MINISTRY OF FOOD PROCESSING INDUSTRIES
GOVERNMENT OF INDIA

सत्यमेव जयते

NIFTEM
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Reading manual for Cardamom Processing

under PMFME scheme

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Ministry of Food Processing Industries

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Introduction

Cardamom (*Elettaria cardamomum L.)* popularly, known as Queen of Spices is native to the evergreen rain forests of the Western Ghats in South India. It is commonly cultivated in Kerala, Karnataka, and Tamil Nadu. Cardamom is used for flavouring various preparations of food, confectionery, beverages, and liquors. Worldwide it is cultivated in Guatemala, Tanzania, Sri Lanka, El Salvador, Vietnam, Laos and Cambodia. In India cardamom is mainly cultivatedin Kerala, Karnataka and Tamil Nadu.

Climate and soil

Evergreen forest of western ghats with a latitude of 600 to 1200 above MSL is best suitable for the cultivation of cardamom. Organic content-rich Forest loamy soil with a soil pH of about 4.2 to 6.8 and low to medium availability of phosphorous and medium to the high availability of potassium are the best suitable soil condition for the growth of cardamom. It also grows on laterite soils, clay loams, and rich black soils having good drainage. Sandy soil is not suitable for growth. Average rainfall about 1500 to 4000 mm and optimum temperature of about 10^0C to 35^oC is the best fit condition for the cardamom cultivation.

Cardamom varities

There are two main types of cardamom: Small green cardamom (Elettaria cardamomum) Large red/black cardamom (Amomum subulatumRoxb) The most common type is the small green cardamom while large cardamom is mainly grown in India, with some in Nepal and Bhutan. They both come from the Zingiberaceae family of plants. Major improved varieties of cardamom released so far areMudigere-1 (V); Mudigere-2 (V); PV-1, PV-2 (V),; CCS-1 (Suvasini) (V); ICRI-1 (V); ICRI-2 (V); ICRI-3, TKD – 4 (V), IISR Vijetha (V), IISR Avinash (V), Njalani green gold (V), SKP-14) (V); ICRI-4 (V) etc.

Cardamom cultivation

Cardamom is propagated mainly through seeds and also through suckers each consisting of atleast one old and a young aerial shoot. Seedlings are normally raised in primary and secondary nurseries. Raised beds are prepared after digging the land to a depth of 30-45cm. The beds of 1m width and convenient length raised to a height of about 30cm are prepared. A fine layer of humus-rich forest soil is spread over the beds. A seed is to be collected from well ripe capsules. Immediately after harvesting, the husk is removed and the

seeds are washed repeatedly in water for removing the mucilaginous coating. Seeds should be sown immediately after extraction. One kg of seed capsules may produce 5000 seedlings. Sowing may be taken up during November-January and is done in rows. Seedbeds are to be dusted with chloropicrin or Carbon disulphide. The germination commences in about 30 days and may continue for a month or two. After germination, the mulch is to be removed. Manuring at the rate of 90g nitrogen (N), 60g phosphorus (P_2O_5) and 120g potash (K_2O) per bed of 5x1m size, in three equal split doses at an interval of 45 days is recommended to produce healthier seedlings. The first dose of fertilizer may be applied 30 days after transplanting in the secondary nursery. Pits of 45x45x30cm size are dug in April-May and filled with a mixture of top soil and compost or well decomposed farm yard manure. In slopy land, contour terraces may be made and pits may be taken along the contour and a close planting (2mx1m) is advisable along the contour. The planting is carried out during the rainy season commencing from June. Seedlings are to be planted upto the collar region for better growth. Cloudy days with drizzle are ideal for planting. Generally in Kerala and Tamil Nadu, the seedlings are transplanted in March-May at a spacing of 20x 20 cm and mulched immediately. Beds are to be covered with an overhead pandal and should be watered regularly. In order to overcome the dry spell during summer, it is necessary to irrigate the crop to get maximum production as it helps in initiation of panicles, flowering and fruit set. They may be irrigated at an interval of 10-15days till the onset of monsoon. It is an important cultural practice in cardamom. Fallen leaves of the shade trees are utilized for mulching. Sufficient mulch should be applied during November-December to reduce the ill effects of drought, which prevails for nearly 4-5 months during summer. Exposing the panicle over mulch is beneficial for pollination. The first round of weeding is to be carried in May-June, the second in August-September and the third in December-January. Trashing should be done for the cardamom plants, it consists of removing old and drying shoots of the plant once in a year with the onset of monsoon under rainfed conditions and 2-3 times in high density plantations provided with irrigated facilities. It is very sensitive to moisture stress. Shade helps to regulate soil moisture as well as temperature and provides congenial micro-climate for cardamom. Excess shade is also quite detrimental and shade has to be regulated so as to provide 50-60% filtered sunlight. After the monsoon is over, a thin layer of fresh fertile soil, rich in organic matter may be earthed up at the base of the clump, covering up to the collar region be scraping between the rows or collecting soil from staggered trenches/check pits. This encourages new growth.

