



A Review on the Method of Preparation, Properties, Formulate and Usage of *Khada(Khala)*-A Traditional Ayurvedic Buttermilk Formulation

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ABSTRACT

Ayurveda gives so importance to *Pathya Kalpana* as it would be the supreme medicine. Life cannot be sustained without *Pathya* (wholesome) even with medicines consumed¹. The *Khada(Khala)* preparation is a good choice in digestive disorders of all kinds and is a cross between food and medicine, an example of diet therapy. *Khada* is known as '*Mukkudi*' among Keralite physicians. It is a type of salutary Buttermilk preparation. Generally, drugs are pounded and cooked in Buttermilk. It was mainly administered to people with low digestive fire and conditions like Hemorrhoids, Dysentery, Anorexia, etc. *Thambli*, a similar preparation is a diet staple that can be used as medicine. As *Mukkudi* being widely used by ancient *Vaidyas* but not new generations, its literary knowledge not available from modern Textbooks. Moreover, Articles were not available concerned with this topic. So a review search was done to know about its method of preparation, types, properties, and various *Khada* formulations. Also, go through the Rituals associated with medicated Buttermilk custom in the month of *Karkidaka*. Also, one of the tabulated formulation was selected and prepared the same to ensure the palatability in addition to assess the casualness in preparation. While analyzing the enlisted tables, it can be concluded that the *Khada* preparation can be given to almost all diseases that occurred in external, internal and intermediate disease channels of the body. This simple preparation can be consumed by any person of any age on any season except hot².

KEYWORDS: *Khada, Khala, Mukkudi, Buttermilk preparation, Thambli, Pathya Kalpana*

INTRODUCTION

Our science, Ayurveda which advocates more on prevention rather than 'cure' of diseases, obviously emphasizes the ideal food to be consumed to attain and sustain good health and this precisely calculated and cooked food is called *Pathya*(wholesome). Ayurvedic classical books quote that no other medicine just like '*pathya*' is available and further declare that one cannot sustain life without '*pathya*' even with any amount of '*aushadha*'(medicine) consumed³. Acharya Kasyapa emphasizes the importance of *Ahara*(food) and he considered the same as *Mahabhaishajya*³(supreme medicine). Acharya Charaka considered *Pathya* as *Chikitsa*⁴ (therapy). The root term for *Pathya* is '*patha*'⁵ which means the 'channels of the body. That which is

wholesome and soothing to our body is called as *Pathya*⁵ or that which maintains health and helps in getting rid of diseases is called *Pathya*.

Ayurvedic tradition has given a lot of importance to *Agni* (digestive fire). According to the fundamental principles of Ayurveda, *Agni* plays a key role in the process of Biotransformation and physiological functioning in the body. The *Ayu*(Longevity), *Varna*(Lustre), *Bala*(Strength), *Swasthya*(Health), *Utsaha*(Enthusiasm), *Buddhi*(Cleverness), *Kanti*(Radiance), *Oja*(Immunity), *Teja*(Sharpness or Brilliance) and *Prana*(Life force) of human beings mainly depends on its status⁶, so it should be kept in its *prakruti*(natural) state. *Jatharagni* (*Digestive fire*) has been considered prime among all *Agnis*⁷. The functioning of other *Agnis*(*Dhatwagni*-Digestive Fire in tissues and *Bhutagni*-Digestive fire in basic elements) are dependent upon the strength of the same. Diseases like *Grahani* ⁸(Irritablebowelsyndrome), *Athisara*(Diarrhoea), *Arsas*(Haemorrhoids), *Udara*(Ascitis), *Arochaka*(Anorexia) all have an etiological background of *Agnivaishmya*(disturbed digestive fire).The occurrence of these diseases is stepping up in the present scenario. Increased migration from villages to cities, so increased urbanization and mechanization that caused adverse lifestyle changes, nutritional imbalance, reduced physical activity, and stress.

Look over various aspects of *Agni*; well known that while treating any disease, the *samprapti vighattana*(discontinuation of pathogenesis) always start with *Amapachana*(metabolic correction) and *Agnivardhana chikitsa*(increasing digestive fire) to get fast and complete heal. Moreover, In *Agnimandya*(weak digestive fire) condition, the patient could not bear the strength of any medicine⁹. Because his *Agni* (digestive fire) is as feeble, cannot cause paka to a single medicine. In this condition,*Pathyakalpana*(Neutraceuticals) suits than Oushada kalpana(medicinal formulations). If we administer medicine in the form of *Pathyakalpana*, it is beneficial as it causes *Jadaragni*(vital heat used in digestion) *vardhana* and moreover, it is *satmya*(habituation) for everyone. In Ayurveda, a variety of preparations have been mentioned for the diseases where *Agnimandya is a cause or symptom. Khada* is one among them. This review goes through various aspects of *Khada* (*Khala*).

METHODOLOGY

A textual-based probe on *Khada* was done mostly from Ancient books. Synonyms of the word *Khada* were searched from the same including *Nighantus*. But no references were found for synonyms, but in some books like *Chikitsamanjari*, etc while explaining various *Khada* preparations, use the term *Mukkudi and Khala* instead of *Khada*. So the search was extended through *Mukkudi and Khala* preparations too. A comprehensive literature search was done for the characteristic features of *Khada* from 4 Ayurvedic treatise. Data was collected from *Bruhatrayees* of Ayurveda, and various Kerala's Ancient traditional formulations books as *Khala* being a traditional preparation. The common definition of *Khada*, types of *Khada*, and general properties of *Khada* was obtained from *the Dalhana* commentary of *Susruta Samhita Sootrasthana*. The common method of preparation was obtained from *Kalpakhanda of Navakhanda* which deals with the common method of preparations of various formulations dealt in Ayurveda and also from *Arogyachinthamani*. Formulations of *Khala* were obtained from *Chikitsamanjari, Arogyakalpadrumam Chakradatta, Vaidyamalika, Yogamruta, Navakhanda, Ashtanga Hrudaya, Oushadayogamanjari, Yogaratnasamucchaya, Ayurvedasudhakara, Vaidya manorama, and Arogya chinthamani*. Name of the *Khala* formulations and related context from above-mentioned texts and English names of each ingredient were tabulated. As most of the referred books were in Malayalam and Sanskrit Language, names of the ingredients were translated from Malayalam and Sanskrit into English by referring to the book "Indian medicinal plants"¹⁰ and with the help of "India biodiversity portal"¹¹. "Ayurveda pharmacopeia of India"¹² was referred for the Modern metric equivalents of the Ayurveda metric system and the measurements of the ingredients were converted into gram unit.

