

## Effect of palm Jaggery as an *Anupanam* - A review

NJQ Tharshanodayan <sup>\*1</sup>, P Rohini<sup>2</sup>

<sup>\*1</sup>PG Scholar, Department of Gunapadam, Government Siddha Medical College,  
(The Tamilnadu Dr. MGR Medical university, Chennai, Tamilnadu, India), Palayamkottai,  
Tirunelveli(627002),Tamilnadu, India [njqtharshan@gmail.com](mailto:njqtharshan@gmail.com)

<sup>2</sup> Medical Officer, District Siddha Hospital, Mannar, Srilanka [prohini165@gmail.com](mailto:prohini165@gmail.com)

### ABSTRACT

**Background:** Palm jaggery(P.J) is a popular food material and an important raw drug used in traditional medicine for therapeutic and pharmaceutical purposes. It is generally produced by concentrating the inflorescence sap(Sweet Toddy) of *Borassusflabellifer*(Palmyrah palm) to a thick consistency.

**Objective:** The aim is to understand the role of (P.J) and its effectiveness in *siddha* medicine as an *anupanam*.

**Methodology:** Properties of (P.J) in *siddha* aspect and scientific validations were collected and data were analyzed.

**Results:** The (P.J) is darker and richer in colour. It is sweet and slight salty to taste. Palm jaggery has a healing property of *Kunmam* (Gastritis), *Suvai inmai* (tastelessness) and also heals the diseases produce by the imbalance *Mukkutram* (*Vatham, Piththam & Kapam*).Strengthens and builds the body and body function and gives *Sattvic gunam*. Increases the *Ojas* (*Channels*), moistens, tissues and waste products.containing 1.04% protein,0.19% fat, 76.86% sucrose, 1.66% glucose, 3.15% total minerals, 0.861 % calcium, 0.052% phosphorus, also 11.01 mg iron per 100 g and 0.767 mg of copper per 100 g.

**Conclusion:** The physicochemical values and medicinal propertieswere suggesting and supporting the statement by the traditional medicine that (P.J) could be better *anupaanam* and sweetener in food stuffs.It is required to encourage to consumption.

### KEYWORDS

Palm jaggery, *Anupanam*, *Kunmam*, *Suvai inmai*, *Mukkutram*

## INTRODUCTION

Palm jaggery is a popular food material and an important raw drug used in traditional medicine for therapeutic and pharmaceutical purposes. It is generally produced by concentrating the inflorescence sap of Palmyrah palm (Sweet Toddy) to a thick consistency (Rajesh *et al* ,2016).Jaggery is widely used in pharmaceuticals in the preparation of traditional medicine dosage forms such as *Lehium, Manapaaku, Paani* etc. In *siddha* medicine palm jaggery is giving as an *anupanam* along with the medications (Vehicle) (Sivashanmugaraja S ,2016).Palmyra palm jaggery can use as a medicine and sweetening agent (Velauthamurthy K *et al*, 2015). Palm jaggery is a sugar rich product and medicine got by evaporation of sap obtained from Palmyrah palm (*Borassus flabellifer* L). Palm jaggery having best medicinal qualities. It generally contains 65-85% sucrose and 5-15% reducing sugars, and is consumed directly as an *anupanam* in traditional medicine, or used for production of traditional sweet meals. It is a good source of minerals like calcium, phosphorous and iron (Vengaiiah PC *et al* ,2012).

The quality of the stored jaggery mostly depends upon the moisture content which is favorable for inversion and development of different types of fungi and bacteria in the jaggery resulting in changes in tastes and colours because of the formation of organic acid and complex decomposition of products(Tiwari GN, Kumar S & Prakash O ,2004)

### **Palm Jaggery as *anupanam* in *Siddha* medicine**

*Anupanam* is a substance which is taken along with or after the consumption of medicine. It helps not only for the palatability but mainly for carrying the medicine to the target place by which it increases its bioavailability and facilitates easy absorption. Through the palm jaggery as an *anupanam* is administered along with medicine to improve the taste and mask the bad odor of the raw ingredients mainly given for carrying the essential substance to the target place. A palm jaggery with specific medications gives specific effect in specific *thosam* (*Vatha, piththa, kapha*) and diseases (Bath Rajesh *et al*, 2014). Palm jaggery has abundant non-reducing sugars. It helps to build up the body function after affects by the illness. In diarrheal disease most of the potassium was lose from the body. In that case palm jaggery plays an important role to recover potassium deficiency (Sivashanmugaraja S ,2016).