Processing of cardamom

The cardamom plants start bearing two to three years after planting. Panicles appear from the base of the plants, it is generally starting to appear on January on ward. The flowering starts from April to August or even after. The peak stage of flowering is may to June. Maturing time for fruit is up to 120 days after flowering, Fruits are small trilocular capsules containing15-20 seeds.On maturity, seeds turn dark brown to black. Healthy cardamom plant produces about 2000 fruits annually, weighing about 900 g.Harvesting commences in August- September and extends into February- March of the next year.

Fig 1: Cardamom fruit and flower bearing stock

Matured cardamom capsules are picked up. Picking practice have done in two ways. Light picking in which matured capsules are picked and in hard picking semi matured capsules also

picked along with matured capsules.

After plucking the capsules are cleaned well as a first stage of post-harvest processing. The crop should be cleaned before processing. The first stage is to remove dust and dirt using a winnowing basket. This can be made locally from bamboo, palm or other leaves. Small machines are available for cleaning but they are rarely cost effective. After winnowing the crop needs to be washed in water, the capsules are washed thoroughly in water to remove any soil that has adhered to them. the water must be changed regularly to prevent recontamination by dirty water. Only potable water should be used. After washing the cardamom capsules the stalks are removed.

Curing is the next step followed by washing. Soaking green (wet) capsules immediately after harvest in 2 per cent sodium carbonate solution for 10 min fixes green colour during subsequent drying and storage. Quick dip of capsules in hot water at 40 °C and dipping capsules for 10 min in 2 per cent sodium carbonate helps in better retention of green colour of cured capsules. Pre-soaking of capsules in copper formulations and chemicals like NAA, IAA, GA and magnesium sulphate helped to retain more chlorophyll compared to other treatments.

Maintain a safe moisture content is important for to reduce the mould and fungal growth and to increase the shelf life of the cardamom. Drying is the most important step in the cardamom processing affecting the quality of the cardamom. It is important to dry the cardamom capsules as soon after harvest as possible to prevent the loss of flavour. The drying temperature should not be above 50°C as this affects the colour and delicate flavour of the final product. In most places, cardamom capsules with a good green colour. The moisture content of a fresh cardamom capsule is about 85%. This needs to be reduced to 10% in the dried product so the cardamom capsules can be stored. If the drying period is too long mould can start to grow on the cardamom. Cardamom capsule colour and the retention of greenness are important for highest quality. Capsules cured immediately after picking retained greener colour and the loss of greenness was more significant if the capsules were stored for more than 12 hours. Bagging of the capsules in jute bags, and cool storage, aids the retention of greenness. Sun-drying is generally undesirable for cardamom because of bleaching and capsule splitting. The most widely-adopted drying system is a slow dry over 18-30 hours using a number of methods of artificial drying (electric, kiln, bin) with various methods of hot air flow. A temperature between 40- 50°C helps retain the green colour and an increase in

