EAST AFRICAN STANDARD

Fresh leeks — Specification and grading

EAST AFRICAN COMMUNITY

HS 0703.90.0000
Foreword

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

In order to meet the above objectives, the EAC Partner States have enacted an East African Standardization, Quality Assurance, Metrology and Test Act, 2006 (EAC SQMT Act, 2006) to make provisions for ensuring standardization, quality assurance, metrology and testing of products produced or originating in a third country and traded in the Community in order to facilitate industrial development and trade as well as helping to protect the health and safety of society and the environment in the Community.

East African Standards are formulated in accordance with the procedures established by the East African Standards Committee. The East African Standards Committee is established under the provisions of Article 4 of the EAC SQMT Act, 2006. 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.

Article 15(1) of the EAC SQMT Act, 2006 provides that “Within six months of the declaration of an East African Standard, the Partner States shall adopt, without deviation from the approved text of the standard, the East African Standard as a national standard and withdraw any existing national standard with similar scope and purpose”.

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.

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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.each.int
Introduction

In the preparation of this East African Standard, the following sources were consulted extensively:


CODEX STAN 193:1995 (Rev.5:2009), *General Standard for Contaminants and Toxins in Foods*

CODEX STAN 228:2001 (Rev.1:2004), *General methods of analysis for contaminants*

Codex Alimentarius website: http://www.codexalimentarius.net/mrls/pestdes/jsp/pest_q-e.jsp

USDA Foreign Agricultural Service website: http://www.mrldatabase.com

USDA Agricultural Marketing Service website: http://www.ams.usda.gov/AMSv1.0/Standards


European Union: http://ec.europa.eu/sanco_pesticides/public

Assistance derived from these sources and others inadvertently not mentioned is hereby acknowledged.

This standard has been developed to take into account:

— the needs of the market for the product;

— the need to facilitate fair domestic, regional and international trade and prevent technical barriers to trade by establishing a common trading language for buyers and sellers.

— the structure of the CODEX, UNECE, USA, ISO and other internationally significant standards;

— the needs of the producers in gaining knowledge of market standards, conformity assessment, commercial cultivars and crop production process;

— the need to transport the product in a manner that ensures keeping of quality until it reaches the consumer;

— the need for the plant protection authority to certify, through a simplified form, that the product is fit for crossborder and international trade without carrying plant disease vectors;

— the need to promote good agricultural practices that will enhance wider market access, involvement of small-scale traders and hence making fruit and vegetable production a viable means of wealth creation; and

— the need to keep unsatisfactory produce from the market by allowing the removal of unsatisfactory produce from the markets and to discourage unfair trade practices e.g. trying to sell immature produce at the beginning of the season when high profits can be made. Immature produce leads to dissatisfaction of customers and influences their choices negatively, which disadvantages those traders who have waited until the produce is mature.
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Fresh leeks — Specification and grading

1 Scope

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

2 Normative references

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

- CAC/GL 21, *Principles for the Establishment and Application of Microbiological Criteria for Foods*
- CAC/RCP 1, *Recommended International Code of Practice — General Principles of Food Hygiene*
- CAC/RCP 44, *Recommended International Code of Practice for the Packaging and Transport of Tropical Fresh Fruit and Vegetables*
- CAC/RCP 53, *Code of Hygienic Practice for Fresh Fruits and Vegetables*
- EAS 38, *Labelling of prepackaged foods — Specification*

3 Description

The leek, *Allium ampeloprasum* var. *porrum* (L.), also sometimes known as *Allium porrum*, is a vegetable which belongs, along with the onion and garlic, to the Alliaceae family. Two related vegetables, the elephant garlic and kurrat, are also variant subspecies of *Allium ampeloprasum*, although different in their uses as food.

The edible part of the leek plant is a bundle of leaf sheaths which is sometimes called a stem or stalk.