Palm jaggery is suitable for consumption by children, pregnant and elders.*Siddha* medicine reported that palm jaggery has a healing property of *Kunmam* (Gastritis),*Suvai inmai* (tastelessness) and also heals the diseases produce by the imbalance *Mukkutram* (*Vatham, Piththam & Kapam*)(Murugesu Muthaliyar K S ,2013). Constituents and medicinal properties were suggesting and supporting the statement by the traditional medicine that palm jaggery could be better

*anupaanam* and sweetener in food stuffs. Palm jaggery is hugely priced due to its medicinal properties. It is required to encourage to consumption as an *anupanam* and food.

## **Aim**

To understand the role of palm jaggery and its effectiveness in *siddha* medicine as an *anupanam*.

## **METHODOLOGY**

The review containing data from different *siddha* texts and research article through globally accepted websites such as PubMed, MEDLINE, Science direct, Europe PMC, Academia ect. Properties of jaggery in *siddha* aspect and scientific validations were collected. Data were analyzed.

## **Literature**

Palmyrah (*Borassus flabellifer*) palms are mainly occurred throughout in north and east provinces of Sri Lanka and it is known to be a worth economic plant. (Velauthamurthy K *et al*, 2015). It has an extreme strength, earthy taste or reminiscent of chocolates in its taste. The palm jaggery got after processing is darker and richer in colour. It is slight salty to taste but much healthier of the two. Due to its cooling result over human body, it is of high usefulness. The price of the palm jaggery is double that of sugar (Vengaiah PC *et al* (2012).

## **Industrial usage of palm jaggery**

Palmyrah (*Borassus flabellifer*) palms are mainly distributed in north and east provinces of Sri Lanka and it is known to be a valuable economic plant (Theivendirarajah K, 2008). Traditionally quick lime is used to prevent the fermentation of sweet sap in the preparation of jaggery at the cottage industries (Vengaiah P C, 2013). Initially sap was collected in slacked lime treated earthen pots by tappers. The cleared sap after lime sedimentation and filtration is transferred in to the boiling Galvanized Iron pan on a traditional furnace (Fig. 1). During boiling, a white scum arises to the surface which is skimmed off (removed with a ladle) and a few castor beans are crushed and put into alloy frothing. After 5 min, boiling was stopped and pan is taken off from furnace and allowed for settling of lime. Then clear brown syrup was again poured in to boiling pan. Clarification was needed,

- (a) if sap's pH is more
- (b) for getting crystalline jaggery
- (c) to get more clear syrup
- (d) for shape.

Both vegetable and chemical clarifiers used for clarification. jaggery can be made in both solid blocks as well as in semiliquid form (liquid jaggery). The quality of gur can be improved by precipitating lime with carbon dioxide gas or citric acid or unripe tamarind fruits, before boiling the juice. Again quantification and type of clarificant to be added is nonstandardized. Processes to be standardized includes type of mucilage to prevent caramalization, pan material, heat application and final super saturation stage for molding (Vengaiah PC *et al* ,2012).

### **Properties of palm jaggery regarding traditional aspect**

#### **Properties:**

Taste → Sweet taste

Potency → Cold

Distribution → Sweet taste

#### **Actions:**

Diuretic

Refrigerant

### **Medicinal properties mentioned in *siddha* literature**

Palm jaggery has a healing property of *Kunmam* (Gastritis),*Suvai inmai* (tastelessness) and also heals the diseases produce by the imbalance *Mukkutram* (*Vatham, Piththam & Kapam*) (Murugesu Muthaliyar K S ,2013)

### **Nutritional properties**

Palm jaggery is a natural sweetener and energy food, it is very rich in minerals, predominantly iron with traces of other mineral salts.Highly rich in calcium. Traditional people often prepare sweets with palm jaggery. They may not have a degree, but they do know where the ingredients come from and how they are made. They avoid sugar. Palm jaggery has more nutrias and healthy than regular sugar because it is unrefined, contains no preservatives or synthetic additives and has minerals such as magnesium, potassium and iron. It is a naturalfood, very rich in minerals, predominantly iron with traces of other mineral salts.

