C/1/2/16/14

Bonu podo y Single

897 11984426

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/Admc/191/10/806 August 27, 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 **Khasi Mandarin** 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 Khasi Mandarin grown in Meghalaya.

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

Looking forward for your kind consideration.

Thanking You,

GOVT. OF INDIA Geographical Indications Registry

2 8 OCT 2013 DY No.756

CHENNAI.

Yours faithfully,

Executive Director

Encl: As stated above



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: es.neramac@gmail.com; Website: www.neramac.com

214/Admn/191/10/1139 December 3, 2013

Shri Chinnaraja G. Naidu

Assistant Registrar of Geographical Indications HO, Geographical Indications Registry Office Intellectual Property Office Building, G.S.T Road, Guindy, Chennai – 600 032 Tel: 044 22502091, 22502090, E-mail: gir-ipo@nic.in

Sub: Fresh Demand Draft

Ref: Your letter No. GIR/ADMN/2013-14/501 dated 29th October, 2013

Dear Sir.

This is in continuation to the letter no. cited above wherein you have described the Demand Drafts (DD No "024160" & DD No "024163") as Instrument is outdated which were sent towards payment of statutory fees for GI Application for "Khasi Manadarin" & "Kachai Lemon".

In this regard, we are attaching herewith two fresh Demand Drafts (DD No "000853" & DD No "000854") for your needful please.

Thanking You,

GOVT. OF INDIA Geographical Indications Registry

DY No. 895

CHENNAL.

Yours faithfully

PA to Managing Director

465



SESHAASAICI/CTS-2010

Rupees रुपये

A/C PAYEE ONLY NOT NEGOTIABLE

DEMAND DRAFT

VALID FOR 3 MONTHS ONLY PAYABLE AT PAR AT ALL BRANCHES OF HDFC BANK LTD

REGISTRAR, GEOGRAPHICAL INDICATIONS REGISTRY ON DEMAND PAY अदा करे

Or Order या उनके आदेश पर



*5.000.00

FOR HDFC BANK LTD.

FOR VALUE RECEIVED

HDFC BANK LTD

DECTOR-59

REF. No. 037213022997 DRAWEE BRANCH

ISSUING BRANCH

AUTHORISED SIGNATORIES

"OOOB 53" 1102400931: 999990#



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



Receipt

CBR NO:2331

Date: 10-12-2013

TO

Generated by :BABU

NORTH EASTERN REGIONAL AGRICULTURAL MARKETING CORPORATION LTD (NERAMAC), 9, RAJBARI PATH, GANESHGURI, G.S. ROAD, GUWAHATI,

ASSAM,

ASSAM. 781 005,

INDIA

CBR Details:

	Application No	Form No	Class	No of Class	Name of GI	Goods Type	Amount Calculated
₹	465	GI-1A	31	1	Khasi Mandarin	Agriculture	5000

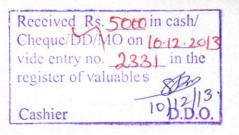
Payment Details:

Payment Mode	Cheque/DD/PO NO	Bank Name	Cheque/DD/PO Date	Amount Calculated	Amount Paid
		HDFC			
DD	000853	Bank	18-11-2013	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 ***

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



(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

- 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]



(E) Type of Goods

Class - 31 - fruits (Litchi)

(F) Specification

Given below is the Physico-chemical characteristic of Khasi Mandarin collected from Meghalaya:

S. No Characters	Specifications
1 Fruit weight (g)	134.50
2 Peel thickness(mm)	3.21336 PERCENTION
3 Number of Segment	10.00
	18.50
4 Seeds per fruit	
5	
6 Acidity (%)	0.64

[Source: Singh, S., Shivankar, V.J., Gupta, S.G., Singh, I.P., Srivastava, A.K. and Das, A.K. 2006.Citrus in NEH region. National Research Centre for Citrus Publ., Nagpur, Maharashtra, India, pp. 1-179.]

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



(H) Description of Good

Class: Magnoliopsida, Order: Sapindales, Family: Rutaceae, Genus: Citrus, Species: reticulata

Mandarin is very important fruit crop, second only to banana. It is usually consumed in raw form or in fruit salads as well as juice. The fruit consists of three layers.

