

Copy 29/8/13

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GI APPLICATION No.  
438  
NERAMAC

उत्तर-पूर्वीय क्षेत्रीय कृषि बिपणन निगम लिमिटेड  
NORTH EASTERN REGIONAL AGRICULTURAL MARKETING CORPORATION LTD  
(A GOVERNMENT OF INDIA ENTERPRISE)  
9, RAJBARI PATH, G. S. ROAD, GANESHGURI, GUWAHATI - 781 005, ASSAM, INDIA  
Pbx: +91 361 2341427; Tele-fax: +91 361 2341428  
E-mail: edfmd.neramac@gmail.com ; Website: www.neramac.com

214/Admn/191/10/572  
August 5, 2013

Shri Prashanth Kumar S. Bhairappanavar  
Examiner of Trade Marks & GI  
Geographical Indications Registry Office  
Intellectual Property Office Building,  
G.S.T Road, Guindy, Chennai - 600 032

Sub: Application for GI registration for **Tejpur Litchi** under the Geographical Indications of Goods (Registration and Protection) Rule 2002.

Dear Sir,

Greetings from NERAMAC!

We are forwarding you application of GI registration for the commodity **Tejpur Litchi** grown in Assam.

This include following list of items:

1. Application - 3 copies
2. Statement of Case - 3 copies
3. Maps - 3 copies
4. Symbolic representation - 5 copies
5. Affidavit - 1
6. MoA and By Laws of NERAMAC - 1 copy
7. DD of INR 5000 for registration fees
8. Test reports

GOVT. OF INDIA  
Geographical Indications Registry  
29 AUG 2013  
DY No. 519  
CHENNAI

Looking forward for your kind consideration.

Thanking You,

Yours faithfully,  
*S. Bhattacharjee*  
S. Bhattacharjee  
Executive Director

Encl: As stated above

Demand Draft



A/C PAYEE ONLY  
NOT NEGOTIABLE

**DEMAND DRAFT**  
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PAYABLE AT PAR AT ALL BRANCHES OF HDFC BANK LTD

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REGISTRAR, GEOGRAPHICAL INDICATIONS REGISTRY

ON DEMAND PAY

Or Order

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या उनके आदेश पर

Rupees

FIVE THOUSAND ONLY

रुपये

₹ \*5,000.00

FOR VALUE RECEIVED

For HDFC BANK LTD.

HDFC BANK LTD

GURGAON - BANKHOUSE - HARYANA

CHEMICAL CLEARING BRANCH - 600002

GURGAON - 122002

Ref. No. 0372127243

DRAWEE BRANCH

ISSUING BRANCH

*(Signature)*  
01/15/13  
0827

AUTHORISED SIGNATORIES

Please sign above

⑈024165⑈ 110240093⑈ 999992⑈ 16



सत्यमेव जयते

# Geographical indications Registry

Intellectual Property Building,  
G.S.T. Road, Guindy, Chennai - 600 032

Phone: 044-22502091 & 92 Fax : 044-22502090

E-mail: gir-ipo@nic.in



INTELLECTUAL  
PROPERTY INDIA

## Receipt

CBR NO :2188

Date : 29-08-2013

TO

Generated by :BABU

NORTH EASTERN REGIONAL AGRICULTURAL MARKETING CORPORATION LTD(NERAMAC),  
9 RAJBARI PATH, GANESHGURI, G S ROAD, GUWAHATI,  
GUWAHATI,  
ASSAM,  
781 005,  
INDIA

### C B R Details :

Application No	Form No	Class	No of Class	Name of GI	Goods Type	Amount Calculated
438	GI-1A	31	1	Tezpur Litchi	Agriculture	5000

### Payment Details :

Payment Mode	Cheque / DD_NO	Bank Name	Cheque/DD Date	Amount Calculated	Amount Paid
DD	024165	HDFC Bank	17-06-2013	5000	5000

Total Calculated Amount in words : Rupees Five Thousand only

Total Received Amount in words : Rupees Five Thousand only

**\*\*\* This is electronically generated receipt,hence no signature required \*\*\***

GI APPLICATION No.

438

**THE GEOGRAPHICAL INDICATIONS OF GOODS  
(REGISTRATION AND PROTECTION) ACT, 1999**

Received Rs. 5000 in cash/  
Cheque/DD/MO on 29.8.2013  
vide entry no. 2188 in the  
register of valuables  
Cashier  
29/8/13  
D.D.O.