4 Provisions concerning quality

4.1 General

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

4.2 Minimum requirements

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

(a) intact (this requirement does not apply, however, to roots and ends of leaves which may be cut)
(b) sound; produce affected by rotting or deterioration such as to make it unfit for consumption is excluded
(c) clean, practically free of any visible foreign matter; however, the roots may have soil adhering to them
(d) fresh in appearance, with wilted or withered leaves removed
(e) practically free from pests
(f) practically free from damage caused by pests
(g) not running to seed
(h) free of abnormal external moisture, i.e. adequately ‘dried’ if they have been washed
(i) free of any foreign smell and/or taste.

4.2.2 When the leaves are cut, they must be neatly cut.

4.2.3 The development and condition of the leeks must be such as to enable them:
(a) to withstand transport and handling, and
(b) to arrive in a satisfactory condition at the place of destination.

4.3 Classification

Leeks are classified in two classes defined below:

4.3.1 Class I

Leeks in this class must be of good quality. They must be characteristic of the variety or commercial type.

The white to greenish white part of the leeks must represent at least one-third of the total length or half of the sheathed part. However, in early leeks, the white to greenish white part must represent at least one-quarter of the total length or one-third of the sheathed part.

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 superficial defects
— slight damage caused by thrips on the leaves, but not elsewhere,
— slight traces of soil within the shaft.

4.3.2 Class II

This class includes leeks which do not qualify for inclusion in Class I, but satisfy the minimum requirements specified above.

The white to greenish white part of the leeks must represent at least one-quarter of the total length or one-third of the sheathed part.

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

— a tender flowering stem, provided that it is enclosed within the sheathed part
— slight bruising, damage caused by thrips and slight traces of rust on the leaves, but not elsewhere
— slight defects in colouring
— traces of soil within the shaft.

1 Direct-drilled, non-transplanted leeks, harvested from late winter to early summer.
5 Provisions concerning sizing

Size is determined by the diameter measured at right angles to the longitudinal axis above the swelling of the neck.

The minimum diameter is fixed at 8 mm for early leeks and 10 mm for other leeks.

For Class I, the diameter of the largest leek in the same bundle or package must not be more than twice the diameter of the smallest leek.

6 Provisions concerning tolerances

Tolerances in respect of quality and size shall be allowed in each package, or each bunch for leeks presented without package, for produce not satisfying the requirements of the class indicated.

6.1 Quality tolerances

6.1.1 Class I

For early leeks, 10% by number or weight of leeks showing a tender flowering stem enclosed within the sheathed part and 10% by number or weight of leeks not satisfying the requirements of the class for other reasons but meeting those of Class II or, exceptionally, coming within the tolerances of that class.

For other leeks, 10 per cent by number or weight of leeks not satisfying the requirements of the class, but meeting those of Class II or, exceptionally, coming within the tolerances of that class.

6.1.2 Class II

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

6.2 Size tolerances

For all classes: 10 per cent by number or weight of leeks not satisfying the minimum diameter requirement and, in the case of leeks in Class I, the uniformity requirement.

7 Provisions concerning presentation

7.1 Uniformity

The contents of each package, or each bundle in the same package must be uniform and contain only leeks of the same origin, variety or type, quality and size (where for this criterion uniformity is prescribed), and appreciably the same degree of development and colouring.

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

7.2 Packaging

The leeks must be packed in such a way as to protect the produce properly.

The materials used inside the package must be new, clean and of a quality such as to avoid causing any external or internal damage to the produce. The use of materials, particularly paper or stamps bearing trade specifications is allowed provided the printing or labelling has been done with non-toxic ink or glue.

The packages or bundles for produce presented without package must be free of all foreign matter.
7.3 Presentation

The leeks may be presented as follows:

— arranged evenly in the package
— in bundles, whether or not in a package.

The bundles in each package should be practically uniform.

8 Marking and labelling

8.1 Consumer packages

In addition to the requirements of EAS 38, the following specific provisions apply:

8.1.1 Nature of produce

If the produce is not visible from the outside, each package shall be labelled as to the name of the produce and may be labelled as to name of the variety and/or commercial type.

8.2 Non-retail containers

Each package or each bundle presented in bulk, must bear the following particulars, in letters grouped on the same side, only for produce presented in a package, legibly and indelibly marked, and visible from the outside:

For leeks transported in bulk (direct loading into a transport vehicle) these particulars must appear on a document accompanying the goods, and be attached in a visible position inside the transport vehicle.

