



**United States
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**Agricultural
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Service**

**Fruit and
Vegetable
Programs**

**Fresh
Products
Branch**

United States Standards for Grades of Grapefruit (California and Arizona)

Effective December 27, 1999

United States Standards for Grades of Grapefruit (California and Arizona) ¹

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¹ Packing of the product in conformity with the requirements of these standards shall not excuse failure to comply with the provisions of the Federal Food, Drug, and Cosmetic Act or with applicable State laws and regulations.

Grades

§51.925 U.S. Fancy.

U.S. Fancy shall consist of grapefruit of similar varietal characteristics which are mature, well colored, firm, well formed, of smooth texture for the variety, and fairly thin skinned; free from decay, broken skins which are not healed, hard or dry skins, dryness or mushy condition, and, free from injury caused by bruises, sprayburn, fumigation, exanthema, scars, green spots, scale, sunburn, oil spots, skin breakdown, sprouting, dirt or other foreign materials, disease, insects or mechanical or other means. (See §51.932)

§51.926 U.S. No. 1.

U.S. No. 1 shall consist of grapefruit of similar varietal characteristics which are mature, fairly well colored, firm, well formed, of fairly smooth texture for the variety, and not excessively thick skinned; free from decay, broken skins which are not healed, hard or dry skins, and free from damage caused by bruises, dryness or mushy condition, sprayburn, fumigation, exanthema, scars, green spots, scale, sunburn, oil spots, skin breakdown, sprouting, dirt or other foreign materials, disease, insects or mechanical or other means. (See §51.932.)

§51.927 U.S. No. 2.

U.S. No. 2 shall consist of grapefruit of similar varietal characteristics which are mature, slightly colored, fairly firm, fairly well formed, and not decidedly rough; free from decay, broken skins which are not healed, hard or dry skins, and from serious damage caused by bruises, dryness or mushy condition, sprayburn, fumigation, exanthema, scars, green spots, scale, sunburn, oil spots, skin breakdown, sprouting, dirt or other foreign materials, disease, insects or mechanical or other means. (See §51.932)

§51.928 U.S. Combination grade.

U.S. Combination grade shall consist of a combination of U.S. No. 1 and U.S. No. 2 grapefruit: **Provided**, That at least 40 percent, by count, of the grapefruit in each lot shall meet the requirements of the U.S. No. 1 grade. (See §51.933)

§51.929 U.S. No. 3.

U.S. No. 3 shall consist of grapefruit of similar varietal characteristics which are mature, slightly colored, which may be slightly spongy, misshapen, and rough but not seriously lumpy; which are free from decay, broken skins which are not healed, hard or dry skins, and free from very serious damage caused by bruises, dryness or mushy condition, sprayburn, fumigation, exanthema, scars, green spots, scale, sunburn, oil spots, skin breakdown, sprouting, dirt or other foreign materials, disease, insects or mechanical or other means. (See §51.932)

§51.930 [Reserved].

Tolerances

§51.931 Tolerances.

In order to allow for variations incident to proper grading and handling in each of the foregoing grades, the tolerances, by count, based on a minimum 25 count sample, set forth in the U.S. Fancy, U.S. No. 1, U.S. No. 2, U.S. No. 3 and U.S. Combination grades are provided as specified.

§51.932 U.S. Fancy, U.S. No. 1, U.S. No. 2 grades.

For defects at shipping point. Not more than 10 percent, by count, of the grapefruit in any lot may fail to meet the requirements relating to color. In addition, not more than 10 percent,

by count, of the grapefruit in any lot may fail to meet the remaining requirements of the specified grade, included in this amount not more than 5 percent shall be allowed for defects causing very serious damage, included in this latter amount not more than 1 percent for decay.

U.S. Fancy, U.S. No. 1, and U.S. No. 2 grades. For defects en route or at destination.

Not more than 10 percent, by count, of the grapefruit in any lot may fail to meet the requirements relating to color. In addition, not more than 12 percent, by count, of the grapefruit in any lot may fail to meet the remaining requirements of the specified grade: **Provided**, that included in this amount not more than the following percentages shall be allowed for defects listed: 10 percent for fruit having permanent defects; or 7 percent for defects causing very serious damage, including therein not more than 5 percent for very serious damage by permanent defects and not more than 3 percent for decay.

U.S. No. 3 grade. For defects at shipping point. Not more than 10 percent, by count, of the grapefruit in any lot may fail to meet the requirements relating to color. In addition, not more than 10 percent, by count, of the grapefruit in any lot may fail to meet the remaining requirements of the specified grade, included in this amount not more than 1 percent for decay.

