# Specification for ‘Ceylon Cinnamon’


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# 1. The Applicant

This application for the registration of a name as a protected geographical indication within the terms of Regulation (EU) No 1151/2012 is made by the Sri Lanka Export Development Board (hereinafter referred as “SLEDB”) on behalf of the ‘Ceylon Cinnamon’ Geographical Indication Association (hereinafter referred as “CCGIA”). The SLEDB is a government body corporate duly established under the Sri Lanka Export Development Act No. 40 of 1979 with the objective of promoting and developing exports from Sri Lanka. For the purposes of this applicant SLEDB is the authority within the terms of Article 49(5) of Regulation (EU) No 1151/2012 and represents CCGIA which is the association of growers, producers, processors, collector’s traders, and exporters of ‘Ceylon Cinnamon’ products. CCGIA is society registered under the Society Ordinance of Sri Lanka.

The CCGIA has its registered office at C/O; SLEDB, No. 42, Nawam Mawatha, Colombo 2, Sri Lanka. The SLEDB has its registered office at No. 42, Nawam Mawatha, Colombo 2, Sri Lanka. The official website of the SLEDB is http://www.srilankabusiness.com, telephone number in Sri Lanka is 0094-11-230-0712, fax: 0094-11-230-0715, e-mail: chairman@edb.gov.lk

# 2. The Name to be protected: ‘Ceylon Cinnamon’

The name to be protected is: ‘Ceylon Cinnamon’

The name Ceylon is the traditional/former official name of the island of Sri Lanka. ‘Ceylon Cinnamon’ refers to cinnamon products coming from cinnamon tree species which is indigenous to Sri Lanka (Ceylon). The term ‘Ceylon Cinnamon’ consists of two parts. The first part ‘Ceylon’ denotes the geographical origin and the second part ‘cinnamon’ the specific species of the plant.

Cinnamon was one of the first spices to be traded in the ancient world (Parry 1969). Originally it was traded overland between its origin and the Arab world and then by ship to Europe. After the opening of the sea routes to the Indian Ocean and the Bay of Bengal in the late 15$^{th}$ century the shipping was direct.

The name ‘‘Ceylon Cinnamon’’ is protected by the EDB as a Certification Mark under the trade mark law of Sri Lanka, at the National Intellectual Property of Sri Lanka with the Registration Number: 163543 dated 28 of June 2011.

# 3. Type and Description of the Product

## 3.1. Characteristics and types of ‘Ceylon Cinnamon’

‘Ceylon Cinnamon’ products are produced from the tree *Cinnamomum zeylanicum* Blume.– Botanically ‘Ceylon Cinnamon’ plant belongs to the genus *Cinnamomum* of the Lauraceae family. ‘Ceylon Cinnamon’ refers to the specific cultivated species of cinnamon indigenous to Sri Lanka (Ceylon). The species epithet zeylanicum in the botanical name *Cinnamomum zeylanicum* Blume indicates that cinnamon tree that belongs or native to Sihala (Ceylon). Zeylan is the Latinized name for Ceylon.

There are 4 main types of ‘Ceylon Cinnamon’ products as described below.

### 3. 1. 1. Quills/Cut quills

Quills are produced out of the inner bark of mature cinnamon stems: the trees are harvested and their outer bark is scrapped. Half pipes of inner bark are peeled and left to dry in the shade. By drying, those half pipes of inner bark curve. They are then joined together by overlaps (until they reach a length of 1050 ± 50 mm quills and filled with quillings (uneven pieces of the inner bark that cannot be properly peeled as half pipes). This method of producing quills is traditional to the identified geographical area of Sri Lanka. The cinnamon quills are graded on the diameter, colour, number of quills per kilogram, and extent of foxing. Then cut quills are made by cutting quills into varying length 20mm ≤ 525 mm) (See figure 3.1)




Figure 3.1: Cut Quills

### 3. 1. 2. Powder

'Ceylon Cinnamon' ground/powder has a golden yellowish (CC5) to dark brown colour (CC10) the ground/powder cinnamon should be prepared exclusively from the barks. (See figure 3.2)



### 3. 1.3. Leaf Oil

Oil extracted from steam distillation of Cinnamon leaf and twigs that remain after harvesting. Oil colour may vary from very pale yellow (CC1) to amber (CC7). Refractive index varies from 1.527 to 1.540 and a relative density of 1.034 to 1.54 at 28°C. (See figure 3.3)

### 3. 1. 4. Bark Oil

Bark oil is extracted by the distillation of cinnamon bark. Cinnamaldehyde content of this product varies between 30% to 70% and its colour from pale yellow (CC2) to amber (CC7). The refractive index varies from 1.555 to1.580 and relative density of 1.01 to 1.03 at 28°C. (See figure 3.3)

Figure 3.3: 'Ceylon Cinnamon' Leaf oil (Left) and 'Ceylon Cinnamon' bark oil (right)

## 3.2. Details of 'Ceylon Cinnamon' products:

Table 3.2.1 Details of 'Ceylon Cinnamon' Products

| Category of products | Physical characters | | Chemical characters | |
|---|---|---|---|---|
| Cut quills | Colour | CC4 to CC9 | Volatile oils, ml/100 g, on dry basis min | 1.0 |

| | | | | |
|---|---|---|---|---|
| | Texture | Semi smooth, not rough | Cinnamaldehyde content in volatile oil, ml/100 g, on dry basis | 50.0-70.0 |
| | Flavour and smell | Smell and taste of the main volatile oil cinnamaldehyde.<br>Mildly sweet 'Ceylon Cinnamon' flavour that sense hot burning feeling on the tongue | Eugenol content in volatile oil, ml/100 g, on dry basis | 2.0-20.0 |
| | Form | Cylindric, diameter varies according the grading | Total ash, per cent by mass, on dry basis (max.): | 5.0 |
| | Moisture | | Moisture content, per cent by mass (max.) | 15.0 |
| Powder | Colour | CC5 to CC10 | Volatile oils, ml/100 g, on dry basis min | 0.5 |
| | Texture | Sticky when water is added but easily removable when dry. Highly hygroscopic | | |
| | Flavour and smell | Mildly sweet 'Ceylon Cinnamon' flavour that sense hot burning feeling on the tongue | Eugenol content in volatile oil, ml/100 g, on dry basis | 2.0 – 6.0 |
| | Form | Small particles with a maximum diameter of 2 mm | | |
| Leaf oil | Colour | CC1 to CC7 | Eugenol content, per cent by mass | 75.0-85.0 |
| | Smell and flavour | Powerful, diffusive, warm, spicy and tenacious | | |
| | Relative density at 28 °C | 1.0340-1.054 | | |
| | Refractive index at 28 °C | 1.5250 – 1.5400 | Cinnamaldehyde content, per cent by mass | 8 – 40 |
| | Optical rotation at 28 °C, in degree | -2.5 to + 2.0 | | |
| Bark oil | Colour | CC2 to CC7 | Cinnamaldehyde content, | 30 – 70 |

| | | | | |
|---|---|---|---|---|
| | Smell and flavour | Sweet and spicy | per cent by mass | |
| | Relative density at 28 °C | 1.0100 – 1.0300 | | |
| | Refractive index at 28 °C | 1.5550 – 1.5800 | | |
| | Optical rotation at 28 °C, in degree | -2.5 to + 2.0 | Eugenol content, per cent by mass | 0.5 - 30 |

The characteristics of the oil contents and other components vary according to the product category. Cut quills, bark oil and powder, are produced directly from cinnamon bark and the characteristics are directly linked to the characteristics of the bark. However, the process of producing powder leads to greater evaporation of oil, thus reducing the oil content compared to quills.

# 4. Raw Materials

Table 4.1 Raw materials

| | |
|---|---|
| Cut Quills | The cut quills are composed of quills cut to the size required by the buyer.<br>Cut quills may contain a maximum of 2.0%, smaller particles/dust or impurities on dry basis. |
| Powder | ‘Ceylon Cinnamon’ powder raw material consists solely of the processed inner bark. |
| Bark oil | Bark oil is made out of the distillation of dried inner bark pieces of ‘Ceylon Cinnamon’. These pieces can be chips, featherings, quillings or cut-off left-overs from cut quill processing. |
| Leaf oil | Leaf oil is made out of the distillation of dried ‘Ceylon Cinnamon’ leaves |

# 5. ‘Ceylon Cinnamon’ production methods

The specific steps in ‘Ceylon Cinnamon’ production that must take place in the geographical area.

## 5.1. Propagation

In order to select for genotypes with desired traits, only the seeds coming from the best mother plants are traditionally kept. Ripe fruits are harvested on selected mother plant during the berry season (once a year, from May to end July). The pericarp is removed by washing, the seed is then directly planted in fields or nursery bags.

Vegetative propagated seedlings can be bought at government nurseries and government certified nurseries, which are certified to furnish high quality plants. Farmers can also select their best plants and use them as mother plant to create their own cuttings.

## 5.2. Cultivation

### 5.2.1 Area of cultivation

- *Suitability of the land*

The soil on which the cinnamon plants is grown varies from red-yellow podzolic soil to reddish brown latosol. The *Cinnamomum zeylanicum* Blume trees are best grown on deep, well-drained moist soils. The soil texture has to be a mix of sand, gravel, clay and silt particles to be suitable for 'Ceylon Cinnamon' cultivation, where no one element has a share higher than 50%.

- *Geography and Climate*

The cultivation of 'Ceylon Cinnamon' is between altitudes of 10m to 700m above sea level. The *Cinnamomum zeylanicum* Blume tree needs a lot of water and high humidity in order to thrive. Regions with 1,250 mm/yr to 3,500 mm/yr precipitation are most suited for cultivation but they can be grown in regions where irrigation is sometimes required.