Then the search was done on the internet for the temples where the god of Ayurveda Dhanwantari is the presiding deity and also for Kerala's traditional *Mukkudi yogas* and the ingredients in the same on giving as a special offering to Lord Dhanwantari. Also, search was done on the internet to know about the formulations which are similar to *Khala*. As the medium of *Khala* preparation was *Takra*, *Bhavaprakasa*¹³ was referred for the preparation and properties of the same. Also *Bhojanakutuhala*¹⁴, *Sutrasthana of Susrutasmhita*¹⁵ and *Ashtanga Hrudaya*¹⁶, *Charaka samhita*¹⁷ was referred for the *guna karma* (properties & actions) of *Takra*. One *Mukkudi yoga* entitled *Inthuppuchukkadi Mukkudi*¹⁸ from the *Ajeerna* (indigestion) *prakarana of Chikitsamanjari*, was selected and prepared the same to ensure the palatability in addition to assess the casualness in preparation. Most common ingredients from the enlisted *Khala yogas* were selected for assessment and discussion on the *gunakarmas* of the same. Also search *Charaka samhita*¹⁹, *Susruta samhita*²⁰, *Ashtanga hrudaya*²¹ for the causes of agnimandya and Grahani and in which conditions agnimandya being a cause and symptom. Also forage was done for treatment principles²² of the same in *chikitsa sthana of Charaka Samhita*.

RESULT

Khala is coming under *pathyakalpana* in which drugs are pounded and cooked in buttermilk.

Khada is of two types.

- 1) *Satakra samidhanya Khada*²³ (*Khala* prepared with buttermilk & pulses)
- 2) *Satakra saka Khada*²³ (*Khala* prepared with buttermilk & vegetables)

Dalhana also mentioned about the *Khalayavagu*²⁴ which is mentioned as the gruel prepared with the *Khala*. All Acharyas considered *Khala* as a buttermilk preparation. But Jejjata, the commentator of *Susruta Samhitha* considered *Khala* as a curd preparation. Acharya Jejjata quoted that *Khada* is the combination of *Dadhi* (curd), *dadima* (pomegranate), *masha* (Black gram), *saka, sneha* (oil)²⁵.

Properties of *Khada*

The *Khada* and *Kambalika* preparations are *Hrudya* (cardio protective) and mitigate *kaphavata dosha*²⁶. Moreover it is *agnideepaka* (carminative), *pachaka* (digestive), *ruchikara* (appetizer), and *sangrahi* (anti-diarrhea).

The general method of preparation of *Khala*

There are many *Khala* and *Mukkudi yogas* seen in Ancient Ayurvedic texts. But the common method of preparation of *Mukkudi* seen in *Navakhanda*²⁷ and *Arogyachinthamani*²⁸. *Navakhanda*, comprises 9 *khandas* (chapters). *Kalpakhanda* is the 9th *khandas* in which *Mukkudi vidhi* is explained. 4 *kazhanch* (1 *kazhanch* = 4g.) *aushada* is taken and cooked in *nazhi* (192ml) *takra* and then made a paste and then again cooked in *takra* and then reduced to 1/4th. And there is also a separate chapter for various *Khalayogas* ie *Khalakhanda* which is the 2nd *khandas*. As *Khala* is interpreted as *yusha* (soup) *visesha*²⁹ it can be prepared according to the method of preparation of *yusha*.

Preparation of *Satakrasamidhanya Khada*³⁰

One part of *Takra* and 1/16th part of dehusked *samidhanya* taken in an earthen pot cooked over *mandagni* till it reduced to 1/2 or 1/4th as per the requirement. Consider the proper cooling. Then *ghrita bharjitha Jiraka, Maricha*, etc are added properly with an appropriate quantity and the preparation is known as *Satakra samidhanya Khada*.

Preparation of *Satakra saka Khada*³⁰

It is prepared with 2 liters of *Takra* and *Kapitha*(wood apple), *Cangeri*(Indian sorrel), *Maricha*(black pepper), *Jeeraka*(cumin) and *Chitraka* are taken in 125gms in total and cooked over *mandagni* till it reduces to half and the preparation is known as *Satakra Saka Khada*.

General Preparation of *Khala* for children²⁸

A different method of preparation was explained in *Arogya chinthamani* by Vallathol. One *pala*(1*pala*=48gm) medicine was cooked in *nazhi*(192ml) *Takra* and then made a paste and then again cooked in *Takra* and then reduced to 3/4th. And this *Mukkudi* was prescribed for children.

Khala yogas from Different Classical textbooks

Takra is the common ingredient of all *Khala* preparations. Other ingredients are tabulated below.

Table 1: Buttermilk preparations from *Chikitsamanjari*

NAME OF <i>KHALA</i>	NAME OF <i>PRAKARANA</i> (context)	DISEASE CONDITION	INGREDIENTS
<i>Jeerakadi Khala</i> ³¹	<i>Jwara</i> (Fever)	<i>Udara vrana</i>	Cumin,,Holy basil, Embelic myrobalan, Ixora, Turmeric, Indian sorrel, Indian stinging nettle, Riber ebony
<i>Chundakka Khala</i>	<i>Kasa</i> (Cough)	<i>Vata kapha kasa</i>	Poison berry, Long pepper, cumin, Juice of betel leaves
<i>Parpadakadi Mukkudi</i>	<i>Arochaka</i> (Distasteful)		Wild chay root, Indian stinging nettle, Bone setter, Sesame, Roasted paddy, Turmeric, Black pepper
<i>Manganari thamizhamadi Mukkudi</i>	<i>Arochaka</i>		Rice paddy herb, Hog weed, Ginger, Pomegranate, Dried ginger, Cumin, Jaggery
<i>Avitholadi Mukkudi</i>	<i>Arsas</i> (Hemorrhoids)		Indian Elm, Celery seeds, Long pepper root, Root of tailed pepper, Red flowered lead wort, Dried ginger, Black pepper, Long pepper
<i>Mayooradi Mukkudi thraya</i>	<i>Arsas</i>	<i>Raktarsas</i>	Prickly chaff powder, Bud of Benyan tree, Common Leucas Hog weed, Ginger,Long pepper root, Sesame, Prickly chaff flower, Indian stinging nettle
<i>Sarvatisarahara Mukkudi</i>	<i>Atisara</i> (Diarrhoea)		Kurchi, Tamarind root, Long pepper root, Red flowered lead wort, Hill clerodendrum, Chebulic myrobalan, Velvet leaf

