



**United States
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**Agricultural
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Service**

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Vegetable
Division**

**Fresh
Products
Branch**

United States Standards for Grades of Winter Pears

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United States Standards for Grades of Winter Pears ¹

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General

§51.1300 General.

¹Packing 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.

These standards apply to varieties such as Anjou, Bosc, Winter Nelis, Comice, Flemish Beauty and other similar varieties.

Grades

§51.1301 U.S. Extra No. 1.

"U.S. Extra No. 1" consists of pears of one variety which are mature, but not overripe, carefully hand-picked, clean, well formed, free from decay, internal breakdown, scald, freezing injury, worm holes, black end, hard end, drought spot, and free from injury caused by russeting, limbrubs, hail, scars, cork spot, sunburn, sprayburn, stings or other insect injury, or mechanical or other means, except that they shall be free from damage caused by bruises, broken skins, or disease. (See §§51.1306 and 51.1309.)

§51.1302 U.S. No. 1.

"U.S. No. 1" consists of pears of one variety which are mature, but not over-ripe, carefully hand-picked, clean, fairly well formed, free from decay, internal breakdown, scald, freezing injury, worm holes, black end, and from damage caused by hard end, bruises, broken skins, russeting, limbrubs, hail, scars, cork spot, drought spot, sunburn, sprayburn, stings or other insect injury, disease, or mechanical or other means. (See §§51.1306 and 51.1309.)

§51.1303 U.S. Combination.

A combination of U.S. No. 1 and U.S. No. 2 may be packed. When such a combination is packed, at least 50 percent of the pears in any container shall meet the requirements of U.S. No. 1. (See §§51.1306 and 51.1309.)

§51.1304 U.S. No. 2.

"U.S. No. 2" consists of pears of one variety which are mature, but not overripe, carefully hand-picked, clean, not seriously misshapen, free from decay, internal breakdown, scald, freezing injury, worm holes, black end, and from damage caused by hard end, or broken skins. The pears shall also be free from serious damage caused by bruises, russeting, limbrubs, hail, scars, cork spot, drought spot, sunburn, sprayburn, stings or other insect injury, disease, or mechanical or other means. (See §§51.1306 and 51.1309.)

Unclassified

§51.1305 Unclassified.

"Unclassified" consists of pears which have not been classified in accordance with any of the foregoing grades. The term "unclassified" is not a grade within the meaning of these standards, but is provided as a designation to show that no grade has been applied to the lot.

Tolerances

§51.1306 Tolerances.

(a) In order to allow for variations incident to proper grading and handling, not more than a total of 10 percent of the pears in any lot may fail to meet the requirements of grade: **Provided**, That not more than 5 percent shall be seriously damaged by insects, and not more than 1 percent shall be allowed for decay or internal breakdown.

(b) When applying the foregoing tolerances to the combination grade no part of any tolerance shall be used to reduce the percentage of U. S. No. 1 pears required in the combination, but individual containers may have not more than 10 percent less than the percentage of U.S. No. 1 required: **Provided**, That the entire lot averages within the percentage specified.

Application of Tolerances

§51.1307 Application of tolerances.

(a) The contents of individual packages in the lot, based on sample inspection, are subject to the following limitations, provided the averages for the entire lot are within the tolerances specified for the grade:

(1) For packages which contain more than 10 pounds, and a tolerance of 10 percent or more is provided, individual packages in any lot shall have not more than one and one-half times the tolerance specified. For packages which contain more than 10 pounds and a tolerance of less than 10 percent is provided, individual packages in any lot shall have not more than double the tolerance specified, except that at least one pear which is seriously damaged by insects or affected by decay or internal breakdown may be permitted in any package.

(2) For packages which contain 10 pounds or less, individual packages in any lot are not restricted as to the percentage of defects or off-size: **Provided**, That not more than four times the tolerance specified may be permitted in any package for pears which are seriously damaged by insects or affected by decay or internal breakdown except that at least one defective pear may be permitted in any package.

Basis for Calculating Percentages

§51.1308 Basis for calculating percentages.

(a) When the numerical count is marked in the container or when pears are packed in a container to weigh 5 pounds or less, percentages shall be calculated on the basis of count.

(b) When the minimum diameter or minimum and maximum diameters are marked on a container packed to weigh more than 5 pounds or when the pears are jumbled in a container packed to weigh more than 5 pounds, percentages shall be calculated on the basis of weight or an equivalent basis.

Condition After Storage or Transit

§51.1309 Condition after storage or transit.

Decay, scald or other deterioration which may have developed on pears after they have been in storage or transit shall be considered as affecting condition and not the grade.

Standard Pack

§51.1310 Sizing.

(a) The numerical count, or the minimum size of the pears packed in closed containers shall be indicated on the package. The number of pears in the box shall not vary more than 3 from the number indicated on the box.

