

Received Rs. 5000/- in cash/
Cheque No. 1000 on 02.03.09
vide entry no. 0036 in the
register of values
Cashier

02/03/09

FORM GI-1

Application for the Registration of a Geographical Indication in Part A of the Register, Section II(1) rule 23(2)

- 1. Name of applicant/applicants :**
- 1) Kerala Agricultural University, Thrissur
 - 2) Gur Khandasari Industrial Co-operative Society Ltd., Arumanoor
 - 3) Maddhya Thiruvithamcore Karimpu Vikasana Samithi, Thiruvanvandoor

b) Addresses

- 1) Kerala Agricultural University.
K.A.U. P.O., Thrissur Dist
Kerala, India. Pin 680 656
- 2) Gur Khandasari Industrial Co-operative Society Ltd., (No. C. Ind (K) 60)
Arumanoor P.O., Ayarkunnam (via),
Kottayam, Kerala. Pin 686 568
- 3) Maddhya Thiruvithamcore Karimpu Vikasana Samithi, Krishi Bhavan,
Thiruvanvandoor, Kallisserry P.O.,
Chengannur, Alleppey Dist.
Kerala Pin 689 124

- c) List of Association of persons/producers:** All Sugarcane farmers and jaggery producers of Alappuzha, Pathanamthitta and Kottayam Districts (Approx. 294 nos.).

- d) Type of goods :** Agricultural Product. Jaggery (Sarkara) in different forms produced from sugarcane cultivated in the river banks and nearby places of Alappuzha, Pathanamthitta and Kottayam Districts of Kerala falling in **Class 30**

Specifications : Central Travancore Jaggery is produced in different forms from sugarcane grown in the riverbanks and nearby places of *Pampa*, *Manimala*, *Achenkovil* and *Meenachil* rivers, in Kottayam and Pathanamthitta districts and Chengannur taluk in Alappuzha district of Kerala. It is prepared locally by evaporating the sugarcane juice obtained by mechanical crushing of the cane. Quick lime (burnt lime/Calcium oxide) is used in low concentration and some times local plant clarificants (bhindi/okra) are used for lodged/immature canes while boiling to improve the colour and for better crystallization of the product. Even though no preservative is used traditionally, due to high humidity of the area the product is easily degradable by fungal growth and hence preservative in prescribed limit (up to 70 ppm SO₂) can be allowed. This jaggery is produced in solid, semisolid, liquid or powder form having very sweet taste, flavour and golden brown to brown in colour.

Major forms of Central Travancore Jaggery available in market are '*Pathiyan Sarkara*' and '*Unda Sarkara*'. The semi solid form, '*Pathiyan Sarkara*' (*pathiyan* means malleable) is embedded with sugar crystals having good taste, flavour and golden brown to brown in colour and is stored in 25-30 kg tins. The hand made ball form, known as '*Unda Sarkara*' (*unda* means ball) is hard, easy for storage, has a prolonged shelf life and is golden brown to brown in colour. The liquid form known as '*pani*' (*pani*-means having liquid consistency) is being made and used for home purposes only due to its low shelf life. The methods for preparation of powder and the cube shaped solid forms (for ready – easy use) of the jaggery from the area are under investigations at the Sugarcane Research Station, Thiruvalla and shall be made available in the market soon. The uniqueness of this jaggery is that it is very sweet, have good taste, appealing colour, adopt organic methods for processing and do not have the salty taste of jaggery produced from sugarcane cultivated in the alkaline soils and processed using lot of chemicals. Properties of different forms of Central Travancore Jaggery are given below.

Properties of different forms of jaggery of Central Travancore

Form of jaggery	Physical appearance	Moisture %	Reducing sugar % (d/b)	Total sugar % (d/b)	Colour
<i>Unda Sarkara</i>	Solid form as ball/cube	5-10	< 10	>85	Golden brown - Brown
<i>Pathiyan Sarkara</i>	Semi - solid	10-15	< 15	>85	Golden brown - Brown
<i>Pani</i>	Liquid form	25-30	< 15	>85	Golden brown - Brown
Powder	Powder form	4-8	< 8	>85	Cream - Pale brown

