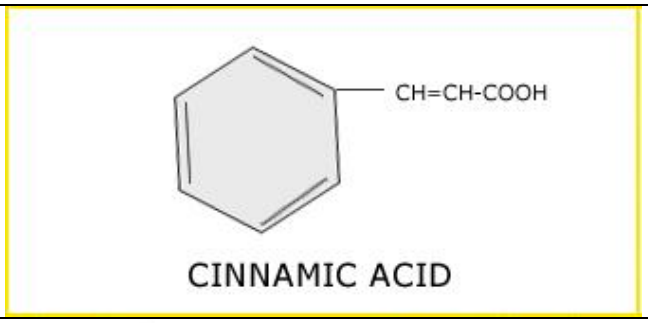
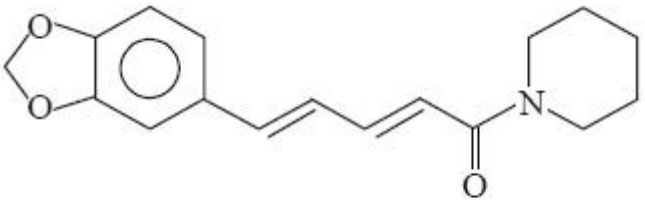
**Pooram – Anthelmintic activity**

Monika et al, studied the anti microbial studies of poora podi a siddha herbomineral dusting powder. Here pooram is the chief ingredient of all. It is treated with the bacterial species of Streptococcus, Staphylococcus, E.coli, Proteus, Pseudomonas aeruginosa. Done by disc diffusion method. Maximum zone of inhibition is seen when compared with a standard contol of Amikacin. Thus their antimicrobial activity are studied. Streptococcus, Pseudomonas aeruginosa showed the better zone of inhibition compared to other species.[15]

**Lingam – Anti microbial activity**

Ravichandran et al, studied Antimicrobial studies of Linga kattu. Linga kattu is treated with some bacterial strains such as Vibrio cholera, Staphylococcus aureus, Entero cocci, Klebsiella, E.coli, Citrobacter, Morgonella, Salmonella typhi, Pseudomonas aerigenosa. Zone of inhibition is noted for each species. At 200µg/ml all the species were controlled with their growth, whereas Vibrio cholera and Pseudomonas aerogenosa were negligible in its growth. Hence the antimicrobial activity is proven. Lingam is effective in antimicrobial activity.[16]

**Table 2: Represent Phytochemical constituent of drug involved.**

| Plant name | Chemical structure | constituent | ref |
|---|---|---|---|
| Kakkanam veer |   CINNAMIC ACID | Cinnamic acid | [17] [22] |
| Thippili |   Piperine | piperine | [18] [22] |

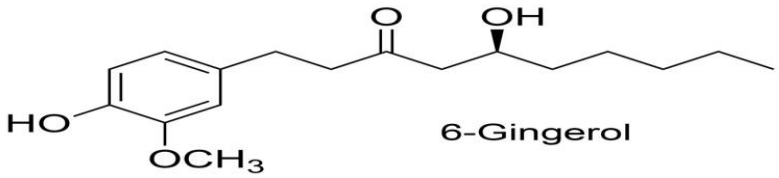
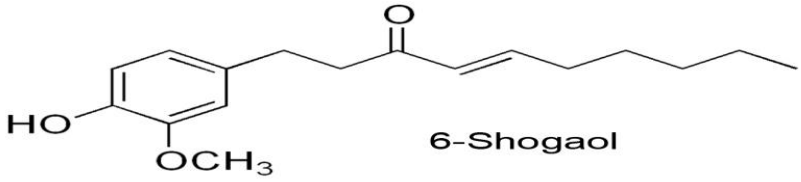
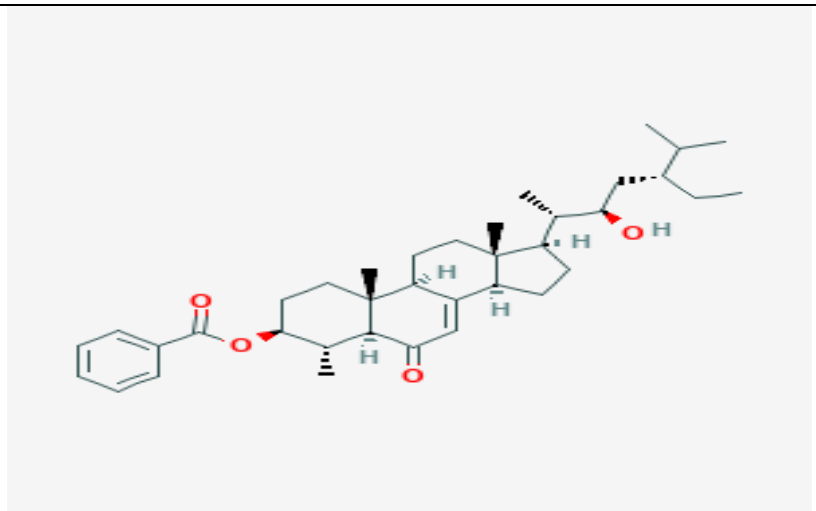
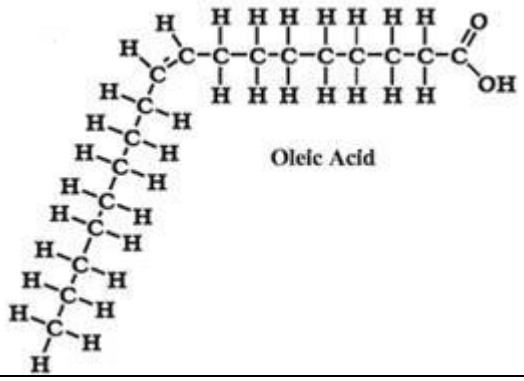
| | | | |
|---|---|---|---|
| Chukka |  <br>  | Gingerol, Shogaol. | [19] [22] |
| kandakathri |  | carpesterol | [20] [22] |
| Nervalam |  | Oleic acid | [21] [22] |