( To be filled in triplicate along with the Statement of Case accompanied by five additional representation of the Geographical indication)

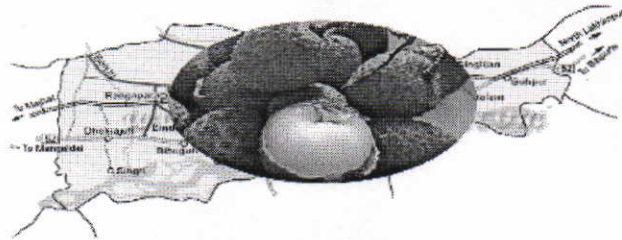
One representation to be fixed within the space and five others to be send separately

1. Application is hereby made by **North Eastern Regional Agricultural Marketing Corporation Ltd (NERAMAC)** with its Registered Office at 9 Rajbari Path, Ganeshguri, G S Road, Guwahati – 781 005 for the registration in Part A of the Register of the accompanying geographical indication furnishing the following particulars :-

- (A) Name of the applicant : North Eastern Regional Agricultural Marketing Corporation Ltd (NERAMAC)
- (B) Address : 9 Rajbari Path, Ganeshguri, G S Road, Guwahati – 781 005
- (C) List of authority : Under the administrative control of the Ministry of Development of North Eastern Region (DoNER), Government of India, New Delhi

(D) Name of the geographical indication  
[and particulars] :

**TEZPUR LITCHI**



(E) Type of Goods : Class – 31 – fruits (Litchi)

(F) Specification :

The Tezpur Litchi variety produced in Assam is not just distinctly special in comparison with other varieties grown elsewhere in India but also significantly different in quality from the same variety



grown in other adjacent states of North East. It is the most popular and excellent cultivar of Assam for fresh consumption.

The Tezpur Litchi varieties have special size, shape, attractive color, mouth watering flavor and delicious taste. Tezpur Litchi is characterized by its pleasant flavor, juicy pulp (aril) with attractive red color and small seed with tight pulp. A single piece fruit of Tezpur Litchi weighs around 70 – 80 g and it is sold in Tezpur market at 19 – 20 Rs/ Piece in its peak season.

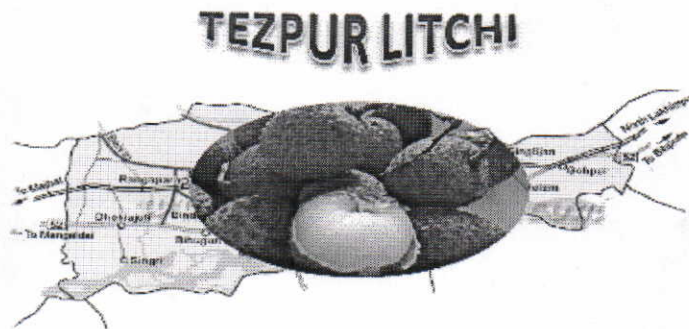
The Tezpur litchi is grown completely under organic condition: as no use of any chemicals reported.

Given below are the specifications of Tezpur Litchi

Weight of the fruit (Kg)	
Total Suspended Solids (TSS %)	
Acidity (%)	
Total Sugar (%)	
Vitamin C (mg/100 gm)	
Colour of pulp	

[To be filled once we receive the Test Report]

(G) Name of the Geographical Indication: (and particulars)



(H) Description of Good

**Family:** *Sapindaceae* , **Genus:** Litchi, **Botanical Name:** *Litchi chinensis*

**The Plant:**

Litchi is one of the finest fruits of the world. It is one of the most delicious, exquisite and nutritious summer season fruit, which belong to family "*Sapindaceae*". It ranks next to citrus and avocado in importance in the sub-tropics.<sup>1</sup>

Litchi is juicy, sweet and delicious, often known as the 'Queen of Fruits'. This pleasantly-flavored passion fruit, which melts in the mouth like a sugar candy, attracts every one and are in high demand internationally. This seasonal fruits are cold and are an instant delight for everyone in the oppressive heat of May-June.<sup>2</sup>