<i>Panchakola Mukkudi</i>	<i>Grahani</i> (Mal absorption syndrome)		Long pepper, Long pepper root, Tailed pepper, Lead wort, Dried ginger
<i>Chundaver Mukkudi</i>	<i>Grahani</i>		Poison berry
<i>Inthuppu chukkadi Mukkudi</i>	<i>Ajeerna</i> (Indigestion)	<i>Agnimandya, Arsas</i>	Rock salt, Dried ginger, Long pepper, Chebulic myrobalan
<i>Cherupulladi Khala</i>	<i>Mootrakruchra</i> (Dysuria)	<i>Mootraruja</i>	Tropical trefoil, Gooseberry, Mountain knot grass
<i>Tharthavaladi Khala</i>	<i>Mootrakruchra</i>	<i>Mootraruja</i>	False button weed, Dwarf copper leaf
<i>Koduveli Khala</i>	<i>Panduroga</i> (Jaundice)		Red flowered lead wort, Iron rust, Sesame, Ginger, False daisy
<i>Changalamparanda Mukkudi</i>	<i>Panduroga</i>		Bone setter, Sesame, False daisy, Chebulic myrobalan
<i>Tiladeepyakadi Khala</i>	<i>Panduroga</i>		Sesame, Celery, Chebulic myrobalan, False daisy, Iron rust.
<i>Koovalathinver Mukkudi</i>	<i>Mandanidra</i> (Insomnia)		Bael root

Table 2: Buttermilk preparations from Ashtanga Hrudaya

<i>Vilwasaladvadi Khala</i> ³²	<i>Pravahika</i> (Dysentery)	Tender fruits of Bael, paste of Sesame
<i>Aparajitha Khala</i>	<i>Pravahika</i>	Black pepper, Coriander seeds, cumin seeds, Tamarind, White turmeric, Pomegranate, Fire flame bush, Velvet leaf, Embelic myrobalan, Gooseberry, Belleric myrobalan, Long pepper, Long pepper root, Tailed pepper, Lead wort, Dried ginger, Nitre, Wood apple, Seed kernel of Mango and Black jambu fruit, Celery seeds, Bael, Green gram soup, Jaggery, Oil and Ghee

Table 3: Buttermilk preparations from Arogyakalpadruma

<i>Sahadevyadi Mukkudi</i> ³³		Purple fleabane, Dried ginger, Long pepper, Black pepper, Rock salt
<i>Paranthipushpadi Mukkudi</i>	<i>Visarpa</i> (Erysipelas)	Ixora, Indian sorrel, Nut galls, Nut grass, Coriander
<i>Amlavethasadi Mukkudi</i>	<i>Visarpa</i>	Indian rhubarb, Indian sorrel, Ixora, Coriander, Pomegranate, Kurchi
<i>Vrischeevamooladi Mukkudi</i>	<i>Visarpa</i>	Hog weed, Climbing bridelia, Nut galls
<i>Amruthadi Mukkudi</i>	<i>Visarpa</i>	Giloy, Nut grass, Poison berry, Coconut inflorescence, Indian pavetta, Indian sarsaparilla, White turmeric, Ixora,

		Indian sorrel, Cumin, Black cumin, Sweet cumin, Prickly chaff flower, Nut galls, Psoralea seeds, Black oil tree, False black pepper, Green cardamom, Indian rhubarb, Pomegranate, Long pepper, Nutmeg, Rock salt
<i>Yavanyadi Khala</i>	<i>Jadara vrana</i> (Gastric ulcer)	Carom seeds, Climbing Bridelia, Nut galls, Rock salt

Table 4: Buttermilk preparation from *Chakradatta*

<i>Kapithadi kala</i> ³⁴	<i>Agnimandya</i> (Digestive insufficiency)	wood apple, Indian sorrel, Black pepper, cumin seeds, Red flowered Leadwort,
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Table 5: Buttermilk preparations from *Oushada yogamanjari*

<i>Tiladi takra</i> ³⁵	<i>Pandu</i>	Sesame, Red flowered Leadwort, Long pepper, Chebulic myrobalan, False daisy, Dried ginger, Iron rust
<i>Balamooladi takra</i>	<i>Pandu</i>	Country mallow, Dried ginger, Sesame, False Daisy, Red flowered Leadwort
<i>Mahoushadadi takra</i>	<i>Pandu</i>	Dried ginger, Iron rust, Sesame, False Daisy, Red flowered Leadwort, Country mallow
<i>Tharthavaladi Mukkudi</i>	<i>Kamala</i> (Jaundice)	False button weed, Tropical trefoil, Stone breaker, Goose berry, Indian pennywort

Table 6: Buttermilk preparations from *Vaidyamalika*

<i>Panchakoladi Mukkudi</i> ³⁶	<i>Grahani</i>	Long pepper, Long pepper root, Tailed pepper, Lead wort, Dried ginger
<i>Mukkapeeradi Mukkudi</i>	<i>Rajayakshma</i> (Tuberculosis)	Madras pea pumpkin
<i>Inchi thippalyadi Mukkudi</i>	<i>Arochaka</i>	Ginger, Long pepper, Rock salt, Pomegranate, Black pepper, Turmeric, Tender leaves of mango tree, Limnophila, Poison berry, Cumin, Celery seeds
<i>Oruveradi Mukkudi</i>	<i>Arsas</i>	Sal leaved desmodium, Sticky desmodium
<i>Cherukadaladyadi Mukkudi</i>	<i>Arsas</i>	Prickly chaff flower, East Indian globe thistle
<i>Padakkizhangu Mukkudi</i>	<i>Arsas</i>	Velvet leaf, Onion, Ghee
<i>Khala with Kulacheera</i>	<i>Arsas</i>	
<i>Virakinkadatholadi Mukkudi</i>	<i>Arsas</i>	Hill clerodendrum, Prickly chaff flower, Creeping sebastiania, Indian sorrel

