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**ON**

# Conservation of Traditional Food Practices: A Food Security Concern

By

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# **Conservation of Traditional Food Practices: A Food Security Concern**

## **Introduction:**

Food security and food safety have become crucial concerns in the recent past. While India can boast of food security on account of its successful policies in the direction of 'food production' (growing food) and having attained the confidence to offer 'right to food' to all its citizens, it is observed that from the point of safe food (food safety) there has been a steady deterioration. It is also to be noted that many aspects of food diversity have been sacrificed in this progress towards food security. However, this is a likely threat to food security itself in future, as diversity of food items consumed decreases, dependence on lesser number of food crops is a potential threat, in the sense, a crop failure of a season can affect the security.

It is also a fact that much food items readily available in the backyards of homesteads and enriched the diet of common folks has gone into disuse. It may be worth the while that such items and the methods of their processing be documented for the benefit of the posterity. It is against this background this minor project was conceived and executed.

## **The Research Problem**

Increasing loss of bio-diversity is now becoming an issue of great significance. United Nations, consequently, has declared 2010 as International Year of Biodiversity for celebrating and conserving the rich variety of life forms (UN Document, 2010). Droughts and famines in various parts of the world – Sudan, Somalia, Ethiopia which had been having their own diversity, when switched over to the western mode of agriculture,

destroying the grazing lands (community commons) and reducing the dependence on the diverse sources of food, began to experience hitherto unheard of food shortage (Sen A., 1981 ). India is also having such pockets facing severe food insecurity on account of introducing similar pattern of agriculture, leading to monoculture and disappearance of various food sources which local communities traditionally used to depend upon. For example, in various parts of Karnataka and Tamil Nadu, where dry land farming was prevalent, and people used to depend on such crops (like raagi, jawa), the modern dominant varieties like rice have replaced them, the agriculture has become unaffordable, and crop failure more frequent making food security a crucial problem for many marginal communities.

This study aims to document certain traditional food preparations from locally available sources and exploring the possibilities of conserving or reviving them. The researcher, in his visits to certain rural areas in the state of Kerala, came to know of some such resources and recipes, which are dependent on locally available vegetation. To list a few: 1) Processing of the fruits of a Palmyra variety, locally known as **int**, 2) the ripened fruits of a vine – usually found twined on mango tree, and locally called **paril**, 3) the processing of highly nourishing and bountiful core of mature palm (**Kodappana**), which is usually felled at that stage – it is said to be enough to feed the whole village 4) health promoting preparations from the pith and stem of banana 5) bread preparation from the seed of mango – most of which seemed unique 6) pea-nut like seed of *Artocarpus hiirsuta*, locally called **anjili**. Many of these came handy for the local residents, especially the rural folk, against shortage of food, or as a substitute for food items to be purchased.

## Objectives

- To document five traditional food resources and the processes
- To understand their significance in the tradition and for the future
- To find out the reasons for their gradual disappearance or threats such resources.
- To identify five other traditional food resources
- To suggest methods of conservation

## Study samples:

1. Seed of *Cycascircinalis* (int)
2. Seed of Mango (Mango stone)– *Mangifera Indica*
3. Banana stem - Rhizome of *Musa sp.*
4. Stem of *Corypha umbraculifera* (Kudappana)
5. Seeds of Anjili- *ArtocarpusHirsuta*

## Data Collection Process

The investigator discussed the concept with acquaintances in the field of nature conservation and plant science. In the light of their suggestions, initial visits were conducted to identify possible resource persons who have had some experience in this matter. Accordingly, Kozhinjampara in Palakkad District, Adimaly (Panamkutty) and Nedumkandam in Idukki district, Thycattussery, Cherthala in Alappuzha District, Kadackal in Kollam District and Nellimattam, Piravam, Koothattukulam and Malayattoor – Kalady regions of Ernakulam District were visited to meet with people having

experiential knowledge regarding the traditional practices of food processing using locally available resources.

Finally, Nellimattam near Kothamangalam in Ernakulam for cycas, Panamkutty, near Adimaly in Idukky District for Corypha (Palm), Thycattussery near Cherthala in Alappuzha District for Jungle Jack, Kadackal in Kollam District for the processing related to seed of Mango and local resources in Thevara itself for processing the stem of Corypha. A senior person in a near by village called Kumbalam, was relied upon for the final processing of the flour from Mango seeds and that of the stem of palm.

