

**Specialized Section on Standardization
of Dry and Dried Produce**

Fifty-seventh session

Geneva, 28 June - 2 July 2010

Item 5 (a) of the provisional agenda

Revision of UNECE Standards

Dried pears

UNECE Standard DDP concerning the marketing and commercial quality control of dried pears

Submitted by the United States of America

This document has been prepared following the decision of the Special Section to review the standard for dried pears (ECE/TRADE/C/WP.7/GE.2/2009/5, paragraph 53).

I. Definition of produce

1. This standard applies to dried pears from varieties grown from *Pyrus Communis L* and 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 dried pears that are processed by sugaring, flavoring, or for industrial processing.
2. Dried pears may be presented¹:
 - (a) Peeled and unpeeled
 - (b) With core and coreless
 - (c) Whole, halves, sliced and pieces.

II. Provisions concerning quality

3. The purpose of the standard is to define the quality requirements of dried pears at the export control stage after preparation and packaging.
4. 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.

¹ Defined in the Annex.

A. Minimum requirements

5. In all classes subject to the special provisions for each class and the tolerances allowed, the dried pears must display the following characteristics:
- intact (only for wholes and halves); however, edges that are slightly torn, slight superficial damage and slight scratches are 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
 - sufficiently developed
 - 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 blemishes, [burns], areas of discolouration or spread stains in pronounced contrast with the rest of the produce affecting in aggregate more than [5.0] per cent of the surface of the produce- [except for pear varieties having blushed surfaces]
 - free from mould filaments visible to the naked eye
 - free of fermentation
 - free of abnormal external moisture
 - free of foreign smell and/or taste, except for a taste of sodium chloride and a slight smell of preservatives/additives².
 - Not gritty.
6. The condition of the dried pears must be such as to enable them:
- to withstand transportation and handling
 - to arrive in satisfactory condition at the place of destination.

B. Moisture content³

7. The Dried Pears shall have a moisture content not exceeding:
- 22.0 percent for Untreated dried pears
 - between 20.0 and 25.0 percent for dried pears treated with preservatives or preserved by other means (e.g. pasteurization).

[Dried pears may be defined by moisture content such as:

- high Moisture – with a moisture content between 24.0 to 28.0%
- low Moisture with a moisture content between 22.0 24.0 percent]

² A slight smell of sulphur dioxide (SO₂) is not considered as “abnormal”. Preservatives may be used in accordance with the legislation of the importing country. Dried peaches may be sulphured in order to retain their original colour.

³ Moisture content shall be determined by one of the methods described in Annex I.

C. Classification

8. In accordance with the defects allowed in section “IV. Provisions concerning tolerances”, dried pears are classified into the following classes: “Extra” Class, Class I, Class II.

9. 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

10. Sizing of dried pears is optional in all classes. However, when sized, size is determined by diameter of the widest part. [When presented sliced and in sizing is not required].

- [The minimum size for whole and halves both peeled and unpeeled in all classes is 18 mm]
- [The maximum difference between the diameters of the largest and smallest fruit in any package is 20 mm.]

IV. Provisions concerning tolerances

11. 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]

<i>Defects allowed</i>	<i>Tolerances allowed</i>		
	<i>Percentage of defective produce, by number or weight</i>		
	<i>Extra</i>	<i>Class I</i>	<i>Class II</i>
(a) Tolerances for produce not satisfying the minimum requirements, of which no more than:	10	15	20
Bruised fruit	3	5	10
Injuries calluses and damage caused by heat during drying	5	8	10
- Mouldy and Mildew Spots, of which no more than:	1	4.5	9
- mouldy	0	0.5	1.0
- Fermented or damaged by pests, rotting or deterioration, of which no more than:	0.5	1.5	3
- fermentation	0.5	1	2
- slightly affected by decay	0	0.5	1
- Living pests and insect damage, of which no more than:	2	2	6
- living pest	0	0	0
- gritty pears	1	2	3
(b) Size tolerances			
- For produce not conforming to the size indicated, if sized	10	15	20
- Presence of pieces among whole and halved pears (by weight)	2	7	13
(c) Tolerances for other defects			
- Foreign matter, loose stems, loose seeds, rachis, pits, fragments of pits and dust (by weight), of which :	3	7	10
- stem, seeds ⁴	2 ⁴	5 ⁴	74 ⁴
Fragments of unripe fruit among slices and pieces	0	4	10

⁴ This tolerance only applies to cored fruit.

