Dominica National

CODE OF PRACTICE

Passionfruit (Passiflora) Production, Postharvest Handling & Processing

D-DNCP 11: 202x

Month 202x

Price Group

DOMINICA BUREAU OF STANDARDS

Draft No. 1

ISSUED FOR COMMENT ONLY

DRAFT

DOMINICA NATIONAL CODE OF PRACTICE

FOR PASSIONFRUIT *(PASSIFLORA)* PRODUCTION, POSTHARVEST HANDLING AND PROCESSING

D-DNCP 11: 202x

This is a draft and should not be regarded or used as a Dominica National Standard

Last date for comments ……...

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GENERAL STATEMENT

The Dominica Bureau of Standards was established under the Standards Act (#4) of 1999 and started operations in April 2000. A broad-based 15-member Standards Council governs the affairs of the Bureau.

The Standards Act gives the Bureau the responsibility to facilitate the development and promotion of Standards and Codes of Practice for products and services for the protection of the health and safety of consumers and the environment as well as for industrial development in order to promote the enhancement of the economy of Dominica.

The Bureau develops Standards and Codes of Practice through consultations with relevant interest groups. In accordance with the provisions of the Standards Act, public comment is invited on all draft Standards and/or Codes of Practice before they are declared as Dominica National Standards (DNS) and/or Dominica National Codes of Practice (DNCP).

The Bureau is a correspondent member body of the International Organization for Standardization (ISO), an affiliate member of the International Electro-technical Commission (IEC), and a member of the Caribbean Regional Organization for Standards and Quality (CROSQ). The Bureau is the local agent for foreign Standard Body, the American Standards for Testing and Measurement (ASTM). The Bureau also serves as the enquiry point for the World Trade Organization (WTO) on matters pertaining to the Technical Barriers to Trade (TBT) Agreement and is the Contact Point for Codex Alimentarius.

In accordance with good practice for the adoption and application of Standards and/or Codes of Practice, Dominica National Standards and Dominica National Codes of Practice are subject to periodic review every five years.

Amendments

Amendment No.	Date of Issue	Text (s) Affected

DOMINICA NATIONAL CODE OF PRACTICE
FOR PASSIONFRUIT (PASSIFLORA) PRODUCTION, POSTHARVEST HANDLING AND PROCESSING

D-DNCP 11: 202x

TECHNICAL COMMITTEE –

ORGANIZATION	**REPRESENTIVE (S)** ***(Alternate)***
TECHNICAL SECRETARY	

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0.0 FOREWORD

0.1. This Dominica National Standard was adopted by the Bureau of Standards (the Bureau) of the Commonwealth of Dominica on _____ after the draft was finalized by _____ and has been approved by the Minister responsible for the Bureau.

0.2. This Standard became effective as a Voluntary Standard on the date notified by the Minister with responsibility for the Bureau of Standards in a Notice published in the Commonwealth of Dominica Official Gazette on _____.

0.3. There has been an increasing demand in the marketplace for safer food products. Some of the major distributors in the fresh fruit and vegetables trade have dictated the need for food safety systems as well as the adoption of environment friendly methods for food production. The trend in agriculture is for the adoption of those practices that will sustain production and land productivity whilst being the least harmful to the local and general environment.

0.4. The purpose of this Code of Practice is to provide producers with a set of guidelines for the safe, yet efficient production, postharvest handling, and processing of passion fruit. These guidelines are based on the “Integrated Crop Management” (ICM) concept, which seeks to balance the economic production of crops with measures, which conserve and enhance land and the environment.

0.5. This Code of Practice is intended for use by:

(a) Producers, processors and exporters

(b) DOMGAP Auditors - as one of the reference documents for farm audits.

0.6. In preparing this standard, assistance has been derived from:

(a) 2017 -Peter Rigden, The Passionfruit Growing Guide

(b) 1987 - Dyanand raj kumar, Growing Passion Fruit Passion Fruit In the In the West Indies

1.0. SCOPE

1.1. The purpose of this Code of Practice is to provide producers with guidelines for the safe, yet efficient production, postharvest handling, and processing of fresh passion fruit (Passiflora). This Code of Practice also prescribes guidelines to protect consumers, the health of workers, and the environment to include air, soil, and water.

2.0 NORMATIVE REFERENCES

2.1. The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies:

(a) CAC/RCP 44 Code *of Practice for Packaging and Transport of Fresh Fruits and Vegetables*

(b) CXS 193 *General Standard for Contaminants and Toxins in Food and Feed*.