- 1) The outer yellow/orange peel is with oil glands which exude the essential oils, producing the typical orange odor.
- 2) The whitish thread like mesocarp.
- 3) The endocarp consisting of 8 10 segments filled with juice sacs (vesicles).

Mandarin is a citrus fruit of the species *Citrus reticulata*. It is distinguished from other citrus species by the relatively loose skin of the fruits, the relative ease with which the segments can be separated, and (in most cultivars) the green cotyledons.

Mostly, the Mandarin tree is more erect than other kinds of citrus trees and many exhibits a drooping habit because of rather long, willowy branches. The wood is somewhat more brittle than other citrus and branch breakage is common under heavy fruit bearing unless some support is provided. Most varieties of Mandarin are self-pollinated, but some of the hybrids are self-incompatible and will produce few fruit in the absence of suitable varieties for cross pollination. Mandarin tends to alternate bearing, with a heavy crop in one year followed by a lighter crop in the next season.

CROP

Citrus fruits trees are small size and evergreen trees that are grown in tropical and subtropical climates. As this perennial crop does not tolerate cold climates, citrus fruits are normally harvested in the area situated at latitude between 40° norths and 40° south. They are therefore typically grown in "Mediterranean" type climates.⁶

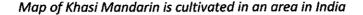
Generally, citrus trees start bearing fruits 3 - 5 years from planting (although economic yields start from the fifth year and the trees may take 8 to 10 years to achieve full productivity) and can be harvested 5 - 6 months from flowering depending on the variety and the environment. Only a small percentage of flowers produce fruits. Citrus trees require a rich, well-drained soil. Citrus growing needs periodical fertilization and irrigation of the soil, as well as pruning of the tree.

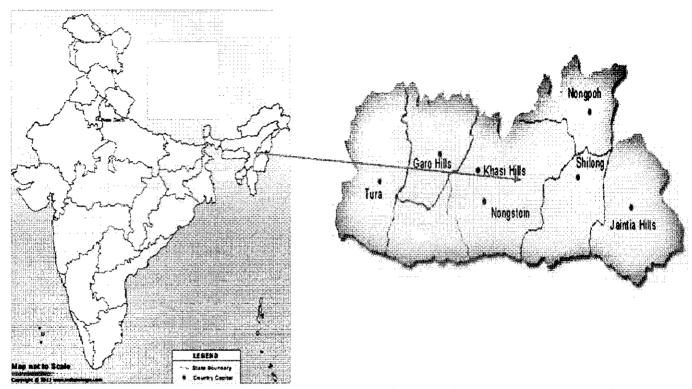
Unlike some other fruits, citrus fruits do not ripen further once they have been removed from the tree, so it is important that they are picked at the right stage of maturity. Maturity is measured depending on different characteristics such as color, juice content, level of soluble solid (sugar) and solids to acid ratio. Normally, citrus fruits are harvested by hand. Fruit is best harvested after 8:00 in the morning, when dew has dried up, since otherwise, if the fruit was still wet, it would become dark and get spoiled. In addition, as citrus fruits are cold-sensitive (the plant dies at 3-5° C below 0°C); growers must have special care to protect the trees against cold. Lemons and limes are the citrus fruits the most sensitive to cold weather. Strategies to protect from cold may include the selection of the proper citrus tree variety and rootstock for the location, selection of the proper planting site and allowing the tree to acclimate to the cold. Protection from frost methods includes also the use of wind machines and the application of water. The general way to pick the fruit is by pulling it from the stem, using gloves in order to avoid damaging the fruit. Once harvested, the fruit has to be graded, sorted, washed and waxed, before being packed for delivery to the fresh market. ⁶

Citrus fruits are notable for their fragrance, partly due to flavonoids and limonoids (which in turn areterpenes) contained in the rind, and most are juice-laden. The juice contains a high quantity of citric acid giving them their characteristic sharp flavor. The genus is commercially important as many species are cultivated for their fruit, which is eaten fresh, pressed for juice, or preserved in marmalades and pickles.⁷

They are also good sources of vitamin C and flavonoids. The flavonoids include various flavanones and flavones.⁷

(I) Geographical area of Production and Map:





Meghalaya Khasi Mandarin production area lies between 25°1′ and 26°5′ North latitudes and 85°49′ and 92°52′ East Longitudes

