

# PHILIPPINE NATIONAL STANDARD

PNS/BAFPS 34:2005  
ICS 67.080.10

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**Pili nuts**



**BUREAU OF PRODUCT STANDARDS**

**Foreword**

The development of Philippine National Standard for Pili Nuts PNS/BAFPS 34:2005 was initially undertaken by the Bureau of Agriculture Fisheries Product Standards (BAFPS) of the Department of Agriculture in consequence to apparent increase in the demand of an orderly marketing of pili kernels.

In collaboration with the members of the Technical Committee, College of Agriculture and Forestry of Bicol University, Department of Science and Technology Region V and Department of Agriculture Region V, the Bureau of Agriculture Fisheries Product Standards created through Special Order No. 54 convened series of technical reviews and public consultation on the draft standard for pili nuts.

BAFPS deemed it necessary to adopt a standard providing common understanding on the essential composition, characterization and quality factors, labeling and methods of analysis, sampling and hygienic handling of pili nuts.

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**Pili nuts**

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**1 Scope**

This standard applies to shelled pilinuts of cultivars grown from *Canarium ovatum* Engl. of the family Burseraceae, an indigenous crop of the Philippines. Pili nuts will be supplied shelled and dried.

**2 References**

The titles of the standards publications referred to in this standard are listed on the inside back cover.

**3 Definitions**

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

**3.1 General****3.1.1****commercial type**

mix of pili varieties defined by the producing country that have similar characteristics and/or appearance or similar end uses

**3.1.2****creamy white**

characteristic color of the pili kernel without testa

**3.1.3****crispy**

firm and brittle when eaten

**3.1.4****damage**

any injury or defects which materially affects the appearance, edibility and shipping quality of the pilinuts. The following should be considered as damage:

- a. broken kernels – mechanically damaged kernels;
- b. discolored kernel – a deviation from the natural color of the testa;
- c. gummy kernel – presence of resinous substance;
- d. moldy kernel – presence of fungi visible to the naked eye;
- e. rancid kernel – distinct disagreeable flavor and aroma;
- f. shriveled kernel – wrinkled or deformed kernels sometimes of greenish color attributed to harvesting of immature nuts; and
- g. rotten kernel – decayed or spoiled kernel.

**3.1.5**

**elliptical**

oblong with rounded ends

**3.1.6**

**foreign materials**

pieces or loose particles of any substance other than pili kernels or seedcoats

**3.1.7**

**fully ripened**

matured ripe fruits; fruits exhibiting purplish black color of the pulp

**3.1.8**

**indigenous**

originating in the locality; not imported

**3.1.9**

**kernel**

the inner portion of the seed with the seedcoat intact

**3.1.10**

**mild**

not of strong turpentine flavor

**3.1.11**

**nutty**

having the distinct flavor of nuts

**3.1.12**

**oblong**

longer than broad; having a thick end or edge

**3.1.13**

**off-odor/ off-flavor**

any smell or taste that is not characteristic of the product

**3.1.14**

**paper ends**

kernel which have very soft and thin ends

**3.1.15**

**pilnut**

the kernel of an indigenous crop pili, *Canarium ovatum* Engl., which is native to the Philippines belonging to the family Burseraceae

**3.1.16**

**raw kernel**

uncooked or unblanched kernel

**3.1.17****seedcoat or testa**

light brown to brownish papery covering of a kernel

**3.1.18****shell**

the endocarp or hard stony covering of a kernel after removing the violet to black pulp (exocarp) and the fibrous flesh (mesocarp)

**3.1.19****tender**

soft and easily chewed

**3.1.20****turpentine**

resinous aroma peculiar to some pili cultivars

**3.1.21****unshriveled**

pili kernel of normal shape, without aborted or dried out portions

**4 Varieties**

Pilnut kernel shall be identified according Table 1.

**Table 1 – Pili nut kernel characteristic**

<b>Variety</b>	<b>Weight (g)</b>	<b>Shape/ Color</b>
“Laysa”	2.57	elliptical, creamy white
“Magnaye”	3.35	oblong, creamy white
“M. Orolfo”	2.69	oblong, creamy white
“Lanuza”	2.57	oblong to elliptical, creamy white
“Magayon”	3.4	oblong, creamy white

Other pili cultivars that possess the same and more or less equal in characters to the varieties shall be considered. All the above -mentioned varieties should have a mild, nutty flavor, tender and crispy texture with seedcoat tightly adhering to the kernel.