temperature significantly increases the percentage of yellow capsules, split capsules, and heat injury. The harvested capsules are spread in a single layer on trays. After keeping cardamom trays in the racks curing room is closed and heating is done by burning firewood in the furnace. The hot air passed through the pipes placed a few centimetres above the floor enhances the room temperature to 45 ñ 550C and this temperature status should be maintained for three to four hours initially. At this stage the capsules sweat and with the enhanced temperature, give off moisture. The ventilators are opened for sweeping out water vapour from the drying fruits. Exhaust fans can also be used for the speedy removal of moisture. After the complete removal of water vapour, ventilators are closed and the temperature inside the chamber should be maintained again at 45 -55^{0}C for about 18 to 24hours. s. The temperature is again raised to 60 - 65^{0}C for another one or two hour for completing the curing process. The temperature is raised to hasten the cleaning process removing debris like stalks attached the capsules. Avoid raising temperature above 65^o C inside the curing house to reduce splitting and loss of volatile oil. Black coloured blanket kept on the capsules spread under the sun will augment the drying process and also provides green colour to the cured produce.

Fig 2: Dried cardamom

Various methods of drying

A. Sun drying

Sun drying is carried out by spreading the cardamom capsules are over the concrete floor. Direct sunlight should be avoided during the drying process because it may cause the colour

fade and affecting the quality of the cardamom. This is the simplest and cheapest method, but does not produce the highest quality product. It is only successful in places where the climate is dry and hot. During the monsoon season for example, drying will be interrupted by rainfall which can cause mould to grow on the capsules. During drying

B. Solar drying

The use of a solar dryer should improve the quality of the dried capsules as compared to sun drying because it is a cleaner and provide a more controlled environment. But it is not a popular choice as the green colour is lost during drying. The capsules should be placed in the dryer, out of direct sunlight, and dried until they have a final moisture content of 10%. In places with high humidity the solar dryer can only be used together with an extractor fan to remove the humid air

C. Wood-fired dryer

In India, cardamom capsules are traditionally dried in curing houses, using wood to provide the heat. This method puts a huge demand on firewood. The smoke from the fire can give the capsules an unpleasant smoked flavour. The processor must ensure that the capsules closest to the heat source are not burnt or scorched. Cardamom capsules dried by this method are not of the highest quality.

D. Electric or gas dryer:

An electric or gas-fired dryer is an improvement over the use of a wood fuelled fire and is the best choice for drying large quantities of cardamom, especially in places where there is rainfall during the drying season. It is the most expensive of all options but does produce the highest quality product

E. Humidity-controlled drying:

A drying chamber has been developed that helps to reduce colour loss and to produce high quality pods. The cardamom capsules are placed in the drying chamber, which is at a temperature of 50°C. During the first two hours of drying, the humidity builds up within the chamber. This allows the cardamoms to ‘cook’ and at the same time destroys the enzymes that break down the chlorophyll (chlorophyll gives the pods their green colour). No light is allowed into the drying chamber. After two hours the humid air is blown out of the chamber and the humidity reduced. The capsules are left in the chamber to dry until they have a final moisture content of 10%

F. Biomass gasifiers

Electricity and liquefied petroleum gas (LPG) are clean and convenient fuels for drying, but are not cheap or easily available in villages. Firewood, stubble and dry leaves are readily available in villages, but they are smoky and can contaminate the dried product. A gasifier is a device that has been developed by TERI (The Tata Energy Research Institute in India) for use in the drying of cardamom. The gasifier uses briquettes that are made from firewood and other types of biomass and turns them into a gas that burns with a clean smokeless flame. The main advantage of using a gasifier is that it is more efficient in terms of the amount of fuel used. Biomass that burns in an open fire losesabout two thirds of its energy as smoke. This system therefore uses less fuel and produces a higher quality dried cardamom. The gasifier for drying cardamom, developed by TERI, can be made locally using recycled oil drums.