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

Tanaka (1927) is of the opinion that this mandarin originated in India and because of its excellence spread widely throughout the Orient at an early date. This view finds support in the fact that for centuries it has been cultivated in the form of seedling groves in widely separated parts of India—notably in the Coorg district in the south and Assam and neighboring Nepal and Sikkim in the northeastern portion of that country. As previously noted, there is reason for believing that this fruit reached Europe as early as 1805. The first known introduction into the United States, however, is referred to 1892 or 1893 when an American medical missionary in China sent fruits to J. C. Barrington of McMeekin, Florida, from which seedlings were grown. One of these was later identified as Ponkan (Tanaka, 1929a). Prior to this identification, however, the Wartmann Nursery Company at Ocala had propagated this fruit on a limited scale under the name Warnurco tangerine. More recent introductions have been made by the U.S. Department of Agriculture.

Because of its highly distinctive characteristics and his conclusion that the Batangas mandarin was the fruit described by Blanco under the species name reticulata, Tanaka (1954) restricted this species to the Ponkan group, a view which in the judgment of the writer has considerable merit, although it

has not been generally accepted. Several forms or clones are recognized of which that characterized above and known in India as Khasi Mandarin is clearly superior. Almost certainly the highly important seedling varieties known variously as Coorg, Assam, Khasi, Butwal, and Sikkim in India are nucellar clonal budlines of the Khasi Mandarin. In this connection, it may be of interest to note that the variety Oneco, which originated in Florida from seed received by P. W. Reasoner in 1888 from northwestern India, has been identified as a form of ponkan (Tanaka, 1929a). Oneco differs, however, in that the fruit is rougher and seedier, ripens somewhat later, and retains its quality on the tree much better, although the rind puffs rather badly. Oneco has never achieved commercial importance and is grown primarily as a home and gift-box fruit. Oneco appears to be the Cravo Tardia of Brazil. The Khasi Mandarin is the citrus fruit of greatest commercial importance in India. While accurate statistics are not available, it is believed that the total plantings of this variety and its seedling derivatives are in the neighborhood of 100,000 acres. The modern commercial industry based on the use of budded trees centers in the Meghalaya region, where a small but growing processing industry has developed. Elsewhere this fruit has importance in Ceylon, Indonesia, Malaysia, the Philippines, South China, Taiwan, and the southern part of Kyushu Island, Japan. 9

(K) Methods of Production:

1.1. Climate and soil

Soil: Mandarins can be grown in a wide variety of soils but medium or light loamy soils with slightly heavy sub-soil, well-drained with pH of 6.0-8.0 are ideal for cultivation.¹⁰

Climate: Mandarin grows successfully in all frost free tropical and sub-tropical regions upto 1,500 m. above m.s.l. An annual rainfall of 100-120 cm. and temperature ranging from 10^{0} - 35^{0} C is suitable for cultivation of the crop. ¹⁰

1.2. Land Preparation

Land is prepared by ploughing, leveling and removing weeds

1.3. Propagation

Mandarin orange is propagated by seeds and also vegetatively propagated by T-budding.

1.4. Planting

Seedlings are mostly transplanted in the month of July-August after commencement of monsoon. Budding should preferably be done in last week of January or first week of February following the 'T' or shield budding method.¹⁰

1.5. Spacing

Oranges are usually planted in pits of 50 cm. X 50 cm. X 50 cm. size in a square system with a spacing of 4.5-6 m., accommodating 350-450 plants/ha. In north-eastern parts of India, Khasi Oranges are very closely spaced (4.5 m. X 4.5 m.), accommodating more than 500 plants/ha. However, a spacing of 6 m. x 6 m. accommodating 120 plants /acre has been considered for the present model. 10

1.6. Fertilizer and Nutrient Management

Nutrition

The recommended fertilizer dose in terms of N, P & K is given in the following table:

Age of the plant	Year-w	ise fertilizer applied (g./p	ilant)
	N	P. D. New York	K
1	150	50	25
2	300	100	50
	450	150	
4 & above	600	200	100

About one third of the recommended dose of nitrogen should be applied through organic manures like FYM, cakes etc. In case of non-bearing trees, nitrogen should be applied in split doses during April, August and November; phosphorus in August and November and potassium in November. Nitrogen should be applied in three split doses in case of bearing trees during April, August and November along with 200 g. phosphorus in two split doses in August and November and 100 g. potassium in November for mandarin grown in black clay soil.¹⁰

Micronutrients

Micro-nutrients viz. zinc, copper, manganese, iron, boron and molybdenum are required in ample quantities. Improper supply of nutrients may cause serious disorders which may lead to decline of the whole orchard. The micro-nutrients should be supplied through foliar spraying.

