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Specialized Section on Standardization of  
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**DRAFT UNECE STANDARD FOR INSHELL PECANS**

Transmitted by the United States

**Note by the secretariat:** This text is a revised proposal for a new UNECE Standard for Inshell Pecans reproduced as received by the United States.

**UNECE STANDARD**  
concerning the marketing and commercial quality control of

**INSHELL PECANS**

**I. DEFINITION OF PRODUCE**

This standard applies to inshell pecans of varieties (cultivars) grown from *Carya illoinoensis* (Wangenh.) K. Koch intended for direct consumption. This standard does not apply to inshell pecans for industrial processing or for use in the food industry except are when they intended to be mixed with other products for direct consumption without further processing.

**II. PROVISIONS CONCERNING QUALITY**

The purpose of the standard is to define the quality requirements of inshell pecans at the export control stage, after preparation and packaging.

**A. Minimum requirements**

**(i) General provisions**

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

**(a) The shell must be:**

- intact, slight superficial damage is not considered as a defect;
- sound, free from defects likely to affect the natural keeping quality of the nut;
- clean, practically free of any visible foreign matter;
- dry, free from abnormal external moisture;
- free from residue of hull;
- free of significant damage caused by pests;
- uniform in colour;
- may be cracked, but with practically no opening.

**(b) The Kernel must be:**

- sufficiently dry to ensure keeping quality;
- intact, slight superficial damage is not considered as a defect;
- sound, produce affected by rotting or deterioration such as to make it unfit for consumption is excluded;

- sufficiently developed;
- clean, practically free of any visible foreign matter;
- free from insects or mites whatever their stage of development;
- free of significant damage caused by pests;
- free from mould;
- free from rancidity;
- free of foreign smell and/or taste.

The condition of the inshell pecans must be such as to enable them:

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

(ii) **Moisture content**

The kernel shall have a moisture content not exceeding 5 per cent.<sup>1</sup>

**B. Classification**

Inshell pecans are classified in two classes defined below:

(i) ***Class I (U.S. # 1)***

Inshell pecans in this class must be of good quality. They must be characteristic of the variety and/or commercial type if indicated.

- kernels must be free from damage by any cause
- shell must be fairly uniform in colour

The following slight defect may be allowed provided it does not affect the general appearance of the produce, the quality, the keeping quality and presentation in the package.

- stains not covering more than 5% of the shell total surface area.

(ii) ***Class II (U.S. # 2)***

Inshell pecans in this class include those not qualifying for inclusion in Class I class but satisfy the minimum requirements specified above.

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<sup>1</sup> {The method to be used should be one of the methods tested collaboratively and shown to give satisfactory results in inter-laboratory trials and which are given in Annexes I and II for dried and dry fruit. The laboratory reference method shall be used in cases of dispute.}

The following defects may be allowed provided the inshell pecans retain their essential characteristics as regards to quality, keeping quality and presentation.

- (optional) uniformity of shell colour
- Stains not covering more than 20% of the shell total surface area.

## C. Colour Classification

### A. Shell

The pecan shells may have colours displaying the following characteristics:

- a) natural
- b) natural and polished
- c) bleached- dyed red-waxed and polished
- d) bleached-dyed-waxed and polished

### B. Kernels

Pecan kernels are classified into four colour types defined below. Colour classification for pecan kernels is optional.

*Light:* the outer surface of the kernel is mostly **golden** colour or lighter, with not more than 25 percent of the outer surface darker than **golden**, none of which is darker than **light brown**.

*Light amber:* more than 25 percent of the outer surface of the kernel is **light brown**, with not more than 25 percent of the outer surface darker than **light brown**, none of which is darker than **medium brown**.

*Amber:* more than 25 percent of the outer surface of the kernel is **medium brown**, with not more than 25 percent of the outer surface darker than **medium brown**, none of which is darker than **dark brown** (very dark-brown or blackish-brown discolouration).

*Dark amber:* more than 25 percent of the outer surface of the kernel is **dark brown**, with not more than 25 percent of the outer surface darker than **dark brown** (very dark-brown or blackish-brown discolouration).

### III. PROVISIONS CONCERNING SIZING

Sizes of inshell pecan are mandatory in all classes. Size is determined by count and weight; the number of nuts per pound or kilogram.

