

WASHINGTON STANDARDS FOR D'ANJOU, BOSCO, WINTER NELIS AND OTHER  
VARIETIES OF WINTER PEARS.

(Effective and mandatory when packed or marketed within the  
State of Washington.)

INTRODUCTION

Numbers and letters in parentheses following grade terms indicate  
where such terms are defined under Definitions of Terms.

When the numerical count is marked on the container, percentages shall be  
calculated on the basis of count.

When the minimum diameter or minimum and maximum diameters are marked  
on the container, percentages shall be calculated on the basis of weight.

When the pears are in bulk, percentages shall be calculated on the  
basis of weight.

The tolerances for the standards are on a container basis. However,  
individual packages, in any lot may vary from the specified tolerances as  
stated below, provided the averages for the entire lot, based on sample  
inspection, are within the tolerances specified.

For a tolerance of 10 per cent or more, individual packages in any lot  
may contain not more than one and one-half times the tolerance specified, except  
that when the package contains 15 specimens or less, individual packages may contain  
not more than double the tolerance specified.

For a tolerance of less than 10 per cent, individual packages in any lot  
may contain not more than double the tolerance specified, provided at least one  
specimen which does not meet the requirements shall be allowed in any one package.

GRADES

Washington Extra Fancy or U. S. Extra No. 1 shall consist of pears of one variety  
which are mature (1), but not overripe (2), carefully handpicked (3), clean (4),  
well formed (5), free from decay, internal breakdown, scald, freezing injury,  
worm holes, black end (6), hard end, drought spot, and free from injury (7) caused  
by russeting (7d), limbrubs (7e), hail (7f), scars (7f), cork spot (7g), sunburn  
(7i), sprayburn (7i), stings or other insect injury (7j) or mechanical or other  
means (7), except that they shall be free from damage (9) caused by bruises (9b),  
broken skins (9c), or disease (9k). (See Tolerances and Condition After  
Storage in Transit, page 6).

U. S. No. 1 shall consist of pears of one variety which are mature (1), but not  
overripe (2), carefully handpicked (3), clean (4), fairly well formed (8),  
free from decay, internal breakdown, scald, freezing injury, worm holes, black  
end (6), and from damage (9) caused by hard end (9a), bruises (9b), broken skins  
(9c), russeting (9d), limbrubs (9e), hail (9f), scars (9f), cork spot (9g),  
drought spot (9h), sunburn (9i), sprayburn (9i) stings or other insect injury  
(9j), disease (9k) or mechanical or other means (9). (See Tolerances and  
Condition After Storage or Transit, page 6).

Washington Fancy or U. S. No. 2 shall consist of pears of one variety which are  
mature (1), but not overripe (2), carefully handpicked (3), clean (4), not seriously  
misshapen (10), free from decay, internal breakdown, scald, freezing injury, worm  
holes, black end (6), and from damage (9) caused by hard end (9a), or broken skins  
(9c). The pears shall also be free from serious damage (11), caused by bruises,  
russeting (11d), limbrubs (11e), hail (11f), scars (11f), cork spot (11g), drought  
spot (11h), sunburn (11i), sprayburn (11i), stings or other insect injury (11j),  
disease (11k), or mechanical or other means (11). (See Tolerances and Condition  
After Storage or Transit, page 6).

Washington Combination or U. S. Combination Grade. A combination of U. S. No. 1 and U. S. No. 2 may be packed. When such a combination is packed, at least 50 per cent of the pears in any container shall meet the requirements of U. S. No. 1. (See Tolerances and Condition After Storage or Transit, page 6 ).

Washington Commercial. A combination of Extra Fancy and Fancy may be packed together as "Washington Commercial Grade" when at least 50 per cent of the pears in any container meet the requirements of Washington Extra Fancy, and the remainder meet the requirements of Washington Fancy (except that broken skins or skin punctures not to exceed three sixteenths (3/16) of an inch in diameter shall not be considered a defect for this grade.)

Washington Fourth Grade shall consist of pears of one variety which are mature, hand picked, clean, sound, not seriously misshapen, free from black end, free from damage caused by hard end, broken skins and from serious damage caused by cork spot, bruises or from other causes.

Culls. Pears which are not graded in conformity with the foregoing grades must be designated as Culls.

#### DEFINITIONS OF TERMS

As used in these standards:

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

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.

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

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

"Hard" means that the flesh of the pear is solid and does not yield appreciably even to considerable pressure. such pears are in suitable condition for long storage period for the variety.