(c) CXG 21 *Principles and Guidelines for the Establishment and Application of Microbiological Criteria related to Foods*

(d) DNCP 1: Part 1 Code of Practice for General Principles of Food Hygiene

(e) DNS 20: Good Manufacturing Practices (GMP) Food Processors and Manufacturers

(f) DNS 2: Part 3 *Specification for the Labelling of Prepackaged Foods*

(g) DNS 23:202x Dominica Good Agricultural Practices (*DOM-GAP) Interpretation Guidelines*

(h) Codex Standard for passionfruit (Codex stan 316 2014)

(i) Codex General Principles of Food Hygiene CAC/RCP 1-1969

3.0. TERMS AND DEFINITIONS

For the purposes of this Code of practice, the following terms and definitions should apply:

3.1. **Biological control**- use of competing biological agents (such as insects, micro-organisms and/or microbial metabolites) for the control of pests, plant pathogens and spoilage organisms.

3.2. **Clean** - practically free from dirt, earth, insect stains or other foreign substances and material

3.3. **Food grade packaging materials -** material which will safeguard the hygienic, nutritional, technological, and organoleptic qualities of the product

3.4. **Integrated Crop Management (ICM)** - is a method of farming that balances the requirements of running a profitable business with responsibility and sensitivity to the environment. It includes practices that avoid waste, enhance energy efficiency and minimize pollution

3.5. **Integrated Pest Management (IPM)** - is a sustainable approach to managing pests by combining biological, cultural, physical and chemical tools in a way that minimises economic, health and environmental risks.

3.6. **Misshapen** - A fruit out of normal round-oval shape that its appearance is obviously affected.

3.7. **Mulching** - is the process or practice of covering the soil/ground to make more favourable conditions for plant growth, development and efficient crop production

3.8. **National Competent authority/relevant authority -** any person or organization that has the legally delegated or invested mandate, capacity, or power to perform a designated function.

3.9. **Pathogen** - an organism that causes disease

3.10. **Plant Protection Products (PPP) -** are chemical or biological products which are used to protect plants or plant products from harm caused by animals (insects and rodents, for example) or diseases such as fungal infestation. Products which are used to eliminate unwanted field weeds are also in the group of plant protection products. Plant Protection products include the following inputs:

(a) Insecticides;

(b) Nematicides;

(c) Herbicides;

(d) Fungicides ; and

(e) Rodenticides

4.0. GENERAL REQUIREMENTS

4.1. General

Where a producer is interested in establishing, rehabilitating or replanting an area, the following recommendations should be adopted as required:

4.2. Site Selection

4.2.1. Site selected for planting should be suitable for production of passion fruits.

4.2.2. The producer should demonstrate that the farm is located in an area where cultivation is allowed or not restricted by a regulatory authority as per relevant laws.

4.2.3. Planting should be done on terrain where the risk of soil erosion can be minimized by good crop and soil management practices.

4.2.4. Land that has been used as a land fill or industrial dumping should not be used for cultivation.

4.2.5. A risk assessment of the site should consider the potential physical, chemical, and biological hazards that are likely to be of environmental concern or posing health and safety risk to consumers of resultant crop.

4.3. Traceability

4.3.1. Producers should establish methods to provide for the traceability of all passion fruits produced on the farm in accordance with CB.1 (Traceability) of D-DNS 23: 202x.

4.4. Waterways

4.4.1. Avoid planting passion fruits on strips of land along the banks of rivers or other waterways that will contribute to the contamination of watercourses through the application of Plant Protection Products (PPP).

4.4.2. Such buffer areas should be planted with slow-growing trees and shrubs to counter soil erosion.

4.4.3. Where practical, the buffer area should be at least 6 m from main waterways. Where farmers are unable to meet the 6 m, farmers shall adopt mitigating practices that will reduce the possibility of contamination.

4.4.4. PPP and fertilizers should be stored away from waterways.

4.5. Plant Density

4.5.1. The recommended plant density should be in accordance with the Tech Pack for passion fruit production.

4.5.2. The type of trellises system for each growing location should be determined in consultation with a relevant competent authority.

NOTE: *Adequate plant density reduces the growth of weeds and therefore reduces the need for herbicide, fertilizer, and PPP applications.*

4.6. Drainage

4.6.1. Farms should have effective drainage systems for the removal of excess water.

NOTE: Proper drainage conditions facilitate effective nutrient absorption, and control of pests and diseases.

4.7. Irrigation

4.7.1. The water sources for use in passionfruit production should be sustainable.

4.7.2. An annual risk assessment of the microbiological, chemical or mineral pollutants in the irrigation water should be undertaken.

