Ref. Ares(2025)6029955 - 24/07/2025

PRODUCT SPECIFICATION

For the application of ‘มะพร้าวน้ำหอมราชบุรี / Maphrao Namhom Ratchaburi’ as a Protected Geographical Indication (“PGI”) in the European Union according to EU Regulation 1151/2012.

Content

(a) the name to be protected as a designation of origin or geographical indication, as it is used, whether in trade or in common language, and only in the languages which are or were historically used to describe the specific product in the defined geographical area;

(b) a description of the product, including the raw materials, if appropriate, as well as the principal physical, chemical, microbiological or organoleptic characteristics of the product;

(c) the definition of the geographical area delimited with regard to the link referred to in point (f)(i) or (ii) of this paragraph, and, where appropriate, details indicating compliance with the requirements of Article 5(3);

(d) evidence that the product originates in the defined geographical area referred to in Article 5(1) or (2);

(e) a description of the method of obtaining the product and, where appropriate, the authentic and unvarying local methods as well as information concerning packaging, if the applicant group so determines and gives sufficient product-specific justification as to why the packaging must take place in the defined geographical area to safeguard quality, to ensure the origin or to ensure control, taking into account Union law, in particular that on the free movement of goods and the free provision of services;

(f) details establishing the following:

(i) the link between the quality or characteristics of the product and the geographical environment referred to in Article 5(1); or

(ii) where appropriate, the link between a given quality, the reputation or other characteristic of the product and the geographical origin referred to in Article 5(2);

(g) the name and address of the authorities or, if available, the name and address of bodies verifying compliance with the provisions of the product specification pursuant to Article 37 and their specific tasks

(h) any specific labelling rule for the product in question.

(a) the name to be protected as a designation of origin or geographical indication, as it is used, whether in trade or in common language, and only in the languages which are or were historically used to describe the specific product in the defined geographical area;

'มะพร้าวน้ำหอมราชบุรี / Maphrao Namhom Ratchaburi'

(b) a description of the product, including the raw materials, if appropriate, as well as the principal physical, chemical, microbiological or organoleptic characteristics of the product;

'มะพร้าวน้ำหอมราชบุรี / Maphrao Namhom Ratchaburi' is an aromatic coconut classified as a short green coconut variety called Moo Si Khiao. The fruit has a fresh green skin with a pleated bottom and a round center with double-layer meat. Its water is sweet with pandan-like fragrance.

Product Characteristics:

(1) Variety: It is a mutation from the short green coconut variety called Moo Si Khiao.

(2) Physical characteristics:

Bunch	Beautiful bunch. The bunch comprises of multiple fruits in one bunch, each fruit is similar in size, with no deformities or irregularities in shape. The bunch has a well-balanced shape, not leaning to one side or the other and each fruit is uniformly arranged.
Shape	Fresh green fruit with a pleated bottom, a round center and have a consistent shape. The shape of each fruit is generally round, the tip and around the perianth of the fruit is slightly sharp. The size of the fruit ranges from medium to small, the average weight is around 1.2 – 1.8 kilograms.
Flesh	The thickness of the coconut meat must be double-layer.
Taste	Sweet with pandan-like fragrance.

(3) Chemical characteristics:

The sweetness level is in the range of 7 – 10 degrees Brix.

