

UNECE STANDARD DDP-23

concerning the marketing and
commercial quality control of

MACADAMIA KERNELS

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NOTE

Working Party on Agricultural Quality Standards

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The new Standard for Macadamia Kernels is based on document ECE/TRADE/C/WP.7/2010/14 and ECE/TRADE/C/WP.7/2011/21, reviewed and adopted by the Working Party at its sixty-sixth and sixty-seventh session respectively.

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UNECE standard DDP-23 concerning the marketing and commercial quality control of Macadamia Kernels

I. Definition of produce

This Standard applies to macadamia kernels of varieties (cultivars) grown from *Macadamia integrifolia*, *Macadamia tetraphylla*, *Macadamia ternifolia* and their hybrids intended for direct consumption or for food when intended to be mixed with other products for direct consumption without further processing. This standard does not apply to macadamia kernels that are processed by salting, sugaring, flavouring or roasting, or for industrial processing.

Macadamia kernels may be presented in:

- Whole
- Mixture of whole and pieces
- Pieces

II. Provisions concerning quality

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

However, if applied at stages following export, the holder shall be responsible for observing the requirements of the standard. The holder/seller of products not in conformity with this standard may not display such products or offer them for sale, or deliver or market them in any other manner.

A. Minimum requirements ¹

In all classes, subject to the special provisions for each class and the tolerances allowed, the macadamia kernel must display the following characteristics:

The kernel must be

- intact (for whole kernels only); however, slight superficial damage is not considered as a defect
- sound; produce affected by rotting or deterioration such as to make it unfit for human consumption is excluded
- clean; practically free of any visible foreign matter

¹ Definitions of terms and defects are listed in Annex III of the Standard Layout – Recommended terms and definition of defects for standards of dry (Inshell Nuts and Nut Kernels) and dried produce <http://www.unece.org/trade/agr/standard/dry/StandardLayout/StandardLayoutDDP_e.pdf>.

- whole kernels should be sufficiently developed; no shrunken or shrivelled kernels which are extremely flat and wrinkled, or with dehydrated, dried out or tough portions affecting more than 25 per cent of the kernel
- free from blemishes, areas of discolouration or spread stains in pronounced contrast with the rest of the kernel/pieces. For whole kernels this should not affect in aggregate more than 25 per cent of the surface of the kernel
- well formed
- free from living pests, whatever their stage of development
- free from damage caused by pests, including the presence of dead insects and/or mites, their debris or excreta
- free from mould filaments visible to the naked eye
- free from rancidity
- free of abnormal external moisture
- free of foreign smell and/or taste.

The condition of the macadamia kernels must be such as to enable them:

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

B. Moisture content ²

The macadamia kernels shall have a moisture content not exceeding 2.0 per cent.

C. Classification

In accordance with the defects allowed in section “IV. Provisions concerning tolerances”, macadamia kernels are classified into the following classes:

Class I and Class II

The defects allowed must not affect the general appearance of the produce as regards quality, keeping quality and presentation in the package.

III. Provisions concerning sizing

Sizing of macadamia kernels is optional. However, when sized, size is determined by the maximum diameter of the equatorial section of the whole nut or by widest diameter of the designated style size requirements.

² The moisture content is determined by one of the methods given in Annex II of the Standard Layout – Determination of the moisture content for dry produce <http://www.unece.org/trade/agr/standard/dry/StandardLayout/StandardLayoutDDP_e.pdf>. The laboratory reference method shall be used in cases of dispute.

In case style designations are used the following applies:

<i>Style</i>	<i>Description</i>	<i>Size</i>
0	(Wholes) shall consist of at least 95 per cent whole kernels with the remaining percentage consisting of pieces	of which no more than 1 per cent will pass through a 6.25 mm (¼ inch) square opening.
I	(Wholes) shall consist of at least 90 per cent whole kernels, with the remaining percentage consisting of pieces	of which no more than 1 per cent will pass through a 6.25 mm (¼ inch) square opening.
II	(Wholes and halves) shall consist of at least 50 per cent whole kernels, with the remaining percentage consisting of pieces	of which no more than 2 per cent will pass through a 7.8 mm (5/16 inch) square opening.
III	(Cocktail) shall consist of at least 90 per cent half or larger kernels, included therein at least 15 per cent whole kernels, with the remaining percentage consisting of pieces	of which no more than 2 per cent will pass through a 6.25 mm (¼ inch) opening.
IV	(Halves and pieces) shall consist of at least 50 per cent half kernels, with the remaining percentage consisting of pieces with no more than 5 per cent larger than half kernels	Style IV L: kernel size is larger than 16 mm (round caliber). Style IV M: kernel size is between 14-16 mm (round caliber). Style IV S: kernel size is between 10-14 mm (round caliber).
V	(Large diced) shall consist of units which are smaller than half kernels	of such size that no more than 5 per cent will pass through a 7.8 mm x 25 mm (5/16 inch x 1 inch) opening, included therein not more than 2 per cent that will pass through a 2.34 mm (3/32 inch) square opening
VI	(Chips) shall consist of units	that at least 95 per cent will pass through a 7.8 mm x 25 mm (5/16 inch x 1 inch) opening but no more than 2 per cent will pass through a 3/32 inch square opening
VII	(Bits and diced) shall consist of units	smaller than half kernels and of such size that at least 95 per cent will pass through a 7.8 mm (5/16 inch) square opening but no more than 10 per cent will pass through a 2.34 mm (3/32 inch) square opening
VIII	(Fines) shall consists of broken, chipped or chopped kernels	all units will pass through a 6.25 mm (¼ inch) square opening and most will also pass through a 2.34 mm (3/32 inch) square opening

IV. Provisions concerning tolerances

At all marketing stages, tolerances in respect of quality and size shall be allowed in each lot for produce not satisfying the minimum requirements of the class indicated.

A. Quality tolerances

<i>Defects allowed</i>	<i>Tolerances allowed (percentage of defective kernels, by number or weight)</i>	
	<i>Class I</i>	<i>Class II</i>
(a) Tolerances for macadamia kernels not satisfying the minimum requirements	7	10
of which no more than:		
Not sufficiently developed, shrunken and shrivelled	3	5
Mouldy	1	1
Rancid or damaged by pests, rotting or deterioration	1	2
Off-odour or off-flavour by any cause	1	2
Living pests	0	0
(b) Size tolerances		
For produce not conforming to the size indicated, if sized	7	7
(c) Tolerances for other defects		
Macadamia kernels belonging to varieties or commercial types other than those indicated	10	10
Foreign matter, loose shells, shell fragments, dust (by weight)	0.25	0.25

V. Provisions concerning presentation

A. Uniformity

The contents of each package must be uniform and contain only macadamia kernels of the same origin, quality, size (if sized) and variety (if indicated) or commercial type.

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

B. Packaging

Macadamia kernels must be packed in such a way as to protect the produce properly.

The materials used inside the package must be 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 the printing or labelling has been done with non-toxic ink or glue.

Packages must be free of all foreign matter in accordance with the table of tolerances in section “IV. Provisions concerning tolerances”.

VI. Provisions concerning marking

Each package³ must bear the following particulars in letters grouped on the same side, legibly and indelibly marked and visible from the outside:

A. Identification

Packer and/or Dispatcher:

Name and physical address (e.g. street/city/region/postal code and, if different from the country of origin, the country) or a code mark officially recognized by the national authority⁴.

B. Nature of produce

- macadamia kernels
- name of the variety and/or commercial type (optional).

C. Origin of produce

- country of origin⁵ and, optionally, district where grown or national, regional or local place name.

D. Commercial specifications

- class
- size (if sized)/style classification; expressed in accordance with section III
- crop year (optional)
- “Best before” followed by the date (optional).

³ These marking provisions do not apply to sales packages presented in packages.

⁴ The national legislation of a number of countries requires the explicit declaration of the name and address. However, in cases where a code mark is used, the reference “packer and/or dispatcher” (or equivalent abbreviations) must be indicated in close connection with the code mark, and the code mark should be preceded by the ISO 3166 alpha country code of the recognizing country, if not the country of origin.

⁵ The full or a commonly used name should be indicated.

E. Official control mark (optional)

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