8.2.1 Identification

The exporter, packer and/or dispatcher shall be identified by 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 authority.

8.2.2 Nature of produce

— "Leeks" if the contents are not visible from the outside
— "Early Leeks" where appropriate.

8.2.3 Origin of produce

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

8.2.4 Commercial specifications

— Class

---

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

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) country/area code of the recognizing country, if not the country of origin.
8.2.5 Official control mark (optional)

9 Contaminants

9.1 Pesticide residues

Leeks shall comply with those maximum pesticide residue limits established by the Codex Alimentarius Commission for this commodity. The limits listed below were current as of the dates indicated. The table below provides current MRLs while Annex E provides current MRLs for the USA, EU and Codex markets.

Maximum pesticide residue limits and extraneous maximum residue limits in leeks (current as at 2009-06-07)

<table>
<thead>
<tr>
<th>Type</th>
<th>Unit symbol</th>
<th>Limit</th>
<th>Method of test</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CYCLOXYDIM</td>
<td>MRL (mg/kg)</td>
<td>0.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CYPERMETHRIN</td>
<td>MRL (mg/kg)</td>
<td>0.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DELTAMETHRIN</td>
<td>MRL (mg/kg)</td>
<td>0.2</td>
<td></td>
<td>Used also as veterinary drug</td>
</tr>
<tr>
<td>DIFENOCONAZOLE</td>
<td>MRL (mg/kg)</td>
<td>0.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DITHIOCARBAMATES</td>
<td>MRL (undef)</td>
<td>0.5</td>
<td></td>
<td>Source of data: mancozeb</td>
</tr>
<tr>
<td>IMIDACLOPRID</td>
<td>MRL (mg/kg)</td>
<td>0.05</td>
<td></td>
<td></td>
</tr>
<tr>
<td>METHIOCARB</td>
<td>MRL (mg/kg)</td>
<td>0.05</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PERMETHRIN</td>
<td>MRL (mg/kg)</td>
<td>0.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PYRACLOSTROBIN</td>
<td>MRL (undef)</td>
<td>0.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOLYLFLUANID</td>
<td>MRL (mg/kg)</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRIFLOXYSTROBIN</td>
<td>MRL (undef)</td>
<td>0.7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9.2 Heavy metals

Onions shall comply with those maximum levels for heavy metals established by the Codex Alimentarius Commission for this commodity. The current limits are as indicated below:

<table>
<thead>
<tr>
<th>Metal</th>
<th>Unit of measurement</th>
<th>Maximum limit</th>
<th>Test method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead (Pb)</td>
<td>mg/kg wet weight</td>
<td>0.10</td>
<td>ISO 6633 (AAS)</td>
</tr>
<tr>
<td>Cadmium (Cd)</td>
<td>mg/kg wet weight</td>
<td>0.10</td>
<td>ISO 6561-1 or 6561-2</td>
</tr>
</tbody>
</table>

10 Hygiene

10.1 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 1, CAC/RCP 53, and other relevant Codex texts such as Codes of Hygienic Practice and Codes of Practice.

10.2 The produce should comply with any microbiological criteria established in accordance with CAC/GL 21.
Fresh leeks in market

Growing leeks in garden

Seeding leeks

Leeks in farm
Annex A
(informative)

Guide to cold storage and refrigerated transport

A.1 Scope and field of application

This annex describes methods for obtaining good conditions of cold storage and refrigerated transport of leeks intended for human consumption, for maintaining their quality and avoiding deterioration.

The limits of application of the methods are given in A.6.

A.2 Conditions of harvesting and putting into store

A.2.1 Harvesting

Leeks of good keeping varieties intended for cold storage and refrigerated transport should be of good commercial quality, of diameter greater than 25 cm and the length of the bulb should be greater than 10 cm measured from the base of the roots. They should be whole, free from abnormal external humidity, evidente of mechanical damage or injuries due to frost, and should be fresh and free from cryptogamic disorders and soil parasites. It is recommended that only leeks intended for direct consumption be put into store.