Volunteers from among the students and staff were also involved at various stages of processing making it a learning process for a few of them. A set of food thus produced were exhibited in the college premises for a day, and the produces were shared among those who visited the exhibition. While the end products were relished by those who consumed them, the labour intensive process, and the availability of alternatives, especially staples like rice and wheat in abundance in the modern era, has greatly diminished the significance of such food items.

An enquiry into the health and nutritional value – of their being unpolluted (or minimally polluted) from chemical inputs, of having high health stimulating components etc may lead to wider use of these resources. A gradually developing interest and taste in ethnic and organic food may also lead to these practices being kept alive or restored.

## 1. Seed of *Cycascircinalis* (int)



### **Scientific Classification:**

Kingdom : Plantae

Class : Cycadopsida

Order : Cycadales

Family : Cycadaceae

Scientific Names : *Cycas circinalis*

Sub. Sp. *Angustifolia*

*Cycas undulata* Desp. Ex Gaudich

*Cycas wallichii* Miq

Common Name : Queen sago (English), int/inth (Malayalam)

## **Plant Description:**

Cycads are an ancient group of seed plants with a crown of large compound leaves and a stout trunk. Cycads are dioecious plants, or in other words, there are separate male and female plants.

The female plant produces the seeds, and the male produces cones with microspores in them. Cycads are known to be among the oldest group of seed plants on earth, surviving unchanged for millions of years. The feathery leaves of this species arranged in a rosette pattern add a sense of the tropics to the landscape.

The leaves are bright green, semi-glossy, 150-250 cm long, flat (not keeled) in section (opposing leaflets inserted at 180° on rachis), with 170 leaflets, to momentum shedding as leaf expands. The Queen Sago does not branch whereas the King Sago, *Cycas revoluta*, creates many heads branching off from the main trunk and also from sprouts at ground level. Male Sago plants develop a cone approximately 30 cm tall coming from the center of the top. The cone is white or yellow, rounded and produces abundant microspores. The megaspores are quite large and are brown or yellow and are displayed on the feather-like seed-bearing leaves called megasporophylls. The seeds have a spongy layer that allows them to float on water. As a slow growing plant, the seed can take from 6–18 months to germinate. Queen Sago is pollinated by a species of weevil, which finds protection in the plant's cone and seed-bearing leaves.

(Good, D. 2001. Cycads of Africa.)

(Jones, D.L. 2002. Cycads of the World.)

(Haynes, Jody L. 2004. Virtual Cycad Encyclopedia.)

**Status:**

IUCN Red List - Endangered

**Native** : India (Karnataka, Kerala & Tamil Nadu)

**Geographical range:** *Cycascircinalis* known to be an Indian endemic, restricted to the Western Ghats, in the states of Karnataka, Kerala and Tamil Nadu and may also occur south of Maharashtra states of India

**Habitat & Ecology :**

It is a terrestrial plant. This species typically occurs in fairly dense, seasonally dry scrubby woodlands in hilly areas. Plants are also found in rocky areas (dried stream beds). Many trees in this habitat lose their leaves in the dry season and *C. circinalis* is also facultative deciduous in extremely dry times. Populations may also occur in taller moist forests. It appears to be an adaptable species with colonies extending from rocky hill outcrops down to coastal habitats at sea level.

**Major threats:**

Human activities like land clearing is thought to have destroyed more than 50% of the original habitat of *C. circinalis*. Cycad leaves are harvested for the urban floricultural market may also have an impact on this species. There are evidently medicinal properties in the leaves and pith of stem. Large and old specimens are ruthlessly hacked down for the extraction of pith. Seeds are harvested and used for food as a regular part of the diet. Its population trend is showing that species are decreasing, ([www.iucnredlist.org](http://www.iucnredlist.org)).