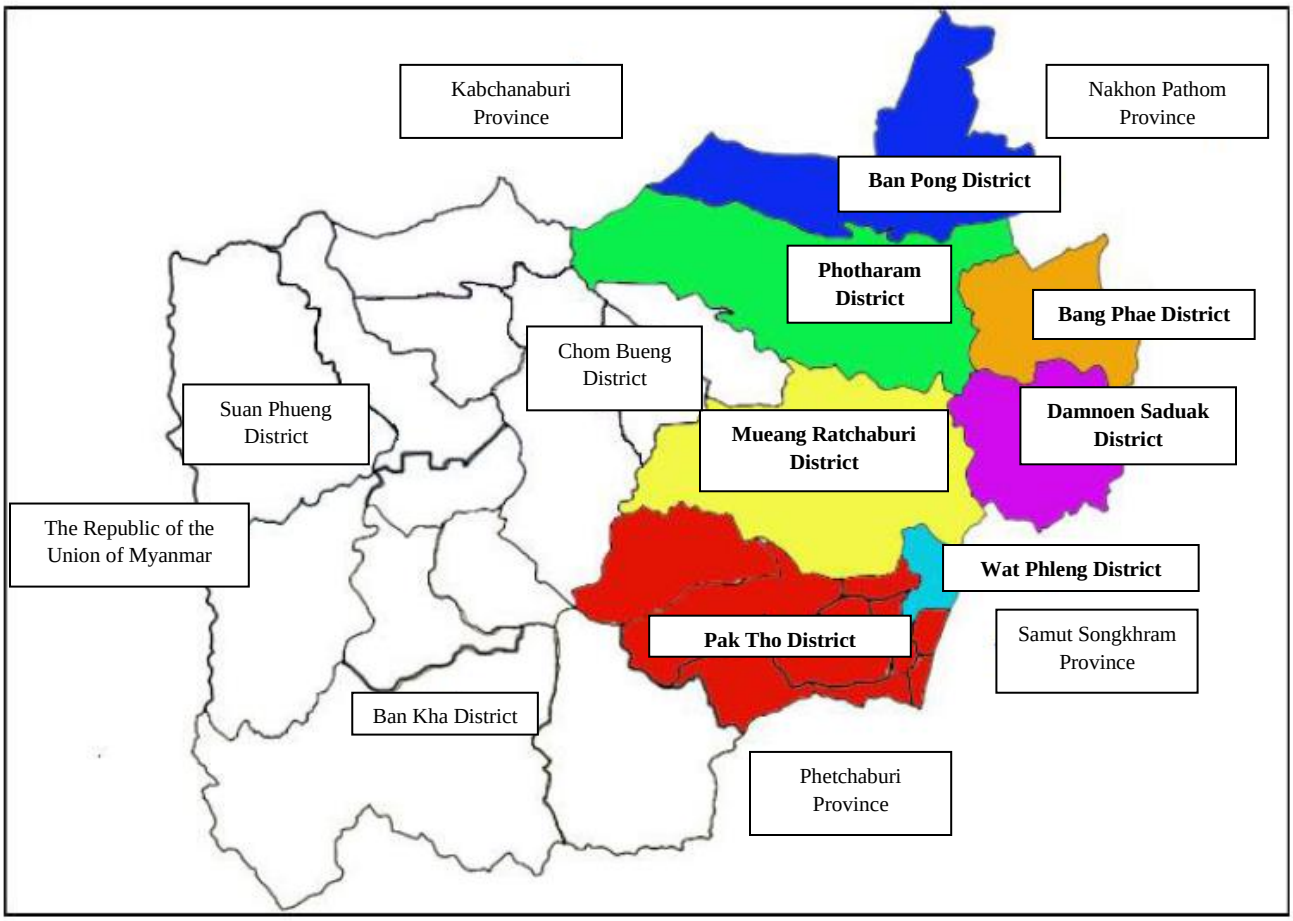
(c) the definition of the geographical area delimited with regard to the link referred to in point (f)(i) or (ii) of this paragraph, and, where appropriate, details indicating compliance with the requirements of Article 5(3);

Plantation covers an area of 7 districts, including Damnoen Saduak District, Wat Phleng District, Ban Pong District, Mueang Ratchaburi District, Bang Phae District, Pak Tho District, and

Photharam District of the Ratchaburi Province. Ratchaburi Province is located in the western central region of Thailand, its border area is next to the Republic of the Union of Myanmar, and its watershed is bordered by the Tanaosri mountain range with a length of 73 kilometers. Ratchaburi Province is about 100 kilometers from Bangkok, with Mae Klong River as the main river flowing through Ratchaburi Province in Ban Pong District, Photharam District, Damnoen Saduak District, and Mueang Ratchaburi District, which is approximately 67 kilometers with an area of 3,247 million rai or 5,196 square kilometers representing 11.27 percent of the area in the western region of 8 provinces with the following territories:

North connects with Kanchanaburi Province.
South connects with Phetchaburi Province.
East connects with Nakhon Pathom, Samut Sakhon and Samut Songkhram provinces.
West connects to the Republic of the Union of Myanmar.

The Geographical conditions of Ratchaburi Province can be classified into 4 types, which are high mountain areas, plateau areas, plain areas, and lowland areas. ‘มะพร้าวน้ำหอมราชบุรี / Maphrao Namhom Ratchaburi’ plantation areas are in the province's central and eastern area which are plain areas and lowland areas. The lowland areas which include Mueang Ratchaburi District, Ban Pong District, Pak Tho District, and Photharam District are on two sides of the Mae Klong River. The low plain areas which include Damnoen Saduak District, Wat Phleng District, Bang Phae District are located at the end of the Mae Klong River and is 1-2 meters above sea level.