The jaggery from Central Travancore area is very sweet in taste without any off flavour or salty taste. The total sugar content varies from 85- 92 % and reducing sugar content varies from 3-15 % on dry basis, depending on different forms, storage, conditions of maturity and lodging of cane, incidence of rain etc. The ash percentage varies from 0.8-1.4 percentage. This jaggery is also a mineral supplement with respect to calcium, iron and phosphorus.

e) Name of the GI and particulars :

Central Travancore Jaggery

'Central Travancore Jaggery' comprises of jaggery prepared from the sugarcane grown in the riverbanks and nearby places of, *Manimala, Pampa, Achenkovil* and *Meenachil* rivers of the old Central Travancore of *Thiruvithamcore Kingdom* (presently Kottayam and Pathanamthitta districts and Chengannur taluk in Alappuzha district) of Kerala. This jaggery is produced by crushing the cane in electric crusher, then evaporating the juice by boiling in open pans made of copper, aluminium or tin on country kilns using the sugarcane trash as the fuel, removing them at different temperatures (striking temperatures) to get different forms, cooling in pans and making them into balls (*Unda*) while hot with hands or transferring it to tins for the semisolid form (*Pathiyan*). The jaggery produced from the geographical area is having a higher market demand than that produced from elsewhere, since it is very sweet in taste and doesn't have any salty taste like jaggery from the sugarcane grown in alkaline soils.

The soil of the river banks of the region, where sugarcane is cultivated gets inundated during the South - West and North - East monsoons and hence is rich in organic matter due to the sedimentation of fresh silt from the flood waters once or twice annually. It provides a media for the luxurious growth of the crop which is the most suitable crop for the flood prone situation. The soil type is riverine alluvium and is unique in having low EC, slightly acidic pH and the natural soil enrichment through silting by flood waters. The Central Travancore Jaggery produced from the area is also unique in having very sweet taste and appealing golden brown colour. Moreover, no harmful chemicals are used for getting the appealing colour, except low concentrations of quick lime (burnt lime-Calcium oxide) giving rise to a concentration up to 40 mg percent in the final jaggery product, which can be considered as a nutritional supplement for fortification with respect to calcium (calcium is an essential nutrient for the human bone and teeth formation and maintenance with a requirement of 644 mg/day).

The major variety of sugarcane grown in the area is the red rot resistant variety 'Madhuri', released from Sugarcane Research Station, Thiruvalla under Kerala Agricultural University, with good jaggery yield and good ratooning efficiency. All the traditional varieties once cultivated in the area became extinct due to the devastating red rot disease in sugarcane and the only traditional variety still existing in some parts of Kottayam district is 'Java' which is more tolerant for prolonged periods of inundation, though less good for jaggery yield and recovery than 'Madhuri'. Another cultivated variety is Madhumathi, evolved from the Sugarcane Research Station Thiruvalla.

Varietal characters of sugarcane in Central Travancore

Variety	Jaggery Yield t/ha	Jaggery recovery %	Jaggery quality	Ratooning efficiency
Java	8.0	7.0	Good (golden brown to brown colour)	Reasonable
Madhuri	10.0	10.0	Good (golden brown to brown colour)	High
Madhumathi	10.0	10.0	Good (brown colour)	Low

f) Description of the goods:

'Sarkara' is the local name of crude form of sugar. In Sanskrit also crude sugar is referred as "sarkara" and is produced from sugarcane plant (*Saccharum officinarum*). It is available in market in two forms. The semi solid form known as '*Pathiyam Sarkara*', is embedded with sugar crystals having good taste, flavour and golden brown to brown in colour and is stored in 25-30 kg tins. The hand made ball form of jaggery known as '*Unda Sarkara*' is hard, easy for storage, has a prolonged shelf life and is golden brown to brown in colour. The liquid form known as '*pani*' is being made and used for home purposes only due to its low shelf life. The preparation of powder and the cube shaped solid forms of the Central Travancore Jaggery are under investigations at the Sugarcane Research Station and shall be made available in the market soon for easy to use purpose. The uniqueness of this jaggery is that it is very sweet, have good taste, appealing colour and do not have the salty taste (which is present in jaggery from the alkaline soils).