U.S. No. 3 grade. For defects en route or at destination. Not more than 10 percent, by count, of the grapefruit in any lot may fail to meet the requirements relating to color. In addition, not more than 12 percent, by count, of the grapefruit in any lot may fail to meet the remaining requirements of the specified grade: **Provided**, that included in this amount not more than the following percentages shall be allowed for defects listed: 10 percent for fruit having permanent defects; or not more than 3 percent for decay.

§51.933 U.S. Combination grade.

U.S. Combination grade. For defects at shipping point. Not more than 10 percent, by count, of the grapefruit in any lot may fail to meet the requirements of the U.S. No. 2 grade relating to color. In addition, not more than 10 percent, by count, of the grapefruit in any lot may fail to meet the remaining requirements of the U.S. No. 2 grade, included in this amount not more than 5 percent for very serious damage, included in this latter amount not more than 1 percent for decay.

U.S. Combination grade. For defects en route or at destination. Not more than 10 percent, by count, of the grapefruit in any lot may fail to meet the requirements of the U.S. No. 2 grade relating to color. In addition, not more than 12 percent, by count, of the grapefruit in any lot may fail to meet the remaining requirements of the U.S. No. 2 grade: **Provided**, that included in this amount not more than the following percentages shall be allowed for defects listed: 10 percent for fruit having permanent defects; or 7 percent for defects causing very serious damage, including therein not more than 5 percent for very serious damage by permanent defects and not more than 3 percent for decay.

U.S. Combination grade. For defects at shipping point and en route or at destination. No part of any tolerance shall be allowed to reduce for the lot as a whole, the 40 percent of U.S. No. 1 grapefruit required in the U.S. Combination grade, but individual samples may have not less than 30 percent less of U.S. No. 1 required: **Provided**, That the entire lot averages within the percentage specified.

Application of Tolerances

§51.934 Application of tolerances.

Individual samples, based on a minimum 25 count, are subject to the following limitations, unless otherwise specified. Individual samples shall have not more than one and one-half times a specified tolerance of 10 percent or more, and not more than double a specified tolerance of less than 10 percent: **Provided**, that at least one decayed fruit may be permitted in any sample: **And provided further**, that the averages for the entire lot are within the tolerances specified for the grade.

Standard Pack

§51.935 Standard pack.

(a) Grapefruit shall be fairly uniform in size, and, when packed in boxes, shall be arranged according to the approved and recognized methods.

(b) All packages shall be tightly packed and well filled but the contents shall not show excessive or unnecessary bruising because of overfilled packages.

(c) "Fairly uniform in size" means that not more than 5 percent, by count, of the fruit in any sample may be more than one standard size larger or smaller than the standard size for the count packed.

(d) Example of standard size grapefruit: The standard size grapefruit for a 64 count is that size grapefruit which will pack tightly 64 grapefruit of uniform size when packed according to the approved and recognized method.

(e) In order to allow for variations, incident to proper packing, not more than 5 percent of the samples in any lot may fail to meet the requirements of standard pack.

Standards for Export

§51.936 Standards for export.

(a) Not more than a total of 10 percent, by count, of the grapefruit in any sample may be soft, affected by decay, damaged by skin breakdown, have broken skins which are not healed, or be seriously damaged by dryness or mushy condition, except that:

(1) Not more than one-half of 1 percent shall be allowed for grapefruit affected by decay.

(2) Not more than 3 percent shall have broken skins which are not healed.

(3) Not more than 5 percent shall be soft.

(4) Not more than 5 percent shall be seriously damaged by dryness or mushy condition.

(5) Not more than 5 percent shall be damaged by skin breakdown.

(b) Any lot of grapefruit shall be considered as meeting the standards for export if the entire lot averages within the requirements specified: **Provided**, That no sample from the containers in any lot shall have more than double the percentage specified for any one defect, and that not more than a total of 10 percent, by count, of the grapefruit in any sample has any of the defects enumerated in the standards for export.

Definitions

§51.937 Similar varietal characteristics.

"Similar varietal characteristics" means that the fruits in any container are similar in color and type.

§51.938 Well colored.

"Well colored" means that the fruit is yellow in color, with not more than a trace of green.

§51.939 Firm.

"Firm" means that the fruit is not soft or noticeably wilted or flabby. The skin may feel slightly springy or spongy.

§51.940 Well formed.

"Well formed" means that the fruit shows the normal shape characteristic of the variety.

§51.941 Smooth texture.

"Smooth texture" means that the skin is of fairly fine grain, the "pebbling" is not pronounced, and any furrows radiating from the stem end are short and shallow.

§51.942 Fairly thin skinned.

"Fairly thin skinned" means that the skin thickness does not average more than 1/2 of an inch, on a central cross section, on a grapefruit 4-1/8 inches in diameter.

§51.943 Injury.