Size Denomination	Number of nuts	
	Per pound	Per kilogram
Oversize	55 or less	121 or less
Extra Large	56 to 63	121 – 138
Large	64 to 77	138 -169
Medium	78 to 95	169 -209
Small	96 to 120	209 - 264

#### Size Uniformity

In each size denomination, the 10 smallest nuts per 100 must weight at least 7% of the total weight of a 100- nut sample

### IV. PROVISIONS CONCERNING TOLERANCES

Tolerances in respect of quality and size shall be allowed in each package (or in each lot for produce presented in bulk) for produce not satisfying the requirements of the class indicated.

#### A. Quality tolerances

Defects Allowed	Tolerance allowed (percent )/ by count	
	Class I	Class II
Total tolerance for Pecans Shells not satisfying the minimum requirements,	10%	15%
Of which no more than		
- Adhering Hull	5	10
- Dark Stained Shells <sup>2</sup>	5	10
- Split/Broken Shells	5	10
- Worm Holes (worms not present)	3	5
- Mould	1	2

<sup>2</sup> Striations in the texture of Pecan shells make them more susceptible to staining or turning dark

Defects Allowed	Tolerance allowed (percent )/ by count	
	Class I	Class II
<b>Total Tolerances for the Kernel;</b> not satisfying the minimum requirements	<b>12</b>	<b>30</b>
Of which no more than		
- serious damage by: skin colour or any colour darker than the specified colour	<b>7</b>	<b>10</b>
- rancid decay, moldy or injured by insects	<b>6</b>	<b>7</b>
- Kernels failing to meet colour requirements for the grade but not seriously damaged by dark discolouration	<b>8</b>	<b>10</b>
- Loose, foreign, extraneous material (by weight)	<b>0.5</b>	<b>0.5</b>

## B. Size tolerances

For all classes 7 per cent, by number or weight, of products not according to the size indicated on the marking but belonging to the size range immediately above and/or below the size indicated.

## V. PROVISIONS CONCERNING PRESENTATION

### A. Uniformity

The contents of each package must be uniform and contain only inshell pecans of the same origin (optional) quality and size (if sized).

In Class I, shells must be uniform in colour.

The visible part of the contents of the package must be representative of the entire contents.

### B. Packaging

Inshell pecans must be packed in such a way as to protect the produce properly.

The materials used inside the package must be new, clean and of a quality such as to avoid causing any external or internal damage to the produce. The use of materials, particularly of paper or stamps bearing trade specifications is allowed provided that the printing or labelling has been done with non-toxic ink or glue.

Packages must be free of all foreign matter.

**C. Presentation**

Inshell pecans must be presented in sacks or solid containers. All consumer packages within each master container must be of the same weight.

**VI. PROVISIONS CONCERNING MARKING**

Each package must bear the following particulars in letters grouped on the same side, legibly and indelibly marked and visible from the outside:

**A. Identification**

Packer	)	Name and address or
and/or	)	officially issued or
Dispatcher	)	accepted code mark 7

**B. Nature of produce**

- "Inshell pecans"
- Variety or commercial type {optional}

**C. Origin of produce**

- Country of origin and, optionally, district where grown or national, regional or local place name

**D. Commercial specifications**

- Class
- Size (if sized);
  - expressed by count per pound or per kilogram
  - size denomination (optional)
- Crop year (optional) mandatory according to the legislation of the importing country
- Net weight, or the number of pre-packages, followed by the net unit weight in the case of packages containing such units (optional or at the request of the importing country).
- "Best before" followed by the date (optional)

**E. Official control mark (optional)**



## ANNEX I

### DEFINITIONS OF TERMS AND DEFECTS FOR INSHELL PECANS

<i>Fairly uniform in colour:</i>	shells do not show sufficient variation in colour to materially detract from the general appearance of the lot.
<i>Loose extraneous or foreign material:</i>	loose hulls, empty broken shells, or any substance other than pecans in the shell or pecan kernels
<i>Well developed:</i>	the kernel has a large amount of meat in proportion to its width and length
<i>Fairly well developed:</i>	the kernel has at least a moderate amount of meat in proportion to its width and length. Shriveling and hollowness shall be considered only to the extent that they have reduced the meatiness of the kernel
Poorly developed:	the kernel has a small amount of meat in proportion to its width and length (see Figure 1).
Well cured:	the kernel separates freely from the shell, breaks cleanly when bent, without splintering, shattering, or loosening the skin; and the kernel appears to be in good shipping or storage condition as to moisture content.
Damage:	<p>any specific defect described in this section; or an equally objectionable variation of any one of these defects, or any other defect, or any combination of defects, which materially detracts from the appearance or the edible or marketing quality of the individual pecan or the general appearance of the pecans in the lot. The following defects shall be considered as damage:</p> <p>(a) Adhering hull material or dark stains affecting an aggregate of more than 5 percent of the surface of the individual shell;</p> <p>(b) Split or cracked shells when the shell is spread apart or will spread upon application of slight pressure;</p>