### 5.2.2 Crop Management

- *Soil Preparation*

Normally, before the planting of the *Cinnamomum zeylanicum* Blume plant, a hole should be dug. Then, 3 to 20 seeds or seedlings are planted inside it (afterwards the 3 to 15 most vigorous of them will be selected and the others removed). The hole in which the plant will be grown needs to be filled with topsoil. The ideal pH for *Cinnamomum zeylanicum* Blume is between 5.5 to 6.5. If the pH is too low (it sometimes drops because of the leaves and other organic materials left on the field), dolomite should be applied (1000kg/ha/yr) in order to rise the pH level.

- *Planting Pattern*

The trees are grown as bushes, consisting of 3 to 15 seeds or seedlings planted close to each other, this is called a "pandura" in the local language. The bushes are cultivated at a spacing of 4 feet between rows by 3 feet within rows. The rows are arranged in a parallel line pattern while the land is flat. However, if the land is on a slope, the rows are arranged in a zig-zag pattern organized in contour lines in order to avoid soil erosion.

Table 5.2: Pandura



Figure 5.2.1 Pandura (bush) in the field



Figure 5.2.2 Pandura in nursery bag



Figure5.2.3: Tillers on coppiced stem



Figure 5.2.4: Immature tiller bounded to older stem

- *Pruning*

Selective pruning will occur several times. One and a half to two years after planting, all the side branches and all the leaves are removed, from the base to half the height of the bush. The same practice will be performed two and half years later. It will then always be performed three months before harvesting. All unnecessary, diseased or damaged shoots need to be removed. After harvesting, a certain number of new tillers start to grow and only some of the strongest and straightest of them will be retained for each stump three month after harvesting. The coppicing is not made on all original stems at the same time, but alternately. This ensure that there is always at least one stem to which the selected young tillers can be attached. Indeed, immature tillers should be bound to mature plants by cloth string to avoid bending and obtained straight plant.

### 5.2.3 Soil Management

Removed weeds and pruned leaves are spread around rootstocks as mulch which is needed for conservation of soil moisture. *Cinnamomum*

*zeylanicum* Blume being a surface feeder, earth is gathered up to the rootstock.

## 5.3. Harvesting and Post-harvest Processes

### 5.3.1 Certification requirements:

The harvesting process, as well as the processing of the cut quills, is carried out by skilled peelers.

### 5.3.2 Harvesting

The plants are ready to be harvested when they are about three years old and the stem colour has become brown. Harvesting starts by cutting stems from a bush using a large and sharp knife called “Keththa”, traditional to the ‘Ceylon Cinnamon’ industry. First, the peeler has to sharpen and clean the Keththa’ with clean water. Before harvesting, a quick pruning is done. The mature shoot is coppiced at a height of about 2 inches (6 cm) from the ground level. The coppicing is done inwardly at an angle of about 45° in one sharp cut. The stems are not harvested all at the same time from the bush, but alternately between harvesting seasons. One or two mature stems per bush remain un-coppiced. (See 5.2 Cultivation, Figure 5.2.4: Immature tiller bounded to older stem). The peeler removes the branches of the harvested stem and the leaves and branches are left for drying or composting.

Table 5.3.1: Harvesting of ‘Ceylon Cinnamon’ stem



Figure 5.3.1 Skilled peeler sharpening a Keththa



Figure 5.3.2 Pre-harvest pruning



Figure 5.3.3 Coppicing of the selected stem



Figure 5.3.4 Coppiced Stem



Figure 5.3.5. Removal of the branches of the selected stem



Figure 5.3.6. Stem ready for processing

### 5.3.3 Processing

The processing of bark involves scraping the bark with a steel scraper, peeling filling up and drying. The outer cork from the bark is scraped prior to peeling. Then the bark is thoroughly rubbed with a wooden or brass rod to loosen it from the woody stem. A longitudinal line is then drawn on the opposite side of the bark. By skilfully manuring the knife, two equal halves of long bark are peeled off from either side of the stick.

The bark halves are packed one inside the other until cigar like quills are obtained. The hollow inside the quill is then packed with pieces of the inner bark which cannot be made into a single quill. The compound quill is assembled on a board and when it has reached the required standard length, the end is trimmed with scissors and rolled to make uniform straight quill, then it is gently lifted and kept on the mat for drying in the shade. The prepared quills are arranged in rows suspended by ropes and dried in the shade for few days. They are never dried in direct sunlight. The dried bark turns a pale yellow colour.

Sometimes the bark is fumigated with Sulphur dioxide to kill any insects and microorganisms while getting more attractive yellow colour quill.

Cinnamon quills prepared by experienced peelers are of uniform thickness from end to end, they have a characteristically smooth skin and uniform yellow colour. The dried quills are tightened in to small bundles, each bundle containing about 100- 200 quills depending on the diameter, grade of the quill making them ready for marketing. With current practices quills are cut in to small lengths with the buyer’s requirement. After systematic grading as per ISO/SLS standard specifications cinnamon quills are exported. The finest and smoothest quills are graded as five zeros (00000), fetching the highest price, and the coarsest as zero (0). A special grade called Alba, the finest thin bark rolled in to a pencil like quills are the most expensive.

The details of the processing are set out below.

| Table 5.3.2: Processing details of products | | |
|---|---|---|
| Cut | Cleanin | Cut cinnamon trees are brought to the peeling shed. |

| | | |
|---|---|---|
| Quills | g | First, they have to be washed in two tanks. In the first tank they lie in water for one day. Then they will be rinsed. Finally, the stems will be left in the shade to dry a little. |
| | Cutting | If there are some nodes on the bark, they will be cut and removed from the “Keththa” to get a smooth stem for easy processing. |
| | Scrapin g | The first step of the process is the removal of the rough outer bark. Traditionally, peelers used to use a sickle steel knife called “Sooruna Koketha” (see figure 5.3.7a). Recently, a tool called “Suththuwa” (see figure 5.3.7b) which is easier to use, has been introduced. Peelers can work on the floor or on special chairs (see figure 5.3.8b), the latest being preferred for ergonomic reasons.<br><br>Figure 5.3.7a (Sooruna Koketha)<br><br>Figure 5.3.7b Suththuwa<br><br>Figure 5.3.8b<br><br>Figure 5.3.8a |
| | Rubbing | The outer bark having been scrapped off, the inner bark is then rubbed with a brass rod (see figure 5.3.9), until the stem starts sweating. This step helps to extract the moisture and the oil compounds out of the wood core, which help in intensifying the flavour within the inner bark. Furthermore, rubbing loosens the inner bark from the wood core and facilitate the next step. These processing steps, traditional in Sri Lanka, improve the flavour of ‘Ceylon Cinnamon’.<br> |

Figure 5.3.9

**Peeling**

Directly following the rubbing, the cutting consists of removing the inner bark from the wood core. The stainless-steel tool used for that step is named “Thalana kokeththa” (see figure 5.3.10). The tool is not sharp and needs skills from the peeler to operate. It is used to define the pattern of the inner bark pieces and to remove (peel) them. Processing takes place on a table where the workers first make a cross slit below one node, all around the stem.



Figure 5.3.10



Figure 5.3.11

Then, perpendicularly to this cross slit, two longitudinal slits are made from this node to the next node below (see figure 5.3.11). The two longitudinal slits are at the exact opposite side of the bark.

Finally, a last slit is made above the second node. Two half-pipes like inner barks can then be peeled out from the wood core. They are called “Pita leli (outer bark) in the common language (see figure 5.3.12).



Figure 5.3.12

Figure 5.3.12





| | | |
|---|---|---|
| | | Figure 5.3.13a Figure 5.3.13b<br><br>Some part of the inner bark cannot be peeled that way, because of the irregularity of the stem. Once cut, those uneven pieces are removed as narrow strips that will be used for the filling. They are called “quillings” (*Podi*). |
| | Shade drying | The removed half-pipes like inner barks are left to curl (by drying) in the shade. After 30 to 45 minutes they are nicely curved and are now known as “Leli”.<br><br>Figure 5.3.15<br><br>Figure 5.3.14 |
| | Filling | Those curved inner barks are first filled with quilling (and smaller inner bark pieces called featherings and chips), following a technique that requires skills and experience.<br> |



Figure5.3.16

Figure 5.3.17

The end product, called “quill” has to measure 42 inches. If the “Leli” is too short, it can be combined with other ones, one laying in the other.





Figure 5.3.18

Figure 5.3.19

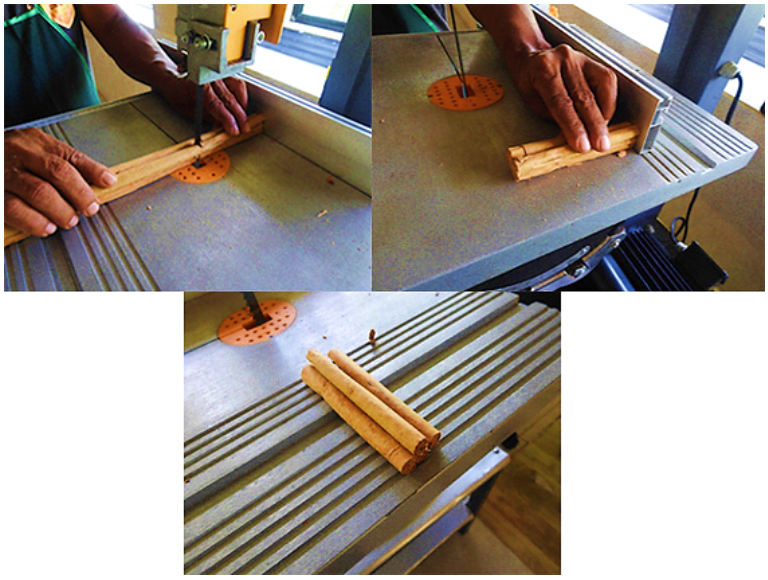
The peeler works with 42 inches measuring stick (known in the local language as ‘*Pethi Kotuwa*’) (see figure 5.3.20). When it has reached the required length, the end is adjusted with scissors.