<i>Padadi Mukkudi</i>	<i>Udavartha</i> (Belching)	Velvet leaf, Hill clerodendrum, Climbing nettle
<i>Khala with Chembravallikizhangu</i>	<i>Vidradi</i> (Abscess)	
<i>Avilkazhanjadi Mukkudi</i>	<i>Vruddhi</i> (Hydrocele)	Indian Elm, Hill clerodendrum, Castor, Balloon vine, Leucas
<i>Pudayavu Mukkudi</i>	<i>Gulma</i> (Abdominal mass)	Wild mussaenda, Flame of the forest, Ghee, Garlic
<i>Mukkudi with kattuthippali</i>	<i>Gulma</i>	Wild long pepper
<i>Ellumkayonyadi Mukkudi</i>	<i>Pandukamala</i> (Jaundice)	Sesame, False daisy, Iron rust
<i>Khala with karinthakkali & vellathumpa</i>	<i>Pandukamala</i>	Black nightshade, Leucas
<i>Muthangadi Khala</i>	<i>Pandukamala</i>	Nut grass, Wild long pepper, Hog weed, Tender leaves of mango tree, Yellow wine, False button weed, Cumin
<i>Mukkudi with Koovala moolatwak</i>	<i>Vinidra</i>	Bael, Asian rice
<i>Mukkudi with Njzhukinputtil & Puliyaal</i>	<i>Atisara</i>	Bandicoot berry, Indian sorrel
<i>Mukkudi with Jeeraka, kudakan, mahisham dadhi</i>	<i>Atisara</i>	Cuminseeds, Indian pennywort, Buffalo curd.
<i>Kudakappalaveradi Mukkudi</i>	<i>Atisara</i>	Kurchi, Climbing nettle, Prickly chaff flower, Indian moon seed, Dried ginger, Celery seeds
<i>Mukkudi with Thettambaral</i>	<i>Raktarsas</i> (Haemorrhoids)	Clearing nut tree

Table 7: Buttermilk preparations from *Yogamruta*

<i>Aviltholadi Mukkudi</i> ³⁷	<i>Arsas</i>	Indian Elm, Celery seeds, Long pepper root, Root of tailed pepper, Red flowered lead wort, Dried ginger, Black pepper, Long pepper
<i>Mukkudi with Elthumbakkudam & chuvanna kadaladi</i>	<i>Arsas</i>	Sesame, Leucas, Prickly chaff flower
<i>Mukkudi with kutajatvak, soorana</i>	<i>Arsas</i>	Kurchi bark, Elephant foot yam
<i>Khala with Avilchenthalir, Ajaji, Vijaya</i>	<i>Arsas</i>	Tender leaves of Indian Elm, Cumin seeds, Chebulic myrobalan
<i>Khala with yavagra & pippali</i>	<i>Atisara</i>	Barley, Long pepper
<i>Sindhucharngaryadi Mukkudi</i>	<i>Atisara</i>	Rock salt, Indian sorrel, Maiden hair, Long pepper, Black pepper
<i>Vilwammooviladi Mukkudi</i>	<i>Atisara</i>	Bael, Sticky desmodium, Sal leaved desmodium, Country mallow, Climbing nettle, long pepper, Dried ginger

<i>Khala with katukka&chukku</i>	<i>Atisara</i>	Chebulic myrobalan, Dried ginger
<i>Kudakappaladi Mukkudi</i>	<i>Atisara</i>	Kurchi, Tamarind, Wild pepper root, Indian moon seed
<i>Mukkudi with Dadima leaves,Jeeraka</i>	<i>Atisara</i>	Pomegranate leaves, cumin seeds
<i>Mukkudi with tender leaves of Amra</i>	<i>Atisara</i>	Tender leaves of mango tree
<i>Neeraraladi Mukkudi</i>	<i>Asthisrava</i>	Four leaf clover
<i>Mandoorali Mukkudi</i>	<i>Pandu</i>	black nightshade, Hogweed,dried ginger, Jackal jujube, East Indian globe thistle, Celery seeds, Maiden hair,Chebulic myrobalan,Sesame
<i>Muthangadi Mukkudi</i>	<i>Kamala</i>	Nut grass, Iron rust, Wild pepper root, Hog weed, Jackal jujube, tender leaves of Mango, Cumin seeds, Turmeric, False button weed, Tender coconut water
<i>Tharthavaladi Mukkudi</i>	<i>Kamala</i>	False button weed, Tropical trefoil, Stone breaker, Indian pennywort

Table 8: Buttermilk preparations from Navakhanda

<i>Kudakadi Khala</i> ³⁸	<i>Aruchi&Jwara</i> (Distasteful,Fever)	Indian pennywort, Black nightshade, Hog weed, Citron, Limnophila, Rock salt, Dried ginger
<i>Musthadi Khala</i>	<i>Jwara</i>	Nut grass, Indian fumitory, Gooseberry,Purple fleabane
<i>Bala apamargadi Khala</i>	<i>Raktapitta</i> (Bleeding disorders)	Country mallow, Chaff flower
<i>Mukkalkkana Mukkudi</i>	<i>Rajayakshma</i>	Dried ginger, Rock salt, Celery seeds
<i>Bhringaraja Khala</i>	<i>Swarasada</i> (Hoarse voice)	False daisy
<i>Padoladi Khala</i>	<i>Kasaswasa</i> (Cough,Dyspnoea)	Pointed gourd, Malabar nut, Coffee senna, Poison berry, Dried ginger, Celery seeds, Rock salt
<i>Adakkamaniyan Mukkudi</i>	<i>Arsas</i>	East Indian globe thistle, Common leucas, Indian sorrel, Indian moon seed, Hill clerodendrum, Climbing nettle,
<i>Sinducharngaradi Mukkudi</i>	<i>Arsas</i>	Rock salt, Indian sorrel, Walking fern, Long pepper, Black pepper
<i>Varalavanadi Mukkudi</i>	<i>Athisara</i>	Gooseberry, Chebulic myrobalan, Belleric myrobalan, Rock salt, Celery seeds, Wood apple, Dried ginger, Mango nut, gum resin of silk cotton tree, Fire flame bush, Cumin seeds,

