
UNECE STANDARD FFV-10

concerning the marketing and
commercial quality control of

CARROTS

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NOTE

Working Party on Agricultural Quality Standards

The commercial quality standards developed by the Working Party on Agricultural Quality Standards of the United Nations Economic Commission for Europe (UNECE) help facilitate international trade, encourage high-quality production, improve profitability and protect consumer interests. UNECE standards are used by Governments, producers, traders, importers and exporters, and other international organizations. They cover a wide range of agricultural products, including fresh fruit and vegetables, dry and dried produce, seed potatoes, meat, cut flowers, eggs and egg products.

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The present revised Standard for Carrots is based on document ECE/CTCS/WP.7/2021/15, reviewed and adopted by the Working Party in 2021 (followed by a silence procedure in line with the special procedures during the COVID-19 period).

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Please contact us at the following address with any comments or enquiries:

Agricultural Standards Unit
Economic Cooperation and Trade Division
United Nations Economic Commission for Europe
Palais des Nations
CH-1211 Geneva 10, Switzerland

UNECE standard FFV-10 concerning the marketing and commercial quality control of carrots

I. Definition of produce

This standard applies to carrots of varieties (cultivars) grown from *Daucus carota* L. to be supplied fresh to the consumer, carrots for industrial processing being excluded.

Carrots may be marketed with or without leaves.

II. Provisions concerning quality

The purpose of the standard is to define the quality requirements for carrots after preparation and packaging.

However, if applied at stages following export/dispatch, products may show in relation to the requirements of the standard:

- a slight lack of freshness and turgidity
- for products graded in classes other than the “Extra” Class, a slight deterioration due to their development and their tendency to perish.

The holder/seller of products may not display such products or offer them for sale, or deliver or market them in any manner other than in conformity with this standard. The holder/seller shall be responsible for observing such conformity.

A. Minimum requirements

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

- intact
- sound; produce affected by rotting or deterioration such as to make it unfit for consumption is excluded
- clean, that is to say:
 - practically free of any visible foreign matter, if they are washed
 - practically free of excess dirt and impurities if they are not washed
- practically free from pests
- practically free from damage caused by pests
- firm
- not forked
- free of secondary roots
- not woody
- not running to seed
- free of abnormal external moisture
- free of any foreign smell and/or taste.

In case of topped carrots the leaves must be evened off or cut off at the top of the root. In case of carrots with leaves, these must be sound, fresh and clean. The foliage may be trimmed.

The development and condition of the carrots must be such as to enable them:

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

B. Classification

Carrots are classified in three classes, as defined below:

(i) “Extra” Class

Carrots in this class must be of superior quality and washed. They must be characteristic of the variety or the varietal type.

The roots must be:

- smooth
- fresh in appearance
- regular in shape
- free of fissures
- free of bruises and cracks
- free of damage due to frost
- free of green or violet/purple tops.

They must be 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.

(ii) Class I

Carrots in this class must be of good quality. They must be characteristic of the variety or the varietal type.

The roots must be fresh in appearance.

The following slight defects, however, may be allowed, provided these do not affect the general appearance of the produce, the quality, the keeping quality and presentation in the package:

- a slight defect in shape
- slight defects in colouring
- slight healed cracks
- slight cracks or fissures due to handling or washing
- green or violet/purple tops up to:
 - 1 cm long for roots not exceeding 10 cm in length
 - 2 cm for other roots.

In case of carrots with leaves, the foliage may be slightly discoloured.

(iii) Class II

This class includes carrots that do not qualify for inclusion in the higher classes but satisfy the minimum requirements specified above.

The following defects may be allowed, provided the carrots retain their essential characteristics as regards the quality, the keeping quality and presentation:

- defects in shape
- defects in colouring

- healed cracks not reaching the heart
- cracks or fissures due to handling or washing
- one fork (two tips)
- some secondary roots
- green or violet/purple tops up to:
 - 2 cm long for roots not exceeding 10 cm in length
 - 3 cm for other roots.

In case of carrots with leaves, the foliage may show some discolouration.

III. Provisions concerning sizing

Size is determined by the maximum diameter or the weight of the root when without foliage.

The minimum size shall be:

- 10 mm when sizing is by diameter and 8 g when sizing is by weight in the case of early carrots¹ and small-root varieties
- 20 mm when sizing is by diameter and 50 g when sizing is by weight in the case of main-crop carrots and large-root varieties.

