



DRAFT EAST AFRICAN STANDARD

Fresh carrots — Specification

EAST AFRICAN COMMUNITY

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East African Community
P.O.Box 1096
Arusha
Tanzania
Tel: 255 27 2504253/8
Fax: 255 27 2504481/2504255
E-mail: eac@eachq.org
Web: www.eac-quality.net

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Foreword

Development of the East African Standards has been necessitated by the need for harmonizing requirements governing quality of products and services in the East African Community. It is envisaged that through harmonized standardization, trade barriers that are encountered when goods and services are exchanged within the Community will be removed.

In order to achieve this objective, the Community established an East African Standards Committee mandated to develop and issue East African Standards.

The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the private sectors and consumer organizations. Draft East African Standards are circulated to stakeholders through the National Standards Bodies in the Partner States. The comments received are discussed and incorporated before finalization of standards, in accordance with the procedures of the Community.

East African Standards are subject to review, to keep pace with technological advances. Users of the East African Standards are therefore expected to ensure that they always have the latest versions of the standards they are implementing.

DEAS ... was prepared by Technical Committee EASC/TC 016

Fresh carrot — Specification

1 Scope

This standard specifies requirements and method of sampling and test for carrots of varieties (cultivars) grown from *Daucus carota* (L.) of *Apiaceae* family to be supplied fresh to the consumer.

2 Normative references

The following referenced documents are indispensable for the application for this standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies;

ISO 6561, *Fruits and vegetables and derived products - Determination of cadmium content Flameless atomic absorption spectrometric method*

ISO 6633:1984 *Fruits, vegetables and derived products -- Determination of lead content -- Flameless atomic absorption spectrometric method*

EAS 38, *Packaging, marking and labeling of foods*

ISO 874, *Fresh fruits and vegetables – Sampling*

ISO 6561 (all parts), *Fruits, vegetables and derived products – Determination of Cadmium content*

ISO 6633, *Fruits, vegetables and derived products -- Determination of lead content -- Flameless atomic absorption spectrometric method*

ISO 7558:1988 *Guide to the prepacking of fruits and vegetables*

CAC/RCP 53-2003, *Code of Hygienic Practice for Fresh Fruits and Vegetables*

ISO 7251, *Microbiology of food and animal feedingstuffs – Horizontal methods for the detection and enumeration of presumptive Escherichia coli – Most Probable Number technique*

ISO 6579, *Microbiology of food and animal feedingstuffs – Horizontal methods for the detection of Salmonella spp.*

3 Terms and definitions

For the purpose of this standard the following definitions shall apply:

3.1 similar varietal characteristics

carrots in any lot of the same general type.

3.2 firm

not soft, flabby, or shriveled

3.3 practically clean

practically free from dirt, stain or other foreign matter and that the general appearance of the carrots in the lot is not more than slightly affected

3.4 practically smooth

not rough, ridged, or covered with secondary rootlets to the extent that the appearance is materially affected

3.5 well formed

The carrot is not forked, or misshaped to the extent that the appearance is more than slightly affected

3.6 damage

Any defect which materially affects the appearance, or the edible or shipping quality of the individual carrot root, or the general appearance of the carrot roots in the container, or causes a loss of more than three percent, by weight, in the ordinary preparation for use, or which materially affects the appearance or shipping quality of the tops.

3.7 serious damage

Any defect which seriously affects the appearance, or the edible or shipping quality of the individual carrot or the general appearance of the carrots in the container, or causes a loss of more than 20 percent, by weight, in the ordinary preparation for use

3.8 fresh

The tops are not wilted

3.9 full tops

The leaf stems have not been cut back, but dried or damaged leaves or leaf stems may have been removed

3.10 diameter

The greatest dimension of the root measured at right angles to the longitudinal axis

3.11

Baby carrots (Early carrots and small root varieties)

carrots harvested before they are fully mature and have not completed their growth

4 Requirements

4.1 General requirements

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

- (a) intact;
- (b) sound; produce affected by rotting or deterioration such as to make it unfit for human consumption is excluded;
- (c) clean, that is:
 - (i) practically free of any visible foreign matter, if they are washed. Washed carrots shall be practically free of visible soil, dust, chemical residue or other visible foreign matter.
 - (ii) practically free of excess dirt and impurities if they are not washed. Unwashed carrots shall be practically free of excessive soil, dust, chemical residue or other visible foreign matter. However, 2% by weight of adhering soil may be regarded as normal.
- (d) practically free from insects or other pests .
- (e) practically free from damage caused by pests

- (f) firm;
- (g) not forked, free of secondary roots;
- (h) not woody;
- (i) not running to seed: carrots which have not started to produce seed heads or stems
- (j) free of abnormal external moisture that is, sufficiently dry after washing
- (k) free of foreign smell and/or taste

4.1.2 The development and condition of the carrots shall be such that enable them:

- (a) withstand transport and handling stress, and
- (b) arrive in satisfactory condition at the place of destination.

4.2 Classification

Carrots are classified in three classes defined as Extra class, class I and class II.

4.2.1 "Extra" Class

The carrots in this class shall be of superior quality and washed. They shall be characteristic of the variety or the varietal type.

They shall 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. Such alterations may appear during cultivation, harvest, storage, packaging or transport.

The roots shall be:

- smooth:
- fresh in appearance:
- regular in shape:
- free of fissures
- free of bruises and cracks
- free of damage due to low temperatures.

The tops shall be free from discolouration.

4.2.2 Class I

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

The roots shall be:

- fresh in appearance: roots shall show no signs of dehydration or ageing. Slight silvering of the skin is permissible.

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:

- slight defects in shape and colour.

