



CARICOM REGIONAL CODE OF PRACTICE

PACKAGED NATURAL COCONUT WATER — CODE OF PRACTICE

DCRCP 2: 201X

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Foreword

This CARICOM Regional Code of Practice CRCP 2:201X Code of practice for packaged natural coconut water has been developed under the authority of the CARICOM Regional Organisation for Standards and Quality (CROSQ). It was approved as a CARICOM Regional Code of Practice by the CARICOM Council for Trade and Economic Development (COTED) at its **xxth Meeting in MM YYYY**.

This code of practice is intended to outline the hygienic practices required for the production of packaged natural coconut water offered for sale in CARICOM Member States. It was developed so as to streamline the industry and clearly define the requirements for the hygienic preparation of packaged natural coconut water.

In formulating this standard considerable assistance was derived from the following:

CARICOM Regional Organisation for Standards and Quality
CRS 5, Labelling of pre-packaged foods

PHILIPPINE NATIONAL STANDARD PNS/BAFPS
2016 Draft Code of Hygienic Practice for Chilled Young Coconut water/drink

PNS/BAFPS 28:2006 Chilled young coconut water/drink – Specification

CODEX Alimentarius Commission
CODE OF HYGIENIC PRACTICE FOR DESICCATED COCONUT (CAC/RCP 4-1971)

1 Scope

This Code of Practice sets out the recommendations for the hygienic preparation of packaged natural coconut water including harvesting, processing, packaging, storing, transporting and distributing.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

Bureau of Standards Jamaica

JS 36, Processed Foods: General Requirements

CARICOM Regional Organisation for Standards and Quality

CRCP 5, General principles for food hygiene

CRS 3, Specification for packaged natural coconut water

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

cleaning

removal of soil, food residue, dust, grease or any other objectionable matter of the coconut

3.2

contaminant

any physical, chemical or biological matter which is not naturally found in the product

3.3

contamination

occurrence of any objectionable matter in the product

3.4

natural coconut water

undiluted, natural, untreated, unsweetened liquid endosperm contained within the white fruit flesh of the nut (*Cocos nucifera*) and which is not expressed but is obtained from sound fruit by manual or mechanical processes without the use of additives or additional water

3.5

normal colour

hazy to clear

3.6

packaged natural coconut water

natural coconut water filled into sealed containers of various compositions, forms and capacities

3.7

potable water

water fit for human consumption, that is free from microorganisms of public health significance and harmful and toxic substances

3.8

sanitation

removal and reduction of the number of microorganisms to a level that will not lead to contamination of natural packaged coconut water by means of hygienically, satisfactory the hygienic application of chemical, biological, biochemical and/or physical methods

3.9

solid endosperm

white tissue (fruit / flesh) of the coconut

4 Harvesting

Processors should ensure that coconuts used for the commercial packaging of natural coconut water are harvested between six (6) to twelve (12) months after pollination. Harvest time is preferably during the cooler part of the day to minimize postharvest deterioration. High temperature at harvest will lead to more rapid physiological changes and deterioration. Free fall of coconuts should not be allowed; coconuts should be lowered from the tree when picked but should not be allowed to come into direct contact with the ground. The use of field crates made of impervious material or metal cages/trolleys to directly receive the nuts are a preferred practice.

Standard Operating Procedures (SOPs) should be established for the maintenance, cleaning and sanitizing of growing and harvesting tools e.g. cutting tools, collecting containers. Growers/agricultural workers should be trained in basic Good Agricultural Practices (GAP) and to follow the SOPs.

5 Transportation

5.1 General requirements

Coconuts should be adequately protected during transportation. Vehicles and other modes of transportation should be designed and constructed so that they:

- a) should not contaminate nor damage nuts;
- b) can be effectively cleaned and, where necessary, sanitized;
- c) permit effective separation of the nuts from non-food items, where necessary during transport; the transportation of chemicals, pesticides or other potentially hazardous material is prohibited;
- d) provide effective protection from contamination;
- e) conform to applicable public health regulations in the country where the packaged natural coconut water is being manufactured;
- f) should include, where possible, a means of keeping the nuts from coming into contact directly with the floor of the transporting vehicle or the area of the vehicle on which person may walk;
- g) should be covered such that no transportation takes place in open vehicles or open trailers unless occurring on a farm from harvesting areas to the storage or processing facility.