4.7.3. The analysis of these pollutants from the various water sources should be carried out by a suitable laboratory and such results documented.

4.7.4. For additional information, *see CB. 5 (Water Management) of D-DNS 23: 202x*.

4.8. Soil Management

4.8.1. Confirmation of the soil type and their suitability for passion fruit production should be done by the relevant authority.

4.8.2. Such soil types are confirmed and identified by soil maps produced by the relevant authority.

4.8.3. Deep well drained soils are recommended for passionfruit production.

4.8.4. Where feasible, crop rotation is encouraged to minimize soil borne pest and disease and maintain soil structure.

4.8.5. Soil erosion can be reduced by the use of minimal tillage during planting, particularly on sloping land.

4.8.6. On such land also, planting should be done along the contour with good contour drains erected to reduce rapid water flow and removal of topsoil and the buildup of pathogens.

5.0. AGRONOMIC PRACTICES

Passion fruit should be cultivated in accordance with recommended agronomic practices detailed in the passion fruit Tech Pack and the following recommendations in order to achieve high yield and quality:

5.1. Land preparation

5.1.1. The site should be adequately cleared.

5.1.2. Where necessary, soil remedial action should be conducted to achieve favourable growing conditions.

5.1.3. Passionfruit should be planted on mounds and along the counter on sloping lands. Avoid over tillage to reduce soil erosion.

5.2. Planting Material

5.2.1. The necessary plant health certificate should accompany plants produced in a nursery or brought in from another location.

5.2.2. Planting material should be obtained from reliable sources and should be true to type.

5.2.3. Planting materials selected from existing fields should be selected from healthy mother source that are free from pest and diseases.

5.2.4. Where seeds are being used as planting material, selected fruits should be of the highest quality.

5.2.5. Records of planting material should be kept for traceability.

5.3. Planting and Spacing

5.3.1. Avoid areas that are prone to waterlogging and where drainage is poor. Refer to passionfruit tech-pack for further information

5.4. Mulching

5.4.1. Mulching is recommended to increase moisture and nutrient retention, reduce weed growth, and regulate soil temperature.

EXAMPLES

Saw dust, coconut husks, dry grass, plastic mulch

5.5. **Weed Control**

5.5.1. If necessary, after land preparation and before planting, a broad spectrum systemic pre-emergent herbicide may be applied to control weeds. Thereafter, weeding should be manual.

NOTE 1: When herbicide is used, the dosage applied should comply with that which is stated on the manufacturers label.

NOTE 2: The herbicide should be approved for use in Dominica.

5.5.2. Adaptation of relevant cultural practices are encouraged to reduce weed incidence.

5.6. Plant Nutrition

5.6.1. In collaboration with an Extension Officer, soil should be tested before the application of any type of fertilizer or soil remedial input.

5.6.2. Leaf analysis should be done if possible.

5.6.3. In addition to inorganic fertilizers, the use of compost is encouraged. These should be practically free from microbial or chemical contaminants at levels that may adversely affect the safety and quality of the resultant crop.

5.6.4. It is recommended to incorporate fertilizers into the soil to minimize wastage.

5.6.5. Fertilizers should be stored away from fresh passion fruit, PPPs and packaging material.

5.6.6. Soil health should be optimal to suppress pest and disease and promote nutrient and water uptake. Refer to passionfruit tech-pack for further information.

5.7. Pest and Disease Management

5.7.1. Where applicable, it is recommended to use cultural practices that reduce the conditions that favors pest and disease development.

NOTE: These cultural practices include good weed control, correct plant density, adequate plant nutrition, and adequate drainage.

5.7.2. Inspections and monitoring should be done to determine pest and disease severity and use of PPP. Where necessary, the relevant authority should be notified on the presence of pests.

5.7.3. Available PPP should be rotated to minimize the risk of the pests or diseases becoming resistant to any one product.

5.7.4. PPP should only be applied when necessary, targeting the specific pest or disease and used in the manner recommended.

NOTE: The PPP used must be approved for use in Dominica.

5.8. Integrated Pest Management (IPM) System

5.8.1. Consideration should be given to techniques and measures that discourages the development of Pest, economically justified, with minimum risk to human health and the environment.

5.8.2. Biological and natural methods of control should be considered and used when possible, to reduce the need for the use of chemical PPP to control pest and disease.