(b) When the numerical count is marked on western standard pear boxes the pears shall not vary more than three-eighths inch in their transverse diameter for counts 120 or less; one-fourth inch for counts 135 to 180, inclusive; and three-sixteenths inch for counts 193 or more.

(c) When the numerical count is marked on western standard half boxes or special half boxes packed three tiers deep, the pears shall not vary more than three-eighths inch for counts 75 or less; one-fourth inch for counts 80 to 110, inclusive; and three-sixteenths inch for counts 115 or more.

(d) When the numerical count is marked on western standard half boxes or special half boxes packed two tiers deep, the pears shall not vary more than three-eighths inch for counts 50 or less; one-fourth inch for counts 55 to 70, inclusive; and three-sixteenths inch for counts 80 or more.

(e) When the numerical count is not shown, the minimum size shall be plainly stamped, stenciled or otherwise marked on the container in terms of whole inches, whole and half inches, whole and quarter inches, or whole and eighth inches, as 2-1/2 inches minimum, 2-1/4 inches minimum, or 2-5/8 inches minimum, in accordance with the facts. It is suggested that both minimum and maximum sizes be marked on the container, as 2-1/4 to 2-3/4 inches, 2-1/2 to 2-3/4 inches, as such marking is especially desirable for pears marketed in the export trade.

(f) "Size" means the greatest transverse diameter of the pear taken at right angles to a line running from the stem to the blossom end.

§51.1311 Packing.

(a) Each package shall be packed so that the pears in the shown face shall be reasonably representative in size and quality of the contents of the package.

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

(c) Pears packed in boxes shall be arranged in containers according to the approved and recognized methods with the pears packed lengthwise. A bridge shall not be allowed in any standard pack. When wrapped, each pear shall be fairly well enclosed by its individual wrapper.

(d) Pears packed in round stave bushel baskets, tubs, or in barrels shall be ring faced.

§51.1312 Tolerances for standard pack.

(a) In order to allow for variations incident to proper sizing, not more than 5 percent of the pears in any lot may fail to meet the size requirements: **Provided**, That when the maximum and minimum sizes are both stated, an additional 10 percent tolerance shall be allowed for pears which are larger than the maximum size stated.

(b) In order to allow for variations incident to proper packing, not more than 10 percent of the containers in any lot may fail to meet these requirements but no part of this tolerance shall be allowed for bridge packs, or for packs with different sizes and arrangements such as layers of 195 size and arrangement, and layers of 180 size and arrangement packed in the same box.

Definitions

§51.1313 Mature.

(a) "Mature" means that the pear has reached the stage of maturity which will insure the proper completion of the ripening process.

(b) Before a mature pear becomes overripe it will show varying degrees of firmness depending upon the stage of the ripening process. Therefore, a statement of firmness should be given in order to indicate the stage of the ripening process. A description of the ground color should also be given.

(1) The following terms should be used for describing the ground color: "Green," "Light Green," "Yellowish Green," and "Yellow."

(2) The following terms should be used for describing the firmness of pears:

(i) "Hard" means that the flesh of the pear is solid and does not yield appreciably even to considerable pressure.

(ii) "Firm" means that the flesh of the pear is fairly solid but yields somewhat to moderate pressure.

(iii) "Firm ripe" means that the flesh of the pear yields readily to moderate pressure.

(iv) "Ripe" means that the pear is at the stage where it is in its most desirable condition for eating.

§51.1314 Overripe.

"Overripe" means dead ripe, very mealy or soft, past commercial utility.

§51.1315 Carefully hand-picked.

"Carefully hand-picked" means that the pears do not show evidence of rough handling or of having been on the ground.

§51.1316 Clean.

"Clean" means free from excessive dirt, dust, spray residue or other foreign material.

§51.1317 Well formed.

"Well formed" means having the shape characteristic of the variety. Slight irregularities of shape from type which do not appreciably detract from the general appearance of the fruit shall be considered well formed.

§51.1318 Black end.

"Black end" is evidenced by an abnormally deep green color around the calyx, or black spots usually occurring on the one-third of the surface nearest to the calyx, or by an abnormally shallow calyx cavity.

§51.1319 Injury.

"Injury" means any blemish or defect, that more than slightly affects the appearance, or the edible or shipping quality. The following shall be considered as injury:

(a) Russeting which exceeds the following shall be considered as injury:

(1) On all varieties any excessively rough russeting (russeting which shows "frogging" or slight cracking).