(d) evidence that the product originates in the defined geographical area referred to in Article 5(1) or (2);

(1) ‘มะพร้าวน้ำหอมราชบุรี / Maphrao Namhom Ratchaburi’ must be produced only 7 districts which are Damnoen Saduak District, Wat Phleng District, Ban Pong District, Mueang Ratchaburi District, Bang Phae District, Pak Tho District, and Photharam District of the Ratchaburi Province, in accordance with the production process and the defined geographical area.

(2) The production process must be controlled and inspected through the registration of farmers producing ‘มะพร้าวน้ำหอมราชบุรี / Maphrao Namhom Ratchaburi’ and the use of accompanying documents must be available for traceability to its origin. The requirement and procedure are governed by the “Operating Manual for Members Requesting the Use of มะพร้าวน้ำหอมราชบุรี and/or Maphrao Namhom Ratchaburi” document and “Inspection Plan for มะพร้าวน้ำหอมราชบุรี and/or Maphrao Namhom Ratchaburi”. Moreover, Ratchaburi Province has established the “Committee and Working Group to Consider GI Application and to Control and Check the Production Process and the Distribution of Geographical Indication goods of มะพร้าวน้ำหอมราชบุรี and/or Maphrao Namhom Ratchaburi” in accordance with the Ratchaburi Province Order No. 339/2561.

(2.1) Registration of producers and traders

Producers or famers must be registered as a member to be allowed to use ‘มะพร้าวน้ำหอมราชบุรี / Maphrao Namhom Ratchaburi’ geographical indication. The name of producers must be in the House Registration document that is located in the geographical area. The place of production must be within the geographical area as well.

Traders must be registered as a member officially in order to use ‘มะพร้าวน้ำหอมราชบุรี / Maphrao Namhom Ratchaburi’ geographical indication.

Processing membership applications are carried out by the Working Group under Ratchaburi Province Order No. 339/2561.

(2.2) Control and Inspection

Internal Control is carried out in accordance with the “Inspection Plan for มะพร้าวน้ำหอมราชบุรี and/or Maphrao Namhom Ratchaburi”. The inspection is done by both the Committee and the producers once per year or when there are changes. The Committee may inspect each element by using a form with details consistent with the Operating Manual and Inspection Plan.

After the inspection is completed, the Committee will issue a Meeting Report detailing the results of the inspection. The results will be approved during the meeting. The documents must be stored for the purpose of traceability.

External control is carried out by BIOAGRIcert S.r.l.'s Thailand office who is qualified under the EN/ISO/IEC 17065:2012 standard to verify compliance of the product specification.

(2.3) Traceability

Verification and documentation of the source, quantity, and origin of raw materials, inputs, recipients, quantity, outputs and destination of products supplied must be carried out in accordance with the Product Specification, Operating Manual for Members Requesting the Use of มะพร้าวน้ำหอมราชบุรี and/or Maphrao Namhom Ratchaburi and Inspection Plan for มะพร้าวน้ำหอมราชบุรี and/or Maphrao Namhom Ratchaburi documents.

Producers and traders must adhere to the requirements and document them accordingly in preparation for inspection:

- area of production may be recorded from GPS location.
- product characteristics, including product list, varieties, physical and chemical characteristics may be inspected by eye, documentation, or measurement.
- source of materials should be documented.
- production steps, including preparation before planting, planting, harvesting, maintenance, and fertilization may be inspected by eye or via documentation.
- compliant information on the packaging may be inspected by eye or via documentation.
- storage and transportation methods may be inspected by eye.
- production and distribution, whether there are membership registrations of producers and traders, may be inspected by eye or via documentation.

(e) a description of the method of obtaining the product and, where appropriate, the authentic and unvarying local methods as well as information concerning packaging, if the applicant group so determines and gives sufficient product-specific justification as to why the packaging must take place in the defined geographical area to safeguard quality, to ensure the origin or to ensure control, taking into account Union law, in particular that on the free movement of goods and the free provision of services;

The whole production cycle must take place in the defined geographical area to ensure that it is conducted entirely under the geographical conditions specific to that area. Harvesting is carried out in the same place, i.e. where the aromatic coconut was originally sown.