It is pertinent to mention that Tezpur Litchi has already earned popularity among the fruit lovers of not only our country but of many countries like America, Switzerland, etc. Tezpur litchi is an attractive item of the fruit market of Madhya Pradesh, Rajasthan, Uttar Pradesh, etc. The popular varieties of Litchi tree grown in Tezpur are "*Bombai, Elachi, Lungara, Kalma*" etc. The best of them are Bombai and Elachi, which are exported at Rs. 5 per piece to foreign countries. Apart from this, its agro-climatic conditions make Assam a favorable area for the cultivation of the litchi tree. But commercialization is yet to start in the State. Since litchi trees require very little pruning and very little care, the organized cultivation of litchi tree would be a boon for our State.<sup>2</sup>

### **The Fruit**

The fruit produced in clusters, are oval to round, strawberry red in color, and about 25 mm in diameter. The brittle outer-covering encloses white, translucent, watery flesh and possesses a large seed. The fruit is beautiful and wrapped in a sanitary and delicate way by nature's hand. The flavor of the fresh pulp is musky, when dried, it is acidic and very sweet. Not only sweet, juicy and tasty, litchi is quite a nutritious fruit too. The juicy sugar content is highly energy-giving, which varies from 10 to 20 per cent, depending on the variety. Litchi is a rich source of vitamin 'C' containing fair amount of proteins, phosphorus, calcium, iron and small amount of vitamins A to B and also malic acid. Its principal chemical constituents are carbohydrates, organic acids, vitamins, pigments and a bit of fat.<sup>2</sup>

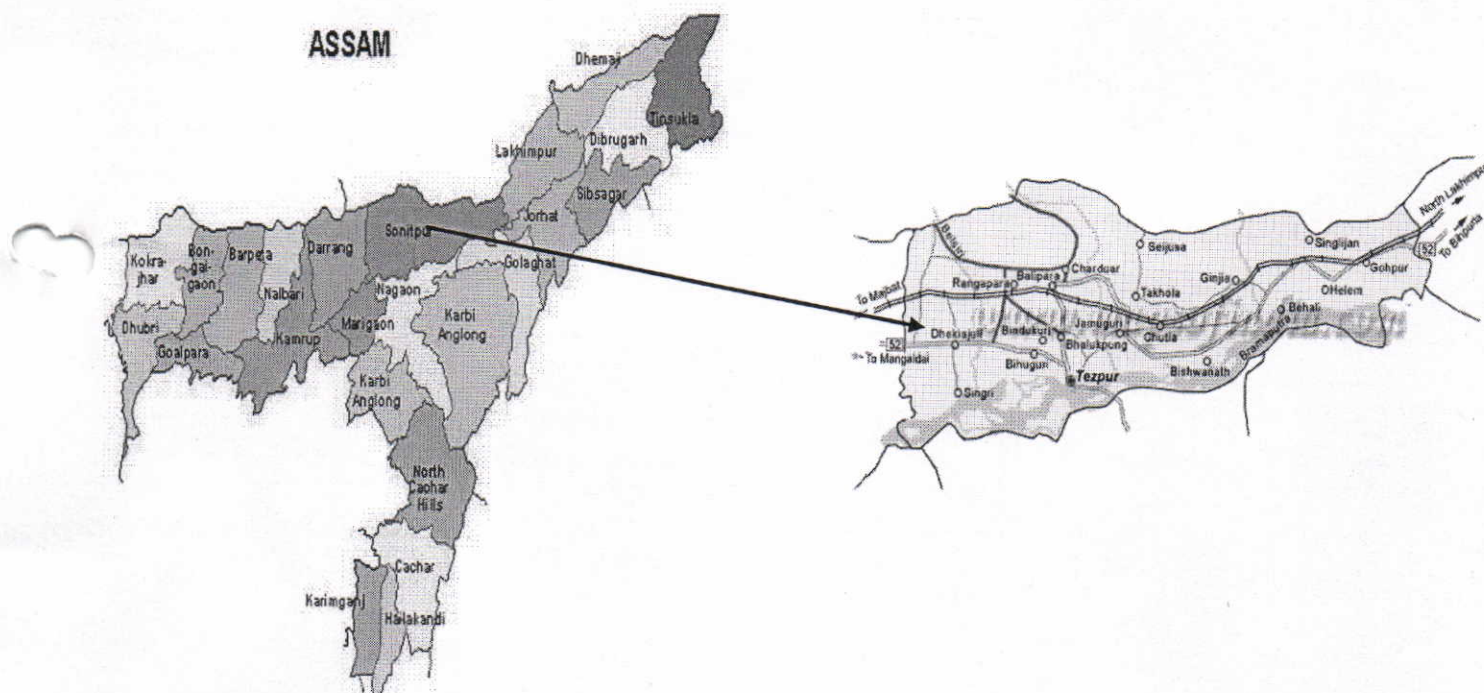
The composition of fruit is 60 per cent juicy, 8 per cent fiber, 19 per cent seed and 13 per cent skin, depending upon the variety. The fruit is eaten fresh and canned in syrup. Jelly can also be prepared out of the fruit. A highly-flavored squash prepared from it is quite popular during the summer months. For canning the fruit, it is peeled and its white pulp is frozen in syrup. Apart from squash, various kinds of beverages, such as sherbet, nectar, etc. can be prepared from the preserved litchi juice. Recently, the scientists of the Indian Agricultural Research Institute has evaluated a new formula for preparing tasty and health-giving squash which is claimed to be both delicious and nourishing with efficient cooling effect.<sup>2</sup>