<i>Chinchabeejadi Khala</i>	<i>Athisara</i>	Seeds & skin of Tamarind, Dried Ginger, Celery seeds, Rock salt
<i>Matsyakshi Khala</i>	<i>Moothrakruchra</i>	Dwarf copper leaf
<i>Mukkudi with Neervairi vermeltholi</i>	<i>Prameha</i> (Diabetis)	
<i>Khala with Ethil grows on Udumbara</i>	<i>Prameha</i>	Loranthus growing over Fig tree
<i>Mukkudi with Amalaki & Haridra</i>	<i>Prameha</i>	Gooseberry, Turmeric
<i>Paranthi Khala</i>	<i>Vidradi</i>	Ixora root bark
<i>Indravalli Khala</i>	<i>Anthravrudhi</i> (Inguinal Hernia)	Balloon wine, Sesame oil
<i>Kuberakshi Khala</i>	<i>Vruddhi</i>	Physic nut, Black pepper, Rock salt
<i>Kalanjadi Khala</i>	<i>Vruddhi</i>	Flower bud of Indian beech tree, Dried Ginger, Rock salt, Celery seeds
<i>Morada Mukkudi</i>	<i>Vruddhi</i>	Portia tree,
<i>Avilkazhanjadi</i>	<i>Vruddhi</i>	Indian elm, Physic nut, Hill clerodendrum, Castor, Balloon wine, Ginger, Common Leucas
<i>Kattuthippalyadi Khala</i>	<i>Kamala</i>	Wild pepper root, Root & root bark of jackal jujube
<i>Puranakittadi Khala</i>	<i>Kamala & Pandu</i>	Iron rust, Hog weed ,Indian pennywort, Indian night shade, Sesame, Lead wort, False daisy, Jujube leaf, Sesame, Selery seeds, Rock salt, Dried ginger
<i>Viswabhayadi Khala</i>	<i>Pandu</i>	Dried Ginger, Chebulic myrobalan, Himalayan cidar, Hog weed
<i>Vanatinthisa Khala</i>	<i>Pandu</i>	
<i>Swethaparanthika Khala</i>	<i>Kamila</i>	White Ixora
<i>Kayyonyadi Khala</i>	<i>Pandu</i>	False daisy, Black pepper, Lead wort, Iron rust, Celery seeds, dried Ginger,
<i>Vyoshadi Khala</i>	<i>Pandu</i>	Black pepper, Long pepper, Wild pepper root, Himalayan cidar, Chebulic myrobalan, Scorpion tail
<i>Suradru Khala</i>	<i>Sopha</i> (Cutaneous swelling)	Himalayan cidar
<i>Raktha paranthee Khala</i>	<i>Visarpa</i>	Red Ixora
<i>Thumpakkuda Mukkudi</i>	<i>Krumi</i> (Worm Infestation)	Common leucas, Devil's lung, False black pepper
<i>Hapushadi Khala</i>	<i>Vata vikara</i> (Neurological disorders)	East Indian globe thistle, Devil's lung, Rock salt, Black pepper
<i>Kodiyavanakkadi Khala</i>	<i>Vatavikara</i>	Creeping sebastiania
<i>Ethi njazhaladi Khala</i>	<i>Garbhatisara</i>	Leaves of Chinese banyan, Beauty berry, Banyan tree, Sacred fig

<i>Thriphalam Khala</i>	<i>Vrana</i> (Ulcer)	Gooseberry, Chebulic myrobalan, Beleric
<i>Cherucheera Mukkudi</i>	<i>Visha</i> (Poison)	Roots of prickly amaranth

Table 9: Buttermilk preparations from *Yogaratra samucchaya*

<i>Kapithadi Khada</i> ³⁹	<i>Agnimandya</i>	Wood apple, Bael, Indian sorrel, Black pepper, Cumin seeds, Lead wort
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Table 10: Buttermilk preparations from *Ayurveda Sudhakara*

<i>Balavilwadi Khada</i> ⁴⁰	<i>Pravahika</i>	Bael, Sesame seeds
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Table 11: Buttermilk preparations from *Arogya Chinthamani*

<i>Poovamkurunthaladi Mukkudi</i> ⁴¹		Ash coloured fleabane, Dried Ginger, Long pepper, Black pepper, Rock salt
<i>Padadi Mukkudi</i>	<i>Arsas</i>	Sea coconut, Velvet leaf, Rock salt, Honey
<i>Ardrakadi Mukkudi</i>		Long pepper, Long pepper root, Tailed pepper, Lead wort, Dried Ginger, Pomegranate, Ginger, Nut grass, Kernel of Mango, Coriander, Tailed pepper, Nutmeg
<i>Ajamodadi Mukkudi</i>		Curry leaves, Rice paddy herb, Pomegranate, Ginger, Celery seeds, Dried Ginger, Long pepper, Black pepper, Kernel of Mango, Indian sorrel, Headache tree
<i>Deeptyakadi Mukkudi</i>	<i>Agnimandya, Grahani</i>	Celery seeds, Atees root, Nut grass, Fire flame bush, Pomegranate, Dried Ginger
<i>Amrutadi Mukkudi</i>	<i>Visarpa</i>	Heart leaved moon seed

Table 12: Buttermilk preparations from *Vaidya Manorama*

<i>Kaidaryadi khala</i> ⁴²	<i>Grahani</i>	Gamhar, Garlic, Dried Ginger, Black pepper, Long pepper, Rock salt, Cumin seeds, Hog weed, Red flowered lead wort, Indian Elm
<i>Mahoushadadi takra</i>	<i>Pandu</i>	Dried ginger, Iron rust, Sesame, False Daisy, Red flowered Leadwort, Country mallow

<i>Tiladi takra</i>	<i>Pandu</i>	Sesame, Red flowered Leadwort, Long pepper, Chebulic myrobalan, False daisy, Dried ginger, Iron rust
<i>Suradruma khala</i>	<i>Sopha</i>	Cedrus deodara
<i>Sarshapadi khala</i>	<i>Jwara</i>	Indian mustard, Red,curry leaves, Garlic, Indian Elm, Dried Ginger, Black pepper, Long pepper,Rock salt
<i>Kulasthadi takra</i>	<i>Jwara</i>	Horse gram, Curry leaves, Garlic, Dried Ginger, Black pepper, Long pepper
<i>Sahadevirasa khala</i>	<i>Jwara</i>	Little Iron weed
<i>Bhringaraja khala</i>	<i>Swarasada</i>	False Daisy
<i>Padadi khala</i>	<i>Arsas</i>	Velvet leaf, Indian sorrel, Red flowered Leadwort, Hog weed, Long pepper, Wild yam, Nettle plant, Celery seeds, Holy Basil
<i>Sindvadi khala</i>	<i>Raktatisara</i>	Rock salt, Indian sorrel, Maiden hair, Long pepper, Black pepper

Karkidaka Mukkudi seva-Medicated Buttermilk custom

Mukkudi is a Kerala special medicinal preparation indigenous to Kerala Ayurveda. Herbs and medicinal powders are processed in buttermilk and given on empty stomach. *Mukkudi seva* or consuming the preparation as a temple offering is a famous ritual in many temples across Kerala. Though many *Mukkudi* preparations are consumed during the month, the standard recipe is followed in many homes and temples. The herbs of *Dasapushpas* together or selectively, the leaves of *pathila* (ten leaves), and other monsoon herbs can be used to prepare *Mukkudi*⁴³.

