

# PHILIPPINE NATIONAL STANDARD

PNS/BFAD 15:2007  
ICS 67.080

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Dried mango products – Specification



BUREAU OF PRODUCT STANDARDS

**Foreword**

The Philippine National Standards for Dried Mango Products, Dried Tropical Fruits and Recommended Code of Practice for the Processing and Handling of Dried Tropical Fruits are another product standards being developed by the Technical Working Group still under the project entitled “Development of Standards for Selected Ethnic Food Products”.

The committee composed of representatives from the food industry, particularly processors of the commodity under standardization, the academe, research and development institutions, concerned government agencies and industry associations worked together in the development of the standard.

Posting of the draft standards was made to solicit comments and suggestions from different stakeholders. Public consultation workshops were conducted not only in Metro Manila but also in Cebu where the products were originated. Attendees composed of representatives from different stakeholders actively participated and gave their comments during the discussion.

The final drafts were forwarded to the Bureau of Agriculture and Fisheries Product Standards, Department of Agriculture (BAFPS-DA) for notification by the World Trade Organization Secretariat.

The final copy was submitted to the Bureau of Product Standards - Department of Trade and Industry (BPS-DTI) for adoption.

These standards were developed not only to serve as guide for the assurance of safety and quality but also to make the products more competitive in the local and world market.

**Dried mango products – Specification**

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**1 Scope**

This standard shall apply to dried mango of varieties conforming to the characteristics of *Mangifera* spp. treated or processed and packed in suitable containers.

**2 Definition of terms**

For the purpose of this standard, the following terms shall mean:

**2.1****container**

any form of packaging material, which completely or partially encloses the food (including wrappers). A container may enclose the food as a single item or several units or types of prepackaged food when such is presented for sale to the consumer

**2.2****current good manufacturing practices (cGMP)**

a quality assurance system aimed at ensuring that products are consistently manufactured, packed or repacked or held to a quality appropriate for the intended use. It is thus concerned with both manufacturing and quality control procedures

**2.3****drying**

the removal of water by natural means, i.e., by sun-drying

**2.4****dehydration**

the removal of moisture by artificial means and in some cases in combination with sun-drying sufficient to ensure quality and shelf life stability at ambient conditions

**2.5****food**

any substance, whether processed, semi-processed or raw, which is intended for human consumption, and includes drink, chewing gum and any substance which has been used in the manufacture, preparation or treatment of “food” but does not include cosmetics or tobacco or substances used only as drugs

**2.6****food additives**

any substance the intended use of which results or may reasonably be expected to result, directly or indirectly, in its becoming a component or otherwise affecting the characteristics of any food (including any substance intended for use in producing, manufacturing, packing, processing, preparing, treating, packaging, transporting, or holding food; and including any source of radiation intended for any such use), if such substance is not generally recognized, among experts qualified by scientific training and experience to evaluate its safety, as having been adequately shown through scientific procedures to be safe under the conditions of the intended use (R.A. 3720, Food, Drugs and Cosmetic Act)

**2.7**

**food standard**

a regulatory guideline that defines the identity of a given food product (i.e. its name and the ingredients used for its preparation) and specifies the minimum quality factors and, when necessary, the required fill of the container. It may also include specific labeling requirements other than or in addition to the labeling requirements generally applicable to all prepackaged foods

**2.8**

**ingredient**

any substance including food additive, used as a component in the manufacture or preparation of a food and present in the final product in its original or modified form

**2.9**

**label**

includes any tag, brand, mark, pictorial, or other descriptive script, written, printed, marked, embossed or impressed on, or attached to the container

**2.10**

**labeling**

any written, printed or graphic matter (1) upon any article or any of its container or wrappers and/or (2) accompanying the packaged food

**2.11**

**lot**

food produced during a period of time and under more or less the same manufacturing condition indicated by a specific code

**2.12**

**moisture content**

the percentage weight of water in relation to the dry weight of the product

**2.13**

**packaging**

the process of packing that is part of the production cycle applied to a bulk product to obtain the finished product. Any material, including painted material, employed in the packaging of a product including any outer packaging used for transportation of shipment. Packaging materials are referred to as primary or secondary according to whether or not they are intended to be in direct contact with the product

**2.14**

**sweetening agent**

includes one or more of the sugars, honey, high intensity sweeteners and artificial sweeteners

**2.15**

**water activity**

the ratio of vapor pressure of water in the product to the water vapor pressure of pure water at the same temperature. It is also a measure of water available for the growth of microorganisms

### **3 Description of products**

#### **3.1 Product definition**

Dried mango is the product prepared from sound and mature ripe fruit of varieties of *Mangifera* spp. processed by drying either by the sun or other recognized methods of dehydration, with or without added sweetening agent and food additives.