1.7. Irrigation

Irrigation is provided at an interval of 10-15 days during winter months whereas during summer months it is provided at an interval of 5-7 days.¹⁰

The water requirement varies from 900 to 1100 mm. per year depending upon the location. Water requirement of young (1-4 years old), middle (5-8 years old) and mature (9 and more)

1.8. Training and Pruning

Trees are trained to single stem with 4-6 well-spaced branches for making the basic framework. The lowermost branches are not allowed to grow below the height of 50 cm. from the soil surface.

Pruning is done during the initial years of planting. The bearing trees require little or no pruning. Main objective of pruning the bearing trees is to maintain the framework and to secure higher yields with better quality fruits. Pruning of bearing trees though differs with variety but chiefly consists of removal of dead, diseased, criss-crossed and weak branches. Removal of water sprouts and suckers

of rootstocks is also highly essential. Pruning of non-bearing trees can be done at any time of the year, but for bearing trees the best time is after harvesting, during late winter or early spring when these are in somewhat dormant stage. Root pruning is also practiced in some parts of central and southern India to regulate flowering season.¹⁰

1.9. Intercultural Operations

Pre-emergence herbicides (Diuron @ 3 kg./ha. or Simazine @ 4 kg./ha.) should be sprayed twice at an interval of 120 days from the last week of May for effective and economical control of dicot and monocot weeds in the orchard.¹⁰

Mulching

Application of dry leaf mulch or paddy husk to a thickness of about 8 cm. in the basin keeps down the weed growth and decreases the number of irrigations and also improves fruit quality.

Inter-cropping

Intercrops viz. pea, cowpea and is taken in mandarin orchards.

1.10. Growth Regulators

Fruit drop in mandarin orange can be controlled in early stages of fruit development by applying two sprays of growth regulators- 2,4 D (15 ppm.) or GA₃ (15 ppm) along with Benomyl (1000 ppm.) and urea (1%) after fruit set at monthly interval in May and June. The same spray schedule may be followed in September and October in order to control the pre-harvest fruit drop.¹⁰

1.11. Plant Protection Measures

Insect Pests

Devitalization of plants due to poor fruit set, fruit drop both at bearing and maturity stage, stem tunnelling, bark removal, girdling etc., on account of the attack of the different insect pests viz. citrus black fly, citrus psylla, citrus leaf miner, bark eating caterpillar, mealy bugs, citrus aphids, citrus thrips, fruit fly, mites etc. results in poor performance by the tree in terms of quality fruit production. Spraying with insecticides viz. monocrotophos, phosalone, dimethoate, phosphamidon, quinalphos etc. depending upon the type of pest infestation has been found to be effective in most cases.¹⁰

Diseases

The main diseases reported are twig blight, gummosis, damping off, root and collar rot. The affected plants should be sprayed with Ridomil MZ 72, Bavistin, Benomyl etc. depending on the type of infection.

1.12. Post Harvest Management

State	Start of season	End of season	Method of harvesting
Meghalaya	November	February	Hand plucking

Fruits are harvested when they attain full size; develop attractive color with optimum sugar and acid blend. Fruits should be harvested preferably with clipper, shears or secateurs. Oranges should not be harvested in wet weather or during rains.¹⁰

Oranges start bearing from the fourth year but substantial yield can be expected only from sixth year onwards. Mandarin produces 500-800 fruits after about 9-10 years. However, its plants attain the level of full bearing at the age of 10-12 years. The net productive life span of mandarin orchards after deducting the first 5 pre bearing years is only 15-20 years.