- slight healed cracks:
- slight cracks or fissures due to handling

Fine cracks due to low temperatures especially around the top and shoulders are allowed provided the flesh remains firm.

Discoloured tops up to 1 cm long for roots not exceeding 10 cm in length, and up to 2 cm for other roots, are allowed.

4.2.3 Class II

This class includes carrots which do not qualify for inclusion in the extra class or class I but satisfy the minimum requirements specified above.

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

- defects in shape and in colouring;
- healed cracks not reaching the heart;
- cracks or fissures due to handling .

Cracks due to low temperatures especially around the top and shoulders are allowed provided the flesh remains reasonably firm and substantially intact.

Discoloured tops up to 2 cm long for roots not exceeding 10 cm in length, and up to 3 cm for other roots, are allowed. This discoloration refers to the carrot where the root has protruded from the ground during growth.

4.3 Size requirements

4.3.1 Size shall be determined by the maximum diameter or the weight of the root without foliage.

4.3.2 For baby carrots, the roots shall be between 10 mm and 40 mm when sizing is by diameter and between 8 g and 150 g when sizing is by weight.

4.3.3 For main-crop carrots and large root varieties, the roots shall not be less than 20 mm when sizing is by diameter and not less than 50 g when sizing is by weight.

4.3.3.1 Roots classified in the "Extra" Class shall not be more than 45 mm when sizing is by diameter and not more than 200 g when sizing is by weight and the difference in diameter or in weight between the smallest and the largest root in any one package shall not be more than 20 mm or 150 g.

4.3.3.2 For roots classified in Class I, the difference in diameter or weight between the smallest and the largest root in any one package shall not be more than 30 mm or 200 g.

4.3.3.3 For roots classified in Class II, the roots need only satisfy the minimum sizing requirements.

5 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.

5.1 Quality tolerances

Under no circumstances shall these tolerances apply to produce affected by rotting, or any other deterioration rendering it unfit for consumption.

5.1.1 Extra Class

5 per cent by weight of carrots not satisfying the requirements of the class, but meeting those of Class I or, exceptionally, coming within the tolerances of that class.

5 per cent by weight of carrots having a slight trace of green or violet/purple colouring at the top.

5.1.2 Class I

10 per cent by weight of carrots not satisfying the requirements of the class, but meeting those of Class II or, exceptionally, coming within the tolerances of that class. However, broken carrots and/or carrots which have lost their tips are excluded from that tolerance.

10 per cent by weight of broken carrots and/or carrots which have lost their tips.

5.1.3 Class II

10 per cent by weight of carrots satisfying neither the requirements of the class nor the minimum requirements, with the exception of produce affected by rotting or any other deterioration rendering it unfit for consumption.

In addition, not more than 20 per cent by weight of broken carrots may be allowed.

5.2 Size tolerances

For all classes: 10 per cent by weight of carrots not satisfying the requirements as regards sizing. The roots may fall below the minimum size or exceed the maximum permissible difference for the class.

5.3 Presentation

Carrots may be presented as:

a) Bunched carrots

The roots shall be presented with their foliage, which shall be fresh, green and sound. Roots in the same bunch shall be practically uniform in size. The bunches in each package shall be practically uniform in weight and arranged evenly in one or more layers.

b) Topped carrots

The foliage shall be evened off or cut off at the top of the carrot without damaging it. The foliage shall be trimmed neatly just above the crown without damage to the root.

The carrots may be presented:

- in small packages.
- arranged in several layers or jumble packed.
- in bulk (direct loading into a transport vehicle or vehicle compartment) for Class II.

6 Contaminants

6.1 Pesticide residues

Carrots shall conform to the pesticide residue limits prescribed by the Codex Alimentarius Commission of the respective commodity.

6.2 Metal contaminants

Carrots shall not contain any metallic contaminants in excess of the quantities specified in Table 1.

Table 1 – Limit for metal contaminants for carrots

Characteristics	Maximum (mg/kg)	Method of test
Cadmium (as Cd)	0.1	ISO 6561
Lead (as Pb)	0.1	ISO 6633

7 Hygiene

It is recommended that the produce covered by the provisions of this Standard be prepared and handled in accordance with the appropriate sections of CAC/RCP 53-2003.

7.2 Microbiological limits

The products shall be free from pathogenic organisms and shall comply with the microbiological limits indicated in Table 2.

Table 2 — Microbiological limits for

S/No.	Type of microorganism	Maximum limit	Method of test
1	<i>Salmonella</i> in 25 g	Absent	ISO 6579
2	<i>Escherichia coli</i> , MPN/g	Absent	ISO 7251

8 Packaging

Carrots shall be packed in such a way that it is protected properly. The food grade packaging material used inside the package shall 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 from any foreign matter and the material shall be recyclable.

Carrots shall also be packed in containers in accordance with ISO 7558.

The contents of each package shall be uniform and consist exclusively of carrots of the same origin, variety and/or commercial type, and quality. The visible part of the content of the package shall be representative of the entire contents.

9 Labelling

9.1 General

In addition to the requirements of EAS 38, each container shall be labeled with the following particulars:

- a) Name of product
- b) Nature of the product "Bunched carrots/topped carrots" or "Baby carrots" or "main-crop carrots"
- c) Name and address of exporter, packer and/or dispatcher.
- d) Country of origin, region, and district where grown
- d) harvest date
- g) Net weight in kilograms
- i) Identification code and/or batch number.

vii) storage instructions

— Class

7 Sampling

Representative samples of the carrots shall be drawn as prescribed in ISO 874.

Bibliography

UNECE Standard FFV – 10 concerning the marketing and commercial quality control of carrots

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