#### **3.2 Styles**

The product may be presented in any one of the following dried forms:

**3.2.1** Halves;

**3.2.2** Sliced;

**3.2.3** Cubes/Diced;

**3.2.4** Slabs – Consisting of portions of sound, ripe mangoes of characteristic color, irregular in shape, size and thickness and excluding whole fruit;

**3.2.5** Chunks, chips and strips; and

**3.2.6** Other forms.

#### **3.3 Other styles**

Any other presentation of the product shall be permitted provided that the product:

**3.3.1** is sufficiently distinctive from other forms of presentation laid down in this standard such as mango leather, sheets or rolls;

**3.3.2** meets all relevant requirements of this standard; and

**3.3.3** is adequately described on the label to avoid confusing or misleading the consumer.

### **4 Essential composition and quality factors**

#### **4.1 Raw materials**

##### **4.1.1 Mango**

Fruit to be used shall be fresh, sound, clean and mature from any cultivated variety conforming to the characteristics of the fruits of *Mangifera* spp. of the *Mangiferae* family. It shall conform to specifications stated in PNS/BAFPS 13:2004 Fresh Fruit – Mango-Specifications.

## 4.2 Optional ingredients

**4.2.1 Sweetening agent** – One or more of the sugars, honey, high intensity sweeteners or artificial sweeteners.

**4.2.2 Other ingredients** – All other ingredients to be used shall be of food grade quality and conform to all applicable food standards.

## 4.3 Quality criteria

### 4.3.1 Maturity characteristics

Mango shall show development characteristics of properly matured fruits, as indicated by proper color and texture for the varietal types defined in PNS/BAFPS 13:2004.

### 4.3.2 Moisture content

The product shall have moisture content of not more than 15%.

### 4.3.3 Water activity ( $a_w$ )

The product shall have a maximum water activity of 0.70 at 25 °C.

### 4.3.4 Sensory properties

The product shall have the characteristic color, aroma, and flavor of mango. Dried mango halves, slices, cubes, slabs and leathers/rolls shall have a chewy texture. Mango flakes shall have a flaky, crispy texture. The dried products shall be free from any objectionable sensory characteristics.

### 4.3.5 Grading

The product shall be graded according to:

**4.3.5.1 Premium** – Obtained from the thickest portion of the flesh (“cheek”) on both sides cut parallel to the seed of the fruit.

**4.3.5.2 Regular** – Obtained from the remaining flesh after cutting the “cheeks” including the fibrous portions of the fruit

### 4.3.6 Types of defects

**4.3.6.1 Foreign matter** – The presence in the sample unit of any matter, which has not been derived from mango, does not pose a threat to human health and is readily recognized without magnification or is present at a level determined by magnification method or any equivalent method that indicates non-compliance with good manufacturing practices and sanitation practices.

**4.3.6.2 Odor/flavor/color** – A sample unit affected by objectionable odors or flavors indicative of decomposition and unacceptable color.

#### 4.3.7 Classification of “defectives”

A container that has any of the type of defects set in 4.3.6 shall be considered as “defective”.

#### 4.3.8 Lot acceptance

A lot shall be considered as meeting the applicable quality requirements when the number of “defectives”, as defined in sub-section 4.3.6, does not exceed the acceptance number of the appropriate sampling plan.

### 5 Food additives

5.1 Food additives when used shall be in accordance with the regulations established by the Bureau of Food and Drugs (BFAD) (Bureau Circular No.2006-016, Updated List of Food Additives) and/or the Codex Alimentarius Commission.

The following food additives listed in, but not limited to, Table 1, may be used for the manufacture of dried mango products.