Dryer	Temperature	Drying time (hrs)
Through flow dryer	**50^{o}C**	**22h**
Solar cardamom dryers	**-**	**3 days**
Cross flow electric dryer	**55^{o}C**	**18 -20 hr**
Bin dryer	**55^{o}C**	**10-12hr**
Electrical dryer	**45-50^{o}C**	**10-12hr**
Sun drying	**-**	**5-6 days**
Kiln dryer	**45-50^{o}C**	**18-22 hr**

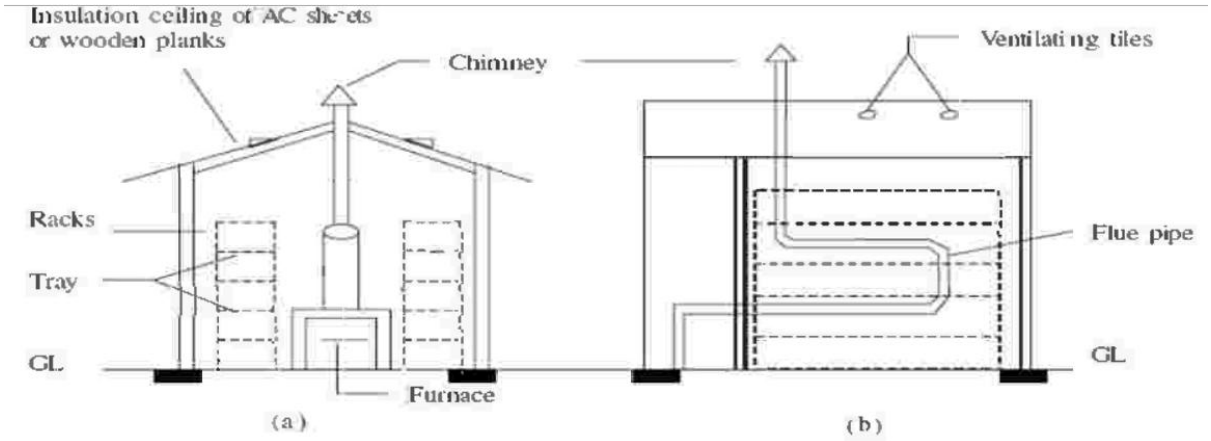


Fig 3:Kiln dryer for cardamom

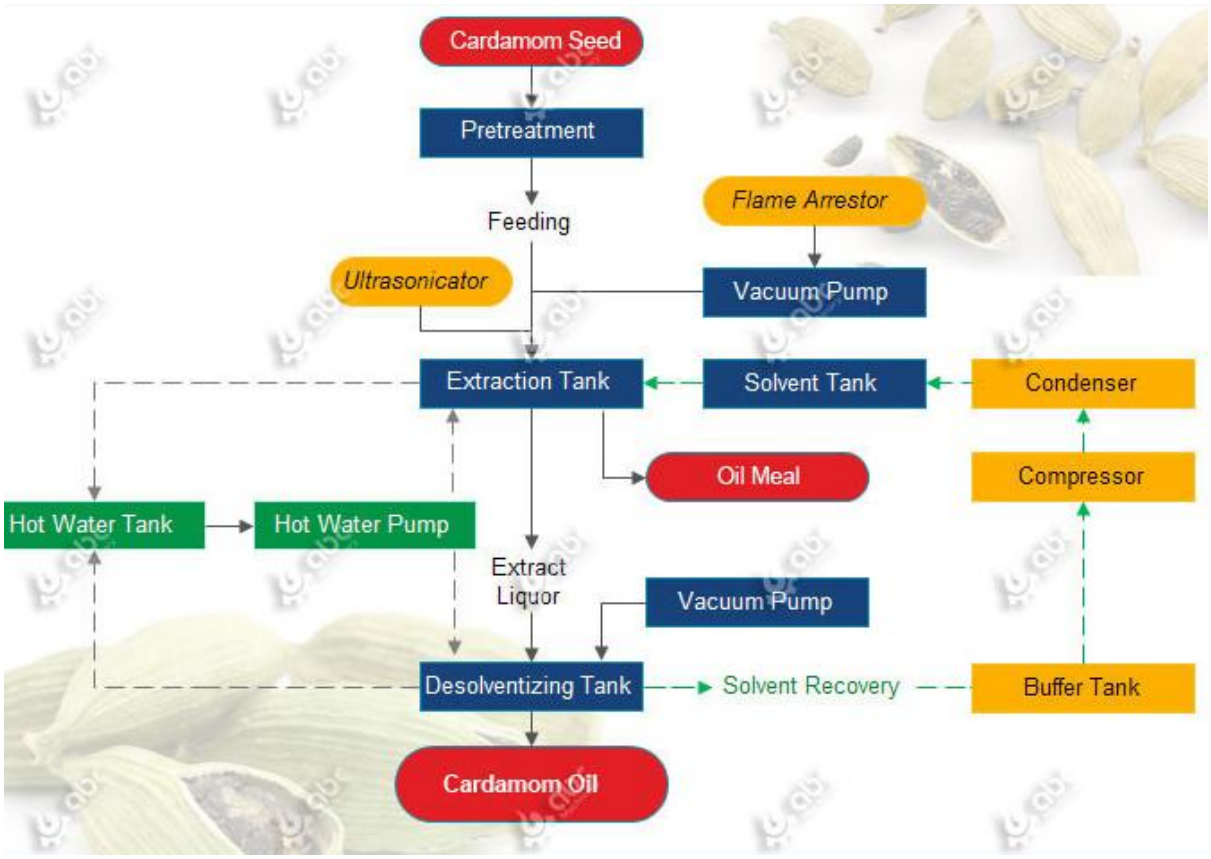
Storage of cardamom

Dried cardamom capsules must be stored in moisture-proof containers away from direct sunlight. For long term bulk storage, polythene-lined gunny bags inside wooden boxes are used. The polythene bags help to preserve the green colour of the pods. It is essential that the capsules are fully dry before they are placed in the gunny bags for storage. Any moisture within the bags will cause the capsules to rot. The stored cardamoms should be inspected regularly for signs of spoilage or moisture. If they have absorbedmoisture, they should be re-dried to a moisture content of 10%. The storage room should be clean, dry, cool and free from pests.

Value addition of cardamom

<u>Cardamom Oil</u>