A.2.2 Putting into store

Leeks should be put into the cold store as soon as possible after harvesting, and with minimal handling.

The cold stores should have been previously disinfected, made free of rats, aired and cooled.

A.2.3 Method of storage

Leeks intended for cold storage should be packed loosely in cases; if required, the leeks may be loosely tied in bundles of 10 to 12 leeks of the same variety and of approximately the same size.

The leeks should be packed for cold storage and refrigerated transport in cases ensuring adequate protection of the product and good air circulation in the package.

A.3 Optimum storage conditions

A.3.1 Temperature

The optimum temperature for the storage of leeks is between -1 and +0.5 °C.

A.3.2 Relative humidity

The relative humidity of the air should be 90 ± 5 %.

A.3.3 Storage life

The storage life is from 2 to 3 months. Under favourable storage conditions and provided that the quality of the leeks stored is good, it is possible to store them for up to 6 months.

Check the state of health of the leeks weekly or as often as necessary and adjust the storage conditions accordingly.

A.4 Operations at the end of storage

When removed from the cold store, the leeks should be packed by size and quality and the withered leaves as well as other undesirable elements on the bulb should be removed so that the white part remains clean.
When removing leeks from the store, account should be taken of the facilities available for conditioning, in order to avoid storing leeks at ambient or high temperature when the leeks cannot be conditioned immediately.

NOTE  It is necessary to slow increase of temperature to avoid condensation on the surface of the cooled product.

A.5  Refrigerated transport

For the purpose of transportation, leeks should be packed in the types of standardized packages used in each country, to ensure the maintenance of their quality. The conditions under which they are transported should be as described in A.3.1 and A.3.2.

A.6  Limits of application

This annex provides guidance of a very general nature only. Because of the variability of the product according to the time and place of cultivation, local conditions may make it necessary to define other conditions for harvesting or other physical conditions in the store.

This annex does not apply unreservedly, therefore, to all varieties (cultivars) in all climates, and it will remain for each specialist to be the judge of any modifications to be made.

Subject to all restrictions arising from the fact that leeks are living material, the application of the guidance contained in this annex should enable much wastage in storage and transport to be avoided.
Annex C
(informative)

Model certificate of conformity with standards for fresh fruits and vegetables

<table>
<thead>
<tr>
<th>1. Trader:</th>
<th>Certificate of conformity with the Community marketing standards applicable to fresh fruits and vegetables</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. …………………………</td>
<td>(This certificate is exclusively for the use of inspection bodies)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Packer identified on packaging (if other than trader)</th>
<th>3. Inspection body</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. Place of inspection/country of origin (1)</td>
<td>5. Region or country of destination</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Internal</td>
</tr>
<tr>
<td></td>
<td>Import</td>
</tr>
<tr>
<td></td>
<td>Export</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>8. Packages (number and type)</th>
<th>9. Type of product (variety if the standards specifies)</th>
<th>10. Quality Class</th>
<th>11. Total net weight in kg</th>
</tr>
</thead>
</table>

12. The consignment referred to above conforms, at the time of issue, with the Community standards in force, vide:

CD/K/058:2010, *Fresh leeks — Specification and grading*

__________________________________________________

Customs office foreseen ………………………………… Place and date of issue …………………………………………….

Valid until (date): …………………………………………………………………………………

Signatory (name in block letters): ………………………………………………………………..

Signature    Seal of competent authority

13. Observations:

(1) Where the goods are being re-exported, indicate the origin in box 9.
Annex D
(informative)

Leeks — Fact sheets

D.1 *Allium ampeloprasum*

Authority L.
Family Liliopsida: Lilliidae: Asparagales: Alliaceae
Synonyms
Common names wild leek, vine leek, Levant garlic, alho poiro bravo, liki
Editor
Ecocrop code 363

Description

A robust, erect herb, 40-100 cm tall, with a pseudostem consisting of the elongated bases and lower blade parts of the foliage leaves.

Uses

The ‘stem’ is eaten as a cooked vegetable and as an ingredient of soups.