### **(I) Geographical area of Production and Map :**

Litchi (*Litchi chinensis*) is most liked and relished fruit of India. Litchi is cultivated in an area of 78 thousand ha and total production is around 497 thousand tons. There is a sizeable increase in acreage and production of litchi in India. Cultivation of litchi has increased from 72 thousand ha in 2008-09 to 78 thousand ha in 2010-11. In terms of production; however, it has increased from 423 to 497 thousand tons. The total production of litchi is concentrated mainly in Bihar, West Bengal, Assam and Jharkhand and to a smaller extent in Tripura, Punjab, Uttarakhand and Orissa.<sup>6</sup>

Bihar is the leading state in litchi production (227.0 thousand tons.), followed by West Bengal (85.1 thousand tons.) and Assam (40.5 thousand tons.). Production ranges from 19.2 thousand tons. in Orissa to 35.9 thousand tons in Jharkhand. Most plantations in Uttarakhand are young and have yet to start bearing. The following list shows the leading catchment areas of markets of Pineapple in Tripura in the three major districts: <sup>6</sup>

*Map of Litchi is cultivated in an area in India*



Tezpur Litchi production area lies between longitude: 89.42<sup>0</sup>E to 96.0<sup>0</sup>E to latitude: 24.5<sup>0</sup>N to 28.0<sup>0</sup>N

#### **(J) Proof of origin: (Historical records) :**

Litchi (*Litchi chinensis* Sonn.), which originated in southern China and possibly northern Vietnam belongs to the Sapindaceae family. The Sapindaceae is a relatively large family containing at least 125 genera and 1,000 species, which are widely distributed in the tropics and warm sub-tropics. The most widely cultivated fruit trees in this family other than litchi are rambutan (*Nephelium lappaceum* L.) and longan (*Dimocarpus longans* Lour.).<sup>6</sup>

The main centre of origin of litchi is believed to be between latitudes 23° and 27° north in the subtropical parts of southern China, northern Vietnam, and Malaysia. It seems to have been in cultivation since about 1500 BC by people of Malayan descent and has since been subjected to intense selection. China has a long history of litchi cultivation for more than 2000 years and from China it reached Burma (Myanmar) by the end of 17th century and was introduced in India in about 18th century.<sup>6</sup>



Litchi reached Madagascar and Mauritius around 1870 and was introduced in Hawaii in 1873 by a Chinese trader. It arrived in Florida, from India, between 1870 and 1880 and was introduced in California in 1897. Litchi was probably brought to Australia by Chinese migrants in 1954 and arrived in Israel sometimes between 1930 and 1940. China, Taiwan Province of China, Thailand, India, South Africa, Madagascar, Mauritius and Australia are now major litchi producing countries in the world.<sup>6</sup>

Today India ranks second in the world next to China in litchi production.<sup>4</sup>

#### **Origin of Tezpur Litchi in Assam:**

Tezpur is a special type of litchi grown in “**LICHU PUKHURI**” situated in the heart of the Tezpur town and Village **POROWA**, just 3 km away from Tezpur town. This Litchi variety have special size, shape, and attractive color, mouth watering flavor and delicious taste.