## **Processing and Practices of Seeds of *Cycas* in Kerala:**

Study site: Nellimattam, Kothamangalam

Resource Person Names: Ms. Seema Davis, Mr. Davis Peechat, Mr. Thomas Peechat, Mr. Sreejith M.G., Mrs Mary Pathrose

### **Preparations:**

The *Cycas* starts producing inflorescence during summer March- April, and the Seed occur during the monsoon season, between the months of June-August. They are usually found in bunches and may resembles big dates in shape. They take about three months to ripen and would be ready for harvest by September – October. Malayalam calendar known as “Karkataka Masam” (Rainy Season). Fully grown seeds are collected from the plant. After collecting it can be stored as it is, even up to two months. A tree produces about 3 kilograms to 8 kilograms of seeds, about hundred to three hundred nuts in a season. Usually, once they start bearing fruit, they continue to do so for many years annually. A ripened fruit would be of 3 to 4cms in size and yellow in color.

Preferably looking into sunny days seed will be started for processing. Once ripened, they are harvested and the thick shell is cut open with a chopper and dried in the sun for three to four days (or in smoke spread over the country fire-wood stove). At this point, it has a kind of intoxicating or nauseating odor, which is indicative of the chemical (toxin) present in the seed. After it is hard dried, the seed (kernel) shrinks. Then it can be extracted from the shell.

Before preparation seed will be soaked in water. Naturally the seed of *Cycas* is poisonous. The potent poison in the seeds is removed by soaking them in water. Water from the first seed-soaking is harmful and will kill

birds, goats, sheep and hogs. Water from the following soakings is said to be harmless. After the final soaking, the seeds are dried and ground into flour. The flour is used to for making soup and porridge.

In this practice, toxin content has to be removed by soaking and rubbing the cut-dried seeds in fresh water for about three to four days, with water being changed, every day. Then it is ground either in the traditional pounding stone or in a flour mill.

The flour, well ground, is very fine and soft. It is fried in the traditional manner in which rice flour is fried for preparing steam cooked food items of Kerala tradition. Once thus fried, it can be stored safely in tightly closed containers. It may have a shelf life of almost 2 years.

The typical Kerala food, steam cake (*puttu*) is prepared from this. It would be brownish yellow in colour when cooked, and would be very soft and tasty.

Another food item is *piti* (a ball of flour steam cooked) which is made an ingredient of a traditional vegetarian mix (*thiruvatira puzhukku*), which is said to be of high nutrition value with most of the ingredients collected from naturally growing or home grown tubers and roots.

#### **For further research:**

- The nutritional content of the flour, the chemical/determination of toxic substance and its applications
- Photos & video clippings
- Data from the groups regarding the processing and benefits



Fig: harvesting the Seeds from a *Cycas cirinalis*



Fig: Megasporophyll of *Cycas* with ripened seeds.



Fig: Processing-Removal of Seed coat (Mrs. Mary Pathrose – Agri labourer)





Fig: Soaking for removal of toxic substances



Fig: Puttu Prepared out of seed of *Cycas*.



Fig: Fr. Prasant (Left) interacting with Host Family (right) regarding Cycas food preparation details

## 2.Seed of *Mangifera indica*(Manghaku):



### a. **Scientific Classification:**

Kingdom : Plantae

Class : Dicotyledones

Order : Sapindales

Family : Anacardeceae

Scientific Names : *Mangifera indica*

Common name : Mango (English), Maanga (Malayalam)

**Plant Description:**

Mango tree is erect, 30 to 100 ft. (roughly 10-30 m) high, with a broad, rounded canopy which may, with age, attain 100 to 125 ft. (30-38 m) in width, or a more upright, oval, relatively slender crown.

The tree is long-lived, some specimens being known to be 300 years old and still fruiting. Nearly evergreen, alternate leaves are borne mainly in rosettes at the tips of the branches and numerous twigs from which they droop like ribbons on slender petioles 1 to 4 in (2.5-10 cm) long.

The new leaves, appearing periodically and irregularly on a few branches at a time, are yellowish, pink, deep-rose or wine-red, becoming dark-green and glossy above, lighter beneath. The midrib is pale and conspicuous and the many horizontal veins distinct. Full-grown leaves may be 4 to 12.5 in (10-32 cm) long and 3/4 to 2 1/8 in (2-5.4 cm) wide.

Hundreds and even as many as 3,000 to 4,000 small, yellowish or reddish flowers, 25 to 98 % male, the rest hermaphroditic, are borne in profuse, showy, erect, pyramidal, branched clusters 2 1/2 to 15 1/2 in (6-40 cm) high.