"Injury" means any defect which more than slightly affects the appearance, or edible or shipping quality of the fruit. Any one of the following defects, or any combination of defects, the seriousness of which exceeds the maximum allowed for any one defect, shall be considered as injury:

- (a) Sprayburn which changes the color to such an extent that the appearance of the fruit is noticeably injured, or which causes scarring that aggregates more than one-half inch in diameter.
- (b) Fumigation injury which noticeably detracts from the appearance of the fruit, or which occurs as small, thinly scattered spots over more than 10 percent of the fruit surface, or as solid or depressed scarring which aggregates more than one-half of an inch in diameter.
- (c) Exanthema which noticeably detracts from the appearance of the fruit, or which occurs as small, thinly scattered spots over more than 10 percent of the fruit surface, or as solid scarring which aggregates more than one-half of an inch in diameter.
- (d) Scars which are very rough or very deep; or scars which are very dark when more than one-fourth of an inch in diameter.
- (e) Scars which are dark, rough, or deep and aggregate more than one-half of an inch in diameter.
- (f) Scars which are fairly light in color, slightly rough, or of slight depth and aggregate more than 5 percent of the fruit surface.
- (g) Scars which are light colored, fairly smooth, with no depth and aggregate more than 10 percent of the fruit surface.
- (h) Green spots, oil spots (oleocellosis) or other similar injuries which are depressed or soft, or which have an aggregate area of more than 2-1/2 percent of the fruit surface, or which are green and more than 4 in number.
- (i) Scale, when more than 5 medium to large California red or purple scale are adjacent to the "button" at the stem end, or scattered over the fruit, or any scale which affects the appearance of the fruit to a greater extent.
- (j) Sunburn which appreciably changes the normal color or shape of the fruit, or affects more than 10 percent of the fruit surface.
- (k) Skin breakdown when exceeding that of a circle 1/4 inch in diameter.
- (l) Bruising when segment walls are collapsed, or albedo and juice sacs are ruptured.

§51.944 Fairly well colored.

"Fairly well colored" means that yellow color predominates on the fruit and that the fruit is free

from distinctly green streaks and distinctly green blotches.

§51.945 Fairly smooth.

"Fairly smooth texture" means that the skin does not feel noticeably rough or coarse. The size of the fruit should be considered in judging the texture, as large fruit is not usually as smooth as the small. It is common for the fruit to show larger and coarser "pebbling" on the stem end portion than on the blossom end. Slight furrows or grooves which may be present on the stem end portion of the fruit shall not be considered as slightly rough unless they are of sufficient depth, length, and number to materially affect the appearance and smoothness of the grapefruit.

§51.946 Excessively thick skinned.

"Excessively thick skinned" means that the skin thickness averages more than 5/8 of an inch, on a central cross section, on a grapefruit 4-1/8 inches in diameter.

§51.947 Damage.

"Damage" means any injury which materially affects the appearance, or the edible or shipping quality of the fruit. Any one of the following defects, or any combination of defects, the seriousness of which exceeds the maximum allowed for any one defect, shall be considered as damage:

- (a) Dryness or mushy condition, when affecting all segments more than one-fourth of an inch at the stem end, or the equivalent of this amount by volume, when occurring in other portions of the fruit.
- (b) Sprayburn which changes the color to such an extent that the appearance of the fruit is materially injured, or which causes scarring that aggregates more than three-fourths of an inch in diameter.
- (c) Fumigation injury which materially detracts from the appearance of the fruit, or which occurs as small, thinly scattered spots over more than 25 percent of the fruit surface, or as solid scarring or depressions which aggregate more than three-fourths of an inch in diameter.
- (d) Exanthema which materially detracts from the appearance of the fruit, or which occurs as small, thinly scattered spots over more than 25 percent of the fruit surface, or as solid scarring, that is not cracked, which aggregates more than three-fourths of an inch in diameter.
- (e) Scars which are very deep; or scars which are very rough or very dark and aggregate more than one-half of an inch in diameter.
- (f) Scars which are dark, rough or deep and aggregate more than three-fourths of an inch in diameter.
- (g) Scars which are fairly light in color, slightly rough, or of slight depth and aggregate more than 10 percent of the fruit surface.
- (h) Scars which are light colored, fairly smooth, with no depth and aggregate more than 15 percent of the fruit surface.
- (i) Green spots, oil spots (oleocellosis) or other similar injuries which are depressed or soft, or which have an aggregate area of more than 5 percent of the fruit surface, or which are green and more than 7 in number.
- (j) Scale, when more than 10 medium to large California red or purple scale are adjacent to the "button" at the stem end, or scattered over the fruit, or any scale which affects the appearance of the fruit to a greater extent.

(k) Sunburn which causes appreciable flattening of the fruit, drying or darkening of the skin, or affects more than 25 percent of the fruit surface.

(l) Skin breakdown when exceeding that of a circle $\frac{3}{8}$ inch in diameter.