The “Lichu Pukhuri” formerly known as “Paltan Pukhuri” covers a total area of about 5 bigha including the water area. It has a special micro agro- climatic condition on account of which the litchi bears its special quality. From the history of Paltan pukhuri it known that during 1922-24 Late “**Padmanath Gohain Boruah**”, who was the chairman of Tezpur Municipal Board brought some litchi layers from Kolkata and Mumbai and planted on the bank of that Paltan pukhuri

#### **A) Litchi from Lichi Pukhari:**

The Lichu Pukhuri orchard has twenty six litchi trees, of which eighteen are old trees and rest eight is newly planted. The varieties found in Tezpur are:

1. Ilachi – 2
2. Piaji – 2
3. Deshi – 15
4. Bilaiti – 5
5. Bombaya – 2

The average yield of litchi is about 7000 – 8000 Numbers of fruits from the old trees where as the new trees are yielding 3000 – 4000 numbers of fruits per year per plant. The litchi plants of the Lichu pukhuri flowers during the month of “**February**”, starts to bear in March. The fruits mature during **May** and are harvested sometime around “**June**”.

It is marketed not just at Tezpur but exported to other parts of country. The Tezpur litchi is grown completely under organic condition: as no use of any chemicals reported.

#### **B) Litchi from Porowa:**

At present about 400 Bigha area is covered by the litchi orchard in Porowa. The litchi orchard was started in Porowa by late “**Surjya prasad Shing**” in 1954. At present there are 104 bighas of old bearing trees and 296 bighas of newly planted trees in the village. In Porowa orchard the varieties found are as follows Ilachi: Piyaji, Bilaiti, Bombaya, Haldia, Deshi, and China.



Flowering of the trees starts from February, and is harvested in the month of "June – July". Bearing habit of the trees varies according to the varieties. It ranges from 8,000 to 25,000 fruits per plant. The litchis from its orchard are exported to "Bombay, Delhi, Kolkata, and Rajasthan" and also to USA.

The sale price of quality Tezpur Litchi varies from Rs.3.00 to Rs.15.00 per fruit. The average income from the litchi orchard ranges from Rs.10, 000 to Rs.25, 000 per plant. At present about 50 farmers are involved in the litchi cultivation of porowa village with an expanded area of 50Ha.

[Source: Scientist, Dr. Pankaj Saikia, District Agricultural Office, Tezpur]

### (K) Methods of Production :

#### 1.1. Climate and soil

**Soil:** The litchi can grow in a variety of soil types particularly in fairly deep, well-drained loam rich in organic matter. A sandy loam or clayey loam with pH ranging between 5.5 and 7 with sufficient soil depth is an ideal soil for litchi cultivation. Water-table should be at least 1.5 to 2 m deep.<sup>7</sup>

**Climate:** In litchi-growing tracts of India, the maximum temperature during flowering varies from 21°C in February to about 38°C in June. Winter frost and dry heat in summer considerably damage the growth of the plants. It causes fruit cracking and subsequently damages the pulp. Humidity is another important factor for the successful cultivation of litchi. Although it can grow up to an altitude of 800 m above the sea level, the best growth and yield is obtained at lower elevations. Well spread rainfall or adequate supply of irrigation water is essential for litchi cultivation. A constant rainfall at the time of flowering however interferes with pollination.<sup>7</sup>

#### 1.2. Propagation

Litchi is generally multiplied by vegetative methods of propagation as plants raised through sexual method (by seed) grow slowly, have a long juvenile period and do not produce fruit true to the type. However, earlier introduction in different parts of the country was perhaps through seeds, which enabled the selection of superior types and perpetuation the cultivar through vegetative means. Although litchi can be propagated asexually by various ways the most common and easiest method adopted all over the world is air-layering. Stooling method of propagation is becoming popular due to higher success rate as compared to air layering. The most commonly practiced method of vegetative propagation is air-layering, though cutting, grafting and budding have been found to be successful.<sup>4</sup>

**Air-layering:** Air-layering or 'gootee' is widely accepted method of propagation in India. In this method a healthy and vigorous, upright twig of about one year old and 2.5 to 4 cm in diameter is selected. A circular strip of bark about 2 cm wide just below a bud is completely removed from the selected twig. Care should be taken to remove all the cambium tissue surrounding the white central wood while removing the bark. Moist sphagnum moss is packed around this portion and tied with

polyethylene sheet, which prevents the loss of moisture. In about 6 weeks, when the roots are visible through the polythene wrap, the rooted branch is detached from the parent plant and potted in the nursery. Top of the branch is cut back to maintain a proper ratio of leaves and roots.<sup>8</sup>

Since, air-layering is a commercial practice, a large number of private nurseries have come forward for large scale multiplication of plants especially in litchi growing regions. It is estimated that about 300,000 litchi plants of different cultivars are produced annually.

