BELIZE STANDARD

BZ CP 10: 202X

BELIZE STANDARD CODE OF HYGIENIC PRACTICE FOR PACKAGED NATURAL COCONUT WATER

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BELIZE NATIONAL STANDARD CODE OF HYGIENIC PRACTICE FOR PACKAGED NATURAL COCONUT WATER

Committee Representation

The preparation of this standard for the Standards Advisory Council established under the Standards Act 1992 was carried out under the supervision of the Bureau's Technical Committee for Coconut Products, which at the time comprised the following members:

TECHNICAL COMMITTEE

CHAIRMAN	**REPERESENTING**

MEMBERS	**REPERESENTING**

Technical Secretary

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Belize Bureau of Standards

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BELIZE STANDARD CODE OF HYGIENIC PRACTICE FOR PACKAGED NATURAL COCONUT WATER

0 FOREWORD

0.1 This CARICOM Regional Code of Practice CRCP 2:202X 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 xx th Meeting in MM YYYY.

0.2 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.

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

0.3.1 Caribbean Community Standard

a) CRS 5, Labelling of pre-packaged foods

0.3.2 CODEX Alimentarius Commission Standard

a) CAC/RCP 4-1971, Code of Hygienic Practice for Desiccated Coconut

0.3.3 International Standard

a) ISO/TS 22002-1:2009, Prerequisite programmes on food safety — Part 1: Food manufacturing

0.3.4 Philippine National Standard

a) 2016 Code of Hygienic Practice for Chilled Young Coconut water/drink
b) PNS/BAFPS 28:2006, Chilled young coconut water/drink – Specification

1 SCOPE

This Code of Practice establishes the recommendations for the hygienic preparation of packaged natural coconut water inclusive of 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.

2.1 National Standards

a) BZS 29, Specification for Prepackaged Natural Coconut Water

2.2 CARICOM Regional Organisation for Standards and Quality

a) CRCP 5, General principles for food hygiene

3 TERMS AND DEFINTIONS

For the purposes of this document, the terms and definitions given in BZS 29 and the following applies.

3.1 **accredited testing laboratory** means a testing laboratory to which accreditation has been granted.

3.2 **cleaning** means removal of soil, residue, dirt, grease, visible extraneous matter, any other physical matter or any other objectionable matter from surfaces.

3.3 **contamination** means introduction or occurrence of a contaminant in food or the food environment.

3.4 **food establishment** means any premises, place, area or building where food, intended for public consumption, is sold, offered for sale, supplied, handled, prepared, packaged, displayed, held, served, processed, stored, transported or dispensed; and the surroundings, under the control of the same management; and any other place declared by the national competent authority to be under food safety legislation.

NOTE: Included are any land, buildings, vehicles, parts of structures, tents, stalls and other temporary structures, boats and pontoons, regardless of whether it is owned by the proprietor and includes those used principally as a private dwelling.

3.5 **potable water** means water that meets the recommendations of the national competent authority or the World Health Organization with respect to physical, chemical and microbial content.

3.6 **sanitation** means all actions dealing with cleaning and maintaining hygienic conditions in an establishment, ranging from cleaning and/or sanitizing of specific equipment to periodic cleaning activities throughout the establishment (including building, structural and grounds cleaning activities).

4 HARVESTING

4.1 Processors should ensure that coconuts used for the commercial packaging of natural coconut water are harvested between six (6) to twelve (12) months after visible apperance of fruit. 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 or impact the ground. The use of field crates made of impervious material or metal cages/trolleys to directly receive the nuts are a preferred practice.

4.2 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 TRANSPORATION

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) neither contaminate nor damage nuts;

b) can be effectively cleaned and 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) prevent the nuts from coming into contact directly with the floor of the transporting vehicle or the area of the vehicle on which persons may walk;

g) are covered to ensure 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. The nuts are not to be transported in sunlight at a temperature not exceeding 22 °C.

5.2 Use and maintenance

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

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

NOTE: Chemicals, animals and any other potential contaminants.

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 repaired / replaced.

6 SELECTION AND STORAGE OF WHOLE COCONUTS

6.1 Coconuts should be subjected to organoleptic examination to ensure that they are free from damage and 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 as follows:

a) at a minimum of 15 cm from the floor on flats or pallets;

b) at least 54 cm away from the walls; and

c) at a temperature not exceeding 33 °C.

6.4 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.

6.5 Coconuts should be processed after harvesting within 120 hours (5 days) when not separated from the bunch and up to 3 days (72 hours) when separated from the bunch.