The oil is extracted from seeds pods of cardamom through using steam distillation method. The main constituents of cardamom oil are sabinene, nerol, limonene, eugenol, terpinene, cineol, geraniol, linalool, nerodilol, heptenone, borneol, alpha-terpineol, beta Terpineol, terpinyl Acetate, alpha-Pinene, myrcene, neryl acetate, cymene, methyl heptenone, linalyl acetate, and heptacosane.



Bathing Soap

Cardamom can be added as an incredient in bathing soap extracted oil

Incredients

1. Glycerin
2. Aqua; Sodium palmate
3. Sucrose
4. Sodium cocoate
5. Sodium chloride
6. Butyrospermumparkii (Shea) butter
7. Decyl glucoside; Tocopherol (Vit E)
8. Zingiber officinale (Ginger) root oil
9. Citric acid
10. Aloe barbadensis (Aloe vera) leaf juice powder
11. Zingiber officinale (Ginger) root powder
12. Elettaria cardamomum (Cardamom) seed powder
13. Elettaria cardamomum (Cardamom) seed oil
14. Citrus aurantifolia (Lime) peel oil; Sodium citrate
15. Sodium palm kernelate; Limonene
16. Certified organic +Food-grade
17. Naturally occurring in essential oils.

<u>Organic cardamom syrup</u>

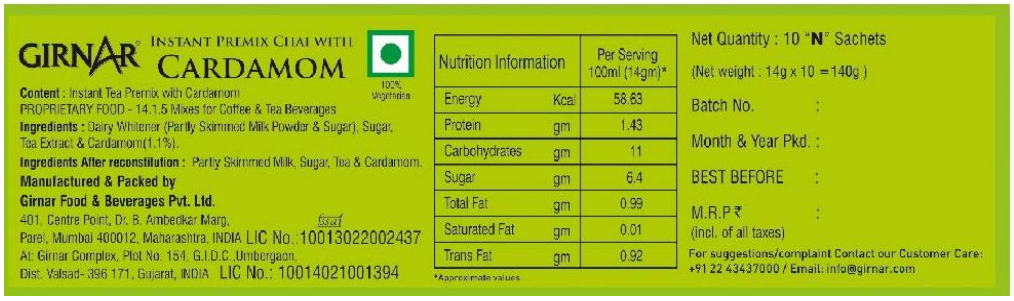
Ingredient:

1. Sugar, Distillate of Green Cardamom,
2. Citric Acid (E-330),
3. Preservative Sodium Benzoate (E-211),
4. Permitted Food Colour FD&C Yellow No. 5 (E-102) & FD&C Blue No.1 (E-133).