Central Travancore Jaggery is very sweet in taste without any off flavour or salty taste. The total sugar content varies from 85- 92 % and reducing sugar content varies from 3-15 % on dry basis, depending on different forms, storage, conditions of maturity and lodging of cane, incidence of rain etc. The ash percentage varies from 0.8-1.4 percentage. The jaggery is also a mineral supplement with respect to calcium, iron and phosphorus. The major sugarcane variety of the area is 'Madhuri' developed by Sugarcane Research Station, Thiruvalla. This variety is being preferred due to its higher yield, appealing colour, crystalline texture of jaggery and the ratooning efficiency for 3-5 years. The traditional variety 'Java', with ability to withstand prolonged periods in inundated fields, is cultivated in some pockets of Kottayam district. The yield of jaggery from this variety is comparatively less though colour and texture are good. This variety also has reasonable ratooning efficiency. The variety 'Madhumathi' is also a good jaggery yielder for the plant crop and jaggery is darker in colour than the above two. The farmers share their experience that since the sweetness of the jaggery produced in the region is more, comparatively less quantity of the same is required for preparations compared to jaggery from other sugarcane areas and other states. The reducing sugar content of the Central Travancore Jaggery is high and the ash content is low, which may be the reason for the sweetness and

taste. Even though higher content of reducing sugar is not a positive factor for long storage, this together with the low ash content, gives better taste and sweetness to this unique product.

g) Geographical area of production and map:

Central Travancore Jaggery is produced in the river banks and nearby places of *Manimala, Pampa, Achenkovil and Meenachil* rivers in the central parts of Travancore coming under Pathanamthitta and Kottayam Districts and Chengannur Taluk of Alappuzha District in Kerala. This includes the 54 panchayats and 3 municipalities of Pathanamthitta district, the 74 panchayats and 4 municipalities of Kottayam district and the 9 panchayats and one municipality in Chengannur taluk of Alappuzha district. All sugarcane farmers of above said panchayaths and municipalities are producers of this GI. The river basins and nearby places of these region are inundated during both the monsoon periods and accumulation of silt occurs during these times and hence has very rich fertility status. The properties of the soils of some major locations of the river banks are as below. The pH is acidic ranging from 4.7 – 5.2, EC 0.08 – 0.16 dS/M, organic carbon 0.8 – 1.1%, and available nutrients, nitrogen 80-150 ppm, phosphorus 1.5 – 5.5 ppm, potassium 30 - 90 ppm, sodium 30 – 65 ppm and calcium 100- 200 ppm

During 1936, the river banks of Pampa and its tributaries alone produced sugarcane in 8000 acres of land in Thiruvalla and Pathanamthitta Taluks of Central Travancore and this was solely used for jaggery production. In those days the export of jaggery from the Travancore State was 1,13,598 cwts., accounting for Rs 11,35,676/. Jaggery locally known as '*sarkara*' was one of the major export commodity in those days coming to 1 percent of the total export value of the '*Thiruvithamcore*' Kingdom and also there was a large internal market for the same. After the opening of the 'Pampa Sugar Mills' in 1946 at Thiruvalla by the British Government and also the Mannam Sugar Mills in Pandalam after that (both in Central Travancore), the area of the sugarcane cultivation increased tremendously coming to 8000 ha in the banks of Pampa and its tributaries alone. But due to several problems, the mills were closed and the area reduced drastically. At present the area of sugarcane is less than 500 ha. in the region.

The area of sugarcane cultivation in Central Travancore, coming under Kottayam and Pathanamthitta districts and Chengannur taluk of Alappuzha

district, is above the MSL and lies between the latitude of 9°4' - 9°52' N and longitude of 76° 21' - 77° 18' E. The map of the sugarcane cultivating area of Central Travancore is given along with the application.

h) Proof of origin (Historical records):

The Travancore State Manual (Volume III), published by State Editor, Kerala Gazetteer Department, Government of Kerala, Thiruvananthapuram, (1996 Edn.), (page 630-632) gives an account of the sugarcane cultivation, jaggery production and its export details of *Thiruvithamcore* Kingdom in the early nineties. The value of the jaggery exported from *Thiruvithamcore* during the Malayalam era 1102 – 1111 (1927-1936 AD), ranged from Rs. 2.08 lakhs to Rs.11.36 lakhs and the quantity varied from 33144 cwts. to 113598 cwts. More over it is stated that there was a large market for jaggery within the country and the produce mainly came from Central and North Travancore. Of these also, the major area was confined to the Thiruvalla and Pathanamthitta taluks in Central Travancore, on the river banks of Pampa and its tributaries. Almost the whole of the crop was used for production of jaggery locally known as 'sarkara'. The details of cultivation of sugarcane, varieties used, details of harvest etc are also provided. Jaggery is mentioned as a major export commodity from the area indicating the superior quality of the produce and also its large scale production. Practically every traveller to India over the centuries mentions sugarcane; the Moroccan Ibn Battuta wrote of the sugarcanes of Kerala which excelled every other in the 14th century.