Fruit is great variation in the form, size, color and quality. They may be nearly round, oval, ovoid-oblong, or somewhat kidney-shaped, often with a break at the apex, and are usually more or less lop-sided. They range from 2 1/2 to 10 in (6.25-25 cm) in length and from a few ounces to 4 to 5 lbs (1.8-2.26 kg). The skin is leathery, waxy, smooth, fairly thick, aromatic and ranges from light-or dark-green to clear yellow, yellow-orange, yellow and reddish-pink, or more or less blushed with bright-or dark-red or purple-red, with fine yellow, greenish or reddish dots, and thin or thick whitish, gray or purplish bloom, when fully ripe. Some have a "turpentine" odor and flavor, while others are richly and pleasantly fragrant. The flesh ranges from pale-



yellow to deep-orange. It is essentially peach-like but much more fibrous, extremely juicy, with a flavor range from very sweet to subacid to taste.

There is a single, longitudinally ribbed, pale yellowish-white, somewhat woody stone, flattened, oval or kidney-shaped, sometimes rather elongated. Within the stone is the starchy seed, monoembryonic - usually single-sprouting or polyembryonic - usually producing more more than one seedling .

(Morton, J. 1987. Mango. Fruits of Warm Climates.)

### **Geographical Range:**

Mango is native to southern Asia, especially eastern India, Burma, and the Andaman Islands. (Morton, J. 1987. Mango. Fruits of Warm Climates.)

### **Status:**

In time, the Mango became one of the most familiar domesticated trees in dooryards or in small or large commercial plantings throughout the humid and semi-arid lowlands of the tropical world and in certain areas of the near-tropics such as the Mediterranean area (Madeira and the Canary Islands), Egypt, southern Africa, and southern Florida.

Local markets throughout its range are heaped high with the fragrant fruits in season and large quantities are exported to non-producing countries. (Morton, J. 1987. Mango. Fruits of Warm Climates.)

### **Native: South East Asia**

## **Food Processing and Practice in Kerala:**

**Study Site:** Thevara & Kollam

Resource Person: Ms. Elizabeth Lonan (75), Mr. Francis, Ms. Sharifa (82), Kadackal, Kollam

### **Preparation & Practices:**

Mango is acclaimed to be king of fruits. India produces mango in its entire stretch except the high altitude regions of Himalayas. The mango season begins from March in the South, and ends in August in the Northern part of India. The seeds are thrown away. Some of them sprout and produce new trees. However, in the recent past, propagation is more by way of budding or grafting, rather than through seeds.

The huge quantity of seeds produced are at the best an organic waste, which gradually get absorbed into the soil. However, there had been a tradition in the Kerala region, where the kernel of this seed was used as a supplementary food resource, said to have been of high nutrition value.

Mango seeds that are left after the fleshy portion is used, are collected and stored after drying in the sun. Then, during the seasons of shortage in food supply, the seeds are split open, the kernel is washed in fresh water several times to remove the content that may be toxic for human consumption. Then it is ground in traditional pounding stone or even in a mixy/grinder or in a flour mill. The flour slightly purple in colour is usually mixed with some amount of rice flour, and steam cooked to produce bread (*appam*). The kernel can be sliced into smaller pieces, further washed in fresh water to remove the bitterness and can be cooked and eaten as a light meal fit for a break-fast or tiffin either as a mix with coconout (*puzhukku*) or with jiggery.

Alternatively, the seeds can be split open and the kernel sun-dried and stored, and further processed as the need emerges.

This used to be a common practice in typical middle class and lower middle class Kerala families till mid-seventies, and it used to serve as a food supplement, when food supply was in shortage, especially, during the heavy south west monsoons of Kerala, which were used to called months of scarcity (*panja masam*). There had been also an interesting saying in the folklore:

*Andiyotiti poti, maavinte kadavannam*

*Andiyottohungatte, mundu njan kaattitharam*

(The house wife complaints to the washerwoman that her dhoti is misplaced and what she got was a smaller one, which was not likely to be hers. The washerwoman, says that it is because it was the season of *andi* – mango stone food, that she was over-nourished to find her cloth not fit for herself. Let the season abate, and she would go thinner, and then she would show the cloth that was duly hers. Implication is of the nourishment value of the mango seed.)

In the past two decades, this practice has almost totally disappeared from Kerala homes.