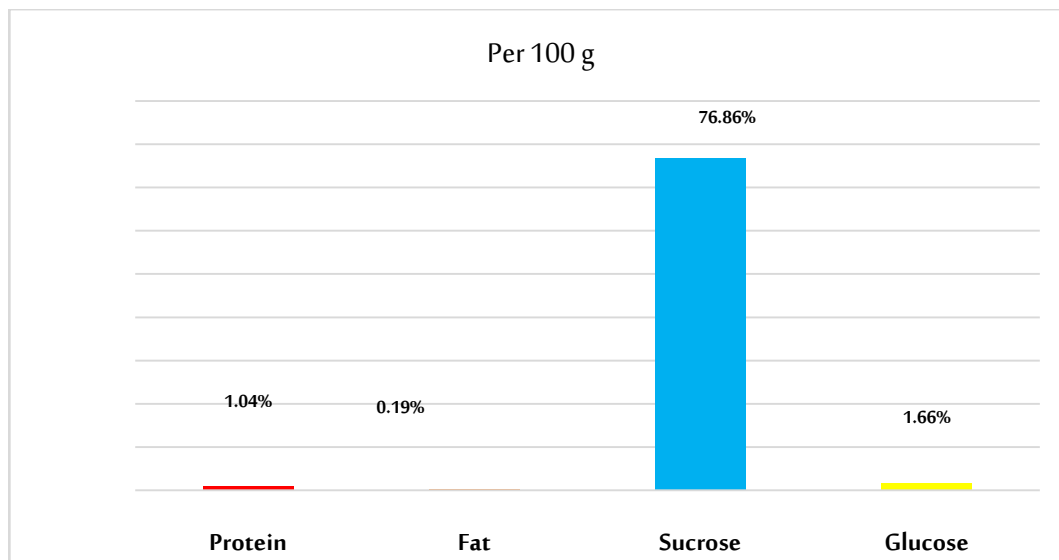
### **Medicinal properties**

The benefits of palm jaggery include its ability to cleanse the respiratory tracts, gastro intestinal tract, act as a digestive agent and it helps the body to get rid of the unwanted particles and thus provide relief from constipation, sweeten the food in a healthy manner, provide good amount of

minerals. Eating few grams of jaggery after a heavy meal is often recommended for those having problem with normal digestion. In the body, palm jaggery activates the various digestive enzymes and itself gets converted to acetic acids, thus speeding up digestion. Most of the time it is given to women who give birth to a child. It helps purifying impurities in the breast milk. Jaggery is a rich source of many vital minerals that are required by the body for normal growth and functioning. It is considered as a store house of various important minerals like iron magnesium phosphorus and potassium ect. Palm jaggery is used since ancient times to treat problems such as dry cough, common cold and asthma. Palm jaggery helps in promoting relaxation of muscle, nerves and blood vessels, thus enhancing their functions. Migraines, the most painful and uncomfortable type of headaches can be relieved to a large extent by palm jaggery. Palm jaggery has a strong antioxidant properties and protects our body cell from the damage caused by free radicals (Jeya Ruban Rajesh ,2014).

## RESULT AND DISCUSSION

**Chart 1:** Nutritional properties of palm jaggery



**Table 2:** Vitamins and minerals of palm jaggery

Parameters	Values for 100 g
Thiamin	10.70- 29.69 mg
Riboflavin	353-494 micro gram
Nicotinic acid	3.70 – 5.10 mg
Vitamin C	7.30 – 33 mg
Calcium	140-283 mg
Phosphorus	16-27 mg
Iron	6-10 mg

(Sivashanmugaraja S ,2016)

**Table 2: properties of palm jaggery**

Substance	Taste	Property	Action	Dosha
Palm jaggery	Sweet	Buildings cold, Unctuous heavy	Strengthens and builds, is generally sattvic gunam –harmonies mind, Increases Ojas, Moistens. Increases tissues and waste products, Benefits the mind.	More is required for Pitta, moderate for vatham, less for Kapham

(Kandasaami mudaliyar, 2012)

Collection of data regarding palm jaggery revealed it has significant medicinal properties. The result suggests and support the statement that Palm jaggery could be as an *anupaanam*., which is a healthy sweetener in use. Study reported that palm jaggery has a gentler Gastro intestinal tract effect and cleansing effect. Therefore, palm jaggery should be beneficial as an *anupaanam* and sugar substitute.

Palmyrah palm jaggery is the main marketable product and which is more nutritious sap based product, containing 1.04% protein, 0.19% fat, 76.86% sucrose, 1.66% glucose, 3.15% total minerals, 0.861 % calcium, 0.052% phosphorus; also 11.01 mg iron per 100 g and 0.767 mg of copper per 100 g. It may be suitable for consumption, by people with impaired by the illness. In diarrheal disease most of the potassium was lose from the body. In that case palm jaggery plays an important role to recover potassium deficiency in line with their dietary requirements in controlled amount.

Its sweet taste is building cold in body and unctuous heavy. Strengthens and builds the body and body function. And gives *Sattvic gunam*. Increases the *Ojas* (Channels), moistens, tissues and waste products. More consumption of palm jaggery required for *Pitta* imbalance, moderate for *vatham* and less for *Kapham*. Palm jaggery is hugely priced due to its medicinal properties.

## CONCLUSION

The physicochemical values and medicinal properties were suggesting and supporting the statement by the traditional medicine that palm jaggery could be better *anupaanam* and sweetener in food stuffs. There is a need to improve the daily consumption by the people. Further, the product needs improved market promotion for it to become not only economically but also nutritionally. This information may be useful for further studies.

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