Main production practices of ‘มะพร้าวน้ำหอมราชบุรี / Maphrao Namhom Ratchaburi’ include the following:

Planting:

(1) Propagate by selecting fruit from mother plants aged 10 years or over and use brown fruit for planting. When germinated into seedlings, it will be fragrant from root to trunk.

(2) Raise the trench to no higher than 1 meter. The trench's width should not exceed 7 meters. Water will flow through the small canal for the whole year and feed along both sides of the plantation row, which must have around 6-6.50 meters distance in between, or as appropriate for each area.

(3) Prepare a planting hole in the dry season, dig a hole sized 50 x 50 x 50 cm. Let the planting holes dry for at least a week. Fill up the holes with soil mixed with manure or compost and leave it until the growing season or as appropriate for the area.

(4) Plant during the rainy season by inserting selected shoots into holes with the shoots pointing east. Cover at least two-thirds of the fruit with soil. Cover the soil higher as the coconut grows to prevent floating roots.

(5) Fertilizer should be applied at the start and end of the rainy season when there is enough moisture to dissolve the fertilizer and the coconut roots are fully developed and can absorb the fertilizer well.

(6) Keep the coconut plantation clean by controlling and eliminating weeds.

Harvesting:

‘มะพร้าวน้ำหอมราชบุรี / Maphrao Namhom Ratchaburi’ is a fruit tree that produces fruit all year and there are many products during February – May and August – September. The optimal period to harvest the coconuts is about 200-205 days (7 months) after it has bloomed, which would give the full shell double-layer meat with thick and soft flesh. It can be harvested every 18 days or 20 days.

(f) details establishing the following:

(i) the link between the quality or characteristics of the product and the geographical environment referred to in Article 5(1); or

(ii) where appropriate, the link between a given quality, the reputation or other characteristic of the product and the geographical origin referred to in Article 5(2);

The pandan-like aroma of ‘มะพร้าวน้ำหอมราชบุรี / Maphrao Namhom Ratchaburi’ coconut water is caused by the hybridization of the stamen (or called Xenia effect). Flowering of the ‘มะพร้าวน้ำหอมราชบุรี / Maphrao Namhom Ratchaburi’ is fast and it will flower about 15-18 flowers per year. The fragrance starts from the root, and there will be a pandan-like aroma when crushing the root.

The main soil suitable for planting ‘มะพร้าวน้ำหอมราชบุรี / Maphrao Namhom Ratchaburi’ are Soil Series 2, 3, 8, and 38, which are found in Mueang Ratchaburi District, Bang Phae District, Wat Phleng District, Photharam District, Pak Tho District, Ban Pong District, and Damnoen Saduak District area and all are near the Mae Klong River.

1) Soil Series 2 (Ayutthaya Soil) which is extremely deep soil. The topsoil is clay soil with dark gray color and is smooth. The soil is mildly acidic (pH 6.0). The top of the subsoil is clay soil with gray, grayish brown or gray-brown color and red spots. The soil is very acidic (pH 5.5) and yellow spots of rice straw can be found at 100-150 cm depth. Gypsum crystals can be found and there are slips between upper and lower soil.

2) Soil Series 3 (Bang Phae Soil) which is extremely deep soil. The topsoil is clay soil with dark gray color and brown spots. The soil ranges from neutral to mildly alkaline (pH 7.0-8.0). The lower topsoil is clay soil to silty clay soil with dark brown spots. The soil is mildly alkaline (pH 8.0). The lower subsoil is clay soil to loam silty clay soil, with black or dark gray color and brown-yellow spots. The soil is mildly alkaline (pH 8.0). Manganese nodules and gypsum crystals can be found. Shells and limestone accumulations may also be found in the subsoil.

3) Soil Series 8 (Damnoen Saduak Soil) which is extremely deep soil. The soil texture is clay soil, with brown or dark brown color. The subsoil is clay soil with brown gray or grayish olive-green color, and gradually changes to greenish gray or bluish gray at a depth of 50 - 125 cm. Brown spots or olive-greenish brown spots can be found at the top of topsoil. The pH of the soil is alkaline ranging from 8.0 – 8.5.