Areas for further research:

- (i) Nutritional value of the product
- (ii) Nature of toxin content
- (iii) Newer ways of processing

Caution: Till mid-seventies, mangoes used to be a safe food, especially with little or very minimum of application of pesticides or insecticides. However, in the recent past, with large scale application of insecticides, from food safety angle, its



Fig: Mango stones after washing dried under sunlight for long term storage purpose.









Fig: Cake prepared out of flour from Mango seeds.



Fig: Mango Cake prepared out of mango seed endosperm.

### 3. Rhizome of *Musa sp.*



Kingdom : Plantae-Plants  
Division : Magnoliophyta-Flowering plants  
Class : Liliopsida-Monocotyledons  
Subclass : Zingiberidae  
Order : Zingiberales  
Family : Musaceae-Banana Family  
Genus : Musa L. - Banana  
Species : ×paradisiaca L. - Edible Banana

(National Plant Database. 2004.)



## **Plant Description:**

The Banana plant, often erroneously referred to as a "tree", is a large herb, with succulent, very juicy stem, which is a cylinder of leaf-petiole sheaths, reaching a height of 20 to 25 ft (6-7.5 m) and arising from a fleshy rhizome or corm.

Suckers spring up around the main plant forming a clump or "stool", the eldest sucker replacing the main plant when it fruits and dies, and this process of succession continues indefinitely. Tender, smooth, oblong or elliptic, fleshy-stalked leaves, numbering 4 or 5 to 15, are arranged spirally and they unfurl, as the plant grows, at the rate of one per week in warm weather, and extend upward and outward, becoming as much as 9 ft (2.75 m) long and 2 ft (60 cm) wide. They may be entirely green, green with maroon splotches, or green on the upperside and red purple beneath. The inflorescence, a transformed growing point, is a terminal spike shooting out from the heart in the tip of the stem. At first, it is a large, long-oval, tapering, purple-clad bud. As it opens, it is seen that the slim, nectar-rich, tubular, toothed, white flowers are clustered in whorled double rows along the floral stalk, each cluster covered by a thick, waxy, hood-like bract, purple outside, deep-red within. Normally, the bract will lift from the first hand in 3 to 10 days. If the plant is weak, opening may not occur until 10 or 15 days. Female flowers occupy the lower 5 to 15 rows. Above them may be some rows of hermaphrodite or neuter flowers. Male flowers are borne in the upper rows. In some types the inflorescence remains erect but generally, shortly after opening, it begins to bend downward. In about one day after the opening of the flower clusters, the male flowers and their bracts are shed, leaving most of the upper stalk naked except at the very tip where there usually remains an unopened bud containing the last-formed of the

male flowers. As the young fruits develop from the female flowers, they look like slender green fingers.

The bracts are soon shed and the fully grown fruits in each cluster become a "hand" of Bananas, and the stalk droops with the weight until the bunch is upside down. The number of "hands" varies with the species and variety. The fruit turns from deep-green to yellow or red, or, in some forms, green-and white-striped, and may range from 2 1/2 to 12 in (6.4-30 cm) in length and 3/4 to 2 in (1.9-5 cm) in width, and from oblong, cylindrical and blunt to pronouncedly 3-angled, somewhat curved and hornlike.

The flesh, ivory-white to yellow or salmon-yellow, may be firm, astringent, even gummy with latex, when unripe, turning tender and slippery, or soft and mellow or rather dry and mealy or starchy when ripe. The flavor may be mild and sweet or subacid with a distinct apple tone. (Morton, J. 1987. Fruits of Warm Climates.)

### **Geographical Distribution:**

Edible Bananas originated in the Indo-Malaysian region reaching to northern Australia. They were known in the Mediterranean region in the 3rd Century B.C. and are believed to have been first carried to Europe in the 10th Century A.D. Early in the 16th Century, Portuguese mariners transported the plant from the West African coast to South America. The types found in cultivation in the Pacific have been traced to eastern Indonesia from where they spread to the Marquesas and by stages to Hawaii. Bananas and Plantains are today grown in every humid tropical region and constitute the 4th largest fruit crop of the world, following the grape, citrus fruits and the apple. (Morton, J. 1987. Fruits of Warm Climates.)