Figure 5.3.20

| | | |
|---|---|---|
| | **Air Drying** | The quills are then lifted on stretched-ropes or special racks, near the ceiling where air can better circulate, and left there for about 24 hours (until the quills nearly close). |

| | | |
|---|---|---|
| | | <br>Figure 5.3.21 |
| | Rolling | After drying, the quills are pressed and rolled by hand to ensure a uniform diameter.<br><br>Figure 5.3.22 |
| | Air Drying | The quills are lifted one more time to dry on an upper layer of stretched-rope, for about 6 - 10 days. |
| | Selection/Sorting and bundling | The quills are packed in bundle and sold to collectors, retailers or directly to exporters.<br><br>Figure 5.3.23<br><br>Figure 5.3.24<br>The collectors sell the bundles to balers, whose role is to sort cinnamon quills according to their grades. The grading is specific to Sri Lanka. The identification of quills grades needs years of expertise. The moisture will be then tested with a moisture meter. At this stage, the moisture content must be less than 15%. Quills with a moisture above this level will be dried longer. |

| | | |
|---|---|---|
| | **Quills cutting** | Then, the quills will be cut to the length required by the buyer.<br><br>Figure 5.3.25<br>Finally, the cut quills are bundled and packed by the exporter.<br><br>Figure 5.3.26<br><br>Figure 5.3.27 |
| **Ground /Powder** | | Quilling and chips are grounded by a grinding machine. The different quality shall not be mixed with each other, so they are ground in different part of the grinding machine. Figure 5.3.28 |

| | | |
|---|---|---|
| | |  |
| **Bark oil** | | Bark oil is processed using distillation units which are built on the hydro distillation principle. |
| **Leaf oil** | | Leaf oil is obtained by steam distillation.<br><br>Figure 5.3.29<br>The condensed distillate is then collected in a series of Florentine vessels. This stage must last at least 5 hours in order to fully separate the water and the oil. |

## 5.4. Grading

### 5.4.1 Cut Quill

Table 5.4.1 Grading Cut Quills

| | | |
|---|---|---|
|  |  |  |

Figure 5.4.1a
Figure 5.4.1b



Group: **Alba**
Grade: **Alba**
Diameter of quills, mm, max: **6**
Extent of foxing, per cent, max. **10**

Figure 5.4.2a
Figure 5.4.2b



Group: **Continental**
Grade: **C5 (extra special)**
Diameter of quills, mm, max: **8**
Extent of foxing, per cent, max. **10**

Figure 5.4.3a
Figure5.4.3 b



Group: **Continental**
Grade: **C5 (special)**
Diameter of quills, mm, max: **10**
Extent of foxing, per cent, max. **10**





Figure 5.4.4a Figure 5.4.4b

Group: **Continental**
Grade: **C5**
Diameter of quills, mm, max: **12**
Extent of foxing, per cent, max. **15**





Figure 5.4.5a Figure 5.4.5b

Group: **Continental**
Grade: **C4**
Diameter of quills, mm, max: **16**
Extent of foxing, per cent, max. **15**



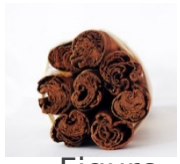


Figure 5.4.6a Figure 5.4.6b

Group: **Continental**
Grade: **C3**
Diameter of quills, mm, max: **18**
Extent of foxing, per cent, max. **20**





Figure 5.4.7a
Figure 5.4.7b

Group: **Mexican**
Grade: **M5 (special)**
Diameter of quills, mm, max: **16**
Extent of foxing, per cent, max. **60**





Figure 5.4.8a Figure 5.4.8b

Group: **Mexican**
Grade: **M5**
Diameter of quills, mm, max: **18**
Extent of foxing, per cent, max. **60**





Figure 5.4.9a Figure 5.4.9b

Group: **Mexican**
Grade: **M4**
Diameter of quills, mm, max: **21**
Extent of foxing, per cent, max. **60**




Figure 5.4.10a Figure 5.4.10b

Group: **Hamburg**
Grade: **H1**
Diameter of quills, mm, max: **23**
Extent of foxing, per cent, max. **25**

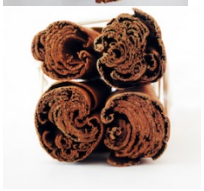



Figure 5.4.11a Figure 5.4.11b

Group: **Hamburg**
Grade: **H2 (special)**
Diameter of quills, mm, max: **25**
Extent of foxing, per cent, max. **40**




Figure 5.4.12a Figure 5.4.12b

Group: **Hamburg**
Grade: **H2**
Diameter of quills, mm, max: **32**
Extent of foxing, per cent, max. **55**




Figure5.4.13a Figure 5.4.13b

Group: **Hamburg**
Grade: **H1**
Diameter of quills, mm, max: **38**
Extent of foxing, per cent, max. **65**

### 5.4.2 Ground/Powder

There is no grading system for trading of powder.

### 5.4.3 Bark oil

Bark oil is traded based on the chemical composition.

Table 5.4.2 Chemical Composition of Bark Oil

| Characteristics | Grading | | | |
|---|---|---|---|---|
| | Superior grade | Special grade | Average grade | Ordinary Grade |
| Cinnamaldehyde content, per cent by mass | Above 60 | 55 – 60 | 45 – 54 | 30 – 44 |
| Phenol content (as eugenol) per cent by mass, (max.) | 6 | 15 | 25 | 40 |

### 5.4.4 Leaf oil:

Leaf oil is traded based on eugenol content (75.0-85.0). Eugenol is a colourless to pale yellow aromatic oily liquid that is found in cinnamon as well as in cloves.

## 5.5. Storage

The store room must be dry, free from deteriorating odours and with pest control and protection against entry of insects, rodent and vermin.

Table 5.5 Storage

| | |
|---|---|
| Cut Quills and Powder | • Storage requires ambient temperature and ventilated conditions, preventing any chemical or microbiological contamination, and avoiding direct sun light exposure.<br>• The conditions should allow to keep the moisture below 15%.<br>• Shelf Life: 2 to 3 years. |
| Bark and Leaf oil | • Storage requires dry and cool place.<br>• The container material should not alter the product and has to protect it from direct sun light. Aluminium or stainless-steel containers are commonly used.<br>• Shelf-life: 2 years |

## 5.6. Details of the Packaging Process

The products are packed in clean and dry packages that do not affect the product and protect them from moisture and loss of volatile oil.

Table 5.6 Details of the Packaging

| | |
|---|---|
| Cut Quills and Powder | • Following the cutting and grinding process, the product is packed in jute/ paper/ cotton/ polythene bags, food grade aluminium foil packs, or other food grade packs. The packages must be sealed to avoid moisture absorption.<br>• Storage requires room temperature, dry and ventilated conditions, enabling to prevent any chemical and microbiological contamination.<br>• Individual packages are often loaded in jutes bags or corrugated cardboard boxes.<br>• Moisture: <15%, no direct sun exposure |
| Bark oil and Leaf oil | In order to avoid a maximum of air-space, the bark oil is supplied in air-tight and preferably amber-coloured glass or epoxy coated metal containers. The container material should not alter the product and has to protect it from direct sun light. Otherwise, other containers can be agreed between the purchaser and the supplier. The Container material should not alter the product and has to protect it from direct sun light. |

# 6. Labelling requirements

Each ‘Ceylon Cinnamon’ package must show the name ‘Ceylon Cinnamon’ and the registration number of the producer when packaged for distribution to the consumer.

Specific mandatory rules for labelling of whole cinnamon or cinnamon powder (as products intended to human consumption), are the following:

- Name, trade name or brand name and address of the manufacturer or packer;
- Batch or code number;
- Net mass;
- Grade of the product (if applies);
- Place of origin–- Sri Lanka

# 7. The Geographical Area

The geographical area extends to the whole island of Sri Lanka, an area of 65,651 km2, which has a uniform climatic and agronomic conditions defined by a distinctive pattern of two annual monsoons, with resultant rainfall patters, consistent patterns of sunshine, and consistent soil and other agronomic characteristics. These conditions are limited to the altitudes between 10m and 700m above sea level. Cinnamon not produced in the defined altitudes cannot be distributed as ‘Ceylon Cinnamon’.

Sri Lanka is an island in the Indian Ocean located in southern Asia, southeast of India, in a strategic location near major Indian Ocean sea lanes. The island is separated from peninsular India by the Palk Strait. It is located between latitudes 5°55′ and 9°51′ N and longitudes 79°41′ and 81°53′ E ,650 km north of the equator and has a maximum length of 268 miles (432 km) north to south and a maximum width of 139 miles (224 km) east to west.

# 8. Link between the Geographical Area and ‘Ceylon Cinnamon’

This specification sets out the qualities and characteristics of ‘Ceylon Cinnamon’ that are essentially attributable to its geographic origin in Sri Lanka as well as the reputation that ‘Ceylon Cinnamon’ enjoys domestically and world-wide. ‘Ceylon Cinnamon’ complies with the

requirements of Article 5(2) of EU Regulation 1151/2012 on the basis of those qualities and characteristics as well as its reputation.

The exceptionally strong aromatic intensity of ‘Ceylon Cinnamon’ is linked to the specific topographical and climatic conditions of the geographical area and the local production methods set out in Section 5. The quill making process is a traditional art dating from ancient times. Sri Lanka produces 90%-95% of the world’s supply of *Cinnamomum zeylanicum* Blume.