The regulatory framework to ensure the quality of plants is not in place, thus the creditability of public institutes or private nurseries determine the preference of growers. The cost of plants also becomes a factor in determining the preference of farmers.<sup>4</sup>

### 1.3. Land Preparation

Before layout the land is cleared of bushes and other weedy vegetation and is leveled with a mild slope in the opposite direction of the water source. To improve the fertility of the soil organic matter is added. A green manure crop is grown and incorporated into the soil, which improves its fertility, moisture holding capacity and physical condition.<sup>4</sup>

Young litchi plants are susceptible to hot winds and cold waves. Therefore suitable wind break trees like silver oak, sesbania, drumstick, etc. should be planted along the boundary of litchi plantation. Young plants can also be covered with thatch by the end of November to protect them from frost injury.<sup>9</sup>

### 1.4. Planting

Planting is normally done during **August-September** after the monsoon has set in. Water is applied immediately after planting. Planting is not advisable when the weather is too dry or too wet.<sup>9</sup>

Only 6 to 9 months old healthy plants with fine roots should be selected for planting. The plants are planted by making a small hole in the center of the pit sufficient to accommodate the soil ball. It is advisable that the new plants should be inoculated with mycorrhiza and after planting the land should not be allowed to dry completely.

The soil around the plant is pressed gently. Planting should be immediately followed by irrigation. In case of high wind velocity the plants are tied to the stake.<sup>9</sup>

### 1.5. Fertilizer and Nutrient Management

The nutrient requirements of litchi are very high. Apart from the requirement of N, P and K, which contributes, to profuse vegetative growth and flower initiation, micronutrients such as Calcium, Magnesium, Zinc, Boron and Copper play an important role in flowering and fruiting. In India litchi is grown mostly in the fertile belt and hence very little or no fertilizer is given. However, soil analysis should be done to determine the exact doses of fertilizer.<sup>12</sup>

## Recommended doses of fertilizers for getting optimum yield

Manure/Fertilizer	Quantity/Tree (kgs)		
	Planting Year	Annual Increase	For Mature Trees
FYM	10-20	4.0	60.0
Ammonium Sulphate	0.2	0.2	2.2
Superphosphate	0.2	0.1	1.2
Potassium Sulphate	0.2	0.1	1.2

### 1.6. Irrigation

Litchi can grow without irrigation in areas with rainfall (>125 cm) well distributed throughout the year. Frequent irrigation is necessary during early plant growth. Irrigation is withheld four months prior to flowering.<sup>10</sup>

Irrigation of the young trees should be done by the basin system. As the tree grows, the basin should be gradually enlarge.<sup>10</sup>

### 1.7. Intercropping

Litchi is a slow growing plant and takes about 15-16 years to develop canopy and cover the area. During the initial period of establishment, the space between the plants can be utilized for planting of filler plants/intercrops. The planting of guava, custard apple, lime/lemon in the centre, between and within the rows of litchi have been found to give additional income in the initial stage of planting without competing with the main crop. Papaya is also planted as filler plant at the spacing of 2.5 x 2.5 m. In between the plants in the initial stage, cowpea, french bean, okra, brinjal or other suitable crops of the regions are grown as intercrops. In the mature litchi orchards, cultivation of partial shade loving plants (ginger, turmeric, elephant foot yam) is practiced successfully, which provides additional income.<sup>4</sup>

The litchi is a slow-growing tree and takes at least six years to come to flowering and fruiting. Intercrop like legumes in pre-bearing stage of trees not only provide more income but also improve health of the trees. The choice of intercrop depends upon the climate and soil and marketing facilities. Vegetables or leguminous crops like pulses, berseem, etc. can be successfully grown during the initial stages. Some quick-growing fruit plants such as drumstick, papaya, and banana can also be grown in the early years of a litchi plantation. Papaya and banana are more suitable due to their upright growth and due to short productive life of 2-3 years. While growing intercrop, care should be taken to ensure that the intercrop is not grown at the cost of the litchi plants. The rows of intercrop should be kept away from the litchi tree.<sup>11</sup>

