
UNECE STANDARD FFV-59

concerning the marketing and
commercial quality control of

ROOT AND TUBERCLE VEGETABLES

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NOTE

Working Party on Agricultural Quality Standards

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The present Standard for Root and Tubercle Vegetables is based on document ECE/CTCS/WP.7/2019/11, reviewed and adopted by the Working Party at its seventy-fifth session.

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UNECE standard FFV-59 concerning the marketing and commercial quality control of root and tubercle vegetables

I. Definition of produce

This standard applies to root and tubercle vegetables of varieties (cultivars) grown from the following species to be supplied fresh to the consumer, root and tubercle vegetables for industrial processing being excluded:

- beetroot (*Beta vulgaris* L. subsp. *vulgaris* Conditiva Group)
- celeriac (*Apium graveolens* var. *rapaceum* (Mill.) Gaudin)
- Hamburg parsley (*Petroselinum crispum* var. *tuberosum* (Bernh.) Mart. Crov.)
- horse-radish (*Armoracia rusticana* G. Gaertn., B. Mey. et Scherb.)
- kohlrabi, cabbage turnip (*Brassica olearacea* var. *gongylodes* L.)
- parsnip (*Pastinaca sativa* L. subsp. *sativa*)
- radish (*Raphanus sativus* L. Radicula Group)
- radish (*Raphanus sativus* Chinensis Group and Longipinnatus Group)
- salsify (*Tragopogon porrifolius* L. subsp. *porrifolius*)
- scorzonera (*Scorzonera hispanica* L.)
- swede (*Brassica napus* L. Napobrassica Group)
- turnip (*Brassica rapa* L. Rapa Group)
- turnip-rooted chervil or bulbous chervil (*Chaerophyllum bulbosum* L.)
- root chicory (*Cichorium intybus* L. Sativum Group).

II. Provisions concerning quality

The purpose of the standard is to define the quality requirements for root and tubercle vegetables 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
- 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 root and tubercle vegetables must be:

- intact; the product-specific presentation without tip and/or lateral roots is not regarded as a defect provided the cut is clean; in any case fractured roots are excluded
- sound; produce affected by rotting or deterioration such as to make it unfit for consumption is excluded
- clean, this means

- practically free of any visible foreign matter, in case of washed roots
- practically free of serious dirt and impurities, in case of unwashed roots
- practically free from pests
- practically free from damage caused by pests
- fresh in appearance and firm
- free of discoloration of the flesh such as grey or black streaks
- not forked
- free of secondary root growth
- not hollow
- not woody, fibrous or spongy
- free of abnormal external moisture
- free of any foreign smell and/or taste.

In case of produce presented with leaves, the leaves must be sound, fresh and clean.

In case of produce presented without leaves, the leaves must be neatly cut at the top of the root.

The development and condition of the root and tubercle vegetables must be such as to enable them:

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

B. Classification

Root and tubercle vegetables are classified in two classes, as defined below:

(i) Class I

Root and tubercle vegetables in this class must be of good quality. They must be characteristic of the variety and/or commercial type.

The root and tubercle vegetables must be well formed.

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 of the skin
- slight bruising and damage removable by normal peeling
- slight skin defects including slight healed cracks.

The flesh must be perfectly sound.

In case of produce presented with leaves, the leaves may be slightly damaged.

(ii) Class II

This class includes root and tubercle vegetables that do not qualify for inclusion in Class I but satisfy the minimum requirements specified above.

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

- defects in shape

- defects in colouring of the skin
- bruising and damage removable by normal peeling
- healed cracks not reaching the core or in case of kohlrabi not more than 1 cm deep
- one fork (two tips).

The flesh must be free from major defects.

In case of produce presented with leaves, the leaves may be damaged, but must be free of progressive defects affecting the produce.

III. Provisions concerning sizing

There is no sizing requirement for root and tubercle vegetables.

IV. Provisions concerning tolerances

At all marketing stages, tolerances in respect of quality shall be allowed in each lot for produce not satisfying the requirements of the class indicated.¹

Quality tolerances

(i) Class I

A total tolerance of 10 per cent, by number or weight, of root and tubercle vegetables 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 neither satisfying the requirements of Class II quality nor the minimum requirements, or of produce affected by decay. An additional 10 per cent, by weight, of roots may be broken.

(ii) Class II

A total tolerance of 10 per cent, by number or weight, of root and tubercle vegetables 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. An additional 25 per cent, by weight, of roots may be broken.

V. Provisions concerning presentation

A. Uniformity

The contents of each package must be uniform and contain only root or tubercle vegetables of the same origin, variety or commercial type and quality.

Root and tubercle vegetables in Class I must be uniform in shape and colouring.

In case of presentation in bundles, the number of roots per bundle must be uniform within the package.

However, a mixture of root and tubercle vegetables of distinctly different species and/or different colours of the same species may be packed together in a sales package, provided they are uniform in quality and, for each species and/or colour concerned, in origin.

¹ 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 OECD Operating Rules for Conformity Checks are recommended for application – also by operators – at the stages of dispatch as well as in wholesale and distribution centres and storerooms of food retail.

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

B. Packaging

Root and tubercle vegetables 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.

Stickers individually affixed to the produce shall be such that, when removed, they neither leave visible traces of glue nor lead to skin defects.

Packages must be free of all foreign matter.

VI. Provisions concerning marking

Each package² 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/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 authority³ if the country applying such a system is listed in the UNECE Code Mark Registry⁴. In the case where there is no street address available, the physical address can be made up of the name of the farm or facility, the nearest village, town, region, and postal code; or GPS coordinates and a PO Box address together with nearest town, region and country shall be accepted as a physical address.⁵

B. Nature of produce

- "Beetroot", "Celeriac", "Hamburg parsley", "Horse-radish", "Kohlrabi", "Parsnips", "Radishes", "Salsify", "Scorzoneria", "Swedes", "Turnips", "Turnip-rooted chervil", "Root chicory", or equivalent denomination if the contents are not visible from the outside
- "With leaves", where appropriate and if the contents are not visible from the outside
- "Mixture of root and tubercle vegetables", or equivalent denomination, in the case of a mixture of distinctly different species and/or colours of root and tubercle vegetables of the same species. If the produce is not visible from the outside, the species and/or colours and the quantity of each in the package must be indicated.

² 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.

³ 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.

⁴ See <http://www.unece.org/trade/agr/codemarkregistry.html>.

⁵ Reservation by the United States of America on the use of a PO Box address, as it may not allow facility inspections or rapid intervention in case of recalls, and is not part of its national labelling requirement related to packer and/or dispatcher/exporter.

C. Origin of produce

- Country of origin⁶ and, optionally, district where grown, or national, regional or local place name.
- In the case of a mixture of distinctly different species and/or colours of root and tubercle vegetables of different origins, the indication of each country of origin shall appear next to the name of the species and/or colour concerned.

D. Commercial specifications

- Class
- Number of bundles or sales packages, where appropriate.

E. Official control mark (optional)

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⁶ The full or a commonly used name should be indicated.