Growing period

Biennial normally grown as an annual. Can be harvested after 120-150 days, but can be harvested over a long period of time.

Common names

Leek, Poireau, Puerro, Breitlauch, Lauch, Porree, Elephant garlic, Great-headed garlic, Kurrat, Prei, Kutsai, Kau ts'ung, Taai suer, Taai ts'ung, Bawang prei, Bawang sayuran, Sibuyas-bisaya, Kuse, Khtum, Khchal, Peenz falanox, Krathiamton, Krathiam-bai.

Further information

Scientific synonym: *A. porrum*. Elevations in the tropics of more than 500-1000 m are preferable for the production of leeks, but adequate yields may be obtained at sea level from local or specially selected cultivars. High temperatures encourage bulb formation, but flower formation and seed production are only possible where the bulbs are subjected to low temperatures. In the tropics, flower and seed formation will therefore only occur at higher elevations, but leek normally does not produce seeds in the tropics. A cool period promotes early leaf production, but large plant may be obtained at high temperatures if they are well watered. Moist soil is required throughout the growing period and growth will continue as long as adequate soil moisture is available, but excessive soil water and high humidity encourage diseases. Long days normally favour bulb development. Leek is considered to be indigenous to Levant in the eastern Mediterranean. Average yields in the tropics may be about 5-20 t/ha or 0.5-2 kg/m² and in temperate regions yields may reach 45 t/ha.

D.2 Leek, *Allium ampeloprasum var. porrum*
The leek, *Allium ampeloprasum var. porrum* (L.), also sometimes known as *Allium porrum*, is a vegetable which belongs, along with the onion and garlic, to the Alliaceae family. Two related vegetables, the elephant garlic and kurrat, are also variant subspecies of *Allium ampeloprasum*, although different in their uses as food.

The edible part of the leek plant is a bundle of leaf sheaths which is sometimes called a stem or stalk.

**Form**

Rather than forming a tight bulb like the onion, the leek produces a long cylinder of bundled leaf sheaths which are generally blanched by pushing soil around them (trenching). They are often sold as small seedlings in flats which are started off early in greenhouses, to be planted out as weather permits. Once established in the garden, leeks are hardy; many varieties can be left in the ground during the winter to be harvested as needed.

**Cultivars**

Leek cultivars can be subdivided in several ways, but the most common types are “summer leeks”, intended for harvest in the season when planted, and overwintering leeks, meant to be harvested in the spring of the year following planting. Summer leek types are generally smaller than overwintering types; overwintering types are generally more strongly flavored. Varieties include King Richard and Tadorna Blue.

**Growing**

Leeks are easy to grow from seed and tolerate standing in the field for an extended harvest. Leeks usually reach maturity in the autumn months, and they have few pest or disease problems. Leeks can be bunched and harvested early when they are about the size of a finger or pencil, or they can be thinned and allowed to grow to a much larger mature size. Hilling leeks can produce better specimens.

**Cuisine**

The edible portions of the leek are the white onion base and light green stalk. The onion-like layers form around a core. The tender core may be eaten; but, as the leek ages, the core becomes woody and very chewy and better replanted than eaten.

Leek has a mild onion-like taste, although less bitter than scallion. The taste might be described as a mix of mild onion and cucumber. It has a fresh smell similar to scallion. In its raw state, the vegetable is crunchy and firm.

Leek is typically chopped into slices 5-10mm thick. The slices have a tendency to fall apart, due to the layered structure of the leek. There are different ways of preparing the vegetable:

- Boiled, which turns it soft and mild in taste.
- Fried, which leaves it more crunchy and preserves the taste.
- Raw, which can be used in salads, doing especially well when they are the prime ingredient.

**Health benefits**

In her book, Guiliano claims that leeks are an important part of the French woman’s diet, pointing out that leeks are a mild diuretic as well as highly flavorful and nutritious.