‘Ceylon Cinnamon’ has a reputation dating back many centuries as will be seen in Section 9. The following key-points of quality of the ‘Ceylon Cinnamon’ linked to the origin can be highlighted as:

- The Cinnamon tree is indigenous to Sri Lanka and not to other origins;
- Soil and climate; grown in various types of soils varying from silver sands and temperature is between 25C- 32C;
- Texture provided by high rainfall in the region of 1,250-3,500 mm per annum;
- Traditional knowledge in harvesting, peeling, drying, preparing the quills and drying again;
- Shared understanding of quality grading which was established long in the past and serves as reference for pricing.

## 8.1. Link between the Product and the Land

The Cinnamon tree is indigenous to Sri Lanka and thrives in the topographic and climatic conditions of the island. These three natural factors (plant, topography and climate) gives ‘Ceylon Cinnamon’ its special characteristics.

The soil on which it is cultivated is different in Sri Lanka than in the other countries where cinnamon has been introduced, and consists of slopes of red-yellow podzolic soil and valley bottoms and flat land of reddish brown lethosol. The soil texture has a nice share of sand which is well appreciated by the plant. The presence of this sandy fraction in the soil, added to the wet climate lead to perfect irrigation and good draining. This is necessary to reach high quality of cinnamon; while depending on aerobic condition (waterlogging is known deteriorate the taste of the bark (Ribero Santos et al., 2017)), the plant likes to grow under high humidity level conditions.

This combination of plant, soil and weather give ‘Ceylon Cinnamon’: a) a delicate, mildly sweet flavour and citrus aroma with a subtle note of honey; b) its pale brown to slightly reddish, tan brown colour; c) contains 30% to 70 % Cinnamaldehyde in 1 ml/100 g volatile oil, d) Contains less than 0.004 mg/kg Coumarin; e) is thin and delicate and easily broken.

## 8.2. Link between Product and Human Factors

‘Ceylon Cinnamon’ had been cultivated and processed in Sri Lanka from time immemorial and the skills and traditional know-how are inherent in the production of ‘Ceylon Cinnamon’.

The details of the traditions in the production of ‘Ceylon Cinnamon’ have been set out in Section 5. The people that prepare the quills are called “skilled peelers” or “cinnamon technicians”. Their knowledge is particular in the world and based on ancient skills transmitted traditionally from generation to generation.

‘Ceylon Cinnamon’ production in Sri Lanka uses special set of tools invented by local craftsmen as mentioned in section 5; the workers engaged in the cinnamon industry of Sri Lanka have coined a special terminology for their own use. The skilled technicians (harvesters) know how to identify the most suitable trees to cut. The special tools, and in particular the keththa, allow them to cut the cinnamon stems to achieve the thicknesses and lengths defined for ‘Ceylon Cinnamon’ quills.

The processing of bark involves scraping the outer bark with a steel scrapper using a gentle and skilled technique to avoid damaging the inner bark. Thereafter, the bark is thoroughly rubbed with a brass rod to loosen it from the woody stem and to increase the oil and moisture flow from the core to the inner bark, as this will enhance the quality of ‘Ceylon Cinnamon’.

A longitudinal line is then drawn on the opposite side of the bark by skilfully manuring the Thalana kokeththa (peeling knife), thus, two equal halves of the long bark are peeled off from either side of the stem (Ravindran, 2004).

The bark halves are packed one inside the other and filled with pieces of the inner bark until cigar-like quills are made. The compound quill is assembled on a board and when it has reached the required standard length, the end is trimmed with scissors and rolled by the cinnamon technician to make a uniform and straight quill. This process gives the quill the special cigar-like shape of ‘Ceylon Cinnamon’ quills. Cinnamon quills prepared by experienced peelers (technicians) are of uniform thickness from end to end, they have a characteristically smooth skin and uniform yellow colour. The skilled ‘Ceylon Cinnamon’ technicians are officially recognized by the Tertiary and Vocational Education Commission of Sri Lanka (TVEC) and assessed technicians receive a National Vocational Qualification (NVQ) certification.

‘Ceylon Cinnamon’ quills and cut quills are graded on the basis of the traditional Sri Lankan grading system which classifies them as Alba, about 0.24 inches in diameter and brittle, Continental, about 0.63 inches in diameter, less brittle, but with six subgrades, Mexican, less than 0.75 inches in diameter, which is the main ingredient in many Mexican dishes with a flavour that is sweet and warm with soft citrus notes, and Hamburg, less than 1.3 inches in diameter and considered thicker and darker that the other grades.

The traditional knowledge of cinnamon harvesting, processing, peeling, drying, and quill making has led to its organoleptic character. As a result, it has been reported by observers that ‘Ceylon Cinnamon’ cannot be replicated easily anywhere in the world (Lankage 2016).

Today, the private and public sectors promote the competency of the peelers to ensure that the knowledge doesn’t get lost. Becoming a peeler is a hard task and it requires many years of practice (after ten years of practice the peeler is considered as experienced). A proficient peeler will be able to prepare about 50 quills (4 kg) of high quality ‘Ceylon Cinnamon’ per day.

The leaf oil production is a traditional way to use the good and healthy leaves which are selected after cutting the stem and the branches by the cinnamon harvester. They have to be collected from the field and be distilled in the following 2-4 days. It is generally produced using a traditional steam distillation process as explained in the chapter 5.6.

## 8.3. Link between Product and Cultivation Techniques

The cultivation of the ‘Ceylon Cinnamon’ consists of many steps that contribute to the best possible quality of the bark and high yield. The result is the pronounced sweet and citrus aroma with a slightly reddish colour and the subtle hint of honey in ‘Ceylon Cinnamon’.

The cultivation of *Cinnamomum zeylanicum* Blume is deeply anchored in the agricultural tradition of Sri Lanka. If ‘Ceylon Cinnamon’ has been established on the international market for centuries, it is due to its ability to maintain these qualities and characteristics over generations. This is due to the traditional selection of the seeds coming only from the best mother plant. The pruning has been elaborated to such a level that it would be hard to further increase yield and quality without improving the genetic of the crop. Its good practice is considered as common knowledge for the farmers, because it is the way they do it since time immemorial.

Furthermore, the quality of the final product is highly related to the harvesting seasons depending on the monsoons. It is the traditional peeler who knows the perfect time for harvesting; when the plants development and the humid climate are satisfying the conditions to produce the highest quality of ‘Ceylon Cinnamon’ products, the inner bark and the oil being detached more easily from the wood core, which increases the oil content. The whole cultivation process is based on years of tradition and practice that eventually lead to the elaboration and bright spread awareness of this techniques.

The quality improvement of ‘Ceylon Cinnamon’ products has been a major focus for the country for many years. It is why a research centre is dedicated to this crop. It is called the National Cinnamon Research and Training Centre (NCRTC). The latest has helped improving knowledge at

every level from the biology to the processing of the ‘Ceylon Cinnamon’ and contributed to maintain this crop at the highest level of local mastering of a product.

# 9. Reputation

## 9.1. History of ‘Ceylon Cinnamon’ Origin and Development

In the ancient Sanskrit book cataloguing plants, Sarasvati Nigandu, Cinnamon is referred to as “Sainhala” meaning belonging to the country of Sihala (Ceylon). Sri Lanka has been known under various names by different nations over time. Several variations of the word ‘Sihaladvipa’ or ‘Sihala’ have been used by foreign nations when speaking about the country and its export spices especially cinnamon. Under British rule, from 1815 to 1948, the island was known as Ceylon.

The English name Ceylon is derived from Sihala, which is a poor rendering of the Sinhalese name of the island. Arabic name – Serendip, Serendiv, Singaldip is derived from Sinhaladvipa and Greek- Sheelan Sielen Diva and ‘Salike’ also derived from the name Sihala the land of the Sihalas. From the name Sielen, many European forms were derived: Portuguese Ceilão, Spanish Ceilán, Dutch Zeilan, Ceilan , Seylon, French Selon, Ceylan and also the Latin Zeylan.

Sri Lanka was the first country in the world to cultivate ‘Ceylon Cinnamon’ as shifting cultivation chena (hen govitan) in home gardens (gewatu) and subsequently as systemic plantations and production facilities for commercial use. The main source of the king’s revenue was the share that he was entitled to from produce of the land. (Nicholas and Paranavtana (1961) ‘Ceylon Cinnamon’ was the major annual land tax (rajakariya) or the source of revenue of the Sinhala kings. King Rajasingha I (A.D. 1581-1593) organised (Mahabadda), the Cinnamon Department, under a Chief Revenue Officer named Maha Vidane.

There are records of trade of ‘Ceylon Cinnamon’ as far back as ancient Egyptian, Babylonian, Arabian, Venice, Greek and Roman times. Arabs controlled cinnamon trade and kept the source of the product secret to ensure their monopoly. It was not until the 13$^{th}$ century till the first report, an Arabic chronicle named “Monument of Places and History of God’s Bondmen”, identified the place of production of the valuable spice.

In this time, the Arabs were given the name “Saheelan” while referring to the island of Sri Lanka. Actually, this word is likely originating from “sainhalam”, which is the Arab term for “cinnamon” (Daily News, 2016). during this era, cinnamon was considered more valuable than gold.

Eventually, western Europeans found the spice route leading to the discovery of the island of Sri Lanka. During the 16$^{th}$ and 17$^{th}$ centuries,

Portuguese conquistadors discovered *Cinnamomum zeylanicum* Blume and started importing it to Europe (Riberos Santos et al., 2017). The spice has been named after Sri Lanka, which was known as Ceylon at this time. This indicates the plant's origin (J. Thomas et al., 2012). At this time, the plant was growing wild and was not yet cultivated. The Dutch arrived in the middle of the 16th century and systematic cultivation of cinnamon was introduced by the Dutch Governor Falk. There was a drop in the production at the end of the 18th century, but by the middle of the 19th century product was again on demand. The distillation of leaf oil began commercially at this time (R. Wijesekera, 1978).