7 BUILDING AND FACILITIES

7.1 Location

Food 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, food establishments should 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-skid materials;

b) free of crevices for e.g. Epoxy floor;

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) designed and / or constructed 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 Walls

Walls should:

a) be made of impervious materials with no toxic effect in intended use;

b) have a smooth surface up to a height appropriate to the operation; and

c) be non-absorbent and easy to clean and disinfect.

7.2.6 Ceilings

Ceilings should be:

a) constructed and finished to minimize the buildup of dirt and condensation; and

b) non-absorbent and easy to clean.

7.2.7 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) The food establishment should be appropriately laid out to accommodate a one way flow of raw materials, finished goods and employees.

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 washing 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. Hands free sinks, single – use towels or automatic hand dryers for hand drying and foot – operated covered bins for waste disposal are recommended. Liquid 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.

8.1.5 Temperature recording devices should be calibrated by the national competent authority at least once per year.

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) should have a design flow to prevent cross-contamination of in-process and finished products with raw materials

All equipment and utensils, such as cutlass tables and containers, should be stainless steel to prevent tarnishing and to facilitate easier cleaning and sanitizing.

9 PROCESSING OF NATURAL COCONUT WATER

9.1 General

Due to sensitivity of coconut water to temperature and atmosphere, 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:

a) the presence of cracks;
b) pedicels not intact;
c) any visible sign of pest infestation;
d) coconuts that are not harvested between six (6) to twelve (12) months after pollination;
e) coconuts with contents that are cloudy; and
f) 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, rinsed 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.

Sanitizing solution (sanitizer plus water) should be changed with sufficient frequency to maintain efficacy of sanitizer and where possible, concentration of sanitizing solution should be verified.

9.3 Cutting/Coconut water collection

A sanitized cutting implement (such as a stainless steel cutlass/machete (without wood handles)) 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: 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 of every hour that maintains their hygienic status.

10 PACKAGING

10.1 Packaging should be consistent with good food hygiene practices as specified in CRCP 5, thus ensuring that the product will be adequately protected from contamination and hazards during transportation and handling. After filtering, packaged natural coconut water should be sealed in suitable food grade containers, transferred rapidly to a blast freezer, OR a chiller or ice bath maintained not more than 4°C, then moved within 24 hours on a First In First Out principle to a freezing chamber kept at -12°C . 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 WASTE DISPOSAL

11.1 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.

11.2 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.

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

11.4 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 food establishment or on the grounds. In general, the food establishment should meet the requirements of the competent authority.

12 STORAGE AND TRANSPORTATION

12.1 Storage of finished products

Filtered coconut water should be cooled and stored as per clause 10.1 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.

NOTE: See clause 9 of the specification for date coding with regards to finished products.

12.2 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.

12.2.1 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.

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 AND RECORD KEEPING

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

a) Use of agricultural chemicals;

b) Date and time of harvest of each lot of coconut;

c) Date and time of processing;

d) Volume of production, and;

e) Storage condition.

14.2 The product should be tested by accredited laboratories or government approved laboratories for those parameters specified in BZS 29. All records should be maintained.

14.3 Representative samples of the product taken for quality assurance purpose should be kept for at least 7 days under the storage conditions as outlined in 12.

14.4 All refrigerated holding areas should be equipped with a thermometer or temperature recording device.

15 RECALL AND TRACEABILITY

Should there be an authoritative reason to recall packaged natural coconut water, reference to appropriate records of production, processing, packaging, storage and distribution will be essential in identifying the source of contamination in coconut water value chain to 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.

The system for traceability and recall should be evaluated annually for effectiveness.

Annex A (normative): Sanitizing agents and pesticides

A.1 Sanitizing agents

Table 1: Recommended sanitizing agents

Product	Recommended strength mg/l
Sodium hypochlorite	50
Hydrogen peroxide	200
Peroxyacetic Acid (PAA)	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 2: Recommended Pesticides

Type of pesticide	Active ingredient
1. Fumigants	Phosphine
2. Spraying compounds (Indoor use)	Bendiocarb Chlorpyrifos-methyl Cyfluthrin Deltamethrin *lambda*- Cyhalothrin Permethrin Pirimiphos-methyl
3. Spraying compounds (Outdoor use)	Cypermethrin Diazinon *lambda*- Cyhalothrin Permethrin

		Propoxur
4.Misting and fogging compounds		Pirimiphos-methyl Pyrethrin and pyrethroid combinations Synergised pyrethrins & pyrethroids
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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