

# PHILIPPINE NATIONAL STANDARD

PNS/BAFPS 77:2009  
ICS 65.020.20

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## Fresh vegetables – Squash – Grading and classification



**BUREAU OF PRODUCT STANDARDS**

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## **Foreword**

The development of the Philippine National Standard for Fresh vegetables – Squash – Grading and classification, PNS/BAFPS 77:2009 was undertaken by the Bureau of Agriculture and Fisheries Product Standards (BAFPS) in order to reflect the recent technology developments in the industry, and the need for its harmonization with ASEAN standards and Codex requirements in Heavy Metals, Pesticide Residues and Hygiene.

PNS/BAFPS 77:2009 was based on the Quality and Grade Specifications for Squash, developed in 1981 by the Food Terminal, Inc.

A Technical Committee (TC) and Sub-Committee (SC) were organized by Bureau of Agriculture and Fisheries Product Standards (BAFPS) through Special Orders No. 411, series of 2001 and No.169, series of 2007 to generate, update the data and formulate the PNS for Squash. BAFPS, in collaboration with the TC conducted technical reviews and public consultations in the three major islands of the country prior to the finalization of the standard.

PNS/BAFPS 77:2009 aims to provide common understanding on the scope, definitions, minimum requirements, classification, size classification, tolerances, sampling, packaging, and marking and labeling of squash.

**Fresh vegetables – Squash – Grading and classification**

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**1 Scope**

This standard establishes a system of grading and classifying squash, *Cucurbita spp.* produced in the Philippines to be supplied fresh to the consumers.

**2 References**

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

**3 Definitions****3.1****badly misshapen**

squash is deformed to such an extent different to the variety

**3.2****clean**

free from stains, dirt or other foreign materials

**3.3****diameter**

greatest dimension of the squash measured at right angles from the stem to the blossom- end

**3.4****discoloration**

caused by scars, bruises or other means which damages the physical appearance of the squash

**3.5****fairly formed**

has typical shape of the variety and the overall shape is fairly symmetrical and no depressed areas which affect the shape

**3.6****fairly young and tender**

a desirable stage of maturity for squash which is indicated by fairly tender skin for the variety, not fully developed seeds, firm, moist and free from fiber

**3.7****firm**

hard, not soft or flabby

**3.8**

**pest damage**

damage caused by insects, pathogens, and rodents (rats)

**3.9**

**length**

greatest dimension of the squash measured from the blossom-end to the stem-end

**3.10**

**mature**

the fruit has generally reached the maximum size for a variety, color and firmness of peduncle and appearance of powdery, whitish substance on the surface of the fruit

**3.11**

**well-trimmed**

the peduncle is firmly attached and 6 cm in length

**4 Minimum requirements**

In all classes subject to the special provisions for each class and tolerances allowed, squash must meet the following requirements:

- whole, clean, firm and well-trimmed;
- free from damages caused by pests and diseases, mechanical or other means;
- and free of foreign/undesirable smell/taste.

The development and condition of squash must enable it to: (a) withstand transport and handling and (b) arrive in satisfactory condition at the place of destination.

**5 Classification**

**5.1** Squash are classified into three classes, as defined below:

**5.1.1 Extra Class** – Squash must be of superior quality and have similar varietal characteristics and/or commercial type. It must be clean, well-formed, uniform in size, firm and well-trimmed. It must be free from damages caused by discoloration, scars, cuts or punctures, pests and diseases, mechanical or other means. Very slight superficial defects are allowed, provided these defects do not affect the quality and presentation in the package.

**5.1.2 Class I** – Squash in this class must be of good quality and have similar characteristics of the variety and/or commercial type. It must be clean, fairly well-formed, fairly uniform in size, firm and well-trimmed. It must be free from damages caused by discoloration, scars, cuts or punctures, pests and diseases, mechanical or other means. Slight superficial defects are allowed, provided these defects do not affect the quality and presentation in the package.

**5.1.3 Class II** - This class includes squash which do not qualify for inclusion in the higher classes, but satisfy the minimum requirements specified in Clause 4.

## 5.2 Size classification

Size classification	Weight of squash (kg)
Extra large	> 6.0
Large	3.1 - 6.0
Medium	1.6 - 3.0
Small	0.5 - 1.5

## 6 Tolerances

### 6.1 Quality tolerance

**6.1.1 Extra class** – Five percent by weight of squash not satisfying the requirements of the class but meeting those of Class I or, exceptionally, coming within the tolerance of that class.

**6.1.2 Class I** – Ten percent by weight of squash not satisfying the requirements of the class, but meeting those of Class II or, exceptionally coming within the tolerance of that class.

**6.1.3 Class II** – Ten percent by weight of squash 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.

### 6.2 Size tolerance

**6.2.1 Extra class** – Five percent by number of squash conforming to the size immediately below or above the specified in the package.

**6.2.2 Class I and II** – Ten percent by number of squash not conforming to the minimum size. In any case, the tolerance is not applicable to squash with a weight of less than 0.5 kg.

## 7 Sampling

Sampling to be used for ascertaining the conformance shall be in accordance with PNS/ISO 874.

## **8 Packaging**

Squash must be packed in suitable containers that will protect the squash from any external or internal damage. The containers shall meet the quality, hygiene, ventilation and resistance characteristics to ensure suitable handling and transport of squash.

## **9 Marking and labeling**

Each container shall be legibly labeled with the following information:

- 9.1** Name of produce, variety and/or commercial type;
- 9.2** Date of harvest;
- 9.3** Class and size;
- 9.4** Net weight, (kg)/pack;
- 9.5** Name and address of producer, trader and exporter;
- 9.6** Origin of produce; and
- 9.7** Product of the Philippines.

## **10 Contaminants**

### **10.1 Heavy metals**

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

### **10.2 Pesticide residues**

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

## **11 Hygiene**

**11.1** It is recommended that the produce covered by the provision 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.2 –1985), and other relevant Codex texts such as Codes of Hygienic Practice and Codes of Practice.

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

## Annex A

## The nutritive value of squash (per 100g edible portion)

<b>Properties</b>	<b>Amount</b>
Water (g)	88.7
Energy (kcal)	44.0
Protein (g)	1.4
Fat (g)	0.5
Dietary Fiber (g)	2.2
Carbohydrates (g)	8.6
Ash (g)	0.8
Calcium (mg)	61.0
Phosphorus (mg)	40.0
Iron (mg)	0.7
Vitamin A (ug)	880.0
Thiamine (mg)	0.06
Riboflavin (mg)	0.05
Niacin (mg)	0.8
Ascorbic Acid (mg)	20.0

FNRI. Table of Food Composition.

**Annex B**

**Maturity indices of squash**

1. Mature fruits are harvested at 30 – 40 days from anthesis or pollination.
2. The appearance of powdery, whitish substance on the surface of the fruit, and the hardening of the rind.
3. Change in peduncle color and texture.
4. Change in rind color.



## References

PNS/BAFPS 77:2009

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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United States Standards for Grades of Summer Squash. 1997

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