**Table1 – Food additives used for processing dried mango products**

<b>Food additive</b>	<b>Maximum level</b>
<b>Acidifying agent</b> Any permissible acidifying agents as specified by BFAD	GMP
<b>Antioxidants</b> Ascorbic acid Sodium erythorbate	GMP
<b>Humectants</b> Any permissible humectants agents as specified by BFAD	GMP
<b>Sulphites</b>	3,000 mg/kg

#### 5.2 Others

All others not included in the above list shall be allowed as carry-over, provided they are approved by the BFAD regulation and shall be in accordance to Section 5.2 of the “Principle Relating to the Carry-Over of Food Additives into Foods” (CAC/Vol. 1 1991).

### 6 Hygiene

It is recommended that the product covered by the provisions of this standard 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. 4-2003) and/or the BFAD A.O. No. 153 s. 2004 - Guidelines, Current Good Manufacturing Practices in Manufacturing, Packing, Repacking or Holding Food and processed according to the Recommended Code of Practice for the Processing and Handling of Dried Tropical Fruits (PNS/BFAD 17:2007).

When tested by appropriate methods of sampling and examination, the product:

- shall be free from filth that may pose a hazard to health;
- shall be free from parasites which may represent a hazard to health;
- shall not contain any substance originating from microorganisms in amounts which may represent a hazard to health;
- shall be free from microorganisms capable of development under normal conditions of storage; and
- shall be free from container integrity defects which may compromise the hermetic seal.

## **7 Labeling**

**7.1** Each container shall be labeled and marked with the following information in accordance with BFAD's Labeling Regulation:

- (a) The name of the product shall be "Dried Mango". In addition, there shall appear on the label as part of the name or in close proximity to the name, any form of presentation listed in 3.2 or 3.3 and grading listed in 4.3.5;
- (b) The complete list of ingredients and food additives used in the preparation of the product in descending order of proportion;
- (c) Products using artificial sweetener/s shall have statement/s referring to its low and/or reduced caloric value and the possibility of hypersensitivity to some of its components;
- (d) The net quantity of content by weight in the metric system. Other systems of measurement required by importing countries shall appear in parenthesis after the metric system unit;
- (e) The name and address of the manufacturer, packer and/or distributor of the food;
- (f) Open date marking;  
The words "Best/"Consume Before indicating end of period at which the product shall retain its optimum quality attributes at defined storage conditions;
- (g) Lot or code number identifying product lot;
- (h) The words "Product of the Philippines" or the country of origin if imported; and
- (i) Additional requirements  
A pictorial representation of fruit(s) on the label should not mislead the consumer with respect to the fruit so illustrated.

## **7.2 Nutrition labeling**

Nutrition labeling shall conform to established regulations of BFAD.

## **8 Methods of analysis and sampling**

### **8.1 Determination of moisture content (vacuum oven method)**

According to the AOAC Official Methods of Analysis, 16<sup>th</sup> ed., 1995. Method No. 934.06.

### **8.2 Determination of water activity**

According to the AOAC Official Methods of Analysis, 16<sup>th</sup> ed., 1995. Method No. 978.18.



### **8.3 Method of sampling**

Sampling shall be in accordance with the FAO/WHO Codex Alimentarius Sampling Plans for Prepackaged Foods - CAC/RM 42-1969, Codex Alimentarius Volume 13, 1994.

## References

PNS/BFAD 15:2007

The following normative documents contain provisions that, through reference in this text, constitute provisions of this standard. For undated references, the latest edition of the referenced document (including amendments) applies.

A.O. No. 153 s. 2004. **Guidelines, Current Good Manufacturing Practice in Manufacturing, Packing, Repacking or Holding Food.** Bureau of Food and Drugs. Department of Health. Alabang, Muntinlupa City, Philippines.

Association of Analytical Chemists. **Official Methods of Analysis Manual.** 16<sup>th</sup> ed., 1995. AOAC International. 481 North Frederick Ave., Suite 500, Gaithersburg, MD 20877-2417. U.S.A.

B.C. No.2006-016. **Updated List of Food Additives.** Bureau of Food and Drugs. Department of Health. Alabang, Muntinlupa City, Philippines.

**FAO/WHO Codex Alimentarius Commission Manual.** 1995. Codex Alimentarius Commission. Food and Agriculture Organization. Viale delle Terme di Caracalla, 00100 Rome, Italy.

**Food, definition.** ALINORM 04/27/41, para. 88 and Appendix VI. 2005. Codex Alimentarius Commission. Food and Agriculture Organization. Viale delle Terme di Caracalla, 00100 Rome, Italy.