"Firm" means that the flesh of the pear is fairly solid but yields somewhat to moderate pressure. The ripening process in firm pears is further advanced than in hard pears and they cannot be held in storage as long. Winter varieties at the firm stage may be held longer than the early varieties.

"Firm Ripe" means that the flesh of the pear yields readily to moderate pressure. Such a pear is approaching the stage at which it is in prime eating condition but may be held for a brief period although winter varieties can be held longer than the early varieties.

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

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

3. "Carefully handpicked" means that the pears do not show evidence of rough handling or of having been on the ground.

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

5. "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.

6. "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.

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

(7d) Russeting which exceeds the following shall be considered as injury:

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

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 1/2 inch in diameter.

On Anjou and other smooth-skinned varieties, smooth solid russeting when the aggregate area exceeds 1/2 inch in diameter and smooth netlike 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 1/2 inch along the contour of the pear, when it is placed calyx end down on a flat surface.

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 1/2 inch in diameter. 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 Baurre	Sheldon
Kieffer	Winter Nelis, and
P. Barry	other similar varieties

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:

(7e) Limbrubs which are cracked, softened, more than very slightly depressed, not light in color, or exceeding an aggregate area of 3/4 inch in diameter.

(7f) Hail marks or other similar depressions or scars which are not very shallow or superficial, or which affect an aggregate area of more than 1/4 inch in diameter.

(7g) Cork spot when a pear shows depressions or other external evidence of the disease.

(7i) 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.

(7j) More than two healed slight stings or depressions, or any stings which materially affect the general appearance of the fruit.

Blister mite or canker worm injury which is not very shallow and superficial or where the injury affects an aggregate area of more than 1/4 inch.

8. "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.

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

(9a) Hard end, 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.

(9b) 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.

(9c) Any pear with one skin break larger than 3/16 inch in diameter or depth, or with more than one skin break 1/8 inch or larger in diameter or depth, shall be considered damaged, and scored against the grade tolerance.

Small inconspicuous skin breaks, less than 1/8 inch in diameter or depth, shall not be considered damage. In addition, not more than 15 per cent of the pears in any container may have not more than one skin break from 1/8 inch to 3/16 inch inclusive in diameter or depth.

(9d) Russeting which exceeds the following shall be considered as damage:

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

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 3/4 inch in diameter.

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 1/2 inch along the contour of the pear, when it is placed calyx end down on a flat surface.

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 3/4 inch in diameter, 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, and
Kieffer	Other similar
P. Barry	varieties.

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:

(9e) Any limbrubs which are cracked, softened, or more than slightly depressed.

Black discoloration caused by limbrubs which exceeds an aggregate area of 3/8 inch in diameter.

Dark brown discoloration or excessive roughness caused by limbrubs which exceeds an aggregate area of 1/2 inch in diameter.

Slightly rough, light colored discoloration caused by limbrubs which exceeds an aggregate area of 3/4 inch in diameter.

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

(9f) Nail marks or other similar depressions or scars which are not shallow or superficial, or where the injury affects an aggregate area of more than 3/8 inch in diameter.

(9g) Cork spot, when more than one in number visible externally, or when the visible external injury affects an area of more than 3/8 inch in diameter.

(9h) Drought spot when more than one in number, or when the external injury exceeds an aggregate area of  $\frac{5}{8}$  inch in diameter, or when the appearance of the flesh is materially affected by corky tissue or brownish discoloration.

(9i) 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 definition of russetting (9d).

(9j) Insects.

More than two healed codling moth stings, or any insect sting which is over  $\frac{3}{32}$  of an inch in diameter, or other insect stings affecting the appearance to an equal extent.

Blister mite or canker worm injury which is not shallow or superficial, or where the injury affects an aggregate area of more than  $\frac{3}{8}$  inch in diameter.

(9k) Disease.

Scab spots which are black and which cover an aggregate area of more than  $\frac{1}{8}$  inch in diameter, except that scab spots of a russet character shall be considered under the definition of russetting (9d).

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  $\frac{5}{8}$  inch in diameter.

10. "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.

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

(11d) Russetting which in the aggregate exceeds the following shall be considered as serious damage:

On all varieties, excessively rough russetting (russetting which shows "frogging" or slight cracking) when the aggregate area exceeds  $\frac{3}{4}$  inch in diameter.

On all varieties, thick russetting such as is characteristic of frost injury, 15 percent of the surface.