In 1681, Robert Knox, a well-known British captain wrote the book "Historical Relations of the Island Ceylon". Knox mentioned 'Ceylon Cinnamon' cultivation and traditional cinnamon processes. According to Knox, cinnamon is naturally grown and he highlighted the expertise of the people who peel the cinnamon bark. "I proceed to the third Tree, which is the Cinnamon, in their Language Corunda-gauhah. It grows wild in the Woods as other Trees, and by them no more esteemed; It is most on the West side of the great River Mavela-gonga. It is much as plenty as Hazel in England in some places a great deal, in some little, and in some none at all. The Trees are not very great, but sizable. The (Ceylon) Cinnamon is the Bark: Bark or Rind, when it is on the Tree it looks whitish. They scrape it and pull it off and dry it in the Sun: they take it only from off the smaller Trees, although the Bark of the greater is as sweet to the smell and as strong to the taste". Knox (1681)

The production and fame of 'Ceylon Cinnamon' grew with time, as John Ferguson rightly indicates in his book, "…the export of the (Ceylon) Cinnamon spice was insignificant as compared with what it has become under the free British system.

"There can be no doubt that 'Ceylon Cinnamon' is the finest in the world, celebrated from the middle of the fourteenth century according to authentic records, and one of the few products of importance indigenous to the island. It was known through Arab caravans to the Romans, who paid in Rome the equivalent of £8 sterling per pound for the fragrant spice. Ceylon (called by De Barras the "mother of cinnamon") has, therefore, well earned the name "cinnamon isle"' (Ferguson, 1887).

## 9.2. Current reputation of 'Ceylon Cinnamon'.

'Ceylon Cinnamon' is highly recognized as a refined spice product with reputation based on the unique flavour and the research done on the product.

Today, high end restaurants located, for example, in Malaysia's twin Petronas towers or in Hong Kong offer 'Ceylon Cinnamon' in their high tea or breakfast churros with 'Ceylon Cinnamon'. Hotels in Washington D.C. provide the option of decaffeinated 'Ceylon Cinnamon' Spice tea in their

In-Room Dinning Menu. The 2020 ‘Penzeys Spices’ website has many recipes using ‘Ceylon Cinnamon’ sticks and powder.

According to the research article published by Abeysekera, Arachchige and Ratnasooriya (2017) Sri Lanka is the topmost and the only continuous supplier of high quality true cinnamon with 85% of world market share and 14.5% market share for all types of cinnamon worldwide. According to the recent statistics nearly 50% of export earnings of minor agricultural crops in Sri Lanka come from ‘Ceylon Cinnamon’. Additionally, the research article indicates that the “‘Ceylon Cinnamon’ is the true cinnamon the world over and the main contributor of the export earnings from spices in Sri Lanka.

In 2019 the New Food Magazine published an article by Priyashantha on ‘Ceylon Cinnamon’ highlighting the good quality and properties with a “particular emphasis on how it compares with cassia cinnamon”.

CBI in its document Exporting cinnamon to Europe describes cinnamon products and specifies quality parameters for ‘Ceylon Cinnamon’ “Cinnamon is graded in accordance with the relevant national standard of the country of production. In addition, ISO standard (…) 6539-2014 (‘Ceylon Cinnamon’) provide some general guidelines on the grading, handling and packing of cinnamon.”. Futhermore, the European Spice Association (ESA) has published the Quality Minima Document in which is indicated the Chemical / physical parameters and it is mentioned “The use of SO2 is only permitted for ‘Ceylon Cinnamon’, Annex III part B Directive 95/2/EC”

A documentary about essential oil in Sri Lanka, “Essential Oil Industry in Sri Lanka”, examines (after an introduction examining the use of the oils) the history and fame of ‘Ceylon Cinnamon’ and describes the virtues of the oil. It has been produced by the Department of chemical and process engineering, University of Moratuwa, Sri Lanka, and is available online (see: https://www.youtube.com/watch?v=wCJ7K-oFdPk).

# 10. Controls

## 10.1. Responsible entities for the control of ‘Ceylon Cinnamon’

The Department of Export Agriculture (DEA), a part of the public administration of Sri Lanka, is the public authority designated by Sri Lanka to verify the compliance with the product specification. It is an executive authority established under the Export Agriculture Act No 46 of 1992. The DEA has both a central directorate and offices throughout Sri Lanka. The DEA provides assistance to Cinnamon growers including new plantings, productivity improvements and post-harvest measures, statistics and prices, as well as the organisation and promotion of cultivation and

processing. It ensures that policies related to cinnamon are reflected in other governmental policies.

See generally: http://www.exportagridept.gov.lk/web/index.php?lang=en, for a detailed examination of the activities of the DEA.

## 10.2. Control plan

The control plan has been drawn up by the DEA and will be carried out by the DEA as the public authority designated by Sri Lanka. An outline of the controls to be undertaken is set out in Table 10.2.

**TABLE 10.2 – Points of control, compliance criterial and sampling requirement**

| | Control Point | Compliance Criteria | Sampling DEA |
|---|---|---|---|
| 10.2.1. | General | | |
| a. | Producer, Processor & Trader, Collector, Controllers, and processing facilities are registered member of CCGIA | Registration Number, Contract, contact information, address or location, certificates (if apply) | 100 % |
| b. | There shall be a reference system in the field for identification | Name board, Plot ID, Number of hectares | 100 % |
| c. | Cultivation field shall locate within the geographic area | Individual field map or geo-localized IT file (GPS Coordinates), Overview map and description of the cultivation field | 100 % |
| d. | Internal inspection has been performed by ICS (Internal Control System) within last year | Internal inspection report, Sanction Report/ Sanction list, etc. | 100 % |
| e. | Members of the CCGIA authorize to use the CCGI are keeping records of their actions to ensure the compliance with CCGI specifications | Proper record keeping of the actions for the self-control aimed to ensure the compliance with specifications | ≤50 % |
| 10.2.2. | Propagation and Cultivation | | |
| a. | Planting materials (seeds, plantlets) obtained from own farm or from a nursery | Planting materials (seeds, plantlets) purchasing invoices, Planting records | ≤50 % |

| | | | |
|---|---|---|---|
| | approved by Department of Agriculture | (Farm diary) | |
| b. | Planting arrangement (land establishment) shall be done as per Section 5.2. | Planting records (Farm diary), Physical observation | ≤50 % |
| c. | Proper pruning of the bush (Removal of unnecessary side branches and leaves) shall be done as per Section 5.2. | Pruning records (Farm diary), Physical observation | ≤50 % |
| d. | Pest, Disease and Weed control is mainly done adhering to IPM (Integrated Pest Management) Practices | IPM records (Farm diary) - Prevention, Observation/ Monitoring and Intervention activities, Physical observation | ≤30 % |
| 10.2.3. | Harvesting | | |
| a. | Harvesting plan including, Plot ID, number of hectares, starting date, ending date, and number of harvesters | Harvesting plan with valid and complete information | 100 % |
| b. | harvesting activities should be carried and fulfilled as per section 5.3 | Harvesting records (Farm diary), Physical observation, Equipment maintenance record, Information required by the traceability system are met | ≤50 % |
| c. | Skilled harvester member of CCGIA with valid ID does the harvesting procedure | Registered harvester, harvester ID | 100 % |
| d. | Creation of batch of stems including, code of the batch, number of stems (500 max per batch), reference of the harvesting plan, and harvester(s) ID(s) | Batch of stems with valid and complete information | ≤50 % |
| e. | If the leaves are going to be used for Cinnamon leaf oil, the leaves must be kept out of the rain and a batch of leaves (5kg to 500 kg) should be created, including the location of plantation, reference of the | Batch of leaves with valid and complete information | ≤50 % |

| | | | |
|---|---|---|---|
| | harvesting plan, and harvester(s) ID(s) | | |
| 10.2.4. | **Transport of raw materials & Finished goods** | | |
| a. | A record of Transporters'/ collectors' ID maintained during harvesting, processing, packaging and delivering the leaf oil, bark oil, powder and cut quills. | Transporters'/ collectors' ID registered and entered in the traceability system | 100 % |
| b. | Harvested Cinnamon stems & Leaves shall only be transported to the pre-processing centres located in close proximity and **within 24 hours** from harvesting site | Location maps, Transport receipts (delivery note against GRN) | 100 % |
| c. | Cinnamon stems & leaves shall be transported in good state using suitable method | Usage of clean bags, Vehicles, Cleaning records, 'Star' grading acceptance | ≤30 % |
| d. | Finished products shall be transported in covered vehicles and under suitable conditions (Clean and dry conditions which will protect the product from pests, moisture and loss of volatile oils) | Visual observation, Dispatch note with suitability remarks | ≤50 % |
| e. | Document receipts shall be kept of relevant transfers/ transportations (indicating basic details – Amount, Field/ Farmer/ Processor reference, etc.) | Transport documents (e.g. Delivery notes, GRNs, Factory dispatches, Gate passes, Invoices, Packing Lists, Bill of Laden, etc.) | 100 % |
| 10.2.5. | **Processing – for all products** | | |
| a. | All processing facility shall be certified under a recognized food safety standard | Valid certificate either of – GMP, HACCP, ISO 22000, FSSC 22000 | 100 % |
| b. | Document receipts shall be kept of relevant transfers/ transportations of batches or products (indicating basic details – Quantity/ Weight, Field/ Farmer/ Peeler reference, | Transport documents (Invoices, Delivery notes, GRNs, etc.) Records of incoming and outgoing batches | 100 % |

