

# PHILIPPINE NATIONAL STANDARD

PNS/BAFPS 93:2010  
ICS 67.080.01

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## Fresh vegetables – Pechay – Classification and grading



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## **Foreword**

The development of the Philippine National Standard for Pechay, PNS/BAFPS 93:2010 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 harmonization with Codex requirements in Heavy Metals, Pesticide Residues and Hygiene.

PNS/BAFPS 93:2010 was based on the quality and grade specification of Petsai conducted by Food Research Development, Food Terminal, Inc. (1981) and recent studies conducted by other research institutions.

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

The PNS for Pechay aims to provide common understanding on the scope, definition, minimum requirements, nutritive values, classification, sampling, packaging, and marking and labeling.

**Fresh vegetables – Pechay – Classification and grading**

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**1 Scope**

This standard applies to pechay grown from *Brassica chinensis* L. to be supplied fresh to the consumers.

**2 Reference**

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****fresh**

the leaves and petioles are not wilted

**3.2****fairly tender**

not full-grown, tough or excessively fibrous

**3.3****fairly clean**

the appearance of pechay is not affected by the presence of soil, dirt or other foreign materials

**3.4****damage**

any defect which materially affects the appearance or shipping quality of the individual plant

**3.5****firm**

not soft, flabby or shriveled

**3.6****seedstems**

heads which have seed stalks showing or in which the formation of seed stalks has just started

#### **4 Minimum requirements**

In all classes, subject to the special provisions for each class and tolerances allowed, pechay must be:

- intact;
- clean, practically free of any visible foreign matter;
- fresh in appearance;
- practically free from pests;
- practically free from damage caused by pests;
- free of suckers and flower stems;
- free of excessive external moisture, i.e. adequately “dried”, if washed; and
- free of any foreign smell and/or taste.

The development and condition of the pechay must enable them to:

- withstand transport and handling, and
- arrive in satisfactory condition at the place of destination.

#### **5 Classification**

Pechay are classified into three classes, as defined below:

**5.1 Class I** – Pechay must be of superior quality and have similar varietal characteristics. They must be fresh, tender, clean, free from decay, seedstems, foreign material, disease, insects and mechanical or other means. Very slight (2%) superficial defects are allowed provided these defects will not affect the general appearance of the produce, the quality, keeping quality and presentation in the package.

**5.2 Class II** – In this class Pechay must be of good quality and have similar varietal characteristics. They must be fresh, fairly tender, fairly clean, and free from decay, seedstems, foreign material, disease, insects and mechanical or other means. The following defects may be allowed provided the general appearance of pechay retain their essential characteristics as regards the quality, the keeping quality and presentation in the package:

- slight discoloration;
- slight deformation;
- slight bruises;
- seedstems when more than one-third the length of the longest leaf; and
- mechanical damage when the individual unit is badly crushed, torn, or broken.

**5.3 Class III** – This class includes pechay which do not qualify for inclusion in Class II but satisfy the minimum requirements in Clause 4.

## **6 Tolerance**

### **6.1 Quality tolerance**

**6.1.1 Class I** – Ten percent (10 %) by weight of pechay not satisfying the requirements of the class, but meeting those of Class II.

**6.1.2 Class II** – Ten percent (10 %) by weight of pechay not satisfying the requirements of the class but satisfying those of Class III.

**6.1.3 Class III** – Ten percent (10 %) by weight of pechay not satisfying the requirements of the class II with the exception of produce affected by rotting or any other deterioration rendering it unfit for consumption.

## **7 Packaging**

Pechay must be packed in suitable containers that will protect the produce properly. The materials used inside the package must be new, clean and of quality such as to avoid any external or internal damage to the produce. The use of materials, particularly of paper or stamps bearing trade specifications is allowed provided the printing or labeling has been done with non-toxic ink or glue. Packages must be free of all foreign matter.

## **8 Marking and labeling**

Each container shall have a label using an indelible ink to provide the following information:

- 8.1** Name of produce, variety or commercial type;
- 8.2** Class and size;
- 8.3** Net weight (kg);
- 8.4** Date of harvest;
- 8.5** Name and address of producer, trader and exporter;
- 8.6** Origin of Produce; and
- 8.7** Product of the Philippines.

