

# PHILIPPINE NATIONAL STANDARD

PNS/BAFPS 54:2007  
ICS 065.020

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Fresh fruits – Lanzones – Grading and classification



BUREAU OF PRODUCT STANDARDS

**Foreword**

The development of the Philippine National Standard for Lanzones (PNS/BAFPS 54:2007) was undertaken by the Bureau of Agriculture and Fisheries Product Standards (BAFPS) in view of the increasing demand of the commodity for domestic and export markets.

A Technical Committee and Sub-Committee were organized by the Bureau of Agriculture and Fisheries Product Standards (BAFPS) through No. 411, series of 2001, and Special Order No. 169, series of 2007 to identify members and experts that shall be involved in the formulation of the PNS for Lanzones. BAFPS in collaboration with the TC conducted technical reviews and public consultations in the three major islands of the country for the finalization of the draft standard.

PNS/BAFPS 54:2007 aims to provide common understanding on the scope, definitions, cultivars, minimum requirements, classification for both quality and size, tolerances, sampling, packaging, marking and labeling, other requirements, contaminants and hygiene.

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**Fresh fruits – Lanzones – Grading and classification**

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**1 Scope**

This standard establishes a system of grading and classifying commercial varieties of lanzones grown from *Lansium domesticum* Correa, of the family Meliaceae family. Also, known as langsat (Malay, Thailand), longkong (Thailand – intermediate type), duku (Malay, Thailand), lansa, langsep, lanzon, lanzone, lansone or kokosan produced in the Philippines to be supplied fresh to the consumer.

**2 References**

The title of the standards 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****clean**

the fruits are free from blemishes, latex, bruises and other damages caused by disease (scab) and insects (mealy bugs)

**3.2****cluster**

a bunch of lanzones usually 18 cm - 20 cm long, with more than 5 fruits depending of the variety closely attached to the stalk or stem

**3.3****mature/ripe**

the fruits are harvested after 2 weeks - 3 weeks when the fruits begin to change their color from green to full straw yellow. To obtain or attain sweeter fruits, full harvesting is done when the fruit stalk turns brown in color

**4 Cultivars**

The most important cultivars in the Philippines are Paete, Jolo/Mindanao, Duku (Coronel, 1983) and Longkong. These cultivars are described below:

**4.1 Paete** – Fruit size is 3.2 cm long, 2.7 cm in diameter, weighs 15 g, and has 0-2 well developed seeds. The tree has an upright growth habit, narrower leaves, and has more fruits per bunch than Duku and Jolo/Mindanao. Paete is the leading cultivar in the Philippines (Morton, 1987).

**4.2 Jolo/Mindanao** – Fruit size is 3.5 cm long, 3.2 cm in diameter, weighs 21 g, has 1-3 large seeds and late maturing. The fruit has a longer shelf life due to its thicker skin. The tree has a spreading growth habit and broad leaves. It is predominantly grown in Southern part of the Philippines.

**4.3 Duku** – Fruit size is 3.5 cm long, 4 cm - 5 cm in diameter, weighs 20 g, has five separate segments with 1-2 seeds. The fruits are oblong-ovoid or ellipsoid, with thick grayed yellow skin, faintly aromatic, and has little or no milky latex (Morton, 1987). The tree is more robust, broad-topped and densely foliated with conspicuously-veined leaflets and has an intermediate growth habit.

**4.4 Longkong** – Fruit size is 4 cm - 5 cm long, 3.5 cm in diameter, weighs 29 g, has 4-5 segments with 0-1 seed (almost seedless), and the sweetest among other cultivars. The fruits are oblong or ellipsoid with thick grayed yellow skin usually 1.0 cm - 1.1 cm and free of latex when peeled. The tree has an upright growth habit with dark green (not bitter) leaves.

**4.5 BPI selection** – Fruit size is 3.88 cm long, 3.38 cm in diameter, weighs 27 g, and has 4-5 segments with 0-1 seed (almost seedless). The fruits are round with thick grayed yellow skin usually 1.1 cm - 1.4 cm and free of latex when peeled. The tree growth habit and the color of the leaf is similar to Longkong but the leaves are bitter upon tasting.

## 5 Minimum requirements

In all classes, subject to the special provisions for each class and tolerances allowed, lanzones must be: (a) whole with calyx, pedicel, or abscission layer intact; (b) show characteristics of the variety or cultivar in terms of freshness, shape, colour, taste, firmness and others (e.g. cork cells or brown specks).

Lanzones must be sound; clean; practically free from visible foreign matter; practically free of pests affecting the general appearance of the produce; practically free of damage caused by low and/or high temperature; free of bruising or clearly visible defects on the skin; practically free of damage caused by pests and diseases; free of abnormal external moisture, excluding condensation following removal from cold storage; and free of any foreign smell and/or taste.

Lanzones must have been carefully picked and have reached an appropriate degree of ripeness, in accordance with the characteristics of the variety and/or commercial type and to the area in which they are grown.

The development and condition of the lanzones must be such as to enable them to: (a) withstand transport and handling, and (b) arrive in satisfactory condition at the place of destination.

## 6 Classification

Lanzones are classified according to its general appearance, quality and condition of the fruits. The fruits are generally classified as follows:

**6.1 Extra class** – Lanzones in this class must be of superior quality. They must be the characteristic of the variety and/or commercial type. The fruits must be free of defects, with the exception of very slight superficial defects, provided these do not affect the general appearance of the produce, the quality, the keeping quality and presentation in the package.