Organic cardamom syrup is made by grinding the cardamom into fine powders and mixed up with the solution made by other ingredients described above

<u>Cardamom Tea</u>

Cardamom tea is healthy drink that can improve the health of the consumers, because it is enriched with the medicinal properties of the cardamom. Cardamom tea is prepared by making grind the dried and roasted cardamom in to fine powder and mixed it with the tea powder



Desert

Ingredients

1. Organic coconutmilk (filtered water, organic coconut),
2. Organic cane sugar, blueberry swirl (blueberries,
3. Organic cane sugar, filtered water,
4. Natural flavor, corn starch, citric acid, xanthan gum),
5. organic coconut oil, organic tapioca syrup,
6. Blueberries,
7. Natural flavor,
8. Pea protein,
9. Locust bean gum,
10. Fruit and vegetable juice (for color),
11. Guar gum,
12. Citric acid,
13. Cardamom.

Packaging of cardamom

Cardamom capsules can be packaged in polythene bags of various sizes according to the market demand. The bags should be sealed to prevent moisture entering. Attractive labels should be applied to the products. The label needs to contain all relevant product and legal information – the name of the product, brand name (if appropriate), details of the manufacturer (name and address), date of manufacture, expiry date, weight of the contents, added ingredients (if relevant) plus any other information that the country of origin and of import may require (a barcode, producer code and packer code are all extra information that is required in some countries to help trace the product back to its origin).

Functions of packaging

- Ability to protect content from spoilage and Spillage
- Prevent insect infestation and insect damage
- Economical, easily available and easy disposal
- Confirm with food laws
- Offer Protection against environmental conditions- moisture barrier
- Offer protection against microorganisms- oxygen barrier
- Strength properties to withstand mechanical hazard during transportation and storage
- Have a good printability

Commonly used packaging materials for pepper

1. **Glass containers**

- Bottles/Jars are commonly used.
- The glass used for food packaging is soda-lime glass.
- Most bottles and jars are tailor-made specifically for one product or one manufacturer.
- Closures for glass containers are more standardized.
- Glass containers can be reused or recycled.
- Eliminates the risk of potentially harmful chemicals found in some plastics that can leach into food.

- **Flexible packaging**

1. Polyester/metallised polyester/ LDPE
2. BOPP/LDPE
3. BOPP/metallised polyester/LDPE.

4. Polyester/AL foil LDPE

2. PET bottles

- Clear, Shiny and transparent.
- Unbreakable.
- Good barrier properties.
- 100 % recyclable.
- Low permeability of moisture and air.

3. Liner Carton Box

- Liner carton filling and packing machine also known as duplex box packing machine
- Provides good protection and barrier properties.

PACKAGING MACHINERY

Bag filling machine

Automatic FFS

Piston Filling Machine

Automatic Double Head Power Filling Machine

Packaging Machineries for Dehydrated Products

Semi Automatic Filling Machine

Fully Automatic Filling Machine

Semi Automatic Bottle Filling Machine

Fully Automatic bottle Filling Machine

FSSAI REGULATORY REQUIREMENTS

Whole Cardamom (Dried Capsule of nearly Ripe Fruits of Elettaria cardamomum L. Maton Var. MinusculaBurkill)

The capsules may be light green to brown or pale cream to white when bleached with sulphur dioxide. It shall have characteristic flavour free from any foreign odour, mustiness or rancidity. It shall be free from mould, living and dead insects, insect fragments and rodent contamination. The product shall be free from added colouring matter and other harmful substances. It shall conform to the following standards

i. Extraneous matter: Not more than 1.0 percent by weight
ii. Empty and malformed capsules by count: Not more than 3.0 percent by count

iii. Immature and shrivelled capsules: Not more than 3.0 percent by weight
iv. Moisture: Not more than 13.0 percent by weight
v. Total ash on dry basis: Not more than 9.5 percent by weight
vi. Volatile oil content on dry basis: Not less than 3.5 percent by v/w
vii. Insect damaged matter: Not more than 1.0 percent by weight