### **Processing and Preparations:**

Rhizome of Banana is removed after fruit harvesting. Then rhizome is thoroughly washed with water. After washing outer skin and roots are scraped out. Further the internal parts are ground to use variety of dishes like steam boiled cakes.



Fig: Removal of Rhizome (remaining stem part of stem)after harvesting of Banana fruits.



Fig: Scraping surface for removal of adventitious roots







A typical preparation is that of vegetarian dish. It is rich in fiber and resembles the upper part of the pith of the banana stem (*pindi*) which is a more popular food, prescribed for its dietary and medicinal benefits.

The rhizome is firm, and has an external resemblance of large *Colocasia* or a small elephant foot yam. However, it gets cooked very quickly, and in cooking its fibrous content is revealed. It makes a good recipe in combination with green gram or lentils of other sort.

When the soil is not chemically contaminated on account of too much of fertilizers or insecticides, this can serve as a very healthy, safe and nutritious food, with very minimum of investment.

Location: Thevara, S.H. Monastery, Campus

Resource Persons: Fr. Poulouse K, Mr. Francis.

#### 4. Stem of *Coryphaumbraculifera*



#### Scientific Classification :

Kingdom	:	Plantae
Class	:	Monocotyledones
Order	:	Arecales
Family	:	Areaceae
Scientific Names	:	<i>Coryphaumbraculifera</i>
Common name	:	Talipot palm
Local name	:	Malayalam:Kodapanna

**Plant Description:**

It is one of the largest palm in the world; individual specimens have reached heights of up to 34 m. or 100 feet, with a trunk of up to 1.3 m. or 3.5 feet in diameter. A fan palm with large costapalmate leaves up to 7 m. or 21 feet in across, an armed with small 2 cm. thorns, the petiole up to 4 m long, and up to 130 leaflets. The talipot palm bears the largest inflorescence of any plant, 6-8 m. long, consisting of up to several million small flowers, borne on a branched stalk that forms at the top of the trunk, monocarpic, (the inflorescence is terminal, dies after flowering), flowering only once, when it is 30 to 80 years old. It takes about a year for the fruit to mature, producing thousands of round, dark green fruit 3-4 cm. diameter, each containing a single seed, it take about a year for the fruit to ripen. Then the tree dies after bearing fruit. (palmpedia.net).

**Geographical Range** :Restricted to Karnataka and the Malabar coast of Kerala. It is difficult to distinguish between wild and semi-wild subpopulations. Native country is India, introduced to Shrilanka.

**Status** :IUCN Data Deficient ver 2.3

**Major Threats** :The major threat to this palm is severe disturbance such as logging trails and forest clearance for shifting cultivation (Johnson 1996).

**Food processing and Practices in Kerala :**

As the plant matures it starts accumulating starch in the stem. Starch deposition is morphologically visible by swollen stem.

Such food accumulation widens the stem radially and starch accumulation will slowly start moving upward towards terminal axis. This accumulated

starch can be used for flowering and fruit setting. In practice people chop the palm just before it reaches its terminal axis.

Outer hard covering is removed and stored food portion is separated with axe. Pieces of stem will be collected in a bag and transferred to a drying yard.

The usual practice is to cut the storage section into several small portions, weighing 10 or 20 kilos, which are taken away by the households in the neighborhood. They sundry those pieces as they are or after slicing them into smaller pieces to keep them stored for suitable time. During this process, it is found that there is a fungal spread over the pieces. The people experienced in this practice say that this is good for the flour, as the fungal process is an organic process leading to the removal of the toxic content from the flour, also making it tastier for human consumption. The entire process of extraction – felling, chopping, and sharing was a kind of communitarian activity which was the result of the close knit rural community life of those times, and in its turn, led to further deepening of the same.

In today's world, as such the practice has disappeared. Or even if one wants to do that, it may incur some substantial expenditure as it would require laborers for the entire process of felling, chopping and extracting.

The crushed or pounded pieces are soaked in fresh water to extract the flour. The flour thus collected is repeatedly washed in fresh water, permitting further sedimentation of flour and removal of dirt or other substances, which are thrown away with the water after sedimentation.



Then we have the finest flour which can be sun-dried and stored in air-tight containers. The flour thus collected is used in combination with rice flour to produce porridge, steam balls, or steam cake or dosa, which are found to be delicious.