**6.2 Class I** – Lanzones in this class must be of good quality. They must be the characteristic of the variety and/or commercial type. The following defects, however, may be allowed, provided these do not affect the general appearance of the produce, the quality, the keeping quality and presentation in the package: (a) slight defects in shape; (b) slight defects in colouring; (c) slight skin defects (i.e., mechanical bruising, sun spots and latex burns). The total area affected shall not exceed 10 % of the total surface area. and (d) slight marks caused by pests. The defects must not, in any case, affect the pulp of the fruit.

**6.3 Class II** – Lanzones which do not qualify for inclusion in higher classes, but satisfy the minimum requirements specified in Clause 5. The following may be allowed, provided the lanzones retain their essential characteristics as regards the quality, the keeping quality and presentation in the package: (a) defects in shape; (b) defects in colouring; (c) skin defects (i.e., mechanical bruising, sun spots and latex burns). The total area affected should not exceed 15 % of the total surface. And (d) slight marks caused by pests. The defects must not, in any case, affect the pulp of the fruit.

**7 Size classification**

Size is determined by the weight of the individual fruit or bunch, in accordance with the following table:

**For Fruit**

| Size code | Weight (g/fruit) |
|-----------|------------------|
| 1         | > 30             |
| 2         | 26 - 30          |
| 3         | 21 - 25          |
| 4         | 15 - 20          |
| 5         | < 15             |

**For Bunch**

| Size code | Weight (g/bunch) |
|-----------|------------------|
| 1         | > 700            |
| 2         | 501 - 700        |
| 3         | 301 - 500        |
| 4         | 200 - 300        |
| 5         | < 200            |

**8 Tolerances****8.1 Quality tolerances**

**8.1.1 Extra class** – Ten percent (10 %) by weight of lanzones not satisfying the requirements of the class, but meeting those of Class I or, exceptionally, coming within the tolerances of that class.

**8.1.2 Class I** – Twenty percent (20 %) by weight of lanzones not satisfying the requirements of the class, but meeting those of Class II or, exceptionally, coming within the tolerances of that class.

**8.1.3 Class II** – Twenty percent (20 %) by weight of lanzones satisfying neither the requirements of the class nor the minimum requirements, with the exception of produce affected by rotting or any other deterioration rendering it unfit for consumption.

**8.2 Size tolerances**

For all classes, 20 by weight for individual fruit and bunch, corresponding to the size immediately above and/or below that indicated on the package.

**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**

Lanzones shall be packed in suitable containers that will avoid any external or internal damage to the produce. Normally it is sold in single layer fiberboard cartoons with padding, sometimes in trays with liners. The containers shall meet the quality, hygiene, ventilation and resistance characteristics to ensure suitable handling, and shipping of lanzones.

## **11 Presentation**

Lanzones may be presented under one of the following forms:

### **11.1 Individually**

In this case the pedicel, calyx or abscission layer must be intact.

### **11.2 In bunches**

Each bunch should not be less than six (6) cm in length, with a minimum of five fruits.

The abscised fruits shall not be more than 10 % of the total net weight in the package upon arrival at its destination.

## **12 Marking and labeling**

Each container shall be labeled and stamped with indelible ink to provide the following information:

**12.1** Name of produce, variety or commercial type;

**12.2** Class and size;

**12.3** Net weight (kg);

**12.4** Name of producer, trader and exporter;

**12.5** Indicate the shelf life; and

**12.6** Product of the Philippines.

## **13 Other requirements for considerations**

### **13.1 Pre-cooling condition**

Lanzones after harvest are immediately required to undergo pre-cooling at room temperature to avoid moisture loss.

### **13.2 Optimum storage condition**

For optimum storage-life of 21 days, lanzones is stored at 18 °C (46 °F) with 90 % Relative Humidity (RH).

## **14 Contaminants**

### **14.1 Heavy metals**

Lanzones shall comply with those maximum residue levels for heavy metals established by the Codex Alimentarius Commission and/or authority for this commodity.

### **14.2 Pesticide residues**

Lanzones shall comply with those maximum residue limits established by the Codex Alimentarius Commission and/or authority for this commodity.

## **15 Hygiene**

**15.1** It is recommended that the produce covered by the provisions of this standard be prepared and handled in accordance with appropriate sections of the Recommended International Code of Practice – General Provisions of Food Hygiene (CAC/RCP 1 –1969, Rev. 2 – 1985), and other relevant Codex texts such as Code of Hygienic Practice and Code of Practice.

**15.2** The produce shall comply with microbial criteria established in accordance with the Principles for the Establishment and Application of Microbiological Criteria for Foods (CAC/GL 21 –1997).



## Annex A

## The characteristics of lanzones cultivars

| <b>Cultivars</b>     | <b>Fruit length<br/>(cm)</b> | <b>Fruit diameter<br/>(cm)</b> | <b>Weight<br/>(g)</b> |
|----------------------|------------------------------|--------------------------------|-----------------------|
| 1. Paete             | 3.20                         | 2.70                           | 15                    |
| 2. Jolo/<br>Mindanao | 3.50                         | 3.20                           | 21 - 30               |
| 3. Duku              | 3.50                         | 4.0 – 5.0                      | 20                    |
| 4. Longkong          | 4.0 – 5.0                    | 3.50                           | 29                    |
| 5. BPI Selection     | 3.88                         | 3.38                           | 27                    |

## References

PNS/BAFPS 54:2007

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.

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**B P S**

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