2. **Cardamom Seeds** (decorticated seeds separated from the dried capsules of Elettaria Cardamomum L. Maton var minisculaBurkill)

   The seeds shall have characteristic flavour free from foreign odour, mustiness or rancidity. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. The product shall be free from added colouring matter and any other harmful substances. It shall conform to the following standards:

   i. Extraneous matter: Not more than 2.0 percent by weight
   ii. Light seeds: Not more than 3.0 percent by weight
   iii. Moisture: Not more than 13.0 percent by weight
   iv. Total ash on dry basis: Not more than 9.5 percent by weight
   v. Volatile oil content on dry basis: Not less than 3.5 percent by v/w
   vi. Insect damaged matter: Not more than 1.0 percent by weight

3. **Cardamom Powder** (grinded dry seeds of Elettaria Cardamomum L. Maton var minisculaBurkil)

   It may be in the form of small pieces of seeds or in finely ground form. It shall have characteristic flavour free from foreign odour, mustiness or rancidity. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. The powder shall be free from added colouring matter and other harmful substances. It shall conform to the following standards:

   i. Moisture: Not more than 11.0 percent by weight
   ii. Total ash on dry basis: Not more than 8.0 percent by weight
   iii. Ash insoluble in dilute HCl on dry basis: Not more than 3.0 percent by weight
   iv. Volatile oil content on dry basis: Not less than 3.0 percent by v/w.

4. **Large Cardamom Powder** (grinded seeds of Amomum subulatumRoxb)

   The powder shall have characteristic flavour free from off flavour, mustiness and rancidity. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. The powder shall be free from added colouring matter and any harmful substance. It shall conform to the following standards:

i. Moisture: Not more than 11.0 percent by weight
ii. Total ash on dry basis: Not more than 8.0 percent by weight
iii. Ash insoluble in dilute HCl on dry basis: Not more than 2.0 percent by weight
iv. Volatile oil content on dry basis: Not less than 1.0 percent by weight

5. **Large Cardamom Seed** (dried nearly ripe fruit (capsule) of Amomum subulatumRoxb)

The capsule shall have characteristic flavour free from foreign odour, mustiness and rancidity. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. The product shall be free from added colouring matter and any harmful substance. It shall conform to the following standards:

i. Extraneous matter: Not more than 2.0 percent by weight
ii. Light seeds / Brown / Red seeds: Not more than 3.0 percent by weight.
iii. Moisture: Not more than 12.0 percent by weight
iv. Total ash on dry basis: Not more than 8.0 percent by weight
v. Ash insoluble in dilute HCl on dry basis: Not more than 2.0 percent by weight
vi. Volatile oil content of seeds on dry basis: Not less than 1.0 percent by v/w.
vii. Insect damaged matter: Not more than 1.0 percent by weight

6. **Large Cardamom Whole** (dried nearly ripe fruit (capsule) of Amomum subulatumRoxb)

The capsule shall have characteristic flavour free from foreign odour, mustiness and rancidity. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. The product shall be free from added colouring matter and any harmful substance. It shall conform to the following standards:

i. Extraneous matter: Not more than 1.0 percent by weight
ii. Empty and malformed capsules by count: Not more than 2.0 percent by count
iii. Immature and shrivelled capsules: Not more than 2.0 percent by weight
iv. Moisture: Not more than 12.0 percent by weight
v. Ash insoluble in dilute HCl on dry basis: Not more than 2.0 percent by weight
vi. Total ash on dry basis: Not more than 8.0 percent by weight
vii. Volatile oil content of seeds on dry basis: Not less than 1.0 percent by v/w.
viii. Insect damaged matter: Not more than 1.0 percent by weight

FSSAI issues three types of licence based on nature of food business and turnover

- Registration: For turnover less than 12 lakh.
- State License: For turnover between 12 Lakh to 20 crores.
- Central License: For turnover above 20 crore.
- So as to establish any food business operation certain legal requirements have to be satisfied and hence taking Food Standards and Safety Authority of India (FSSAI) license or registration are mandatory to start any food enterprise.