4) Soil Series 38 (Tha Muang Soil) which is deep soil. The topsoil is loam silty soil, loam silty clay soil, loam soil or sandy loam soil, with brown, dark brown, and gray brown color. The soil ranges from extremely acidic to slightly acidic (pH 5.5-6.5). The subsoil texture and color is not stable and varies due to the sediment that water deposits each year, which can be noticeably different. The soil texture alternates between loam silty soil, loam soil and sandy loam, with brown or yellowish-brown color. The soil ranges from extremely acidic to slightly acidic (pH 6.0-7.0). Spots can be found in the subsoil at 50-100 cm depth below the soil surface, and mica flakes can be found all over the soil profile.

The climate in this geographical area is impacted by the southwest monsoon, which blows moisture from the Indian Ocean and the Andaman Sea. But due to Tanaosri mountain range blocking it, the area adjacent to the mountain receives not much rainfall. Most of the moisture is blown over to the Mae Klong River estuary and the province's eastern region which is ‘มะพร้าวน้ำหอมราชบุรี / Maphrao Namhom Ratchaburi’ plantation area. The average annual

rainfall is not less than 1,500 – 2,000 mm. The annual average temperature is 35 degrees Celsius.

Because of the favourable soil conditions, climatic conditions, topography and rainfall, the area is suitable for growing ‘มะพร้าวน้ำหอมราชบุรี / Maphrao Namhom Ratchaburi’ and the distinct and outstanding pandan-like aroma of ‘มะพร้าวน้ำหอมราชบุรี / Maphrao Namhom Ratchaburi’ can therefore be retained in the product.

Apart from natural factors which play an integral role in the production of ‘มะพร้าวน้ำหอมราชบุรี / Maphrao Namhom Ratchaburi’, human knowledge also plays a key role in the production. Human knowledge from knowing to select quality fruit from mother plant of at least 10 years old with fruit of brown color, to raising the trench in order for water to flow through a small canal for the whole year and feed along both sides of the plantation row, to knowing that the trees must be planted in rainy seasons, and the optimal period to harvest is about 200-205 days (7 months) after it has bloomed are all human knowledge that play an integral role in the production and determine the quality of ‘มะพร้าวน้ำหอมราชบุรี / Maphrao Namhom Ratchaburi’.

Furthermore, the variety used to grow ‘มะพร้าวน้ำหอมราชบุรี / Maphrao Namhom Ratchaburi’ is mutated from a local short green coconut variety named Moo Si Khiao. Aromatic coconut is an economic crop with an export value of billions of baht per year and is a native coconut originated from Thailand. Coconuts are cross-pollinated crops, so they are not purebred according to the nature of the breeding. Coconuts can be divided into two varieties, namely short coconut variety and tall coconut variety. Short coconut variety is often self-pollinated, so it is fruitful and rarely mutates. It is widely cultivated for its young fruit because when the fruit is not mature or about 4 months old, its meat is soft and its water is sweet. Authentic aromatic coconut that is used to cultivate ‘มะพร้าวน้ำหอมราชบุรี / Maphrao Namhom Ratchaburi’, when it sprouted enough into seedlings, the shell of an authentic aromatic coconut seedling must be wrinkled in streaks, whereas the seedlings of mutated varieties are smooth and not wrinkled. It can also be distinguished from the other varieties in which the mutated seedling’s petioles are red, but an authentic aromatic coconut variety seedling is green. Another way to distinguish is to rub the ends of the coconut roots. If it smells like pandan, then it is an authentic aromatic coconut variety.

The Moo Si Khiao variety is a local variety grown a lot in Sam Phran District and Nakhon Chai Si of Nakhon Pathom Province, and the cultivation is expanded to nearby areas of Ratchaburi Province, especially around the Mae Klong River estuary, eventually became known as Thailand's largest aromatic coconut plantation and the selected variety used to grow

‘มะพร้าวน้ำหอมราชบุรี / Maphrao Namhom Ratchaburi’.

(g) the name and address of the authorities or, if available, the name and address of bodies verifying compliance with the provisions of the product specification pursuant to Article 37 and their specific tasks

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(h) any specific labelling rule for the product in question.

The label on the ‘มะพร้าวน้ำหอมราชบุรี / Maphrao Namhom Ratchaburi’ packaging must contain the following information:

- Details on the label or package shall contain the words “มะพร้าวน้ำหอมราชบุรี” and/or "Maphrao Namhom Ratchaburi".
- Specify the name of the garden/farmer and contact information.
- The Thai GI logo and the EU logo for PGI (after the grant of the PGI) shall also be used.