**Historical consumption**

Dried specimens from archaeological sites in ancient Egypt, as well as wall carvings and drawings, led Zohary and Hopf to conclude that the leek was a part of the Egyptian diet “from at least the 2nd millennium B.C.E. onwards.” They also allude to surviving texts that show it had been also grown in Mesopotamia from the beginning of the 2nd millennium B.C.E. The leek was the favorite vegetable of the Emperor Nero, who consumed it most often in soup.
Raw Leeks, bulb & lower leafs — Nutritional value per 100 g (3.5 oz)

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Amount</th>
<th>% of US recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy</td>
<td>60 kcal</td>
<td>260 kJ</td>
</tr>
<tr>
<td>Carbohydrates</td>
<td>14.15 g</td>
<td>9%</td>
</tr>
<tr>
<td>Sugars</td>
<td>3.9 g</td>
<td></td>
</tr>
<tr>
<td>Dietary fiber</td>
<td>1.8 g</td>
<td></td>
</tr>
<tr>
<td>Fat</td>
<td>0.3 g</td>
<td></td>
</tr>
<tr>
<td>- saturated</td>
<td>0.04 g</td>
<td></td>
</tr>
<tr>
<td>- monounsaturated</td>
<td>0.004 g</td>
<td></td>
</tr>
<tr>
<td>- polyunsaturated</td>
<td>0.166 g</td>
<td></td>
</tr>
<tr>
<td>Protein</td>
<td>1.5 g</td>
<td></td>
</tr>
<tr>
<td>Water</td>
<td>83 g</td>
<td></td>
</tr>
<tr>
<td>Vitamin A equiv.</td>
<td>83 µg</td>
<td>9%</td>
</tr>
<tr>
<td>Thiamine (Vit. B1)</td>
<td>0.06 mg</td>
<td>5%</td>
</tr>
<tr>
<td>Riboflavin (Vit. B2)</td>
<td>0.03 mg</td>
<td>2%</td>
</tr>
<tr>
<td>Niacin (Vit. B3)</td>
<td>0.4 mg</td>
<td>3%</td>
</tr>
<tr>
<td>Vitamin B6</td>
<td>0.233 mg</td>
<td>18%</td>
</tr>
<tr>
<td>Folate (Vit. B9)</td>
<td>64 µg</td>
<td>16%</td>
</tr>
<tr>
<td>Vitamin B12</td>
<td>0 µg</td>
<td>0%</td>
</tr>
<tr>
<td>Vitamin C</td>
<td>12 mg</td>
<td>20%</td>
</tr>
<tr>
<td>Vitamin E</td>
<td>0.92 mg</td>
<td>6%</td>
</tr>
<tr>
<td>Vitamin K</td>
<td>47 µg</td>
<td>45%</td>
</tr>
<tr>
<td>Calcium</td>
<td>59 mg</td>
<td>6%</td>
</tr>
<tr>
<td>Iron</td>
<td>2.1 mg</td>
<td>17%</td>
</tr>
<tr>
<td>Magnesium</td>
<td>28 mg</td>
<td>8%</td>
</tr>
<tr>
<td>Phosphorus</td>
<td>35 mg</td>
<td>5%</td>
</tr>
<tr>
<td>Potassium</td>
<td>180 mg</td>
<td>4%</td>
</tr>
<tr>
<td>Sodium</td>
<td>20 mg</td>
<td>1%</td>
</tr>
<tr>
<td>Zinc</td>
<td>0.12 mg</td>
<td>1%</td>
</tr>
</tbody>
</table>

Percentages are relative to US recommendations for adults. Source: USDA Nutrient database
Annex E
(informative)

Leeks — Codex, EU and US MRLs

Users are advised that international regulations and permissible Maximum Residue Levels (MRL) frequently change. Although this International MRL Database is updated frequently, the information in it may not be completely up-to-date or error free. Additionally, commodity nomenclature and residue definitions vary between countries, and country policies regarding deferral to international standards are not always transparent. This database is intended to be an initial reference source only, and users must verify any information obtained from it with knowledgeable parties in the market of interest prior to the sale or shipment of any products. The developers of this database are not liable for any damages, in whole or in part, caused by or arising in any way from user's use of the database.