i) Method of production:

Cultivation practices:

The sugarcane, from which jaggery is produced is cultivated, using sugarcane 'setts' containing 3 buds from the top portions of the cane, either in ridges and furrows or in pits during December- January. The organic manures and chemical fertilizers are applied at recommended dose as nitrogen (N), phosphorus (P) and potassium (K) (NPK at 165: 82.5: 82.5 kg/ha) for sugarcane. The entire phosphorus is applied as basal dose and N and K are top dressed in two equal splits on 45th and 90th day after planting. Partial earthing up is done after 2nd top dressing and the final earthing up is done after south west monsoon and the trash is removed from the canes about 3 months before the harvest.

Harvesting and processing :

The cane is harvested on maturity (10-14 months) by cutting the cane 2-3 cm above the soil. Roots if any, dry leaves and the top portion of the cane are removed. The cleaned cane is then crushed mechanically in an electric 3- roller crusher and the juice obtained is filtered and kept for sedimentation for some time to remove the impurities. The supernatant sugarcane juice is then decanted to remove the sediments, mixed with low concentrations of quick lime solution in water for better crystallization and then evaporated in big jaggery pans over local fire wood furnaces up to specific temperatures (approximately 108 ° C to 122 ° C for the different forms of jaggery). The frothing impurities are removed at the early stages of evaporation. The processed juice is removed to cooling pans made of wood, stainless steel or on to ground lined with marble/ kadappa stone, allowed to cool to get the crystalline texture and packed in tins or earthen pots in semi solid form. For the preparation of *unda sarkara*, the striking temperature is slightly higher than the semisolid form. The processed juice is transferred to the cooling pans as above to get crystalline texture and shaped into small balls while hot, manually with hand. The same is stored in gunny bags or bags made of Palmyra (*Borassus flabellifer*) leaves in air tight rooms/huge wooden boxes (*ara & pathayam*). The sugarcane trash obtained after crushing the cane is utilized as the fire wood for boiling the juice and there is no waste production except the fire ash which can be used for the cultivation of sugarcane. Hence it is an eco-friendly cottage industry. Also there is not much need of transportation of raw material, since the jaggery production sites are near to the sugarcane fields.

j) Uniqueness:

Central Travancore Jaggery is unique for its very sweet taste, texture and flavour. Traditionally no chemicals, other than low concentrations of quick lime, up to one g/l juice (tied in muslin cloth and kept in juice tank/decanted supernatant - which leads up to 40 mg percent calcium in jaggery) is used in processing and hence is more or less considered as an organic product. The jaggery produced from good mature canes from the area has an appealing golden brown colour and is crystalline. The taste is also very good and sweeter than jaggery from the alkaline soils with no off flavour of salt.

The basic media for preparation of various *Ayurvedic* medicines is jaggery. The Central Travancore Jaggery is preferred for preparation of *Ayurvedic* medicines, for which Kerala is very famous, due to its appealing golden brown colour, higher sweetness and organic nature. Jaggery itself has numerous medicinal properties and is mentioned in the *Ayurvedic* books. It is cooling, diuretic, refreshing and lactogenic, acts as tonic, cardiac tonic, normalizes semen & sperm and improves throat conditions. It is prescribed for use in diseases like anemia, jaundice, cold and cough, breathlessness, kidney problems, rheumatic conditions etc.