5.2 Use and maintenance

5.2.1 Vehicles and containers used for transporting the nuts should be kept clean and dry.

5.2.2 Where the same vehicle or carrier is used for transporting different foods, or non-foods, effective cleaning and, where necessary, sanitation should take place between loads.

5.2.3 Containers for use in holding nuts should be designated and marked “for food use only” and be used solely for that purpose.

5.2.4 When not in use, cleaned harvest containers and transport trailers should be covered and kept in a protected location.

5.2.5 All damaged containers and transport trailers should be replaced.

6 Storage and selection of raw material

6.1 Coconuts should be examined to ensure that they are free from damage and chemical contamination.

EXAMPLE Damage caused by mechanical means, rodents, sun and infestation by insects

6.2 Coconuts should be washed using running potable water to remove soil and debris and then sanitized using any suitable sanitizing agent according to good manufacturing practices (see Annex A). Washing may be done with a brush if done manually or by mechanical means.

6.3 Coconuts should be stored indoors at a minimum of 15 cm from the floor on flats or pallets and at least 54 cm away from the walls and at a maximum temperature of 33 °C. Coconuts should be stored in a manner consistent with good manufacturing practices to prevent contamination and cross-contamination. Storage rooms should be kept clean, dry, and well-ventilated. Avoid storing coconuts in direct sunlight.

6.4 Coconuts should be stored no longer than 24 hours after harvesting.

7 Building and facilities

7.1 Location

Establishments should not be located where there is a threat to food safety and quality. Buildings and grounds should be kept reasonably free of objectionable odour, smoke, dust or other contaminants. In particular, establishments should normally be located away from:

- a) polluted areas;
- b) industrial activities which pose a serious threat to food safety;
- c) areas prone to flooding unless sufficient safeguards are provided;
- d) areas prone to infestation by pests; and
- e) areas where waste, either solid or liquid, cannot be removed effectively.

7.2 Internal structures and fittings

Food establishment should be designed and maintained as per applicable national regulations. They should be:

- a) of sound construction;
- b) easy to maintain;
- c) clean;
- d) easily sanitized using the recommended agents in Annex A;

- e) protected against entrance and harbourage of pests.;
- f) built in accordance with the requirements of the national competent authority and CRCP 5; and
- g) of sufficient size for the intended operation without crowding of equipment or personnel.

7.2.1 Floors

Floors should be:

- a) made of waterproof, non-absorbent, washable and non-slip materials;
- b) free of crevices;
- c) kept clean at all times; and
- d) sufficiently sloped to allow for proper drainage.

7.2.2 Drains

Drains should be:

- a) designed with the inclusion of trapped outlets;
- b) designed for easy cleaning; and
- c) kept clean at all times.

7.2.3 Windows

Windows should be:

- a) easy to clean;
- b) constructed to minimize the build up of dirt;
- c) fitted with cleanable insect-proof screens; and
- d) of the safety type or otherwise protected to prevent food contamination in the case of breakage.

7.2.4 Doors

Doors should:

- a) have smooth, non-absorbent surfaces;
- b) be easy to clean and sanitize;
- c) self-closing; and
- d) be constructed to prevent entry of rodents and insects.

7.2.5 Sanitary Facilities and Controls

- a) There should be adequate separation of the different operations (cutting and filling) to ensure contamination is adequately minimized/controlled.