*Mukkudi nivedyam*⁴⁴ is a very special offering to Lord Dhanwantari. It is prepared by using dry ginger, pepper, pomegranate peel, cumin seed, turmeric, rock salt, and other such items of medicinal quality. It is offered to the deity during '*Usha pooja* on all Thursdays. *Mukkudi nivedyam* is later on distributed to the devotees present on that occasion. This divine medicine is believed to be curative for all kinds of abdominal problems. This ritual is held in the famous and sacred Nelluvai Dhanwanthari temple situated in the Nelluvai village in Erumapetti panchayat under Thalappilly taluk of Thrissur district & in Parappur Sree Dhanwanthari Kshetram, Nellikkunnu, Thrissur. Lord Dhanwantari is referred to as the Lord of Ayurveda is the presiding deity here. It is believed that all types of diseases can be cured by worshipping Lord Dhanwanthari. A large number of devotees come here for this purpose. Also in Koodalmanikyam temple, Irinjalakuda, *Mukkudi nivedyam* was given to devotees on November. In Kerala, the 16th of *karkidakam* is considered as *oushada seva dinam*.

Thambli(*Tambuli*)

*Thambli*⁴³ a preparation very similar to *Mukkudi* is a curry in the coastal and the high range regions of Karnataka. Many herbs are blended in Buttermilk and seasoned with carminative ingredients. The roasted ingredients (Fenugreek, Curry leaves, Mint) are added with buttermilk. In this preparation, there is no need of

heating the buttermilk so that the probiotic properties of buttermilk were conserved. *Mukkudi* has an identity of medicine that can be used as a diet supplement while *Thambli* is identified as a staple diet that can be used as medicine.

DISCUSSION

The *Khala* preparation is a good choice for digestive disorders of all kinds and is a cross between food and medicine, an example of diet therapy. Among *Bruhatrayees*, *Dalhana commentary of Susruta Samhita*, provides more explanation about *Khala*. The general method of preparation of *Khala* in *Navakhanda* explains the ratio of drugs and buttermilk as 1:12 and it is reduced to one-fourth. Meanwhile *Arogyachintamani* explains the same as 1:4 and reduced to three fourth. From this ratio, it can be interpreted as while preparing any *Mukkudi* for children, it need not be very much concentrated. If go through the enlisted *Khada yogas (khada formulations)* , *Chikitsamanjari* give the name *Khala* for some *yogas* and *Mukkudi* for some *yogas*. But the term *Mukkudi* used for more *yogas* as *Chikitsamanjari* being Kerala's traditional book. *Ashtanga Hrudaya* used the term *Khala*. *Arogyakalpadruma* used the term *Khala* for one *yoga* and *Mukkudi* for remaining *yogas*. As it is being one of Kerala's traditional *chikitsa grantha* used the term *Mukkudi* for most *yogas*. In *Oushada yogamanjari* out of 4 *yogas*, 1 *yoga* named as *Mukkudi* and other 3 *yogas* named as *takra*. Out of the *yogas* in *vaidyamalika*, the term *Mukkudi* was used for all *Khala* preparations. In *yogamruta*, out of 15 *yogas*, 3 *yogas* named as *Khala* and 12 *yogas* named as *Mukkudi*. In *Navakhanda*, out of 35 *yogas*, 9 *yogas* were termed as *Mukkudi*, and the remaining termed as *Khala*. Out of 1 *yoga* each, *Yogaratra samucchaya* and *Ayurveda Sudhakara* used the term *Khada* for the same. In the text *Arogya chinthamani* the *yogas* termed as *mukkudi* meanwhile in *Vaidyamanorama*, *yogas* termed as *khala*. In *Dalhana commentary of Susruta samhita*, the term *Khada* was used. It can be concluded that in most of the Kerala Ayurveda traditional books, the term *Mukkudi* and *Khala* was used for the *Khada*. Although the synonym for *Khada* was not mentioned in any *Samhitas*, *Mukkudi* and *Khala* can be considered as a synonym for *Khada*. Most Kerala Ayurvedic *vaidyas* and physicians used the term *Mukkudi*.

On acute observation, it was understood that Navakhanda, an ancient book that contains a separate chapter for *Khala* preparations contains the greatest number of *Khala* formulations. 16 *Khala yogas* were found from *Chikitsamanjari*, 2 *Khala yogas* from *Ashtanga hrudayam*, 7 *Khala yogas* from *Arogyakalpadrumam*, 2 *Khalayogas* from *Chakradatta*, 4 *Khala yogas* from *Oushadayogamanjari*, 19 *Khala yogas* from *Vaidyamalika*, 15 *Khala yogas* from *Yogamruta*, 35 *Khala yogas* from *Navakhanda*, 10 *yogas* from *Vaidya manorama*, 6 *yogas* from *Arogyachinthamani*, 1 *Khalayoga* each from *Yogaratra samucchaya* and *Ayurveda sudhakara*.

These *Khala* preparations are mostly used in *Atisara*, *Grahani*, *Arsas*, *Udara* and *Arochaka*. Also it is used in conditions like *Jwara*, *Kasa Ajeerna*, *Mootrakruchra*, *Panduroga*, *Kamala*, *Mandanidra*, *Pravahika*, *Visarpa*, *Jadaravrana*, *Agnimandya*, *Rajayakshma*, *Udavartha*, *Vidradi*, *Vruddhi*, *Gulma*, *Asthirava*, *Raktapitta*, *Svarasada*, *Prameha*, *Anthravruddhi*, *Sopha*, *Krumi*, *Vatavikara*, *Garbhatisara*, *Visha*, and *Vruna*. When analysing the indications in all tables, it can be concluded that although *Khala* is indicated in *vata-kaphaja* condition, it can be given in *paithika* condition also. In *Arogyakalpadruma*, many *Khala* formulations were indicated in *visarpa*. In these formulations, *Seeta veerya* drugs like nutgrass mixed along with *Ushnaveerya* drugs. So it can be concluded that *Khala* has *tridoshasamana* property by the mixing of suitable ingredients. *Khala* is used in diseases associated with *Rasavahasrotas* or diseases in which *Agnimandhya* is an etiological factor. As all know that *Agnimandhya* is the main symptom in diseases like *Jwara*, *Pandu*, *Atisara*, *Grahani*, *Ajeerna*, *Gulma*, *Kamala*, *Sotha*, *Shwasa*, *Pratisyaya*, *Arsha* etc. In the conditions like *Atisara*, *Grahani*, *Arsas* *laghu*, *deepana* and *pachana* and sometimes *grahi* drugs are essential. Also *agnimandya* is a *vata kapha*