For preparation of *Prasadams* of various temples also the Travancore Jaggery is preferred adding to its high market demand. In Chalai market of Thiruvananthapuram (major market of *Thiruvithamcore*), Central Travancore Jaggery is sold at a premium price which is Rs. 3 - 4 / kg higher than jaggery from other places.

k) Inspection body:

Inspection body comprises of the following members

1. Director of Research, Kerala Agricultural University, Trissur
2. Co-ordinator, WTO Centre, Kerala Agricultural University, Trissur
3. Convener, IPR Cell, Kerala Agricultural University, Trissur
4. Professor & Head, Sugarcane Research Station, Thiruvalla
5. Scientist i/c of Jaggery quality analyses, Sugarcane Research Station, Thiruvalla
6. Joint Director of Agriculture, Alleppey (Dist.)
7. President, Maddhya Thiruvithamcore Karimpu Vikasana Samithi, Krishi Bhavan, Thiruvanvandoor, Kallisserry P.O., Chengannur Alleppey Dist. Kerala Pin 689 124
8. President, Gur Khandasari Industrial Co-operative Society Ltd. Arumanoor P.O, Ayarkunnam (via) Kottayam, Kerala Pin 686 568
9. Agricultural Officer, Thiruvanvandoor Krishi Bhavan, Kallisserry P.O., Chengannur, Alappuzha , Kerala 689 124

10. Sri. M.V. Narayanan Nampoothiri., Mampatta Illam, Vanavathukkara, Eramallikkara P.O., Thiruvanvandoor, Chengannur, Alappuzha (Dist.)
PIN 689 109
11. Sri. K.M. Ouseph, Kanichirayil house, Arumanoor P.O, Ayarkunnam, Kottayam (Dist.), Kerala Pin 686 568

D) Other

Jaggery has gathered a special interest as a natural sweetener due to its higher nutritional status with respect to the vital minerals, calcium, phosphorus and iron. Reducing sugars are also present in jaggery, which give more sweetness to jaggery. Preference for purified food items with various chemical processes is diminishing recently, and people go for natural and crude form of food prepared hygienically. Moreover in the world market, quality products produced from specified localities have higher demand. Hence, due to the better taste and flavour and sweetness, jaggery prepared from this area, which was a major centre for jaggery production and trade in the past, definitely will be having immense scope in the world market also.

Along with the Statement of Case in Class 30 in respect of Central Travancore Jaggery in different forms and its products in the name of Kerala Agricultural University, Gur Khandasari Industrial Co-operative Society Ltd., Arumanoor and Maddhya Thiruvithamcore Karimpu Vikasana Samithi whose addresses are

- 1 .Kerala Agricultural University.
K.A.U. P.O,
Thrissur Dist, Kerala, India. Pin 680 656
2. Gur Khandasari Industrial Co-operative Society Ltd.
(No. C. Ind (K) 60), Arumanoor P.O., Ayarkunnam (via)
Kottayam, Kerala, Pin 686 568, India
3. Maddhya Thiruvithamcore Karimpu Vikasana Samithi
Krishi Bhavan, Thiruvanvandoor, Kallisserry P.O., Chengannur
Alleppey Dist. Kerala Pin 689 124, India

who claim to represent the interest of the producers of the said goods to which the geographical indications relates and which is in continuous use since time immemorial in respect of the said goods.

2. Other necessary particulars called for in rule 32(1) are given in the statement of case

3. All communications related to this application may be sent to the following address in India

Director of Research
Kerala Agricultural University
KAU P.O., Thrissur -680 656
Kerala, India

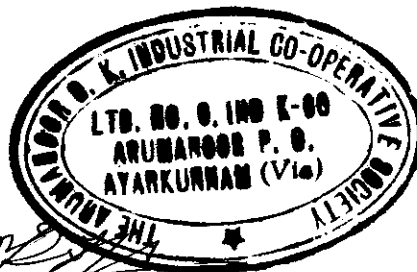
1. Signature

Name of signatory in Block letters : Dr. **JOBI V. PAUL**



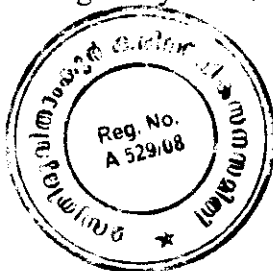
2. Signature

Name of signatory in Block letters : Sri. **T.K.UNNIKRISHNAN**



3. Signature

Name of signatory in Block Letters : Sri. **T.A.GOPINATHA PILLAI**



കേരളകൃഷി/കൃഷി
അവകാശനിയമം പ്രകാരം രജിസ്റ്റർ ചെയ്തതാണ്