

# PHILIPPINE NATIONAL STANDARD

PNS/BAFPS 12:2004  
ICS 65.020.20

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**Fresh fruit – Durian - Specification**

## **Foreword**

The formulation of this Philippine National Standard for Fresh Fruits – Durian, PNS/BAFPS 12:2004 was initially undertaken in July 2001 under the Bureau of Agriculture and Fisheries Product Standards (BAFPS)' Technical Assistance on Safety and Quality Standards Covering Products of High Value Commercial Crops, in view of the increasing demand of the commodity for the domestic and export markets.

In 2003, the Bureau of Agriculture and Fisheries Product Standards (BAFPS) conducted series of technical reviews and public consultations nationwide on the draft standards for fresh durian fruits prior to its approval.

The Technical Committee and Sub-Committees of BAFPS organized through Special Order No. 411, series of 2001 set the classification of fresh durian fruit based on their physical characteristics and current practices existing in the sectors concerned.

In the preparation of this standard the following documents were considered:

Department of Agriculture – Ministry of Industry and Primary Resources, Brunei Darussalam. Durian Quality Management Manual – AAECF – Phase III:1999. Quality Assurance Systems for ASEAN Fruits Project (QASAF) – Fresh and Minimally Processed. DA – MIPR/1999. 98p.

Hiranpradit, H., N. I. CC Ungulasatian, S. Chandraparnik and S. Jantajoo.1992. Quality Standardization of Thai Durian, *Durio zibethinus* Murray. *Acta Hortic.* 321:695 -701.

Odtojan, Rufino C., Roman B. Armenio, Jr., Noel T. Estellena, Myrna S. Cantila and Juvy Astilla. 2000. Development of Quality Standard for Durian. RIARC, Department of Agriculture, Bago, Oshiro, Davao City.

Pamplona, Pablito P. and Marisa E. Garcia. Technoguide to Durian Production University of Southern Mindanao (USM) and Central Mindanao Agriculture and Resources Research and Development Consortium (CEMARRDEC) 77 p.

Sonthat, Nanthachi (ed) 1994. Durian: Fruit Development, Postharvest Physiology, Handling and Marketing in ASEAN Food Handling Bureau, Kuala Lumpur, Malaysia. 156 p.

**Fresh Fruits – Durian**

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**1 Scope**

This standard establishes a system of grading and classifying commercial varieties and other clones of durian grown from *Durio zibethinus Murray* produced in the Philippines that are to be supplied fresh to the consumer.

**2 References**

PNS ISO 874:2004 – Fresh fruits and vegetables – Sampling contains provisions which, through reference in this text form part of this national standard. At the time of publication, the edition indicated was valid.

**3 Definitions**

For the purpose of this standard, the following definitions shall apply:

**3.1****aril**

refers to the fleshy portion of the fruit that can be eaten

**3.2****clean**

the fruit is free from dirt and other foreign matter, chemical/pesticide residue levels shall not exceed maximum residue limit (MRL)

**3.3****clean, reasonably**

fruit exhibits unavoidable dirt and other foreign matters

**3.4****durian**

a tropical tree scientifically known as *Durio zibethinus Murray*. The durian has an aril fruit with sharp spines on the pericarp. Each fruit usually contains 5 locules. There are many known varieties and clones of durian in the Philippines (Table 1)

**3.5****firm**

the fruit does not yield to slight pressure

**3.6****mature**

the fruits have reached a stage of maturity which will ensure proper completion of the ripening process. At full maturity, the peel color changes, perceptible aroma develops, carpel sutures widen, produces hollow sound when tapped, abscission sutures become prominent and spines become pliable

**3.7**

**well-formed**

the fruit has the typical shape of the variety (Annex A)

**3.8**

**well-trimmed**

the peduncle is neatly cut off at a point not less than 2.5 cm above the abscission point

**4 Defects** (as shown in Annex A)

**4.1 Defects associated with insects/rodents**

**4.1.1 Mealy bug damage** – The damaged parts are usually covered with black sooty mold growing on the honeydew produced by the mealy bug.

**4.1.2 Husk borer damage** – Healed feeding scar on peel surface with apparent insect excretion at the opening of the feeding tunnel.

**4.1.3 Rodents**

**4.2 Defects associated with microorganisms, physiological disorder and mechanical damage**

**4.2.1 Physiological disorder** – Dark patches appear on the skin followed by skin cracks near the base of the peduncle. Bronzing color on the skin of slightly affected fruit. Fruit fails to ripen after removal from cold storage to ambient temperature.

**4.2.2 Fruit rot** – Water-soaked lesion on the outer skin of the fruit which later coalesce to form dark brown lesion, spots become larger and penetrate deeper into the rind of durian.

**4.2.3 Other damages** - These include broken or crushed spines, and broken peduncle. (See Figures 1 and 2 for sample defects).