Basic FSSAI Registration- To be taken by businesses or startups having annual turnover below Rs.12 lakhs .

Documents Required

1. Authorized person address proof
2. Passport size photo
3. Business name and address
4. FSSAI declaration form
5. Nature of business details

State FSSAI License Registration- Businesses having annual turnover between Rs.12 lakhs to 20 crore can apply for FSSAI State license.

Documents Required

1. Rental Agreement of Business Premises.
2. ID Proof of the Concerned Person (Aadhaar Card / Driving License / Passport / Voter ID)
3. If any Government Registration Certificates (Company Incorporation Certificate / Firm Registration / Partnership Deed / Pan card / GST / Shop & Establishment / Trade License)
4. If the applicant is private limited company or partnership firm then they should provide MOA & AOA or Partnership deed copy
5. For applying State License any One of the following certificate is compulsory (Trade license, Shop & Establishment, Panchayath License, Corporation License , Municipality License)
6. Nature of Business.
7. FSSAI declaration form

Central FSSAI License Registration- Businesses having annual turnover above 20 crore can apply for FSSAI central license. Eligible food Business Operators like Importers, Manufacturers, operators in central government, Railways, airports, seaports, etc. need to take a Central FSSAI license from Food Standards and Safety Authority of India.

Documents Required

1. Rental Agreement of Business Premises.
2. ID Proof of the Concerned Person (Aadhaar Card / Driving License / Passport / Voter ID)
3. If any Government Registration Certificates (Company Incorporation Certificate / Firm Registration / Partnership Deed / Pan card / GST / Shop & Establishment / Trade License)
4. If the applicant is private limited company or partnership firm then they should provide MOA & AOA or Partnership deed copy.
5. IE Code (Import Export Code) Certificate (for the category of export and import IE code is compulsory)
6. Authority letter from the company letterhead to the concerned person stating that he is authorized to file FSSAI application.
7. List of food category desired to be manufactured (In case of manufacturers).

General Labeling Requirements

1. Every pre-packaged food shall carry a label containing information about the product.
2. The particulars of declaration required under these Regulations to be specified on the label shall be in English or Hindi in Devnagri script. However nothing herein contained shall prevent the use of any other language in addition to the language required under this regulation.
3. Pre-packaged food shall not be described or presented on any label or in any labeling manner that is false, misleading or deceptive or is likely to create an erroneous impression regarding its character in any respect;
4. Label shall be applied in such a manner that they will not become separated from the container;
5. Contents on the label shall be clear, prominent, indelible and readily legible by the consumer under normal conditions of purchase and use.

Specific restrictions on product labels-

(1) The label shall not contain any reference to the Act which can cause contradictions

(2) Labels not to use words "recommended by the medical profession"

(3) No claims concerning medicinal (preventative, alleviative or curative) effects shall be made.

(4) Labels not to contain false or misleading statements

FSSAI labelling requirements

- Name, trade name or description
- Name of ingredients used in the product in descending order of their composition by weight or volume
- Name and complete address of manufacturer/packer, importer, country of origin of the imported food (if the food article is manufactured outside India, but packed in India)
- Nutritional Information
- Information Relating to Food Additives, Colors and Flavors
- Instructions for Use
- Veg or Non-Veg Symbol
- Net weight, number or volume of contents
- Distinctive batch, lot or code number

Conclusion

The worldwide demand for spices as nutraceuticalsis showing an increasing trend. Processed products and derivatives cardamom offer great promises for further improvement and exploration under food related small and medium scale agricultureindustries development. Cardamom cultivation and its value addition is an excellent income for farmers. Different types of diseases are emerging day by day, to over come this pandemic situation we should focus on the healthy aspects of food. These spices offer an excellent option for the improvement of food by natural medicinal components

Reference

- Food Safety and Standards (Food Product Standards and Food Additives) Regulation, 2011 – https://fssai.gov.in/dam/jcr:99067191-c774-4c81-b9c8-708b9e72b770/Food_Additives_Regulations.pdf
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