Degreening of Oranges by applying ethrel (50 ppm.) one week before the actual date of harvesting has become a commercial practice in most of the developed mandarin growing countries. Further, fruits dipped in 50 ppm. ethrel after harvesting develop golden yellow color within 5 days of the treatment. Average yield is 4.8 tones/acre.¹⁰

1.13. Post Harvest Management

Grading

Fruits are graded on the basis of their size and color. The fruits which are oblong, high collard, immature, puffy, blemished, deformed, deep green colored, bruised and diseased are removed during the sorting operation.¹⁰

Storage

Green or fully ripe fruits can be stored in evaporative cool chamber at 8-10°C & 90-95% relative humidity for a period of three weeks after post-harvest treatment with Bavistin (1000 ppm.). Yellowish green fruits develop attractive yellowish orange in this chamber.¹⁰

Packing

The harvested fruits are usually washed with chlorine (1000 ppm.) and after removing the surface water they are coated with stay fresh high shine wax (2.5%) containing Bavistin (4000 ppm.) and finally dried at 50° - 55° C in the tunnel dryer.

Fruits are usually packed in wooden boxes for distant markets, while for local marketing baskets of split bamboo and mulberry are used. Chopped straw and dry grasses are mostly used for padding. The fruits should be cleaned and polished lightly with a piece of cloth, before wrapping them in tissue paper or newspaper. Use of ventilated corrugated fiber board cartons in place of wooden boxes is highly beneficial.¹⁰

Transportation

Oranges are generally transported by rail or road as ordinary cargos without refrigeration

(L) Uniqueness:

Mandarins include a diverse group of citrus fruits that are characterized by bright colored peel and pulp, excellent flavor, easy-to-peel rind and segments that separate easily.⁸

Following are the distinguishing features of khasi Mandarin:

- "Fruit large, globose to moderately oblate; base commonly with strong furrowed but relatively short neck or low collar; apex usually deeply depressed and with radiating furrows; sometimes with naval.
- Rind medium-thick, fairly loosely adherent; surface relatively smooth but pebbled, with prominent, sunken oil glands; orange-colored at maturity. Segments about 10, easily separable; axis large and hollow.
- Flesh color orange; tender and melting, juicy; flavor mild and pleasant, and aromatic.
- Seeds few, small, plump, and polyembryonic; cotyledons light green.
- Loses quality and rind puffs if not picked when ripe.
- Tree commonly vigorous and distinctive in appearance because of pronounced upright growth habit.⁸
- Mandarins are rich in Ascorbic acid (13 54 mg per 100 g of edible portion) and Calcium (25 46 mg per 100 g of edible portion). They are a great source of Vitamin C.
- One orange actually has all the Vitamin C that one needs for the day. The water content in the fruit is nearly 80 per cent to 90 per cent of edible portion. The chemical composition of the Mandarin is as under.⁸

The characteristics of Khasi Mandarin is as under

Name of the Variety/ Area	Characteristics		
	Fruits globose to oblate, surface smooth, color orange-yellow to bright orange, rind thin with very little adherence, segments usually 10, pulp vesicles uniformly orange, texture coarse, juice abundant with well-blended flavor.		

Fruit:

"Fruit large (for a mandarin), globose to moderately oblate; base commonly with strong furrowed but relatively short neck or low collar; apex usually deeply depressed and with radiating furrows; sometimes with naval. Rind medium-thick, fairly loosely adherent; surface relatively smooth but pebbled, with prominent, sunken oil glands; orange-colored at maturity. Segments about 10, easily separable; axis large and hollow. Flesh color orange; tender and melting, juicy; flavor mild and pleasant, and aromatic. Seeds few, small, plump, and polyembryonic; cotyledons light green. Early midseason in maturity. Loses quality and rind puffs if not picked when ripe.

Tree:

Tree commonly vigorous and distinctive in appearance because of pronounced upright growth habit. Productive but with strong alternate-bearing tendency. Reported to be less cold-resistant than most mandarins.

Economic Importance:

Mandarins are rich in vitamin A, B, C and phosphorus, which are consumed fresh or in the form of juice, jam, squash and syrup. It is one of the main sources of peel oil and citric acid

(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 **(Khasi Mandarin)** in the name(s) of **NEC Secretariat, Nongrim Hills, Shillong – 793 003,** 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

EXECUTIVE DIRECTIOR

NORTH EASTERN REGIONAL AGRICULTURAL MARKETING CORPORATION LTD (NERAMAC)

9 RAJBARI PATH, GANESHGURI, G S ROAD, GUWAHATI – 781 005