**5 General requirements**

**5.1** Durian must be mature.

**5.2** Durian must be whole and fresh in appearance.

**5.3** Durian must be clean.

**5.4** Durian must be firm.

**5.5** Durian must be practically free from mechanical, disease and pest damages.

**6 Varieties and Clones**

Durian shall be identified according to the characteristics of the varieties listed in Table 1.

**Table 1 – Fruit characteristics of some durian varieties/clones recommended in the Philippines**

Variety	Shape	Maturity (days)	Fruit weight (kg)	Skin color	Flesh color and other characteristics	Edible portion (%)
Chanee	Cylindrical	110 – 115	2.0 – 5.0	Greenish brown	Golden yellow, aromatic	35 – 40
Monthong	Elongated	120 – 125	2.0 – 5.0	Golden yellowish brown	Creamy yellow aromatic sweet	30
Alcon fancy	Round	120 – 125	1.0 – 2.0	Greenish brown	Canary yellow; firm; buttery; sweet; spicy; mildly aromatic	35
Arancillo	Ovoid to cylindrical	115 – 120	1.0 – 3.0	Brownish	Mimosa yellow; firm; mildly aromatic; sweet, spicy	33
Puyat	Cylindrical	120 – 125	3.0 – 5.0	Greenish brown	Chrome yellow; firm; soft; buttery; mildly aromatic	40

## 7 Grading

Durian shall be classified into three grades according to its general appearance, quality and conditions as follows:

**7.1 Premium Grade** – Durian fruits in this grade shall be of superior quality and have the characteristic of the variety or commercial type. They shall be matured, well-trimmed, well-formed, free from defects associated with insects and microorganisms, and external physiological disorder with exception of very slight superficial defects provided that these do not affect the general appearance of the produce, the keeping quality and presentation in the package. The weight of durian fruit shall not be less than 1.5 kg and not more than 4.0 kg.

**7.2 Grade I** – Durian in this grade shall be of good quality and has the characteristic of the variety or commercial type. Durian fruits shall be matured, reasonably clean, well-trimmed, well-formed and free from defects associated with insects, microorganisms and external physiological disorders. Slight defects such as slightly misshapen and slight color are permissible provided that they do not affect the general appearance of the produce, its keeping quality and presentation in the package. The weight of durian fruit shall not be less than 1.5 kg and not more than 4.0 kg.

**7.3 Grade II** – Durian in this grade which do not qualify for inclusion in the higher grades but satisfy the requirement of this grade. Durian shall be fairly well-matured, fairly clean, slightly misshapen, and free from defects associated with microorganisms. Defects due to mechanical damage such as broken spines shall be allowed. The weight of durian fruit shall not be less than 1.5 kg and not more than 4.0 kg.

## 8 Tolerances

Tolerances shall be allowed in each package for product not satisfying the requirements of the grade indicated.

**8.1 Premium Grade** – Five percent of the total weight of shipment of durian is allowed for off-sized and not more than 1% by count or weight of durian for other defects shall fail to meet the requirements but shall conform to the requirements of the next lower grade

**8.2 Grade I** – Ten percent of the total weight of shipment of durian is allowed for off-sized and not more than 2% by count or weight of durian for other defects shall fail to meet the requirements.

**8.3 Grade II** – Ten percent of the total weight of shipment of durian is allowed for off-sized and not more than 5% by count or weight of durian for other defects shall fail to meet the requirements.

## 9 Sampling

Sampling method to be used for ascertaining conformance to the requirements of this specification shall be in accordance with PNS/ISO 874.

## **10 Packaging**

Durian shall be packed in suitable containers that will avoid any external or internal damage to the produce. The containers shall meet the quality, hygiene, ventilation and resistance characteristics to ensure proper handling and shipping of durian.

## **11 Marking or labelling**

Each package has the capacity of 10 kg - 12 kg durian and shall be legibly labeled on the same side with the following information:

- 11.1 Name of product, the variety and/or commercial type;
- 11.2 Grade and size and/or number of pieces;
- 11.3 Net weight (in kilograms);
- 11.4 Name of shipper/importer/consignee;
- 11.5 The words “Product of the Philippines”;
- 11.6 Date and place of inspection (optional); and
- 11.7 Name and signature of inspector (optional).

## **12 Contaminants**

### **12.1 Heavy Metals**

Durian shall comply with those maximum residue levels established by the Codex Alimentarius Commission for this commodity.

### **12.2 Pesticide Residues**

Durian shall comply with those maximum residue levels established by the Codex Alimentarius Commission for this commodity.

## **13 Hygiene**

It is recommended that the produce shall be covered by the provisions of this standard 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), and other relevant Codex texts such as Codes of Hygienic Practice and Codes of Practice.

## **14 Compliance and specification**

When found to comply with the requirements specified in this Philippine Standard Specification, the lot, the batch, or the consignment from which the samples have been drawn, shall be deemed to comply with this Philippine National Standard Specification.



Figure 1



Figure 2

**Department of Agriculture  
Bureau of Agriculture and Fisheries Product Standards**

**Technical Sub-Committee on Crops**

**Chair**

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**Co-Chair**

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