- (c) Broken shells when any portion of the shell is missing;
- (d) Kernels which are not well cured;
- (e) Poorly developed kernels;
- (f) Kernels which are dark amber in colour;
- (g) Kernel spots when more than one dark spot is present on either half of the kernel, or when any such spot is more than one-eighth inch (3 mm) in greatest dimension;
- (h) Adhering material from the inside of the shell when firmly attached to more than one-third of the outer surface of the kernel and contrasting in colour with the skin of the kernel; and,
- (i) Internal flesh discolouration of a medium shade of gray or brown extending more than one-fourth inch (6 mm) lengthwise beneath the centre ridge, or any equally objectionable amount in other portions of the kernel; or lesser areas of dark discolouration affecting the appearance to an equal or greater extent.

Serious damage:

any specific defect described in this section; or an equally objectionable variation of any one of these defects, or any other defect, or any combination of defects, which seriously detracts from the appearance or the edible or marketing quality of the individual pecan. The following defects shall be considered as serious damage:

- (a) Adhering hull material or dark stains affecting an aggregate of more than 20 percent of the individual shell;
- (b) Broken shells when the missing portion of shell is greater in area than a circle one-fourth inch (6 mm) in diameter;
- (c) Worm holes when penetrating the shell;

(d) Rancidity when the kernel is distinctly rancid to the taste. Staleness of flavour shall not be classed as rancidity;

(e) Mold, on the surface or inside the kernel, which is plainly visible without magnification;

(f) Decay affecting any portion of the kernel;

(g) Insect injury when the insect, web or frass is present inside the shell or the kernel shows distinct evidence of insect feeding;

(h) Kernel spots when more than three dark spots on either half of the kernel, or when any spot or the aggregate of two or more spots on one of the halves of the kernel affects more than 10 percent of the surface;

(i) Dark discolouration of the skin which is darker than dark amber over more than 25 percent of the outer surface of the kernel;

(j) Internal flesh discolouration of a dark shade extending more than one-third the length of the kernel beneath the ridge, or an equally objectionable amount of dark discolouration in other portions of the kernel; and,

(k) Undeveloped kernels having practically no food value, or which are blank (complete shell containing no kernel).

Inedible kernels

kernel or pieces of kernels are rancid, moldy, decayed, injured by insects or otherwise unsuitable for human consumption.

## ANNEX II

### OPTIONAL DETERMINATIONS FOR FOR INSHELL PECANS

The determinations set forth herein are not requirements of these standards. They may be performed upon request in connection with the grade determination or as a separate determination. Samples of pecans for these determinations shall be taken at random from a composite sample drawn throughout the lot.

*Edible kernel content:* A minimum sample of at least 500 grams of in-shell pecans shall be used for determination of edible kernel content. After the sample is weighed and shelled, edible appearing half kernels and pieces of kernels shall be separated from shells, centre wall, and other non-kernel material, and inedible kernels and pieces of kernels, and weighed to determine edible kernel content for the lot.

Poorly developed  
Kernel content: A minimum sample of at least 500 grams of in-shell pecans shall be used for determination of poorly developed kernel content. The amount of poorly developed kernels and pieces of kernels shall be weighed to determine poorly developed kernel content of the lot.

*Edible kernel content*  
Colour classification: The amount of "Light," "Light amber," "Amber" "Dark amber" and "darker shades of skin colour shall be determined according to Colour Classification. The total weight of edible kernels and pieces of kernels shall be the basis for determining colour classification content for the lot.

*Kernel moisture content:* The sample of pecans for determination of kernel moisture content shall be shelled immediately before analysis and all shells, centre wall and other non-kernel material removed. The air-oven or other methods or devices which give equivalent results shall be used for moisture content determination.

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