5.8.3. For additional information, *see CB.6 (Integrated Pest Management) of DNS 23:202x*

5.9. Plant Protection Products (PPP) Management

5.9.1. Where the application of PPP is unavoidable, the following general guidelines should be followed:

5.9.1.1. The use of PPP should be minimized in terms of volume and range by targeted application.

5.9.1.2. Appropriate training should be provided to all workers, especially those involved in the supervision, preparation and application of PPP.

5.9.1.3. Workers undertaking chemical PPP applications should receive annual health checks to determine their level of exposure to such chemicals.

5.9.1.4. Persons handling chemical PPP should use appropriate Personal Protective Equipment (PPE).

5.9.1.5. PPP should be handled and administered in accordance with all applicable laws of the producing and importing countries and customers' specific requirements.

5.9.1.6. The least toxic product that is as safe as possible to humans, wildlife and the environment should be selected for the purpose required.

5.9.1.7. The PPP selected should form part of the IPM system.

5.9.1.8. Environmental damage should be avoided or minimized.

5.9.1.9. All PPP usage should be guided by personnel technically competent to do so.

5.9.1.10. PPP should be stored locked, and away from other farm inputs and fresh produce.

5.9.1.11. PPP should always be stored in original containers. These containers should not be used for any other purpose.

5.9.1.12. PPP should be transported in a manner that does not present a hazard to the handler.

5.9.1.13. Obsolete and expired PPP should be disposed of in a safe manner.

5.9.1.14. Equipment used to apply PPP should be appropriate and fit for purpose, well maintained and calibrated when necessary.

5.9.1.15. For additional information on PPP, *see CB.7 (Plant Protection Products) of DNS 23: 202x.*

5.9.1.16. A record of all PPP applications should be maintained for the farm. For additional information *see CB 7.3 (Records of Application) of DNS 23: 202x.*

5.11. Harvesting

5.11.1. Passion fruits should be harvested at seven (7) to ten (10) months after transplanting.

NOTE: The maturity is based on varieties, methods of cultivation and fruit color change.

5.12. Handling during harvesting

5.12.1. Care should be taken during the harvesting process to minimize damage as this greatly reduces shelf life.

NOTE: Damage includes bruising, scrapping, or squeezing of fruits

6.0. POSTHARVEST HANDLING

6.1. General

6.1.1. Effective measures should be taken to prevent contamination of fresh passion fruits from agricultural inputs or personnel who come directly or indirectly into contact with the commodity. The growers, harvesters and handlers should adhere to the following:

6.1.1.1. Fresh passion fruit unfit for human consumption and unsafe for further processing should be separated and disposed of properly.

6.1.1.2. Care should be taken when packing fresh passion fruit in the field to avoid exposure to contamination.

EXAMPLE

Pesticides, animal/human waste, etc.

6.1.1.3. Containers used collecting, storing, and transporting passion fruits should be cleaned and sanitized.

6.3. Storage

6.3.1. Successful storage of passion fruit requires:

a) adequate ventilation for the optimal storage of passion fruits;

b) protection from pests and rodents;

c) regular inspection during storage and removal of rotting fruits; and

d) protection from direct sunlight and rain.

6.4. Transportation

6.4.1. Vehicles used in the transportation of passion fruit should be appropriate, clean, and produce should be protected from damage and postharvest deterioration.

6.5. Packaging

6.5.1. Packaging materials and containers should be food grade and suitable for transporting fresh passion fruit.

6.5.2. The packaging materials and containers should comply with legal and environmental requirements.

6.5.3. Packaging should be done in accordance to the requirements of *CAC/RCP 44 Code of Practice for the Packaging and Transport of Fresh Fruit and Vegetables*.

7.0 PROCESSING

7.1. General

7.1.1. The processing of passion fruit should be done in accordance with *D-DNS 20 Good Manufacturing Practices (GMP) Food Processors and Manufacturers.*

8.0. PROVISIONS CONCERNING MARKING OR LABELLING

8.1. Consumer Packages

8.1.1. In addition to the requirements of the *DNS 2 Part 3 Specification for The Labelling of Prepackaged Foods* the following specific provisions apply:

8.2 Name of Produce

8.2.1 Each package should be labelled as to the name of the produce “passion fruit” and may be labelled as to the name of the variety(ies), and/or commercial type.

8.3 Origin of Produce

8.3.1 Country of origin and, optionally, district where grown, or national, regional or local place name.

8.4 Non-Retail Containers

8.4.1 Each package should bear the following particulars in letters grouped on the same side, legibly and indelibly marked, and visible from the outside.

8.4.2 For passion fruit transported in bulk, these particulars should appear on a document accompanying the goods and attached in a visible position inside the transport vehicle unless the document is replaced by an electronic solution. In that case the identification should be machine readable and easily accessible.