(2) On Comice, and on Anjou and other smooth-skinned varieties, slightly rough russeting, or thick russeting, such as is characteristic of frost injury, when the aggregate area exceeds one-half inch in diameter.²

(3) On Anjou and other smooth-skinned varieties, smooth solid russeting when the aggregate area exceeds one-half inch in diameter and smooth net-like russeting when the aggregate area exceeds 15 percent of the surface, and on Comice, smooth solid or smooth netlike russeting when the aggregate area exceeds one-third of the surface, except that, in addition, on these and similar varieties, any amount of characteristic smooth russeting shall be permitted on that portion of the calyx end not visible for more than one-half inch along the contour of the pear, when it is placed calyx end down on a flat surface.²

(4) On any of the following and other similar varieties, rough or thick russeting such as is characteristic of frost injury when the aggregate area exceeds one-half inch in diameter.² On any of these varieties any amount of characteristic russeting is permitted whether due to natural causes such as weather or stimulated by artificial means; leaf whips or light limbrubs which resemble and blend into russeted areas shall be considered as russet:

Bosc.	Pound.
Clairgeau.	Seckel.
Easter Beurre.	Sheldon.
Flemish Beauty.	Winter Nelis, and other
Kieffer.	similar varieties.

²The area refers to that of a circle of the specified diameter.

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(b) Any one of the following defects or any combination thereof, the seriousness of which exceeds the maximum allowed for any one defect, shall be considered as injury:

(1) Limbrubs which are cracked, softened, more than very slightly depressed, not light in color, or exceeding an aggregate area of three-fourths inch in diameter.²

(2) Hail marks or other similar depressions or scars which are not very shallow or superficial, or which affect an aggregate area of more than one-fourth inch in diameter.²

(3) Cork spot when a pear shows depressions or the flesh of the pear is more than slightly affected.

(4) Sunburn or sprayburn if the normal color of the fruit has been materially changed, or if the skin is blistered or cracked, or the flesh softened or discolored.

(5) More than two healed slight stings or depressions, or any stings which materially affect the general appearance of the fruit.

(6) Blister mite or canker worm injury which is not very shallow and superficial or where the injury affects an aggregate area of more than one-fourth inch.²

§51.1320 Fairly well formed.

"Fairly well formed" means that the pear may be slightly abnormal in shape but not to an extent which detracts materially from the appearance of the fruit. Winter Nelis pears with characteristic slight sutures or with slight flattening on one side and/or other slight irregularities which do not materially detract from the general appearance of the pear shall be considered fairly well formed.

§51.1321 Damage.

"Damage" means any injury or defect which materially affects the appearance, or the edible or shipping quality.

(a) Hard end shall be considered as damage if the pear shows an abnormally yellow color at the blossom end, or an abnormally smooth rounded base with little or no depression at the calyx, or if the flesh near the calyx is abnormally dry and tough or woody.

(b) Slight handling bruises and package bruises such as are incident to good commercial handling in the preparation of a tight pack shall not be considered damage.

(c) Any pear with one skin break larger than three-sixteenths inch in diameter or depth, or with more than one skin break one-eighth inch or larger in diameter or depth, shall be considered damaged, and scored against the grade tolerance.²

(1) Small inconspicuous skin breaks, less than one-eighth inch in diameter or depth, shall not be considered damage. In addition, not more than 15 percent of the pears in any container may have not more than one skin break from one-eighth inch to three-sixteenths inch, inclusive, in diameter or depth.²

(d) Russeting which exceeds the following shall be considered as damage:

(1) On all varieties excessively rough russeting (russeting which shows "frogging" or slight cracking) when the aggregate area exceeds one-half inch in diameter.²

(2) On Anjou and other smooth-skinned varieties, slightly rough russeting, or thick russeting

²The area refers to that of a circle of the specified diameter.

such as is characteristic of frost injury, when the aggregate area exceeds three-fourths inch in diameter.²

(3) On Anjou, smooth solid or smooth netlike russeting when the aggregate area exceeds one-third of the surface, and on other smooth-skinned varieties, 15 percent of the surface, except that, in addition, on Anjou and other smooth-skinned varieties, any amount of characteristic smooth russeting shall be permitted on that portion of the calyx end not visible for more than one-half inch along the contour of the pear, when it is placed calyx end down on a flat surface.

(4) On any of the following and other similar varieties, rough or thick russeting such as is characteristic of frost injury, when the aggregate area exceeds three-fourths inch in diameter.² On any of these varieties any amount of characteristic russeting is permitted whether due to natural causes such as weather or stimulated by artificial means; leaf whips or light limbrubs which resemble and blend into russeted areas shall be considered as russet:

Bosc.	Pound.
Clairgeau.	Seckel.
Comice.	Sheldon.
Easter Beurre.	Winter Nelis,
Flemish Beauty.	and other
Kieffer.	similar varieties.

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(e) Any one of the following defects or any combination thereof, the seriousness of which exceeds the maximum allowed for any one defect, shall be considered as damage:

(1) Any limbrubs which are cracked, softened, or more than slightly depressed.