| | | | |
|---|---|---|---|
| | Processing unit reference, etc.) | | |
| | **Leaf Oil** | | |
| a. | Cinnamon leaf oil shall be obtained using batch of (naturally) dry leaves and proper steam distillation methods accordingly to **Section 5.3.** | Processing records, Physical observation, code of the batch of leaves used | ≤30 % |
| b. | Processing facility shall be located in the defined geographical area | ID of the processing facility and information registered in the CCGI | 100 % |
| c. | Creation of batch of leaf oil including, code of the batch, ID of the processing facility, quantity (max 200 litres as a batch), code of the leaf batch used | Batch of leaf oil with valid and complete information | ≤50 % |
| d. | Visual and smell inspection of oil batch according to **Section 3.2** and eugenol content determination (if required) | Procedures for inspection, records of non-conformities, and records of eugenol determination | ≤30 % |
| e. | Sampling and testing of oil for every 1000 litres produced in the same facility or the samples collected every 2 years | Sample keeping and test results from an accredited ISO/IEC 17025 laboratory | ≤50 % |
| | **Bark Peeling** | | |
| a. | Processing facility shall be located in the defined geographical area | ID of the processing facility and information registered in the CCGI | 100 % |
| b. | Creation of batch of raw material including, code of the batch, ID of the processing facility, quantity (max 50 kg as a batch), code of the stems batch used, processing facility ID | Processor training records, Processing records, Cleaning/ Pest control records, Visual observation, Cinnamon technicians' ID | ≤50 % |
| c. | Creation of batch of quills including, code of the batch, ID of the processing facility, quantity (max 50 kg as a | Batch of raw material with valid and complete information | ≤50 % |

| | | | |
|---|---|---|---|
| | batch), code of the stems batch used, processing facility ID | | |
| | **Bark Oil** | | |
| a. | Cinnamon bark oil shall be obtained using raw material from the peeling process and proper steam distillation methods accordingly to **Section 5.3 III.** | Processing records, Physical observation, code of the batch of raw material used | ≤30 % |
| b. | Creation of batch of bark oil including, code of the batch, ID of the processing facility, quantity (max 200 litres as a batch), code of the raw material batch used | Batch of bark oil with valid and complete information | ≤50 % |
| c. | Visual and smell inspection of oil batch according to **section 3.2** and grading according to section 5.4-III | Procedures for inspection, records of non-conformities, and records of grading | ≤50 % |
| d. | Sampling and testing of oil for every 1000 litres produced in the same facility or the samples collected every 2 years | Sample keeping and test results from an accredited ISO/IEC 17025 laboratory | ≤30 % |
| | **Cinnamon Powder** | | |
| a. | Cinnamon powder shall be obtained using raw material from the peeling process and grinding methods accordingly to **Section 5.3 III.** | Processing records, Physical observation, code of the batch of raw material used | ≤50 % |
| b. | Creation of batch of cinnamon powder including, code of the batch, ID of the processing facility, quantity (max 50 kg as a batch), code of the raw material batch used | Batch of cinnamon powder with valid and complete information | ≤50 % |
| c. | Visual and smell inspection of oil batch according to **section 3.2** | Procedures for inspection, records of non-conformities | ≤30 % |
| | **Sorting Quills and Cut Quills** | | |

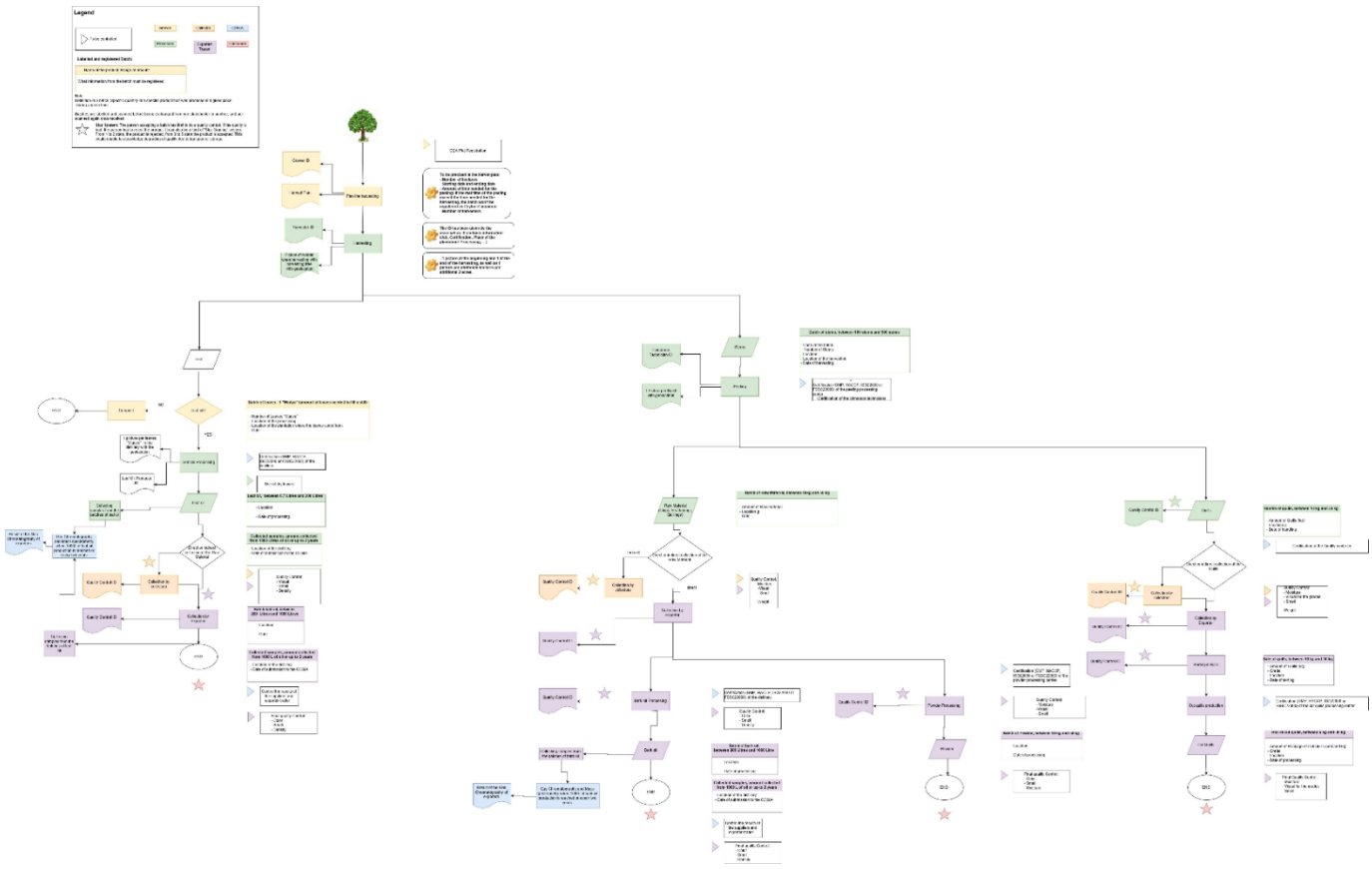
| | | | |
|---|---|---|---|
| a.<br><br><br><br>b.<br><br><br><br>c. | Sorting and grading of Cinnamon quills shall be done by certified Cinnamon technicians as per section 5.4 -I<br><br>Creation of batch of cut quills including, code of the batch, number of stems (30 kg max as a batch), reference of batch of quills used.<br><br>Visual and smell inspection of quills or cut batch according to section 3.2 | Records, Visual observation, records of sorting procedures, ID of cinnamon technician doing th grading<br><br>Batch of cut quills with valid and complete information<br><br>Procedures for inspection, records of non-conformities | ≤50 %<br><br>≤50 %<br><br>≤30 % |
| 10.2.6. | Packaging and Storage | | |
| a.<br><br><br><br>b.<br><br><br>c. | All 'Ceylon Cinnamon' GI products packaging should be meet all conditions at the Section 5.6<br><br>Duration of storage for Cut quills and Cinnamon powder shall only be stored for max 2 years<br><br>Cinnamon bark oil and leaf oil shall only be stored for max 2 years | Food grade certificate of packaging materials, Packaging specification, Cleaning records, Pest control records, Visual observation<br><br>Stock movement records, Production/ Best before date references<br><br>Stock movement records, Production/ Best before date references | ≤50 %<br><br>≤30 %<br><br>≤30 % |
| 10.2.7. | Labelling | | |
| a.<br><br>b. | All type of labels of CCGI products should in complies with Section 6<br><br>Labels of whole Cinnamon quills and Cinnamon powder shall contain below mandatory references<br><br>1) Name, trade name or brand name and address of the manufacturer or packer<br>2) Batch or code number | Sample label, Visual observation, Label approval<br><br>Sample label, Visual observation, Label approval | ≤50 %<br><br>≤50 % |

| | | | |
|---|---|---|---|
| | 3) Net mass<br>4) Grade of the material<br>5) Producing country – Sri Lanka<br>6) Any other markings required by the buyer (Year of harvest, Date of packing, Date of expiry, etc.) | | |
| 10.2.8 | Administration | | |
| a. | Stock and routine activity records shall be maintained at field cultivation level | Farm Dairy (Planting records, IPM records, pruning records, Cultivation input records, Harvesting records, etc.), Sub-contractor agreements/ assessments, Yield estimate records, etc with the support of Internal Controllers and Traceability System | ≤30 % |
| b. | Maintain the traceability for all four products | Traceability reports, errors identified, customer complain handing records, etc | 100 % |
| c. | Sample analysis should be analysed in ISO 17025 accredited laboratories for all CCGI products as per a defined frequency in **Section 10.2.5.** | Sample analysis reports of finished products (Cinnamon quills, Cinnamon powder, Cinnamon leaf oil & Bark oil) | 100 % |

**Note: The sampling percentage are indicative and can be revised by the public authority on the basis of the experience gained in implementing the plan.**