V. Provisions concerning presentation

A. Uniformity

12. The contents of each package (or lot for produce presented in bulk) must be uniform and contain only dried pears of the same origin, quality and size (if sized) and variety or commercial type (if indicated)

13. For “Extra” Class and Class I, the dried pears must be of the same variety and/or commercial type

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

B. Packaging

15. The dried pears must be packed in such a way so as to protect the produce properly.

16. 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 and stamps bearing trade specifications is allowed provided the printing or labelling has been done with non-toxic ink or glue.

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

C. Presentation

18. Dried pears may be presented must be presented in bags or solid containers. All sales packages within each package must be of the same weight as specified below:

- for immediate consumption small packages (e.g pre-packages) may be used
- the buyer and the seller must agree on the size and number of packages packed in a case. ~~In no instance, however, may the weight of large containers or boxes exceed 25 kg.~~

VI. Provisions concerning marking

19. Each package⁵ or compartmented package must bear the following particulars in letters grouped on the same side, legibly and indelibly marked and visible from the outside:

⁵ Package units of produce prepacked for direct sale to the consumer shall not be subject to these marking provisions, but shall conform to national requirements. However, the markings referred to shall in any event be shown on the transport packaging containing such package units.

A. Identification

20. 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 authority⁶.

B. Nature of produce

- name of the produce
- name of the variety and/or commercial type (optional){according to the nature of the produce }
- type or style {according to the definitions of the standard}.
- “rehydrated” “[Sun Dried]” etc (when appropriate).

C. Origin of produce

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

D. Commercial specifications

- class
- size (if sized); expressed in accordance with section III
- crop year {according to the nature of the produce }
- “Best before” followed by the date (optional).

E. Official control mark (optional)

⁶ 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.

Annex I

Determination of the moisture content for dried fruit

Method I – Laboratory reference method⁷

1. Definition

The moisture content of dried fruit is defined as being the loss of mass determined under the experimental conditions described in this annex.

2. Principle

The principle of the method is the heating and drying of a sample of dried fruit at a temperature of $70^{\circ}\text{C} \pm 1^{\circ}\text{C}$ at a pressure not exceeding 100 mm Hg.

3. Apparatus

Usual laboratory apparatus is used together with the following items:

- 3.1 Electrically heated constant-temperature oven, capable of being controlled at $70^{\circ}\text{C} \pm 1^{\circ}\text{C}$ at a pressure of 100 mm Hg.
- 3.2 Dishes with lids, of corrosion-resistant metal of about 8.5 cm in diameter.
- 3.3 Mincer, either hand or mechanically operated.
- 3.4 Desiccator, containing an effective desiccant.
- 3.5 Precision balance.

4. Procedure

4.1 Preparation of the sample

Take approximately 50 g of dried fruit from the laboratory sample, and mince these twice with the mincer.

4.2 Test portion

Place 2 g of finely divided asbestos⁸ into the dish, tare the dish with its lid and the asbestos, dried beforehand. Weigh, to the nearest 0.01 g about 5 g of prepared sample.

4.3 Determination

Moisten the sample and the asbestos thoroughly with a few ml of hot water. Mix the sample and the asbestos together with a spatula. Wash the spatula with hot water to remove the sample residues from it, letting the residues and the water fall into the dish.

Heat the open dish on a boiling-water bath (bain-marie) to evaporate the water to dryness. Then place the dish, with the lid alongside it, in the oven and continue drying for six hours at 70°C under a pressure not exceeding 100 mm Hg, during which time the oven should not

⁷ This method is the same as that prescribed by the AOAC: Official Methods of Analysis, XIIIth edition, 1980, 22.013 - Moisture in Dried Fruits, Official Final Action.