(2) Black discoloration caused by limbrubs which exceeds an aggregate area of three-eighths inch in diameter.²

(3) Dark brown discoloration or excessive roughness caused by limbrubs which exceeds an aggregate area of one-half inch in diameter.²

(4) Slightly rough, light colored discoloration caused by limbrubs which exceeds an aggregate area of three-fourths inch in diameter.²

(5) Smooth, light colored discoloration caused by limbrubs which exceeds an aggregate area of 1 inch in diameter.²

(6) Hail marks or other similar depressions or scars which are not shallow or superficial, or where the injury affects an aggregate area of more than three-eighths inch in diameter.²

(7) Cork spot when more than one in number is visible externally or when the flesh is materially affected.

(8) Drought spot when more than one in number, or when the external injury exceeds an aggregate area of three-eighths inch in diameter, or when the appearance of the flesh is materially affected by corky tissue or brownish discoloration.²

(9) Sunburn or sprayburn where the skin is blistered, cracked, or shows any light tan or brownish color, or the shape of the pear is appreciably flattened, or the flesh is appreciably softened or changed in color, except that sprayburn of a russet character shall be considered under the

²The area refers to that of a circle of the specified diameter.

definition of russeting.

(10) Insects:

(i) More than two healed codling moth stings, or any insect sting which is over three thirty-seconds of an inch in diameter, or other insect stings affecting the appearance to an equal extent.²

(ii) Blister mite or canker worm injury which is not shallow or superficial, or where the injury affects an aggregate area of more than three-eighths inch in diameter.²

(11) Disease:

(i) Scab spots which are black and which cover an aggregate area of more than one-fourth inch in diameter, except that scab spots of a russet character shall be considered under the definition of russeting.²

(ii) Sooty blotch which is thinly scattered over more than 5 percent of the surface, or dark, heavily concentrated spots which affect an area of more than three-eighths inch in diameter.²

§51.1322 Seriously misshapen.

"Seriously misshapen" means that the pear is excessively flattened or elongated for the variety, or is constricted or deformed so it will not cut three fairly uniform good quarters, or is so badly misshapen that the appearance is seriously affected.

§51.1323 Serious damage.

"Serious damage" means any injury or defect which seriously affects the appearance, or the edible or shipping quality.

(a) Russeting which in the aggregate exceeds the following shall be considered as serious damage:

(1) On all varieties, excessively rough russeting (russeting which shows "frogging" or slight cracking) when the aggregate area exceeds three-fourths inch in diameter.²

(2) On all varieties, thick russeting such as is characteristic of frost injury, 15 percent of the surface.

(3) On Anjou, smooth solid or smooth netlike russeting when the aggregate area exceeds two-thirds of the surface, except that, in addition, any amount of characteristic smooth russeting shall be permitted on that portion of the calyx end not visible for more than one-half inch along the contour of the pear, when it is placed calyx end down on a flat surface. On Flemish Beauty smooth russeting shall be permitted on the entire surface.

(b) Any one of the following defects or combination thereof, the seriousness of which exceeds the maximum allowed for any one defect, shall be considered as serious damage:

(1) Limbrubs which are more than slightly cracked, or excessively rough limbrubs or dark brown or black discoloration caused by limbrubs which exceeds an aggregate area of three-fourths inch in diameter.²

(2) Other limbrubs which affect an aggregate area of more than one-tenth of the surface.

(3) Hail marks or other similar depressions or scars which affect an aggregate area of more than three-fourths inch in diameter, or which materially deform or disfigure the fruit.²

(4) Cork spot when more than two in number are visible externally or when the flesh is seriously

²The area refers to that of a circle of the specified diameter.

affected.

(5) Drought spot when more than two in number, or where the external injury affects an aggregate area of more than three-fourths inch in diameter, or when the appearance of the flesh is seriously affected by corky tissue or brownish discoloration.²

(6) Sunburn or sprayburn where the skin is blistered, cracked or shows any brownish color, or where the shape of the pear is materially flattened, or the flesh is softened or materially changed in color, except that sprayburn of a russet character shall be considered under the definition of russetting.

(7) Insects:

(i) Worm holes. More than three healed codling moth stings, of which not more than two may be over three thirty-seconds of an inch in diameter, or other insect stings affecting the appearance to an equal extent.²

(ii) Blister mite or canker worm injury which affects an aggregate area of more than three-fourths inch in diameter or which materially deforms or disfigures the fruit.²

(8) Disease:

(i) Scab spots which are black, and which cover an aggregate area of more than one-half inch in diameter, except that scab spots of a russet character shall be considered under the definition of russetting.²

(ii) Sooty blotch which is thinly scattered over more than 15 percent of the surface, or dark heavily concentrated spots which affect an area of more than three-fourths inch in diameter.²

²The area refers to that of a circle of the specified diameter.