Philippine National Standards No. 991:1993. **Agricultural and Other Food Products – Bottled Drinking Water Specifications.** Bureau of Product Standards. Department of Trade and Industry. Makati City, Philippines.

PNS/BAFPS 13:2004. **Philippine National Standard for Fresh Fruits – Mangoes – Specification.** Bureau of Agriculture and Fisheries Product Standards. Department of Agriculture. Diliman, Quezon City, Philippines.

R.A. 3720. **Food, Drugs and Cosmetic Act.** Bureau of Food and Drugs. Department of Health. Alabang, Muntinlupa City, Philippines.

**B P S**

BUREAU OF PRODUCT STANDARDS  
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CERTIFIED  
Product Quality

The use of the PS Certification Mark is governed by the provisions of Department Administrative Order No. 01 series of 1997 – Revised Rules and Regulations Concerning the Philippine Standard (PS) Quality and / or Safety Certification Mark Scheme by the Bureau of Product Standards. This mark on a product/container is an assurance by the manufacturer/producer that the product conforms with the requirements of a Philippine standard. Details of conditions under which a license to use the PS Certification Mark may be granted can be obtained from the Bureau of Product Standards, Department of Trade and Industry, 361 Sen. Gil J. Puyat Avenue, Makati City.



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Product Safety

**FORMULATING BODY**  
**Development of Standards for Selected Ethnic Food Products**

**BFAD Philippine National Standards for Food Products**

- |                                   |   |   |
|-----------------------------------|---|---|
| 1. Ms. Ofelia M. Alba             | - | Chief, Laboratory Service Division        |
| 2. Ms. Virginia Francia C. Laboy  | - | OIC, Policy, Planning & Advocacy Division |
| 3. Ms. Liberty V. Importa         | - | Nutritionist-Dietitian IV                 |
| 4. Ms. Almueda C. David           | - | Food-Drug Regulation Officer IV           |
| 5. Ms. Charina May T. Tandas      | - | Food-Drug Regulation Officer III          |
| 6. Ms. Maria Theresa C. Cerbolles | - | Food-Drug Regulation Officer III          |
| 7. Ms. Carmencita S. Masangkay    | - | Food-Drug Regulation Officer II           |

**Funding Agency**

- |                             |   |  |
|-----------------------------|---|--|
| Ms. Grace Estillore         | - | Philippine Council for Industrial and Energy Development |
| Ms. Czarina C. Resurrection | - | Department of Science and Technology                     |

**Technical Working Group**

**Academe:**

- |                           |   |  |
|---------------------------|---|--|
| Prof. Teresita P. Acevedo | - | Project Leader<br>University of the Philippines<br>College of Home Economics |
| Ms. Bernarda G. Dreje     | - | Project Assistant  |

**Government Agencies:**

- |                         |   |   |
|-------------------------|---|---|
| Ms. Charina May Tandas  | - | Department of Health                              |
| Ms. Caroline Duller     | - | Bureau of Food & Drugs                            |
| Dr. Gilberto Layese     | - | Department of Agriculture                         |
| Mr. Mary Grace Mandigma | - | Bureau of Agriculture Fisheries Product Standards |
| Ms. Norma Hernandez     | - | Department of Trade & Industry                    |
| Ms. Myra F. Magabilin   | - | Bureau of Product Standards                       |
| Ms. Rose Marie Castillo | - | Food Products                                     |
| Ms. Myrna Almarines     | - | Bureau Export Trade & Promotions                  |

**Testing/Research:**

- |                             |   |   |
|-----------------------------|---|---|
| Ms. Teresita S. Palomares   | - | Department of Science and Technology        |
| Ms. Ma. Dolor L. Villasenor | - | Industrial Technology Development Institute |

**Professional/Industry Association:**

- |                      |   |  |
|----------------------|---|--|
| Dr. Elias E. Escueta | - | Philippine Chamber of Food Manufacturers Incorporated (PCFMI)<br>Philippine Association of Food Technologists (PAFT) |
|----------------------|---|--|

**Food Industry:**

- |                      |   |  |
|----------------------|---|--|
| Ms. Marilou Florendo | - | Integrated Food Manufacturers Association of the Philippines (INFORMAPP) |
| Ms. Clarissa Cavero  | - | Philippine Food Processors and Exporters Organization Inc. (PHILFOODEX)  |