## **9 Contaminants**

### **9.1 Heavy metals**

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

## **9.2 Pesticide residues**

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

## **10 Hygiene**

**10.1** 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 Principles of Food Hygiene (CAC/RCP 1 – 1969, Rev. 4 – 2003), Code of Hygienic Practice for Fresh Fruits and Vegetables (CAC/RCP 53-2003), and other relevant Codex texts such as Codes of Hygienic Practice and Codes of Practice.

**10.2** The produce should comply with any microbiological criteria established in accordance with the Principles for the Establishment and Application of Microbiological Criteria for Foods (CAC/GL 21-1997).

## Annex A










## Nutritional values of Pechay

Each 100 g fresh edible portion contains:

<b>Nutrient</b>	<b>Amount</b>
Water , g	93.0
Protein, g	1.7
Fat, g	0.2
Carbohydrates, g	3.1
Fiber, g	0.7
Ash, g	0.8
B-carotene, g	2.3
Vitamin C, mg	53.0
Calcium, mg	102.0
Phosphorus, mg	46.0
Iron, mg	2.6
Energy Value, kJ	86.0

## Annex B

## Varieties of Pechay

-  **Green Stem Pak Choi (*Brassica rapa var chinensis*)** - Green baby pak choy, Shanghai Chinese chard, Shanghai pak choy - Mei Qing Choi, Hybrid, San Fan, Hybrid
-  **White Stem Pak Choi (*Brassica rapa rosularis*, *Brassica rapa var chinensis*)** - Baby bok choy, celery mustard, Chinese chard, Chinese mustard, Chinese white cabbage, rosette bok choy, spoon shaped bok cho, Chinese Pak Choi, Taisai
-  **Specialty Pak Choi** – Has frilly leaves to light yellow-green color. These are Fun Jen, Hybrid, Golden Yellow, Hybrid
-  **Petchay PAVITO** – A compact, short & fast growing variety; very dark green leaves with pure white and crispy petioles; compact plant habit allows for easy transportation after harvest
-  01-108 ; GP 01 - 108
-  01-109; GP 01 – 109
-  Pavo – Petsay Pavo
-  Super Black Behi
-  Tsoi Sam



**Green Stem Pak Choi (*Brassica rapa* var *chinensis*) - green baby pak choy, Shanghai Chinese chard, Shanghai pak choy**



**Figure 1 – Mei Qing Choi, Hybrid**

**Green Stem Pak Choi**



**Figure 2 – San Fan, Hybrid**

**White Stem Pak Choi (*Brassica rapa rosularis*, *Brassica rapa var chinensis*)**  
- Baby Bok Choy, Celery Mustard, Chinese Chard, Chinese Mustard, Chinese White Cabbage, Rosette Bok Choy, Spoon Shaped Bok Cho



**Figure 3 – Chinese Pak Choi**

**White Stem Pak Choi**



**Figure 4 – Taisai**

**Specialty Pak Choi**



**Figure 5 – Fun Jen, Hybrid**



**Figure 6 – Petchay PAVITO**



**Figure 7 – 01-108**

F<sub>1</sub> Green Hybrid



Figure 8 – GP 01-108

**F<sub>1</sub> Green Hybrid**



**Figure 9 – GP 01-109**





Figure 10 – Kyoto Behi



**Figure 11 – Super Black Behi**



Figure 12 – Pavo



**Figure 13 – Tsoi Sam**



**Figure 14 – Pechay Garden in Lucban, Quezon**



**Figure 15 – Pechay Garden in Rizal**



**Figure 16 – Pechay Harvest in Rizal**

**Green-stem pechay**



**Figure 17 – Natsugozen**





**Figure 18 – The Organic Pechay**

**Location: Bliss Elementary School, Lucena City**

## References

**PNS/BAFPS 93:2010**

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.

Code of Hygienic Practice for Fresh Fruits and Vegetables. CAC/RCP 53-2003.

General Principles of Food Hygiene. CAC/RCP 1 – 1969, Rev. 4 –2003.

Maghirang, R. G. 2000. Pechay Production Guide. IB Number 161/2000.

Principles for the Establishment and Application of Microbiological Criteria for Foods. CAC/GL 21-1997.

Quality and Grade Specification for Petsai. 1981. Food Research Department. Food Terminal, Inc.

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