(m) Bruising when segment walls are collapsed, or albedo and juice sacs are ruptured.

§51.948 Slightly colored.

"Slightly colored" means that sufficient yellow color is distributed over the fruit surface and, when blended with the green color present, is equivalent to 25 percent of full yellow color characteristic of the variety.

§51.949 Fairly firm.

"Fairly firm" means that the fruit may be slightly soft but is not decidedly flabby. The skin may be thick and slightly puffy.

§51.950 Fairly well formed.

"Fairly well formed" means that the fruit is not materially flattened, materially pointed, extremely elongated, or otherwise decidedly deformed.

§51.951 Decidedly rough.

"Decidedly rough" means that the skin is materially rough, materially lumpy, decidedly folded, or decidedly ridged.

§51.952 Serious damage.

"Serious damage" means any injury which seriously affects the appearance, or the edible or shipping quality of the fruit. Any one of the following defects, or any combination of defects, the seriousness of which exceeds the maximum allowed for any one defect, shall be considered as serious damage:

(a) Dryness or mushy condition, when affecting all segments more than one-half of an inch at the stem end, or the equivalent of this amount by volume, when occurring in other portions of the fruit.

(b) Sprayburn which changes the color to such an extent that the appearance of the fruit is seriously injured, or which causes scarring that aggregates more than 10 percent of the fruit surface.

(c) Fumigation injury which occurs as small, thinly scattered spots over more than one-half of the fruit surface, or solid scarring or depressions which aggregate more than 5 percent of the fruit surface.

(d) Exanthema which occurs as small, thinly scattered spots over more than one-half of the fruit surface, or solid scarring that is not cracked, which aggregates more than 5 percent of the fruit surface.

(e) Scars which are very deep; or scars which are very rough or very dark and aggregate more than one inch in diameter.

(f) Scars which are dark, rough or deep and aggregate more than 5 percent of the fruit surface.

(g) Scars which are fairly light in color, slightly rough or of slight depth and aggregate more than 15 percent of the fruit surface.

(h) Scars which are light colored, fairly smooth, with no depth and aggregate more than 25 percent of the fruit surface.

(i) Green spots, oil spots (oleocellosis) or other similar injuries which are soft, or which have an aggregate area of more than 10 percent of the fruit surface.

(j) Scale, when California red or purple scale is concentrated as a ring or blotch, or which is more than thinly scattered over the fruit surface, or any scale which affects the appearance of the fruit to a greater extent.

(k) Sunburn which causes decided flattening of the fruit, drying or dark discoloration of the skin, or which affects more than one-third of the fruit surface.

(l) Skin breakdown when exceeding that of a circle 5/8 inch in diameter.

(m) Bruising when segment walls are collapsed, or albedo is ruptured and juice sacs are ruptured.

§51.953 Slightly spongy.

"Slightly spongy" means that the fruit is puffy or slightly wilted but not decidedly flabby.

§51.954 Misshapen.

"Misshapen" means that the fruit is materially flattened, materially pointed, extremely elongated or otherwise decidedly deformed.

§51.955 Very serious damage.

"Very serious damage" means any injury which very seriously affects the appearance, or the edible or shipping quality of the fruit. Any one of the following defects, or any combination of defects, the seriousness of which exceeds the maximum allowed for any one defect, shall be considered as very serious damage:

(a) Sprayburn which seriously affects more than 25 percent of the fruit surface.

(b) Fumigation injury which causes deep, rough, or dark scarring which aggregates more than 25 percent of the fruit surface.

(c) Exanthema which aggregates more than 10 percent of the fruit surface, or causes serious cracks.

(d) Scars which are very dark, very rough, or very deep and aggregate more than 10 percent of the fruit surface.

(e) Scars which are dark, rough or deep and aggregate more than 25 percent of the fruit surface.

(f) Green spots, oil spots (oleocellosis) or other similar injuries which are badly sunken or soft, or which have an aggregate area of more than 25 percent of the fruit surface.

(g) Scale so numerous or large that the appearance of the fruit is very seriously affected.

(h) Sunburn which seriously affects more than one-third of the fruit surface.

(i) Skin breakdown when exceeding that of a circle 1-1/4 inches in diameter.

(j) Bruising when fruit has been split open, peel is badly water-soaked following bruising or albedo is ruptured and juice sacs are ruptured causing a mushy condition affecting all segments more than 3/4 inch at bruised area or the equivalent of this amount, by volume, when affecting more than one area on the fruit.

(k) Dryness or mushy condition, when affecting all segments more than three-fourths of an inch at the stem end, or the equivalent of this amount, by volume, when occurring in other portions of the fruit.

Note: All references in this standard to area, aggregating area, or length are based on a grapefruit 4-1/8 inches in diameter, allowing proportionately greater areas on larger fruit and lesser areas on smaller fruit.