**Table 3: Represent other Siddha medicines used to treat Maantham and worm infestation.[1,2]**

| Name of the medicine | Dosage | Anupana | Uses in siddha | Mode of intaking |
|---|---|---|---|---|
| Poduthalai kudineer | 15-30 ml | - | Diarrhea | Internal |
| Vasambu kudineer | 15-30 ml | - | Loss of appetite, Flatulency | Internal |
| Maasikai kudineer | 15-30 ml | - | Perunkalichal | Internal |
| Elakkai choornam | Moondru chittigai | Hot water | indigestion | Internal |
| Seeraga choornam | Moondru chittigai | Sugar | Mantha vaayu | Internal |

| | | | | |
|---|---|---|---|---|
| Vasambu choornam | 250-500 mg | - | Agattu vayu | Internal |
| Ooma choornam | 250-500 mg | Butter milk | Indigestion | Internal |
| Thayirchundi choornam | 250-300 mg | Hot water | Kazhichal, Mantham | Internal |
| Thaalisadi vadagam | 5gm | - | Mantham | Internal |
| Thurunji manapagu | 5-10ml | Water | Vomiting | Internal |
| Maathulai manapagu | 5-10ml | - | Vomiting | Internal |
| Ooma theener | 15-30 ml | - | Promotes appetite | Internal |
| Poduthalai surasam | 5-15 ml | - | Maantham | Internal |
| Nochi sarru | 5-15ml | - | maantham | Internal |
| Veyliparuthi saaru | 5-10 ml | - | Maantham | Internal |
| Oomaa kudineer | 170 ml | Water | Maantham | Internal |
| Veylai kudineer | 15-30 ml | - | maantham | Internal |
| Mukkaduku kudineer | 15-30 ml | - | maantham | Internal |
| Maasipathri kudineer | 15-30 ml | - | Maantham | Internal |
| Ingaya choornam | 135 gm | Honey, butter | Maantham | Internal |
| Sundai vatral choornam | 250-500mg | Buffalo curd | Maantham | Internal |
| Thaalisadi choornam | 250-500mg | - | Maantham | Internal |
| Panchadeepakni choornam | 250-500 mg | Honey, ghee | Indigestion | Internal |
| Anna podi | 250-500 mg | With cooked rice | Promotes digestion | Internal |
| Adathodai nei | 2.5 gm | - | Maantham | Internal |
| Sarva maantha ennai | 5-15 ml | Sukku kudineer,ooma dravakam | Maantham | Internal |
| Poondu ennai | 5-15 ml | - | Maantham | Internal |
| Ilaneer ennai | 5-15 ml | - | Maantham | Internal |
| Ponnanganni ennai | 5-15 ml | - | Maantham | Internal |
| Anda thailam | 1-4 drops | Cow’s milk | Maantham | Internal |
| Kanathennai | 4-8 ml | Mother’s milk | Maantham | Internal |
| Amirtha kulikai | 65-130 mg | - | Maantham | Internal |
| Maantha maarana kulikai | 1 pill | Hot water | Diarrhea | Internal |
| Naakupoochi kudineer | 4gm | honey | Intestinal parasites | Internal |
| Eli sevi kudineer | 81ml | 4g vaividankam | Intestinal parasites | Internal |
| Mushutai kudineer | 335ml | - | Worm infestation | internal |
| Ilaneer nei | 16ml | - | Worm infestation | Internal |
| Siupeelai nei | 4.4gm | - | Intestinal parasites | Internal |

## CONCLUSION

This review paper deals with the Kakkanam ver maathrirai is effective in treating Kirumi noi (Worm infestation) and Maantham (Gastro intestinal disturbances). The each and individual drugs are rich in anthelmintic property, in its actions. Siddha text mentioned medicnal preparations are equivalent with the properties of modern medicines. Hence it is an effective remedy in case of Pedicatric illness.

## ACKNOWLEDGEMENTS

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