The pith can also be cut into small pieces and given as a feed to duck which feed on it merrily.

It is said that this used to serve as a substitute for food shortage in the period of acute food shortage of 20<sup>th</sup> century. Now a day, this is hardly ever practiced and the new generation is rather totally unaware of such resources.

The only point to be noted is that this extraction leads to the destruction of a giant tree. However, it is a matter of a few months or a year before the palm reaches its full growth and begins to wither away.





Fig: Study Location, Panakootti, Idukki District (Place is known in the name of *Corypha*, for its abundant distribution around, Pana menas Palm)





Fig: Above picture shows selection of mature Palm which is ready to harvest for its starch storage in stem.





Fig: Fallen Palm after removal of crown, broadened portion of stem indicates starch storage.



Fig: Central stem with starch and plant fibers



Fig: Pieces of stem further carried for drying.



Fig: Resource Person explaining the processing of *Corypha* stem.





Fig: Cut opening the stem for central stored starch content of *Corypha*





Fig: One naturally fallen old stem shows fungus and insect eaten nutritionally rich central pith leaving dry bark









Fig: Traditional beating process of dried stem pieces for separation of starch powder from plant fibers



Fig: Soaking of starch powder and frequent wash help s recover clean powder from debris.



Fig: Prepared food cake out of starch extract of *Corypha umbraculifera*  
It can also be used to for Dosa or Puttu preparation



Fig: Fr. Prasant with his Research Team with host Family





## 5.Seed of *Artocarpushirsutus*

### Scientific Classificatin:

Class :           Dicotyledones  
Order:           Rosale  
Family:          Moraceae  
Genus:          *Artocarpus*  
Species:         *A. hirsutus*

Common Name : ***Artocarpus hirsutus***, known by a variety of names, such as **Aini**, **Aini-maram**, **Aani**, **Anhili**, **Anjili** (Malayalam: ആഞ്ഞിലി), Hebbalasu (Kannada) and the Wild Jack or Jungle Jack



It is a tropical evergreen tree species that is native to India ( Karnataka, Kerala, Maharashtra and Tamil Nadu), where it prefers moist, deciduous to partially evergreen woodlands.

The tree is prized for its durable timber which is comparable in quality with teak. The timber was used extensively in the construction of ceilings, door frames and furniture in older buildings, especially in Kerala. The famous snake boats of Kerala are often hewn out of the Aini's wood.

Evergreen trees, up to 40 m tall. Leaves alternate, broadly elliptic-ovate, up to 18 x 12 cm, rounded at base, acuminate at apex. Flowers monoecious, on axillary pedunculate receptacles; the male receptacles narrowly cylindric, up to 15 x 1 cm; the female receptacles ca 15 x 9 cm. Perianth lobes 2, shortly connate below in male flowers; in female tubular. Stamen 1. Fruit a syncarp, cylindric & ellipsoid, ca 15 x 10 cm, echinate with long processes, orange when ripe. Seeds ovoid, up to 1.8 cm long.

Its unisexual flowers are, in axillary inflorescences and its fruits are syncarps and very sweet, changing to an orange hue when ripe. It's simple, alternate leaves will ooze latex if broken. It is harvested for its wood.

### **Habitat :**

The *Artocarpus hirsutus* grows in altitudes ranging from sea level to an elevation of 1000 m in places with an annual rainfall of 1500 mm or more. They are endemic to the Western Ghat and are found in its evergreen forest. The canopy tree can reach a height of up to 35 m and about 4.5 m in girth.

**Geographical Range :** In moist deciduous to semi-evergreen forests. Karnataka, Tamil Nadu and Kerala, Endemic to South West India.

**Status:**Threatened species

### **Processing:**

The plant is a commonly found indigenous species, once found abundantly in almost all homesteads. The primary human use was for timber once the tree grows up to a minimum of 20 or 30 years.

However, its fruits used to serve as a pass time refreshment for the youngsters, especially since its annual season occurred in April – May coinciding with the summer vacation for schools. The fruit resembling a miniature Jack fruit, usually oval in shape, and having a size of 4 to 8 inches length longitudinally and 4 to 6 inches latitudinal. The fleshy part covering the seeds which are bright yellow or orange in colour is sweet-sour in the mouth, and it used to be a fun time for children of yester years to gather them and enjoy them.