## **5 Minimum requirements**

In all classes, subject to the special provisions of all classes and the tolerances allowed, they must be:

- 5.1.** Fully ripened,
- 5.2.** Raw,
- 5.3.** Dry (3-5% MC),
- 5.4.** Unshriveled,
- 5.5.** Clean, practically free from any visible foreign matters,
- 5.6.** Uniform in size, shape and color,
- 5.7.** Free from pests/disease damage, and
- 5.8.** Free of any foreign smell and/or taste.

## **6 General classification**

### **6.1 Quality**

Kernels shall be graded according to its general appearance, quality and condition.

#### **6.1.1 Extra class**

Kernels in this class must be of superior quality. They should meet the characteristic of the variety and/or commercial type. They must be:

- 6.1.1.1.** Whole,
- 6.1.1.2.** Testa intact,
- 6.1.1.3.** Absence of shriveled kernel,
- 6.1.1.4.** Uniform in size, shape and color, and
- 6.1.1.5.** Free from 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.

#### **6.1.2 Class I**

Kernels in this class must be of good quality. They should meet the characteristic of the variety and/or commercial type. They must consist of not less than 90 % whole kernels.

#### **6.1.3 Class II**

Kernels in this class which do not qualify for inclusion in the higher class but should be free from insects and pests damage. They must not consist of not less than 85% whole kernels.

**6.1.4 Class III**

Kernels in this class which do not qualify for inclusion in the higher classes but showed practically be free from insects and pests damage. They must consist of not less than 80% whole kernels.

**6.2 Weight**

Kernels shall be classified according to Table 2.

**Table 2 – Weight classification of kernel**

	<b>Weight/Kernel</b>	<b>Estimated no. of kernels/Kilo</b>
Extra Class	>3.5 g	= 285 (XL)
Class I	2.6 – 3.4 g	290 - 380 (L)
Class II	2.0 – 2.5 g	400 –520 (M)
Class III	< 2.0	= 520 (S)

**7 Tolerance**

**7.1 Quality tolerance**

Tolerances in respect with quality shall be allowed in each package for produce not satisfying the requirements of the class indicated

**7.2 Weight tolerance**

Extra Class	5 %
Class I and Class II	10 %
Class III	15 %

**8 Packaging**

Kernels must be packed to ensure proper protection of the product and withstand transport and handling conditions. The packaging materials must be clean, of good quality, non-toxic and free from foreign matter.

**9 Marking or labeling**

Each package must bear the following particulars in letters grouped in the same size, legibly and indelibly marked and visible from the outside.

- 9.1. Name of product;
- 9.2. Origin of the produce;
- 9.3. Class and size;
- 9.4. Procedure’s name and address;
- 9.5. Net weight;

- 9.6.** Best before; and
- 9.7.** Product of the Philippines.

## **10 Sampling**

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

## **11 Hygiene**

Kernels shall be prepared and handled in accordance with the appropriate sections of the Recommended International Code of Practice of Food - CAC/RCP 1 – 1969 (Rev. 3 – 1997)

Kernels shall comply with microbial criteria established in accordance with the Principle for the Establishment and Application of Microbiological Criteria for Foods (CAC/GL 21-1997).



## References

**PNS/BAFPS 34:2005**

The following referenced documents are indispensable for the application of this standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

CAC/RCP 1 – 1969, Rev. 3 – 1997, Amd. (1999) - Recommended International Code of Practice General Principles of Food Hygiene.

Coronel, Roberto E. 1990. Promising Fruits of the Philippines.

Orbase, B.R. 1996. Trial Planting of Selected Varieties and Strains of Pili in Bicol Region. Completed Research.

Orolfo, E.B., *et al.* 1998. Pili Development Project in the Bicol Region.

Philippine Recommends for Pili. 1999.

PNS/ISO 874 Fresh Fruits and Vegetables--Sampling

**BPS**

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