- b) Plant should be appropriately laid out to prevent crossing of finished or in-process products with raw materials as well as employees in each department.
- c) The water supply should be potable and conform to the International Standards for Drinking Water (World Health Organization, 197).
- d) There should be adequate lighting throughout the facility. Light bulbs and fixtures should be of the safety type or otherwise protected to prevent food contamination in the case of breakage.
- e) Adequate ventilation should be provided especially in areas with excessive heat, steam, obnoxious fumes/vapours or contaminating aerosols.
- f) Adequate number of restrooms should be provided and be equipped with self closing doors that do not open directly into the production areas. They should be kept in sanitary condition and provide hand washing facilities. Hand wash signs should be posted.
- g) Adequate number of hand washing facilities should be provided at appropriate locations throughout the facility with posted hand washing signs. Single-use towels or automatic hand dryers for hand drying and foot-operated covered bins for waste disposal are recommended. Liquid anti-bacterial soap and hand sanitizer should be available.

8 Equipment and utensils

8.1 Construction, cleaning and maintenance

8.1.1 Equipment and containers used for harvesting and production should be constructed to ensure that they can be adequately cleaned, sanitized and maintained to avoid contamination of foods.

8.1.2 All equipment and utensils used should be cleaned and sanitized before and after use in accordance with good manufacturing practices.

8.1.3 Equipment and utensils used for inedible/contaminated material should be identifiable and only used for such materials.

8.1.4 Equipment should be regularly maintained and records kept.

8.2 Location

Equipment should be located to:

- a) permit adequate maintenance and cleaning;
- b) function in accordance with its intended use;
- c) facilitate monitoring; and
- d) prevent crossing of in-process or finished products with raw materials

9 Processing of natural coconut water

9.1 General

All steps in the processing of natural coconut water should be performed without unnecessary delay and under conditions to prevent the possibility of contamination and deterioration.

Coconuts characterized by the following must be rejected and must not be included as raw source of coconut water/drink:

- the presence of cracks;
- pedicels not intact;
- any degree of pest infestation;
- pre-mature or over-mature coconut;
- coconuts with contents that are cloudy; and
 - coconuts with contents having a rancid odour

9.2 Sanitizing of coconut

Prior to cutting, coconuts should be inspected to ensure that they are free from damage. The coconuts should be washed and sanitized according to section 6.2 of this document. Sanitized coconuts should be transferred to a clean surface off the ground and allowed to air dry.

Sanitizer water should be changed with sufficient frequency especially when there is a high level of soil contamination.

9.3 Cutting/Coconut water collection

A sanitized cutting implement (such as a cutlass/machete) or other suitable implement for removing the coconut water in a sanitary manner should be used. The collecting containers should be washed and sanitized prior to use and should be made from nontoxic, impervious, easily cleanable material.

Coconut water that is cloudy and exhibits a rancid odour should be promptly disposed of and should not be mixed with the other coconut water. The processors may employ a check of the pH of the coconut water from each nut using appropriate range pH paper or a pH meter. Ideally, the pH should be in the range indicated in the accompanying standard (CRS 3 2018) which represents a wholesome nut with water likely to give the best possible shelf life and quality outcome.

9.4 Filtering

Freshly collected natural coconut water should be filtered into clean, sanitized containers using a sanitized filtering mechanism. Natural coconut water should be filtered with the appropriate material or equipment to remove solids and particulates in accordance with good manufacturing practices and immediately chilled. Examples of materials for filtering include plastic or metal strainers, voile, muslin or cheese-cloth. If voile, muslin or cheese cloth is used, these should be changed or cleaned and sanitized at a frequency that maintains their hygienic status.

10 Packaging

10.1 Natural Coconut water should be filled into cleaned and sanitized, sealed food grade containers that will adequately protect the product from contamination and hazards from transportation and handling. Packaging should be consistent with good food hygiene practices as specified in CRCP 5. Packaged natural coconut water should be sealed and transferred rapidly to a chiller and maintained at 4°C or frozen at -12°C within 24 hours. The packaged product should be stored away from direct light.

10.2 All packaging processes should be done indoors (adequately separated from other activities) in a manner that precludes contamination.

11 Storage and transportation

11.1 Storage

Filtered coconut water should be cooled and stored at a maximum temperature of 4 °C immediately after collection. The facility should employ the FIFO principle of “first in, first out”. The flow of product within the facility should maintain a forward progression from the raw material to coconut water packaging to avoid cross contamination.