predominant disease. So, a combination which mitigates *vata kapha* and in which the drugs are *laghu, deepana, pachana* and *grahi* might pacify *agnimandya*. If we go through the properties of buttermilk it is efficacious in *grahani* disorders due to appetising nature, astringent and lightness. Because of sweet *vipaka*, it does not vitiate *pitta*, is wholesome in *kapha* due to astringent, hot, *vikasi* and rough properties, and in *vata* due to sweet, sour, and viscous nature (thus it is useful in all the three *doshas*). Buttermilk, if fresh, doesn't produce burning (or acidity). Hence the uses of buttermilk prescribed earlier in abdominal disorders and piles are all applicable in *grahani* disorder and should be applied in all ways. In *Khala*, *deepana pachana* drugs like *pippali, maricha, dadima, charngari, jeeraka* etc are pounded together and cooked in *Takra*. The *deepana pachana* Gunas of ingredients act along with *grahi, ushna, Sandra*,⁴⁵ properties of *takra*. Nutritional value also suggests that *Takra* also strengthens immunity and helps to maintain health by preventing diseases. When we prepare something in buttermilk, the resultant preparation has properties of buttermilk as well as its ingredients. In the case of *Khala*, it has the property of both buttermilk & pulses, legumes & vegetables. According to *Bhavaprakasa*, when 1/4th water¹³ is added to *Dadhi*, it is called *Takra*. It is of 3 types. *Ruksha, Ardhodrutha, Anudhrutha*⁴⁶ according to the butter content. From this, we can interpret that the *ruksha takra* can be given in *kaphaja* condition and *anudhruta takra* can be given in diseases with *Vata* predominance. Although buttermilk was indicated in *Vatakaphaja* condition, can be administered *ardhodruta dadhi* with *pittasamana* drugs in diseases with *paithika* predominance. So if we prepare *Khala* in *ardhodruta takra*, there is a production of plenty of water-soluble and fat-soluble substances. But when we prepare the *Khala* in *Ruksha takra*, only water-soluble components may be produced. But if we make *Khala* in *anudhrta Khala*, there is a chance of production of more fat-soluble substances than water-soluble substances.

In the conditions like *agnimandya*, *Pathya kalpana* suits than *oushada kalpana* due to the feeble digestive fire. Out of the *pathyakalpana*, the buttermilk which is known as *nectar* more suits in the same. Buttermilk when added with suitable ingredients, becomes more powerful and acts in digestive system. Moreover, The *Khala* plays an important role in diseases that occurred in *bahya* (external) and *abhyantara* (internal), and *madhyama* (Intermediate) *roga marga*. It has an action on digestive, respiratory, urinary, integumentary systems. It can be used even in gynecologic ailments and in general debility. It can be used in diseased conditions as well as in healthy conditions. Even a healthy man could be used the *Khala* for the non-occurrence of diseases. Most of the formulations included in the table contain 1-5 ingredients which is easily available and their preparation was quite easier. So the doctors can be prepared this medicine every day and could be provided to the patients in daily op.

Our forefathers were wise enough, knew the magical powers of the herbs like *pathila* (ten leafy vegetables) growing in the yard which is highly nutritious and easily available which abounding in antioxidants, micronutrients, and macronutrients. Moreover, its rich fibre content improves intestinal absorption for healthy digestion thereby ensuring the expulsion of toxins accumulated in the body and resuscitate the immune system. On scrutinizing the constituents in *Mukkudi nivedyam*, it can be interpreted as *satakrasaka Khada*. The role of *Mukkudi nivedyam* in rituals declares its significance in healthcare. On evaluating the two similar preparations, *Khala and Thambli*, can observe a slight difference. In the preparation of *Khala*, intense heating of buttermilk takes place while the same does not happen in *Thambli*. So it can be elucidated that probiotic properties of Buttermilk are conserved in *Thambli*.

Preparation of *Inthuppu chukkadi Mukkudi*¹⁸

For preparing *Khala* initially buttermilk was prepared. 4 *pala dadhi* (not removed ghee) was taken and 1 *pala* water was added and mixed and got 5 *pala* of buttermilk. Then *nazhi* (4 *pala*) buttermilk was taken and added with 1 *kazhanch* (4g) each of *Saindhava, Nagara, Aaranyapippali, Haritaki* and then boiled. Then boiled medicaments were taken and make a paste and again added with buttermilk. Then again cooked in buttermilk

and reduced to 1/4th to get 1 *pala* of *Khala*. The prepared *Khala* was brown in colour and tasty. It was predominantly acrid and astringent tastes. It possesses high palatability.

Limitations

- It should be prepared daily as it has a chance of contamination.
- *Khala* possesses short shelf life so that it makes instantaneously according to the need.
- Being an age old formulation, only few classical books are available for the reference of *Khala*.

Benefits

- It is healthy as it contains no synthetic ingredient or preservative.
- It is an efficient formulation with easy method of preparation and more accessible ingredients.

CONCLUSION

Khada is an Ayurvedic wholesome diet that can be prepared easily even by the common people. It was mainly administered to people with low digestive fire and all diseases enlisted but mainly in conditions like Haemorrhoids, Dysentery, Anorexia etc. Most of the enlisted Formulations have minimum ingredients with maximum efficacy. As the medium of preparation was buttermilk it can be provided to people with Lactose intolerance. It can be administered daily and can be used in any season except hot. The *Khala* can be prepared very easily with minimum available ingredients. Some *Khala* contain only one ingredient along with buttermilk. It was very cost-effective also. There were no chances of contamination as it was freshly prepared. Although this preparation had disease curing capacity moreover it provides nutrients to the body. Thus it plays an important role in general health. And can be stated obviously that the *Khala* preparation can be used *Athura*(diseased) as well as *swastha*(healthy). It can be even administered to children, old age people, etc.

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REFERENCES

1. Vrddhajivaka. [P.V.Tewari (trans.comme.)].Kashyapasamhita.Chaukhabha viswabharati.Varanasi, 2013,468
2. Susruta.Dalhana (comme).[P.V.Sarma,trans].Susrutasamhita.Varanasi:Chaukhambha Viswabhatati; 2004.P.433
3. Vrddhajivaka. [P.V.Tewari(trans.comme.)].Kashyapasamhita.Chaukhabha viswabharati.Varanasi, 2013,468
4. Agnivesa. [Prof. PriyavratSharma,trans].Charakasamhita.Vol3,Chaukhambha Orientalia, Varanasi, 2014,4
5. Agnivesa. [Prof.PriyavratSharma,trans].Charakasamhita.Vol1,Chaukhambha Orientalia, Varanasi, 2014,173
6. Agnivesa. [Dr.Ram Karan Sharma and Vaidyan Bhagwan Dash,trans]. Charakasamhita. Vol4,Chaukhambha Sanskrit Series Office,Varanasi,2014,1
7. Agnivesa. [Dr.Ram Karan Sharma and Vaidyan Bhagwan Dash,trans]. Charakasamhita. Vol4, Chaukhambha Sanskrit Series Office,Varanasi,2014,22