### 1.8. Training and Pruning

Training of young litchi plants is done to establish a good framework. Pruning is usually done to remove the dead or diseased branches and damaged shoots. Since litchi flowers are borne mostly on current year's growth, the removal of the ends of the fruiting branches promotes new shoots and



flowering next year. Therefore while harvesting; a portion of the twig is cut off along with the fruits. When the trees become too old and produce fruits of small size, heavy pruning improves the yield and quality of fruits by promoting new shoot growth.<sup>11</sup>

### 1.9. Harvesting and Handling

#### **Harvesting:**

The fruits are harvested in bunches along with a portion of the branch and a few leaves. At the time of harvesting care is taken to harvest the selected bunch, which has attained the desirable maturity as determined by color development and taste of the pulp. The fruits are harvested early in the morning when temperature and humidity are congenial, to have longer shelf-life of the fruit. At the time of harvest fruits are collected in a manner so that they do not fall on the ground. The harvesting period is generally "May-June", depending upon cultivar and location.<sup>4</sup>

#### **Yield:**

The yield of litchi varies according to the age of the tree, agro-climatic condition and maintenance of the orchard. Usually about 80-150 kg fruit/tree is obtained from 14-16 year old trees. However, from a fully grown tree a yield of 160-200 kg/tree has also been recorded. Apart from a management practice, bee keeping in litchi orchards has been found to increase the yield of quality fruits by 15-20 percent, since litchi needs cross-pollination. *Apis mellifera* is the commonly used bee in litchi orchards, which also provide additional income from honey.<sup>4</sup>

Litchi tree comes to bearing at the age of 3 to 4 years with proper care and management. The flowering starts from latter part of January or early February and fruits ripen in April and May when the atmospheric temperature is high.<sup>13</sup>

Maturity of the fruits is indicated by the red colour with a fruit size of minimum 25mm diameter. Besides colour the maturity of the fruit is indicated when tubercles become somewhat flattened and the shells become smooth. Litchi fruits should be harvested fully-ripe because they do not continue to ripen after harvest. The fruits for local market should be harvested at the full ripe stage as indicated by the attractive skin colour while for distant market the fruit is harvested slightly early, when they have just started turning reddish or pinkish. Litchi fruits, like other fruits, are not harvested individually, but they are harvested in bunches along with a portion of the branch and a few leaves as it prolongs the storage life of fruits. If the individual fruit is harvested, the skin at the stem end is ruptured and the fruit rots quickly.<sup>13</sup>

### 1.10. Post Harvest Management

Litchi deteriorates very fast after harvest. Pericarp browning is a major post-harvest problem, which renders the fruit unmarketable. Browning is associated with desiccation. Peroxidase activity coupled with ascorbic acid oxidation enhances anthocyanin degradation. Techniques to reduce browning and maintain the red color and prolonged storage life include sulphur treatment and packaging in perforated plastic bags and storage under cold conditions. Sulphur dioxide (SO<sub>2</sub>) fumigation is used as a post-harvest treatment to reduce browning. SO<sub>2</sub> treated fruits have a bleached pericarp which turns uniformly pink in color after 2-3 days. Fumigated fruits absorb 30-65 percent of applied



SO<sub>2</sub>. There is increasing concern about the residue of sulphur and the residual limit is only 10 ppm. For sea transportation 600-650g sulphur is recommended for the duration of 50-60 minutes, while for air transport 300-400 g sulphur for 30 minutes are advocated.<sup>4</sup>

Storage temperature of 2-5°C is considered to extend the shelf-life. Use of perforated polythene bags and storage at 3°C has also been reported to increase shelf-life. Controlled atmosphere storage is considered better for maintenance of the freshness of the fruits. Thus, to have better post-harvest life of fruits, careful harvesting, pre-cooling, transportation in cool van, sulfuring and storing at 2-3°C would be essential.<sup>4</sup>

#### **Storage:**

Litchi fruit cannot be kept for more than a few days after harvest, at room temperature. If marketing is delayed fruits should be kept in cold storage where they can be stored in good condition for 3-4 weeks.<sup>16</sup> Fruits could be stored at 2°C in perforated polythene bags for 5 weeks without much spoilage. For short-term storage less than two weeks, a temperature of 7°C is satisfactory. A relative humidity should be kept at 90-95% throughout storage and transport.<sup>17</sup>

Controlled atmosphere storage (3-5% O<sub>2</sub> and 3-5% CO<sub>2</sub>) reduces skin browning and slows down the losses of ascorbic acid, acidity, and soluble solids. Exposure to oxygen levels below 1% and/or carbon dioxide levels above 15% may induce off-flavors and dull gray appearance of the pulp.<sup>18</sup>