A good many of the fruits are eaten by birds and animals like squirrels. What they leave behind are seeds which are of 8 to 10 mm in length, looking like a miniature of Jack fruit seed.

In earlier times, children used to collect those seeds and store them. Then, they are either sun dried and stored, or directly fried in a pan, usually mixing the seeds with sand for frying without them getting burned.

Once fried in the pan, they are removed from the sand, and the seed coating is removed either by rubbing in the hands or by gently pounding them in the country mill or pounding stone. The fried seeds, are delicious and can be eaten like pea nuts fried sans oil.

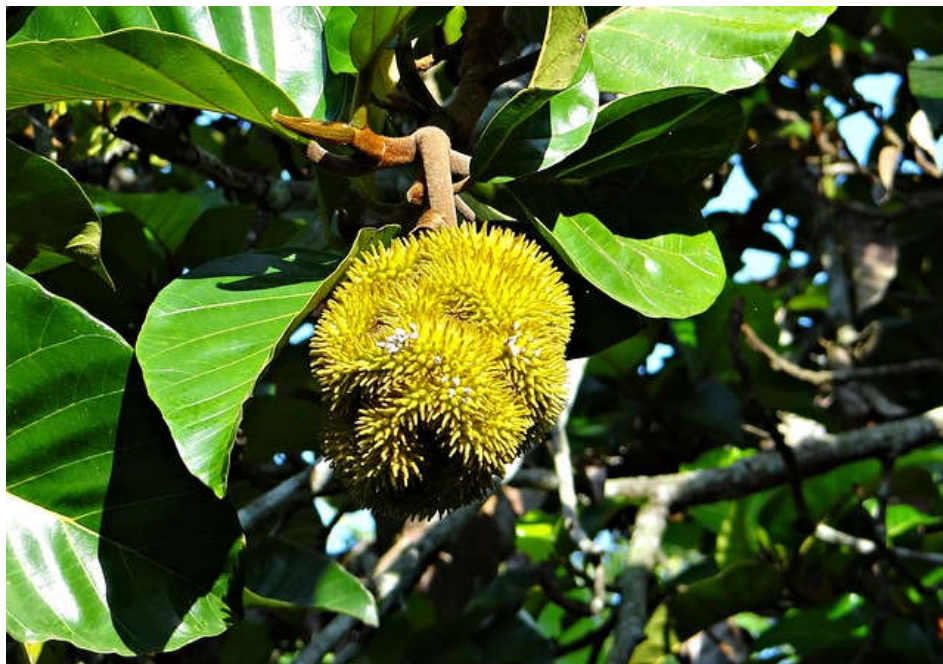


This is of high nutritional value and can be listed among safe food among the pass time food.

The sad part is that this energy rich resource is now practically laid waste and hardly ever used.

Location: Thycattussery, Cherthala

Resource Person: Mrs. Thressiakutty Souriar







## CONCLUSIONS

1. Five indigenous food practices, almost directly based on natural resources, once abundant in rural areas of Kerala were identified and described.
2. Of the five, two resources or species are now endangered, in the sense of increasing displacement of natural open spaces on account linked to homesteads and community lands getting diminished. These two are: *Cycascircinalis (int)* and *Artocarpushirsutus*. *Corypha umbraculifera (Kudappana)* can also be listed as threatened.
3. The use the processes and produces described above has almost entirely vanished or diminished to the minimum, which is indicative of two things: (i) a drastically changing life style and food habits, and (ii) the growth in food security, which has almost sidelined the dependence on such resources any more.
4. Tapping such resources has also become very expensive in today's labor and consumer market, where people don't have the leisure for such activities, and if something of the sort is to done, it would require labor of such extend that it almost becomes unaffordable.
5. In today's context, two of the produces described – the one from mango seed and the rhizome of banana, cannot be considered safe, on account of the likely intrusion of chemicals and insecticides.
6. The nutritional value of the produces is to be further assessed, and experiments on its dietary benefits to be held. This could be another area of research.
7. From the angle of tourism potential, possibilities in such traditional food practices also could be explored.

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Jungle Jack – Ms. Thressiakkutty Souriar, Mr. Sreejith

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## Photos

### **RHYZOME OF BANANA**































## **Stem of *Corypha umbraculifera***







