8. Agnivesa. [Dr.Ram Karan Sharma and Vaidyan Bhagwan Dash,trans]. Charakasamhita. Vol3,Chaukhambha Sanskrit Series Office,Varanasi,2014,28
9. Agnivesa. [Dr.Ram Karan Sharma and Vaidyan Bhagwan Dash,trans]. Charakasamhita. Vol3,Chaukhambha Sanskrit Series Office,Varanasi,2014,201
10. P.K.Warrier,V.P.K.Nambiar,C.Ramankutty,ed.Arya Vaidya Sala Kottakkal,Indian Medicinal Plants,, Vol 1-5,Orient Longman Private Limited,Chennai,1994
11. (<https://ftti.indiabiodiversity.org/>)
12. The Ayurvedic Pharmacopoeia of India,Government of India,Ministry of Health and Family welfare,New Delhi,Part 1,Vol 6,349
13. Bhavamisra. [Prof.K.R.Srikanthamurthy, Trans.].Bhavaprakasa.Vol1,Chowkhambha Krishnadas Academy, Varanasi,2016,465
14. Raghunatha.Bhojanakutuhala.Part.1, Suranad Kunjanpillai, Trivandrum, 202
15. Susruta. [K.R.Srikanthamurthy,trans].Susrutasamhita.Vol1,Chaukhambha Orientalia, Varanasi, 2012,342
16. Vagbhata. [T.Sreekumar (Trans,comme.)].AshtangaHrdaya.Edn3, Harisree Hospital, Thrissur, 123
17. Agnivesa. [Vaidya Yadavji Trikamji Acharya,ed.].Charakasamita.Chaukhambha Orientalia, Varanasi, 2015,520
18. D. SreemanNambootiri (comme).Chikitsamanjari.Edn11, Vidyarambham Publishers, Alappuzha, 2013,205
19. Agnivesa.[Prof.PriyavratSharma(trans,ed)]Charakasamhita.Edn7,Vol2,Chaukhambha Orientalia,Varanasi,2005,253-254
20. Susruta. [K.R.Srikanthamurthy,trans].Susrutasamhita.Vol3,Chaukhambha Orientalia, Varanasi, 2012,247-248
21. Vagbhata. [Prof.K.R.SrikanthaMurthyTrans.].Ashtangahrdaya.Edn5, Vol 2, Chaukhambha Krishnadas Academy, Varanasi, 2003, 77
22. Agnivesa. [Prof.PriyavratSharma, trans].Charakasamhita.Edn7, Vol2, Chaukhambha Orientalia, Varanasi, 2005,255
23. Susruta.Dalhana (comme). [Vaidya Jadavji Trikamji Acharya,Narayan Ram Achaya,ed]. Susrutasamhita.Edn6,Chaukhambha Orientalia,Varanasi,1997,241
24. Susruta.Dalhana(comme).[Vaidya Jadavji Trikamji Acharya,Narayan Ram Achaya,ed].Susrutasamhita.Edn6,Chaukhambha Orientalia,Varanasi,1997,241
25. Susruta.Dalhana(comme).[Vaidya Jadavji Trikamji Acharya,Narayan Ram Achaya,ed]. Susrutasamhita. Edn6, Chaukhambha Orientalia,Varanasi,1997,241.
26. Susruta.Dalhana(comme).[P.V.Sarma,trans].Susrutasamhita.Varanasi:Chaukhambha Viswabhatati;2004,532
27. P.K.Namboodiri.Navakhandam.156
28. Vallathol.Arogyachinthamani.Edn3UnnimoossFoundation,Thrissur,2020,113
29. Susruta.Dalhana (comme). [Vaidya Jadavji Trikamji Acharya,Narayan Ram Achaya,ed]. Susrutasamhita.Edn6,Chaukhambha Orientalia,Varanasi,1997,241
30. Dr G Prabhakara Rao.A textbook of Bhaishajyakalpana vijnanam.Edn4,Chowkhamba Krishnadas Academy,Varanasi,2009,311
31. D. Sreeman Nambootiri (comme).Chikitsamanjari.Edn11,Vidyarambham Publishers, Alappuzha, 2013,89-420
32. Vagbhata.[Prof.K.R.SrikanthaMurthy,trans.].Ashtangahrdaya.Edn5,Vol 2,Chaukhambha Krishnadas Academy,Varanasi,2003,338

33. Kaikulangara Rama Warriar. [Dr. B. Syamala, ed]. Arogyakalpadruma. Samrat Publishers, Thrissur, 52-120
34. Cheppattu K. Achutha Warriar (com). Chakradattam. Edn 4, V. V. Press, Kollam, 1955, 47
35. Dr. B. Syamala (ed). Oushada yoga manjari. Samrat publishers, Thrissur, 111-113
36. B. S. Rajendran (ed) Vaidyamalika. Samrat publishers, Thrissur, 40-118
37. L. A. Ravi Varma. Yogamrta. Edn 4, Authority of the Government of His Highness The Maharaja of Travancore, Travancore, 1960, 60-118
38. P. K. Namboodiri. Navakhandam, 19-23
39. Anakkaleelil. S. Gopalapilla. Yogaratna Samucchaya. Edn 2, The Vidhyarambham Press and Book Dippo Pvt. Ltd, Alappuzha, 1980, 149
40. Kavungal Neelakandapilla. Ayurveda sudakaram. Edn 2, Sreeramavilasam Press and Bookdippo, Kollam, 357
41. Vallathol. Arogyachinthamani. Edn 3 Unnimooss Foundation, Thrissur, 2020, 69-301
42. Vayaskara N. S. Moos. [Cheppad Achuta Varier, com]. Vaidyamanorama. Unnimooss Foundation, Thrissur, 2020, 43-293
43. Karkidaka Mukkudi seva-medicated buttermilk custom. Available from <https://www.google.com/url?sa=t&source=web&rct=j&url=https://sakalya.sanesquare.com/blog>
44. Offerings. Available from <http://dhanwantaritemple.in/offerings>
45. Vagbhata. [Prof. K. R. Srikantha Murthy, Trans.]. Ashtangahrdaya. Edn 5, Vol 2, Chaukhambha Krishnadas Academy, Varanasi, 2003, 355
46. Bhavamisra. [Prof. K. R. Srikanthamurthy, Trans.]. Bhavaprakasa. Vol 1, Chowkhambha Krishnadas Academy, Varanasi, 2016, 466



Fig 1. Ingredients of *Inthuppu chukkadi mukkudi*



Fig 2. Prepared *Inthuppu chukkadi mukkudi*