## 10.3. Flow chart of traceability and control points for 'Ceylon Cinnamon'

**See:** http://pureceyloncinnamon.srilankabusiness.com/pdf/Control-Plan-CCGIA.pdf



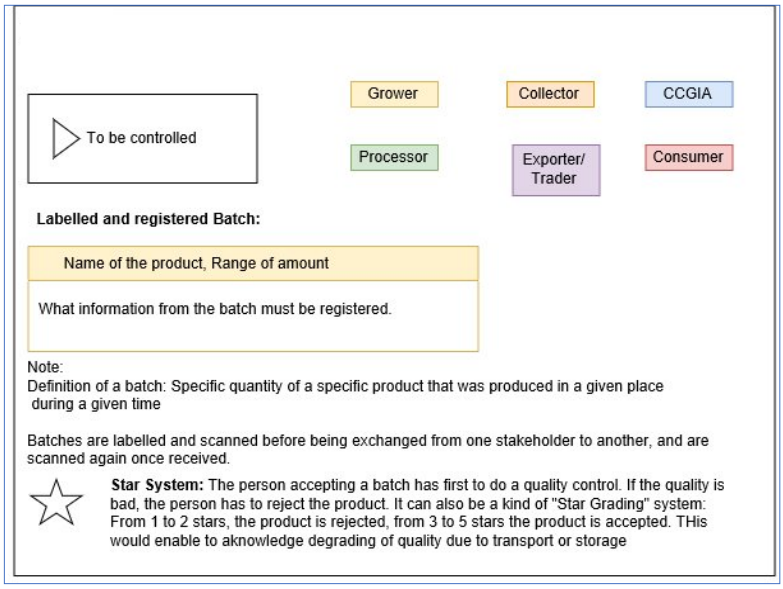



Figure 10.2.1: Flow chart codes of control map

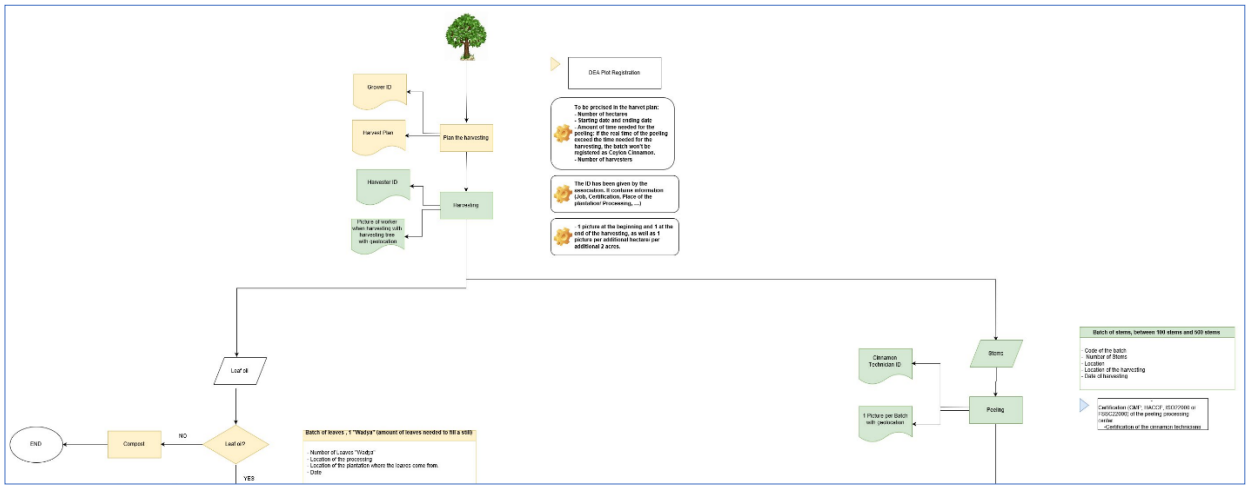
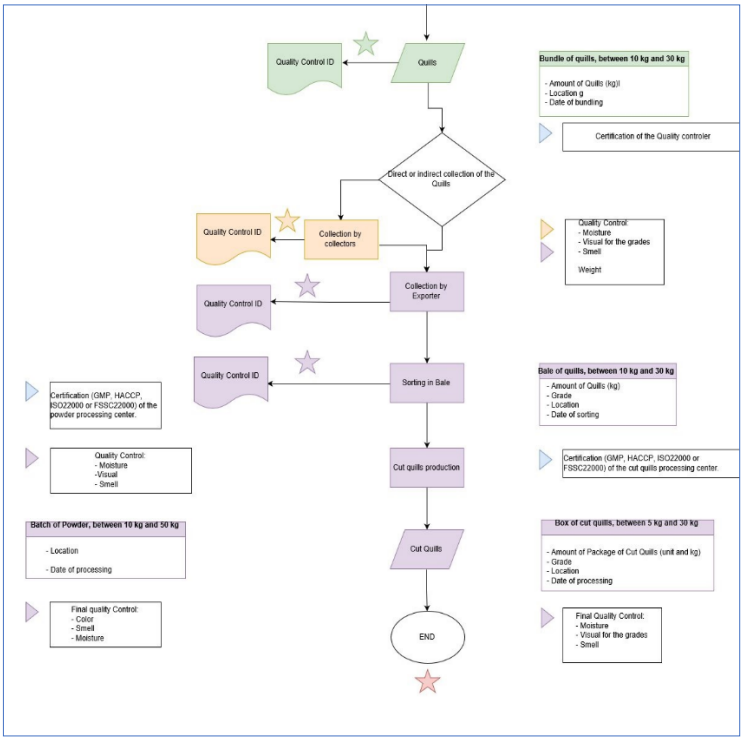



Figure 10.2.2: First steps in Harvesting and raw materials




Figure 10.2.2: End products steams and raw materials for Cut Quills, Powder, Bark Oil




Figture 10.2.3: Controls at Cut Quills processing.