#### **Cool Chain:**

Cool chain is essential during the transport of export quality commodity all the way from the farm to the customer. This helps in maintaining the temperature inside the box at the same low level as in the cold storage.<sup>17</sup>

#### **Packing:**

After harvesting, fruit should be packed as quickly as possible, as their quality deteriorates markedly, if they are exposed to sun even for a few hours. For domestic markets litchi is usually packed in small bamboo baskets or wooden crates. These are lined with litchi leaves or other soft packing material as paper shavings, wood-wool, etc.<sup>16</sup>

Proper packing of fruits is important in maintaining freshness and quality and preventing fruit decay during transit for marketing to distant places. A good box for packing fruits should be light in weight, shallow and rigid enough to protect the fruits. It should have few holes for ventilation and rope handles on either side for lifting the box. Fruits are packed in clusters along with few leaves.<sup>19</sup>

#### **Transportation:**

The fruit along with twigs is packed and transported by truck to the wholesalers and retailers of the nearest towns. During transit care should be taken to avoid crushing of fruits and damage of the skin. Litchi being a highly perishable fruit, its marketing should be done as early as possible.<sup>14</sup>

**(L) Uniqueness :**

The Tezpur Litchi variety produced in Assam is not just distinctly special in comparison with other varieties grown elsewhere in India but also significantly different in quality from the same variety grown in other adjacent states of North East. It is the most popular and excellent cultivar of Assam for fresh consumption.

The Tezpur Litchi varieties have special size, shape, attractive colour, mouth watering flavour and delicious taste. Tezpur Litchi is characterized by its pleasant flavour, juicy pulp (aril) with attractive red colour and small seed with tight pulp. A single piece fruit of Tezpur Litchi weighs around 70 – 80 g and it is sold in Tezpur market at 19 – 20 Rs/ Piece in its peak season.

The Tezpur litchi is grown completely under organic condition: as no use of any chemicals reported.

**Physical Characteristics of Tezpur Litchi:**

Variety	Fruit size/ shape	Color	Flesh	Sweetness	Fruiting habit
Ilachi	Round & small. Seed small. Shape is Just like grapes	Shendury	Compact	Sugar sweet & scented	Medium bearing
Bilaiti	Round & very Large. Shape is Just like an apple .Seed is small	Brick red	Compact & scented	Sugar sweet	Profuse bearing
Bombaya	Round & very Large. Small seed. Shape is Just like strawberry	Brick red	Compact& scented	Sweet but slightly sour	Profuse bearing
Piyaji	Elongate & Medium large	Brick red	Loose pulp scented like onion	Sugar sweet	Alternate bearing
Haldia	Elongated Large seed	Yellowish red	Compact	Sweet	Medium bearing
Others	Medium to large	Red	Compact	Sweet	Medium Bearing

[Source: Scientist, Dr. Pankaj Saikia, District Agricultural Office, Tezpur]

**(M) Inspection body :**

NERAMAC is taking steps to set – up a suitable and efficient inspection body to ensure the quality standards of the product. The organisation has an established branch office at Gangtok, Sikkim which is already working in close association with the farmers of the state helping them to market their produce to the exporters and traders from Guwahati and other parts of the country. As per the requirements of the inspection body a well-organized and appropriate team will be appointed.

Along with the Statement of Case in Class 31 in respect of Fruits (Tezpur Litchi) in the name(s) of **North Eastern Regional Agricultural Marketing Corporation Ltd (NERAMAC)** whose address is **9 Rajbari Path, Ganeshguri, G S Road, Guwahati – 781 005** Who claims to represent the interest of the producers of the said goods to which the geographical indication relates and which is in continuous use since in respect of the said goods.

2. All communications relating to this application may be sent to the following address in India.  
**North Eastern Regional Agricultural Marketing Corporation Ltd (NERAMAC), 9 Rajbari Path, Ganeshguri, G S Road, Guwahati – 781 005**

SIGNATURE

**SHRI S. BHATTACHARJEE**  
MANAGING DIRECTOR  
NORTH EASTERN REGIONAL AGRICULTURAL MARKETING CORPORATION LTD (NERAMAC)  
9 RAJBARI PATH, GANESHGURI, G S ROAD, GUWAHATI – 781 005