On Anjou, smooth solid or smooth netlike russetting when the aggregate area exceeds two-thirds of the surface, except that, in addition, any amount of characteristic smooth russetting shall be permitted on that portion of the calyx end not visible for more than  $\frac{1}{2}$  inch along the contour of the pear, when it is placed calyx end down on a flat surface.

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:

(11e) 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  $\frac{3}{4}$  inch in diameter.

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

(11f) Hail marks or other similar depressions or scars which affect an aggregate area of more than  $\frac{5}{4}$  inch in diameter, or which materially deform or disfigure the fruit.

(11g) Cork spot, when more than two in number visible externally, or when the visible external injury affects an aggregate area of more than 1/2 inch in diameter.

(11h) Drought spot when more than two in number, or where the external injury affects an aggregate area of more than 3/4 inch in diameter, or when the appearance of the flesh is seriously affected by corky tissue or brownish discoloration.

(11i) 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 (11d).

(11j) Insects;

Worm holes.

More than three healed codling moth stings, of which not more than two may be over 3/32 inch in diameter, or other insect stings affecting the appearance to an equal extent.

Blister mite or canker worm injury which affects an aggregate area of more than 3/4 inch in diameter or which materially deforms or disfigures the fruit.

(11k) Disease.

Scab spots which are black, and which cover an aggregate area of more than 1/4 inch in diameter, except that scab spots of a russet character shall be considered under the definition of russetting (11d).

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 3/4 inch in diameter.

#### Tolerances for Preceding Grades

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 container may be below 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.

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.

#### CONDITION AFTER STORAGE OR TRANSIT

Decay, mold 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

#### Sizing.

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.

When the numerical count is marked on western standard or special pear boxes the pears shall not vary more than 5/8 inch in their transverse diameter for counts 120 or less; 1/4 inch for counts 135 to 180 inclusive; and 3/16 inch for counts 193 or more.

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 1/4 inch for counts 90 or less, and 3/16 inch for counts 100 or more.

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  $\frac{3}{8}$  inch for counts 50 or less;  $\frac{1}{4}$  inch for counts 55 to 60 inclusive; and  $\frac{3}{16}$  inch for counts 65 or more.

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  $2\frac{1}{2}$  inches minimum,  $2\frac{1}{4}$  inches minimum, or  $2\frac{5}{8}$  inches minimum, in accordance with the facts. It is suggested that both minimum and maximum sizes be marked on the container, as  $2\frac{1}{4}$  to  $2\frac{3}{4}$  inches,  $2\frac{1}{2}$  to  $2\frac{3}{4}$  inches, as such marking is especially desirable for pears marketed in the export trade.

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

#### Packing

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.

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.

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.

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

#### TOLERANCES FOR STANDARD PACK

In order to allow for variations incident to proper sizing, not more than 5 percent of the pears in any container may not 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.

In order to allow for variations incident to proper packing, not more than 10 percent of the containers in any lot may not 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.

#### BOX PACKS

All pears packed in boxes under these regulations shall be arranged in clean, fairly bright and tightly nailed boxes according to the approved and recognized methods, with the stems pointing towards the end of the box, except when jumbled, and all boxes shall be tightly packed at time of packing but the contents shall not show excessive or unnecessary bruising because of an over-filled package.

Each pear wrapped shall be well wrapped.


#### MARKING BOXES

When shipped, the box shall bear the correct name of the variety, or "Variety unknown", the name of the grower, packer, or shipper, and his address, the grade, and the number of pears or the net contents either in terms of dry measure or weight. Any of these marks may be printed on the label but in case they are not, they must be stamped on the end of the box. The grower's, packer's or shipper's name and address, if not included on the label, must be placed either in line with the grade marks above the label or on the opposite end of the box.

When boxes are marked as to number, they shall comply with the specifications mentioned under size.

Other grades and Brands

Any person, firm, or organization wishing to pack pears under any other grade or brand than those described in the foregoing rules shall file a certified copy of the description of such grade or brand with the Director of Agriculture at Olympia, Washington, before the first day of August of the year in which the pears so to be packed are grown. If such grade or brand is approved by the Director of Agriculture, pears may be packed under such grade or brand instead of the official state grading rules, and all boxes of pears so packed shall be marked with that grade or brand.

  
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Walter J. Robinson, Director of Agriculture

  
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J. I. Griner, Supervisor of Horticulture

Signed at Olympia, Washington, this 29th day of July, 1940.