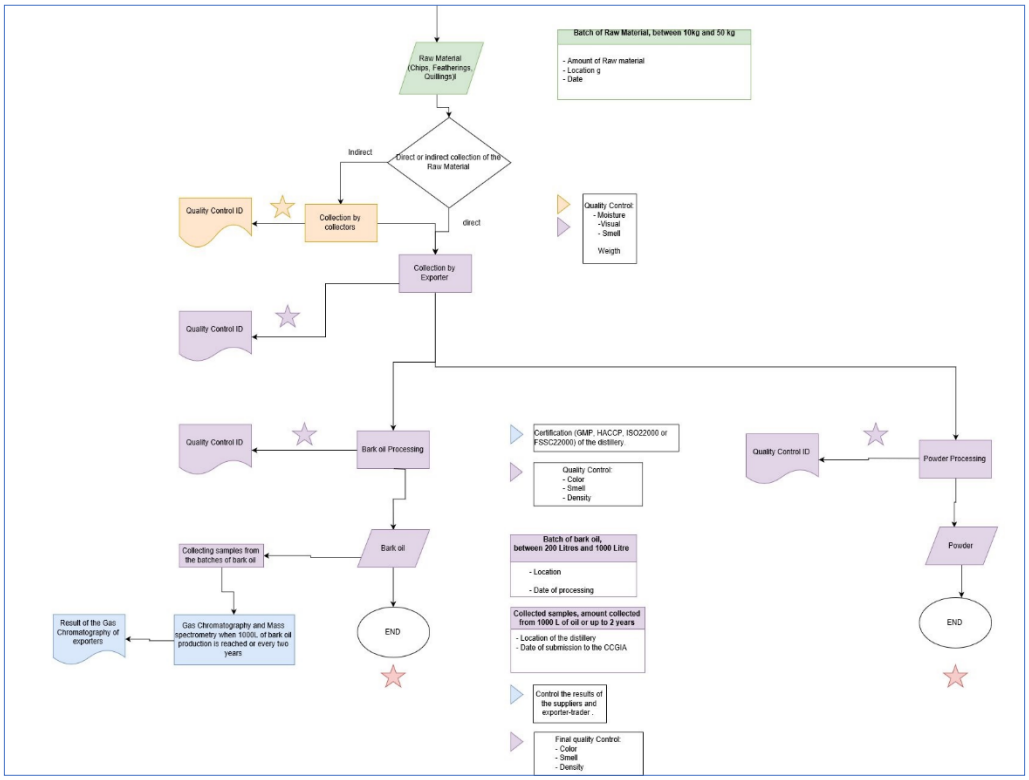



Figure 10.2.4: Controls at the Bark oil and powder processing

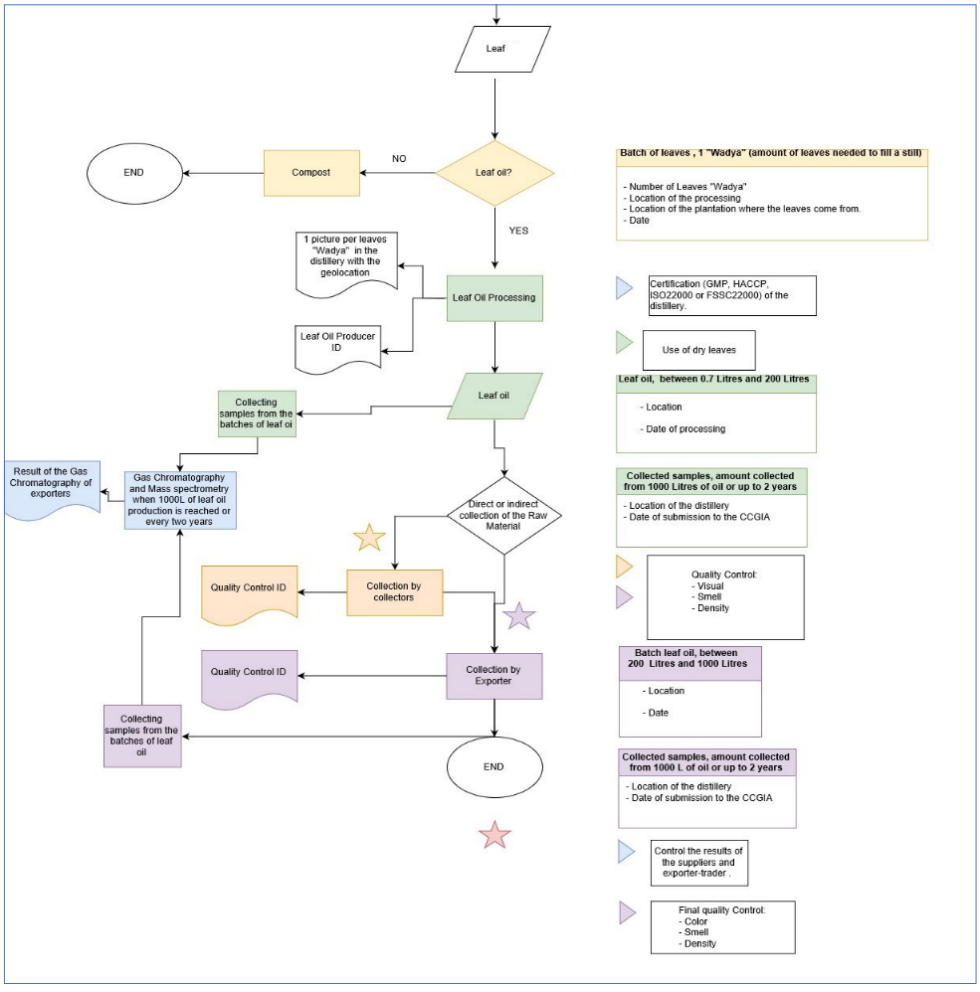
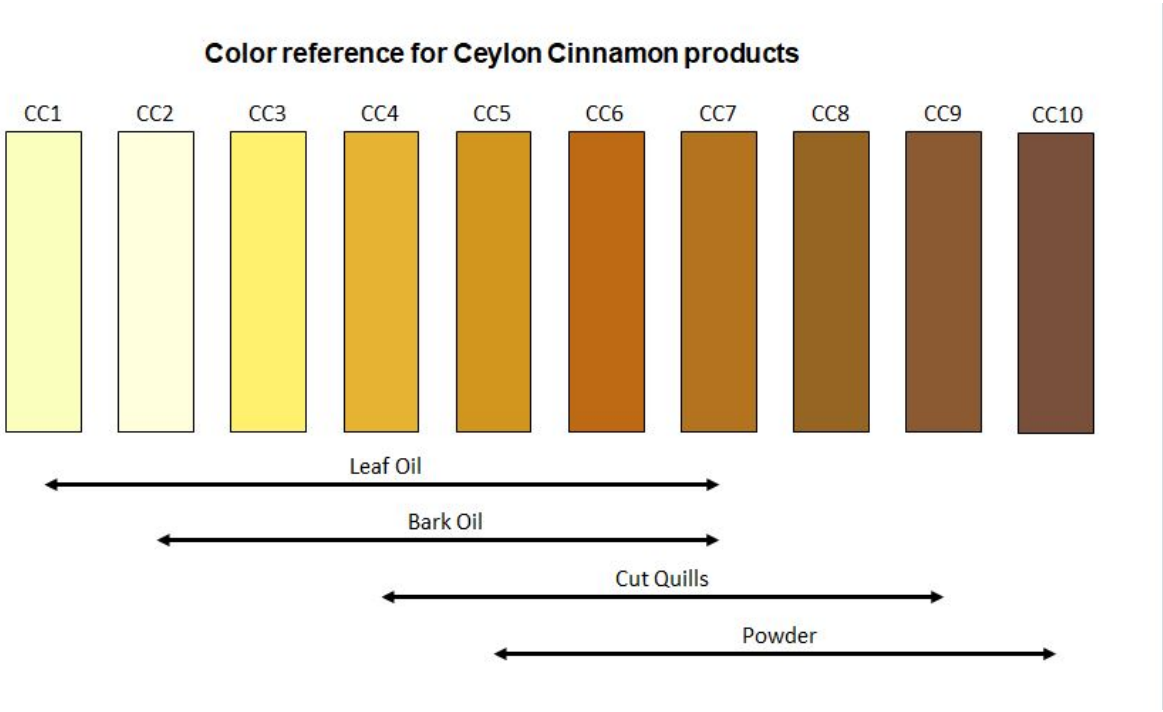



Figure 10.2.5: Controls at the leaf oil processing

# Appendix

1. Panton Clour reference




2. Panton Clour code

| CC1 | CC2 | CC3 | CC4 | CC5 |
|---|---|---|---|---|
| **RGB:** 250 255 190<br>**CMYB:** 2 0 25 0<br>**Hex:** #FAFFBE | **RGB:** 255 255 220<br>**CMYB:** 0 0 14 0<br>**Hex:** #FFFFDC | **RGB:** 255 240 110<br>**CMYB:** 0 6 57 0<br>**Hex:** #FFF06E | **RGB:** 230 180 50<br>**CMYB:** 0 22 78 10<br>**Hex:** #E6B432 | **RGB:** 210 150 30<br>**CMYB:** 0 29 86 18<br>**Hex:** #D2961E |

| CC6 | CC7 | CC8 | CC9 | CC10 |
|---|---|---|---|---|
| **RGB:** 190 105 20<br>**CMYB:** 0 29 86 18<br>**Hex:** #BE6914 | **RGB:** 180 115 30<br>**CMYB:** 0 36 83 29<br>**Hex:** #B4731E | **RGB:** 150 100 35<br>**CMYB:** 0 33 77 41<br>**Hex:** #966423 | **RGB:** 140 90 50<br>**CMYB:** 0 36 64 45<br>**Hex:** #8C5A32 | **RGB:** 120 80 60<br>**CMYB:** 0 33 50 53<br>**Hex:** #78503C |

# Proof of Origin

As the geographical area is contiguous with the territory of the Democratic Socialist Republic of Sri Lanka, the proof of origin is the normal customs origin certificate issued on the export of all goods from Sri Lanka.

In addition, the origin and compliance with the specification is ensured by the control body, the DEA, and the 'Ceylon Cinnamon' GI Association (CCGIA). The DEA controls the growing of the trees and the registration of cinnamon farmers, as well as the harvesting and post harvesting processes, as well as at the export stage to ensure that at all stages of production the specifications are complied with.

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18. Wijesekera, R. (1978*). Historical overview of the cinnamon industry. Critical Reviews in Food Science and Nutrition*, 10(1), 1e30 https://www.ncbi.nlm.nih.gov/pubmed/363362

**Relevant Publications for Geographical Link, Reputations, and Historical Background**
http://pureceyloncinnamon.srilankabusiness.com/blog.html

1. Cultivation and Management of Cinnamon
   http://pureceyloncinnamon.srilankabusiness.com/pdf/Cultivation-and-Management-of-Cinnamon.pdf

2. The Cinnamon Industry in Sri Lanka
   http://pureceyloncinnamon.srilankabusiness.com/pdf/The-Cinnamon-Industry-in-Sri-Lanka.pdf

3. Historical Background of 'Ceylon Cinnamon'
   http://pureceyloncinnamon.srilankabusiness.com/pdf/Historical-Background-of-Ceylon-Cinnamon.pdf

4. Increased Export Potential for 'Ceylon Cinnamon'
   http://pureceyloncinnamon.srilankabusiness.com/pdf/Increased-Export-Potential-for-Ceylon-Cinnamon.pdf

5. Cultivation and Management of Cinnamon
   http://pureceyloncinnamon.srilankabusiness.com/pdf/Cultivation-and-Management-of-Cinnamon.pdf

6. Link to the References stated in background

http://www.statistics.gov.lk
http://www.climate-data.org
https://www.youtube.com/watch?v=wCJ7K-oFdPk

**Public Authority designated by Sri Lanka to verify compliance**

**http://www.exportagridept.gov.lk/web/index.php?lang=en**

# Department of Export Agriculture with District Offices

| No. | Name of Office | Address | Telephone No. | Fax Number |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| 1 | Colombo | 16th Floor, Suhurupaya, Battaramulla | 011 2867275 | 011 2867275 |
| 2 | Gampaha | 313/64/19, Walawwatta Road, Gampaha | 033 2222553 | 033 2222553 |
| 3 | Kalutara | 179B, Temple Road, Kalutara North | 034 2236367 | 034 2236367 |
| 4 | Kandy | 1062, Sirimavo Bandaranayake Mawatha, Peradeniya | 081 2388392 | 081 2388392 |
| 5 | Matale | Elwala, Ukuwela | 066 2243451 | 066 2243451 |
| 6 | Nuwaraeliya | Racecourse Road, Nuwaraeliya | 052 2222065 | 052 2222065 |
| 7 | Galle | Bandi Road, Labuduwa, Akmeemana | 091 2223494 | 091 2223494 |
| 8 | Matara | No. 38, Rahula Road, Matara | 041 2222443 | 041 2222443 |
| 9 | Hambantota | Kadurupokuna Road, Tangalle | 047 2240214 | 047 2240214 |
| 10 | Ampara | C7, Dutugamunu Road, Ampara | 063 2222236 | 063 2222236 |
| 11 | Kurunegala/Puttalam | No. 10, Wilgoda Road, Kurunegala | 037 2222160 | 037 2222160 |
| 12 | Anuradhapura | 908, Buddhagaya Mawatha, Anuradhapura | 025 2055103 | 025 2055103 |
| 13 | Polonnaruwa | No. 55, Samudragama, Bandiwewa, Polonnaruwa | 027 2227446 | 027 2227446 |
| 14 | Badulla | Ratwatta Mawatha, Badulla | 055 2222057 | 055 2222057 |
| 15 | Monaragala | District Secretariat, Monaragala | 055 2276069 | 055 2276068 |
| 16 | Ratnapura | New Town, Ratnapura | 045 2222029 | 045 2222029 |
| 17 | Kegalle | Rathambalawatta Road, Kegalle | 035 2222204 | 035 2222204 |