8.5 Identification

8.5.1 Name and address of exporter, packer and / or dispatcher. Identification code (optional).

8.6 Name of Produce

8.6.1 Name of the produce.

8.6.1.1 Name of variety and/or commercial type.

8.7 Origin of Produce

8.7.1 Country of origin and, optionally, district where grown, or national, regional or local place name.

9.0 CONTAMINANTS

9.1. The produce covered by this Standard should comply with the maximum residue limits for pesticides established by the Codex Alimentarius Commission.

9.2. The produce covered by this Standard should comply with the maximum levels of the *General Standard for Contaminants and Toxins in Food and Feed* (CXS 193).

10.0 HYGIENE

10.1. It is recommended that the produce covered by the provisions of this Standard be prepared and handled in accordance with the appropriate sections of the *Code of Practice for General Principles of Food Hygiene (DNCP 1: Part 1) and AF.3 (Hygiene) of DNS 23:202x Dominica Good Agricultural Practices (DOM-GAP) Interpretation Guidelines.*

10.2. The produce should comply with any microbiological criteria established in accordance with the *Principles and Guidelines for the Establishment and Application of Microbiological Criteria related to Foods* (CXG 21).

11.0 WASTE AND POLLUTION MANAGEMENT, RECYCLING AND RE-USE

11.1. The farmer and processing facilities should document and implement a waste management plan which will clearly identify all farm and processing generated waste and the measures to be taken to reduce such waste.

11.2. As part of the ICM process, producers should seek to minimize waste production and manage field waste in a responsible manner to minimize pollution of the environment.

11.3. In respect to minimizing pollution, producers should implement the following procedures:

11.3.1. Organic materials such as cut stems and leaves should be recycled by being left or redistributed in the field after each harvest.

11.3.2. All diseased organic material should be treated and properly disposed.

11.3.3. Chemical containers used should be triple rinsed, punctured, bagged, and taken to the landfill for disposal.

11.3.4. Organic waste collected during post-harvest should be composted.

11.4. For additional information, *See AF.6 (Waste and pollution management, recycling, and re-use) of DNS 23:202x*

12.0 OCCUPATIONAL, HEALTH AND SAFETY

12.1. Labour Practices

12.1.1. Workers should adhere to established protocols and such protocols should be based on thorough hygiene risk analysis and communicated to all workers.

12.1.2. The farm operator should ensure that all relevant permits and/or authorization have been obtained and up to date from the relevant authorities. These are inclusive but not limited to:

(a) Health; and

(b) Worker's permit (where applicable)

12.1.3. All relevant legislation of the country should be always complied with fully, including working conditions, job security pensions, health benefits and social security.

12.1.4. Workers should have the right to participate in organizations, societies, or unions of their choice.

12.1.5. Workers should be employed in accordance with the labour laws.

12.2. Emergency and First-aid Procedures

12.2.1. Accident and emergency procedures should exist on all passion fruit farms and processing facilities.

12.2.2. These procedures should be communicated and be clearly understood by all workers and where practical, they should be visually displayed.

12.2.3. Emergency numbers should be clearly displayed.

12.2.4. The necessary first aid training should be provided.

12.2.5. All farms and processing facilities should have a complete first aid kit in close proximity to the farm.

12.3. Hygiene and Food Safety

12.3.1. Hygienic facilities should be clean and easily accessible.

12.3.2. All workers should receive basic hygiene training and such training should be documented.

12.3.3. Workers are required to notify their employees of any communicable disease that may prevent them from working.

12.3.4. In addition to specialized training, the principles of the ICM system should be understood by all staff and implemented at all stages of production.

12.3.5. All staff should be trained in the identification and monitoring of pests, disease and the presence of biological agents on the farm.

12.3.6. For additional information, *see AF.4 (Worker Health Safety & Welfare) of DNS 23:202x.*

Dominica Bureau of Standards

Dominica Bureau of Standards is a statutory body established under the Standards Act No. 4 of 1999 to establish, promote and maintain Standards for:

a. Improving goods and services produced or used in Dominica;

b. Processes and practices for ensuring industrial efficiency and development;

c. Public and industrial welfare, health and safety;

d. Safeguarding the environment.

The National Standard Council

The National Standard Council (NSC), a fourteen (14) member Council representing various interest groups, is appointed by the Minister responsible for the Dominica Bureau of Standards yearly, to guide the policy decision matters of the Bureau and oversee its financial management. The Council is also responsible for the general administrative affairs of the Dominica Bureau of Standards.

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