PHILIPPINE NATIONAL STANDARD

PNS/BAFPS 76:2010
ICS 67.180

Coconut sap sugar – Grading and classification

BUREAU OF PRODUCT STANDARDS

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Foreword

The development of the Philippine National Standard for Coconut sap sugar, PNS/BAFPS 76:2010 was undertaken by the Bureau of Agriculture and Fisheries Product Standards (BAFPS) upon the request of the Philippine Coconut Authority (PCA) in October 2008. Coconut sap sugar is a processed product which is beyond the mandate of BAFPS pursuant to Republic Act 8435 or the Agriculture and Fisheries Modernization Act (AFMA). The need therefore to ask permission for the formulation of the said standard from the Bureau of Food and Drugs (BFAD), an authority competent for the standards formulation of processed products under the Department of Health was done in January 2009. Approval for said request was granted in February 2009.

A Technical Committee (TC) was organized by the Bureau of Agriculture and Fisheries Product Standards (BAFPS) through Special Order No. 140, series of 2008 to present common information and understanding on the quality and safety requirements for coconut sap sugar. The TC conducted technical reviews and public consultations in the three major islands of the country to generate further scientific data and opinions needed prior to the finalization of the draft standards.

The PNS for Coconut sap sugar aims to provide common understanding on the scope, definition, minimum requirements, classification, size classification, tolerances, packaging, sampling, marking and labeling, contaminants and hygiene. There is also the need for harmonization with Codex requirements in Heavy Metals and Pesticide Residues.

Coconut sap sugar is a high value commercial product which has promising health benefits to humans especially for diabetics. The Philippine Coconut Authority contracted the Food and Nutrition Research Institute (FNRI), Department of Science and Technology to conduct a test on the glycemic index of coconut sugar. The results of test showed that the glycemic index (GI) of sugar obtained from the sap of coconut showed a low GI of 35. Low GI food is good for proper control and management of diabetes mellitus and may lower the total, HDL and LDL cholesterol. It may also be good for weight maintenance thus prevent overweight and obesity. The importance of the product led to increase in demand for both domestic and international markets. The product is a good substitute for commercial sweeteners which are available in the market. The Product Quality Control and Research Department of PCA encourage toddy tappers to adopt the recent technology developments in the industry in processing the fresh toddy to coconut sap sSugar.

Finally, we would like to acknowledge the efforts of the PCA for their whole-hearted support and assistance in establishing the Philippine National Standard for Coconut sap sugar.

1 Scope

This standard establishes a system of grading and classifying commercial Coconut sap sugar obtained from fresh sap tapped from an unopened inflorescence of coconut trees, ***Cocos nucifera*** Linn.

2 References

The titles of the standard publications and other references of this standard are listed on the inside back cover.

3 Definitions

For the purpose of this standard the following definitions apply.

3.1
coconut sap
liquid oozing out from the tapped unopened inflorescence of the coconut palm

3.2
coconut sap sugar
a sweetener in solid form, derived from pure fresh coconut sap obtained by boiling

3.3
filth/impurities
extraneous and foreign matters

4 Minimum requirements

Coconut sap sugar should conform to the following requirements:

4.1 Physical characteristics

Coconut sap sugar should conform to the physical characteristics specified in table1.

Table 1 – Physical characteristics

Parameter	Quality characteristics
Color	Light yellow/Cream to dark brown
Odor	Sweet scent; pleasant nutty aroma
Taste	Sweet
Others	Free from filth and extraneous matters

4.2 Chemical properties

Coconut sap sugar should conform to the chemical property requirements specified in table 2.

Table 2 – Chemical property requirements

Parameter	Values (%)
Water activity, a_w	0.5 – 0.8
Glucose*	2.0 – 3.0
Fructose*	1.0 - 4.0
Sucrose*	78.0 - 89.0
Ash	≤ 2.4
*Analyses were done by Sugar Regulatory Administration (SRA).	

4.3 Microbiological characteristics

Coconut sap sugar should conform to the microbiological characteristics specified in table3.

Table 3 – Microbiological characteristics

Parameter	Values
Salmonella (/25g)	Negative
E. Coli (MNP/100g) or (cfu/g)	Negative
Coliform count	< 10cfu/g
Total plate count	< 10cfu/g
Mold and yeast	< 10cfu/g

5 Classification

Coconut sap sugar should conform to the requirements specified in table 4.

Table 4 – Classification

Class	Specification
Premium class (Superior quality)	Color: Light yellow to cream Water Activity, aw < 0.5
Class I (Good quality)	Color: Light brown to brown Water Activity, aw 0.5 – 0.7
Class II	This class includes coconut sap sugar which does not qualify for inclusion in the higher classes, but satisfy the minimum requirements specified in Section 4.

6 Contaminants

6.1 The coconut sap sugar should be free from filth and extraneous matters.

6.2 Coconut sap sugar should conform with heavy metals in amount not hazardous to human health.

6.3 No additives permitted.

7 Hygiene

Coconut sap sugar should be prepared and handled in accordance with the appropriate sections of the Recommended International Code of Practice – General Principles of Food Hygiene (CAC/RCP 1 – 1969, Rev. 2 - 1985, Codex Alimentarius Vol. 1B) and other relevant Codes of Hygienic Practices and BFAD Administrative Order No. 153 series of 2004, Revised Guidelines on Current Good Manufacturing, Packing, Repacking, or Holding Food and Codes of Practice recommended by the Codex Alimentarius Commission which are relevant to this product.

8 Methods of Sampling and Analysis (AOAC, 15th ed. 1990)

9 Packaging

9.1 Coconut sap sugar should be packed in suitable containers which will safeguard the integrity of the product.

9.2 The packaging materials should be made of substances which are safe and food grade suitable for the intended use.

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10 Marking and labeling

In addition to the requirements of the Codex General Standard for Labeling of Prepackaged Foods (Codex Stan 1 – 1985, Rev. 1 – 1991, Codex Alimentarius Vol. 1 A, the mandatory label information per BFAD AO 88-B series of 1984 and RA 7394 should be applied as follows:

10.1 Brand and trade names,

10.2 Specific name of the product – Coconut sap sugar,

10.3 Net content, in metric system,

10.4 Name and address of the manufacturer/importer/distributor,

10.5 Lot identification code,

10.6 Date of manufacture,

10.7 Best before date,

10.8 Nutrition facts – specify the nutrients, and

10.9 Product of the Philippines.

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.

BFAD AO 88-B s. 1984. Rules and Regulation Governing the Labeling of Prepackaged
of Food Products Distributed in the Philippines.

BFAD AO 153 s. 2004. Revised Guidelines on Current Good Manufacturing, Packing,
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BFAD Bureau Circular 01 – A s. 2004. Guidelines for the Assessment of Microbiological Quality of Processed Foods.

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Ticzon, S. G., L. V. Sancha and S. S. Magat. 1997. Sugar from Coconut Sap in Relation to Nut Production: A Review. Diliman, Quezon City. ARDB, 1997. 53 pp. (R&D Technical 1 Report No.4).

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