Results Key
MRL values in (italics) are more restrictive than US
--- indicates no MRL value is established.
Cod, EU, etc. indicates the source of the MRL and EXP means the market defers to the exporting market.
All numeric values listed are in parts per million (ppm), unless otherwise noted

<table>
<thead>
<tr>
<th>US 1</th>
<th>Cod</th>
<th>EU 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetamiprid</td>
<td>4.5</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>(0.01)</td>
<td></td>
</tr>
</tbody>
</table>

1. United States does not maintain a specific MRL for the Acetamiprid/Leeks combination, but does maintain an MRL of 4.5 PPM for its "Onion, green, subgroup 3-07B" group.

2. European Union does not maintain a specific MRL for the Acetamiprid/Leeks combination, but does maintain an MRL of 0.01 PPM for its "Stem vegetables (fresh)" group.

<table>
<thead>
<tr>
<th>US 3</th>
<th>Cod</th>
<th>EU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boscalid</td>
<td>3</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

3. United States does not maintain a specific MRL for the Boscalid/Leeks combination, but does maintain an MRL of 3 PPM for its "Vegetable, bulb, group 3" group.

<table>
<thead>
<tr>
<th>US 4</th>
<th>Cod</th>
<th>EU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Captain</td>
<td>0.05</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

4. United States does not maintain a specific MRL for the Captain/Leeks combination, but does maintain an MRL of 0.05 PPM for its "Vegetable, bulb, group 3" group.

<table>
<thead>
<tr>
<th>US 5</th>
<th>Cod</th>
<th>EU 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carfentrazone-ethyl</td>
<td>0.1</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>(0.01)</td>
<td></td>
</tr>
</tbody>
</table>

5. United States does not maintain a specific MRL for the Carfentrazone-ethyl/Leeks combination, but does maintain an MRL of 0.1 PPM for its "Vegetable, bulb, group 3" group.

6. European Union does not maintain a specific MRL for the Carfentrazone-ethyl/Leeks combination, but does maintain an MRL of 0.01 PPM for its "Vegetables Fresh or Frozen" group.

<table>
<thead>
<tr>
<th>US 7</th>
<th>Cod</th>
<th>EU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cymoxanil</td>
<td>1.1</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>(0.05)</td>
<td></td>
</tr>
</tbody>
</table>

7. United States does not maintain a specific MRL for the Cymoxanil/Leeks combination, but does maintain an MRL of 1.1 PPM for its "Onion, green, subgroup 3-07B" group.

<table>
<thead>
<tr>
<th>US 8</th>
<th>Cod</th>
<th>EU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyromazine</td>
<td>3</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>(0.05)</td>
<td></td>
</tr>
</tbody>
</table>

8. United States does not maintain a specific MRL for the Cyromazine/Leeks combination, but does maintain an MRL of 0.01 PPM for its "Vegetables Fresh or Frozen" group.

<table>
<thead>
<tr>
<th>US 9</th>
<th>Cod</th>
<th>EU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimethenamid</td>
<td>0.01</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>0.01</td>
<td></td>
</tr>
</tbody>
</table>

8. European Union does not maintain a specific MRL for the Dimethenamid/Leeks combination, but does maintain an MRL of 0.01 PPM for its "Vegetables Fresh or Frozen" group.

<table>
<thead>
<tr>
<th>US 10</th>
<th>Cod</th>
<th>EU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimethomorph</td>
<td>2</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>(0.2)</td>
<td></td>
</tr>
</tbody>
</table>

9. United States does not maintain a specific MRL for the Dimethomorph/Leeks combination, but does maintain an MRL of 2 PPM for its "Vegetable, bulb, group 3" group.

<table>
<thead>
<tr>
<th>US 11</th>
<th>Cod</th>
<th>EU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Famoxadone</td>
<td>40</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>(2)</td>
<td></td>
</tr>
</tbody>
</table>

10. United States does not maintain a specific MRL for the Famoxadone/Leeks combination, but does maintain an MRL of 40 PPM for its "Onion, green, subgroup 3-07B" group.