11.2 Transportation of finished products

Packaged coconut water should be transported at a maximum temperature of 4 °C under such conditions as to preclude the contamination or deterioration of the product.

11.2.1 Vehicles used to transport finished products should be designed and constructed so that they:

- a) can effectively maintain the temperature and other conditions necessary to protect food from harmful or undesirable microbial growth and deterioration likely to render it unsuitable for consumption; and
- b) allow for any necessary temperature checks.

12 Waste disposal

12.1 Containers for waste that are kept in the processing area should be:

- a) clean and leak-proof;
- b) constructed of metal or other suitable impervious material;
- c) easily cleaned; and
- d) able to close and kept closed when not receiving waste.

12.2 Waste should be removed from the processing area as quickly as possible but within a maximum of 8 h of processing and should be disposed of in accordance with local legislation or regulatory requirements.

12.3 Equipment and utensils used for waste should be clearly identified.

12.4 Adequate drainage should be present in the processing and sanitary facilities to avoid the risk of contaminating the coconut water. Drains should be cleaned periodically to prevent build-up of biofilms that may contain pathogenic microorganisms. There should be no standing water in the facility/on the grounds. In general, the facility should meet the requirements laid out in JS 36.

13 Personal hygiene

Personal hygiene should be in accordance with the CRCP 5 and other relevant national public health regulations to maintain an appropriate degree of personal cleanliness; and operate in an appropriate manner.

14 Quality control, Documentation & Record keeping

14.1 Permanent, legible and dated records of pertinent production and storage details should be kept for each lot. Records should be retained for a period in accordance with national requirements to facilitate recalls and foodborne illness investigations. Information should include:

- o Use of agricultural chemicals;
- o Date and time of harvest of each lot of coconut;
- o Date and time of processing;
- o Volume of production, and;
- o Storage condition

14.2 The product should be tested by accredited laboratories. All records should be maintained.

14.3 Representative samples of the product should be taken and kept for at least 7 days under the storage conditions as outlined in 11.

14.4 All refrigerated holding areas should be equipped with a thermometer or temperature recording device. This device should be calibrated by the national competent authority at least once per year. All records should be maintained for at least one (1) year.

15 Recall procedures

Should there be a foodborne illness outbreak associated with coconuts and packaged natural coconut water, reference to appropriate records of production, processing, packaging and distribution will be essential in identifying the source of contamination in chilled coconut water chain and facilitate product recalls. There should be an established system for traceability/product tracing through to growers/processors/distributors. Detailed records should be kept that will link each supplier of the product with the immediate subsequent recipient of the product throughout the food chain.

There should be a test of this traceability system at least annually.

Annex A (normative)

Sanitizing agents and pesticides

A.1 Sanitizing agents

Table A.1 — Recommended sanitizing agents

Product	Recommended strength mg/l
Sodium hypochlorite	50
Hydrogen peroxide	200

A.2 Pesticides approved for use

Pesticides should only be used as stated on the label and only used if approved by the national competent authority. Baits should be applied in a manner which preclude them coming in contact with food or food contact surfaces.

Table A.2 — Recommended pesticides

Type of pesticide	Active ingredient
1. Fumigants	Phosphine
2. Spraying compounds (Indoor use)	Bendiocarb Chlorpyrifos-methyl Cyfluthrin Deltamethrin <i>lambda</i> - Cyhalothrin Permethrin Pirimiphos-methyl

3. Spraying compounds (Outdoor use)		Cypermethrin Diazinon <i>lambda</i> - Cyhalothrin Permethrin Propoxur
4. Misting and fogging compounds		Pirimiphos-methyl Pyrethrin and pyrethroid combinations Synergised pyrethrins & pyrethroids
Type of pesticide		Active ingredient
5. Baits	a) Rodenticides	Brodifacoum Bromodialone Chlorophacinone Coumatetralyl Diphacinone Difenacoum Flocoumafen Pindone Warfarin
	b) Others	Abamectin Borax Boric acid Hydramethylnon Imidachloprid

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