⁸ Dried sand which has previously been washed in hydrochloric acid and then rinsed thoroughly with water may be used in the place of the asbestos. Analysts using this technique should note that it is a deviation from the AOAC procedure, and should mention this in their report.

be opened. During drying admit a slow current of air (about two bubbles per second) to the oven, the air having been dried by passing through H₂SO₄. The metal dish must be placed in direct contact with the metal shelf of the oven. After drying, remove the dish, cover it immediately with its lid and place it in the desiccator. After cooling to ambient temperature, weigh the covered dish to the nearest 0.01 g.

5. Calculation and expression of results

The moisture content of the sample, as percentage by mass is calculated as follows:

$$\text{Moisture content} = \frac{(M_1 - M_2)}{(M_1 - M_0)} \times 100$$

Where:

M₀: is the mass of the empty dish with its lid and containing the asbestos, g.

M₁: is the mass of the dish with its lid, asbestos and test portion before drying, g.

M₂: is the mass of the dish with its lid after drying, g.

The results are expressed to one decimal place.

Duplicate determinations should agree to 0.2% moisture.

METHOD II - RAPID ROUTINE METHOD

1. Principle

A rapid method based on the principle of electrical conductivity.

2. Procedure

Moisture content in pears

Moisture meter method

Final action.

3. Apparatus

Dried fruit moisture tester meter - Type A series (DFA of California, PO/Box 270A, Santa Clara, CA 95052); see Fig. 22.03 for elec. circuit.

4. Determination

Grind sample three times through food chopper, using cutter with 16 teeth. If testing hot fruit from processor, cool fruit as follows: Mix ca/60 g chopped solid C02 with fruit and then grind mixture three times before taking moisture reading. Pack ground sample into Bakelite cylinder with fingers, making certain that it is packed tightly around bottom electrode. Fill cylinder completely with tightly packed sample and level.

Lower top electrode and press it into sample until top electrode lever is against stop. Insert thermometer into ground sample until thermometer bulb is ca halfway between electrodes.

Select correct table for type and condition of fruit being tested (Table/22:01: natural or low moisture, tap 6 setting; Table 22:02: processed, tap 3 setting). Set switch (S2) to number given on table selected.

Plug tester into 110 v ac outlet and put switch to "on". (Red light indicates current.) Keep push button down and turn dial so that meter needle moves toward 0. Adjust dial so that needle is at its lowest, or turning, point. After making fine adjustment of dial to meter 0 or turning point, read dial and then read thermometer.

5. Use of tables

Choose temperature column of appropriate table nearest to sample temperature. Read down this column to figure closest to dial reading, then read across to "% Moisture" column.

6. Example

Examination of processed raisin sample gave following data: dial setting 76 and temperature 74o F, on tap 3. Looking down 74o column (Table 22:02), obtain 75.2 at 18.5% moisture and 78.4 at 19.0% moisture. Since reading is nearer to 18.5 than 19.0%, report sample as containing 18.5% moisture, or interpolate.

(Refs.: JAOAC 52,858 (1969); 54,219 (1971); 55,202 (1972).)

Annex II

Definitions of defects

Definitions of terms and defects of dried pears

- (a) **Whole pears:** whole pears
 - (b) **Halved pears:** the pears have been cut longitudinally into approximately equal halves
 - (c) **Sliced pears:** the pears have been cut longitudinally into several slices
 - (d) **Pears in Pieces:** the pears have been cut into approximately equal-sized cubes
 - (e) **Decay:** visible decomposition of any portion of pears caused by micro-organisms
 - (f) **Mouldy:** mould filaments visible to the naked eye
 - (g) **Fermentation:** damage by fermentation to the extent that the characteristic appearance and/or flavour is substantially affected
 - (h) **Mineral impurities:** acid insoluble ash
 - (i) **Colour:** uniform colour not darker than dark amber
 - (j) **Foreign matter of plant origin:** any matter other than dried pears
 - (k) **Damage caused by insects:** visible damage caused by insects and animal parasites or presence of dead insects or insect residues
 - (l) **Russet:** reddish brown discoloration
 - (m) **Maturity:** fully ripe
 - (n) **Grittiness:** the presence of distinct particles in the fruit flesh
 - (o) **Skin damage:** tears in the skin or damage to the skin by sunburn, hail, limb-rubs or other means which result in darker colour or hard, tough or leathery texture
 - (p) **Excessively dried:** over-dried (burned) or hollow
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