<table>
<thead>
<tr>
<th>US 12</th>
<th>Cod</th>
<th>EU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fenamidone</td>
<td>1.5</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>(0.02)</td>
<td></td>
</tr>
</tbody>
</table>

11. European Union does not maintain a specific MRL for the Fenamidone/Leeks combination, but does maintain an MRL of 0.02 PPM for its "Stem vegetables (fresh)" group.

<table>
<thead>
<tr>
<th>US 13</th>
<th>Cod</th>
<th>EU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fludioxonil</td>
<td>0.02</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>0.05</td>
<td></td>
</tr>
</tbody>
</table>

12. United States does not maintain a specific MRL for the Fludioxonil/Leeks combination, but does maintain an MRL of 0.02 PPM for its "Vegetable, bulb, group 3" group.
<table>
<thead>
<tr>
<th>Acetamiprid</th>
<th>US 1</th>
<th>Cod</th>
<th>EU 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>---</td>
<td>(0.5)</td>
<td></td>
<td>(0.005)</td>
</tr>
</tbody>
</table>

13. United States does not maintain a specific MRL for the Fluopicolide/Leeks combination, but does maintain an MRL of 7 PPM for its "Vegetable, bulb, group 3-07" group.

14. United States does not maintain a specific MRL for the Glyphosate/Leeks combination, but does maintain an MRL of 0.2 PPM for its "Vegetable, bulb, group 3" group.

15. European Union does not maintain a specific MRL for the Glyphosate/Leeks combination, but does maintain an MRL of 0.1 PPM for its "Stem vegetables (fresh)" group.

16. European Union does not maintain a specific MRL for the Malathion/Leeks combination, but does maintain an MRL of 0.02 PPM for its "Stem vegetables (fresh)" group.

17. Methomyl and Thiodicarb (sum of methomyl and thiodicarb expressed as methomyl) European Union does not maintain a specific MRL for the Methomyl/Leeks combination, but does maintain an MRL of 0.05 PPM for its "Stem vegetables (fresh)" group.

18. United States does not maintain a specific MRL for the Methoxyfenozide/Leeks combination, but does maintain an MRL of 5 PPM for its "Onion, green, subgroup 3-07B" group.

19. European Union does not maintain a specific MRL for the Sethoxydim/Leeks combination, but does maintain an MRL of 0.7 PPM for its "Vegetable, bulb, group 3" group.

20. United States does not maintain a specific MRL for the Pendimethalin/Leeks combination, but does maintain an MRL of 0.9 PPM for its "Vegetable, bulb, group 3" group.

21. MRL does not apply to onion, bulb. United States does not maintain a specific MRL for the Pyriproxyfen/Leeks combination, but does maintain an MRL of 0.7 PPM for its "Vegetable, bulb, group 3" group.

22. European Union does not maintain a specific MRL for the Pyriproxyfen/Leeks combination, but does maintain an MRL of 0.05 PPM for its "Stem vegetables (fresh)" group.

23. United States does not maintain a specific MRL for the Spinetoram/Leeks combination, but does maintain an MRL of 1 PPM for its "Stem vegetables (fresh)" group.

24. European Union does not maintain a specific MRL for the Spinetoram/Leeks combination, but does maintain an MRL of 0.05 PPM for its "Stem vegetables (fresh)" group.

25. United States does not maintain a specific MRL for the Spinosad/Leeks combination, but does maintain an MRL of 0.1 PPM for its "Vegetable, bulb, group 3" group.

26. European Union does not maintain a specific MRL for the Spinosad/Leeks combination, but does maintain an MRL of 0.05 PPM for its "Stem vegetables (fresh)" group.

27. United States does not maintain a specific MRL for the Teflubenzuron/Leeks combination, but does maintain an MRL of 0.1 PPM for its "Vegetable, bulb, group 3" group.

28. United States does not maintain a specific MRL for the Teflubenzuron/Leeks combination, but does maintain an MRL of 1.3 PPM for its "Onion, green, subgroup 3-07B" group.

29. European Union does not maintain a specific MRL for the Teflubenzuron/Leeks combination, but does maintain an MRL of 0.5 PPM for its "Stem vegetables (fresh)" group.