The maximum size shall be:

- 40 mm when sizing is by diameter and 150 g when sizing is by weight in the case of early carrots and small-root varieties
- 45 mm when sizing is by diameter and 200 g when sizing is by weight in the case of main-crop carrots and large-root varieties of the “Extra” Class.

To ensure uniformity in size, the range in size between produce in the same package shall not exceed:

- 20 mm or 150 g for Class “Extra”
- 30 mm or 200 g for Class I.

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 requirements of the class indicated.²

A. Quality tolerances

(i) “Extra” Class

A total tolerance of 5 per cent, by number or weight, of carrots not satisfying the requirements of the class but meeting those of Class I is allowed. Within this tolerance not more than 0.5 per cent in total may consist of produce satisfying the requirements of Class II quality.

In addition, a total tolerance of 5 per cent by weight of carrots having a slight trace of green or violet/purple colouring at the top is allowed.

¹ Roots in which growth has not been arrested.

² A conformity check shall be made by assessing primary or composite samples. It is based on the principle of presumption that the quality of the randomly taken samples is representative of the quality of the lot. The application of the OECD Operating Rules for Conformity Checks is recommended for application – also by operators – at the stages of dispatch as well as in wholesale and distribution centres and storerooms of food retail. <http://www.oecd.org/agriculture/fruit-vegetables/publications/oecd-fruit-and-vegetables-rules.htm>.

(ii) Class I

A total tolerance of 10 per cent, by number or weight, of carrots not satisfying the requirements of the class but meeting those of Class II is allowed. Within this tolerance not more than 1 per cent in total may consist of produce satisfying neither the requirements of Class II quality nor the minimum requirements, or of produce affected by decay. However, broken carrots and/or carrots that have lost their tips are excluded from that tolerance.

In addition, a total tolerance of 10 per cent by weight of broken carrots and/or carrots that have lost their tips is allowed.

(iii) Class II

A total tolerance of 10 per cent, by number or weight, of carrots satisfying neither the requirements of the class nor the minimum requirements is allowed. Within this tolerance not more than 2 per cent in total may consist of produce affected by decay.

In addition, a total tolerance of 25 per cent by weight of broken carrots is allowed.

B. Size tolerances

For all classes (if sized): a total tolerance of 10 per cent, by number or weight, of carrots not satisfying the requirements as regards sizing is allowed.

V. Provisions concerning presentation

A. Uniformity

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

However, a mixture of carrots of distinctly different varietal types and/or colours may be packed together in a package, provided they are uniform in quality and, for each varietal type and/or colour concerned, in origin. However, in case of those mixtures uniformity in size is not required.

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

B. Packaging

Carrots 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.

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:

³ These marking provisions do not apply to sales packages presented in packages bearing these particulars. However, they do apply to sales packages (pre-packages) presented individually.

A. Identification

Packer and/or dispatcher/exporter:

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 if the country applying such a system is listed in the UNECE database.

B. Nature of produce

- If the contents are not visible from the outside:
 - “Bunched carrots” or “carrots”
 - “Early carrots” or “main-crop carrots”
- “Mixture of carrots”, or equivalent denomination, in the case of a mixture of distinctly different varietal types and/or colours of carrots. If the produce is not visible from the outside, the varietal types and/or colours and the quantity of each in the package must be indicated.

C. Origin of produce

- Country of origin⁵ and, optionally, district where grown, or national, regional or local place name
- In the case of a mixture of distinctly different varietal types and/or colours of carrots of different origins, the indication of each country of origin shall appear next to the name of the varietal type and/or colour concerned.

D. Commercial specifications

- Class
- Size (if sized) expressed as minimum and maximum diameters or weights (optional)
- Number of bunches (in the case of bunched carrots).

E. Official control mark (optional)

Adopted 1962

Last revised 2021

Aligned with the Standard Layout 2021

The OECD Scheme for the Application of International Standards for Fruit and Vegetables has published an explanatory illustrated brochure on the application of this standard. The publication may be obtained from the OECD bookshop at: www.oecdbookshop.org.

⁴ The national legislation of a number of countries requires the explicit declaration of the name and address. However, in the case where a code mark is used, the reference “packer and/or dispatcher (or equivalent abbreviations)” has to be indicated in close connection with the code mark, and the code mark should be preceded by the ISO 3166 (alpha-2) country/area code of the recognizing country, if not the country of origin.

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