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DEPARTMENT OF AGRICULTURE
OLYMPIA

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WASHINGTON STANDARDS FOR APPLES
(Effective for All Apples Marketed Within the State)

I, Joe Dwyer, Director of Agriculture of the State of Washington, by virtue of the authority vested in me under Chapter 15.16, Revised Code of Washington, after due notice and public hearing held at Ellensburg on August 14, 1962, (Pursuant to RCW 43.32.010 and 34.04.020), do hereby establish the following Washington Standards for Apples.

General Regulation

Section 1. The following regulations and definitions shall apply to all varieties and grades under this Order:

Apples at the time of shipment shall not be over-ripe. (See tolerance which applies at time of shipment.)

"Mature" means having reached the stage of growth which will insure the proper completion of the ripening process. Firmness of the flesh shall be considered only in connection with other factors to determine the degree of maturity.

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

"Hand picked" means that the apples do not show evidence of rough handling or of having been on the ground.

"Clean" means free from excessive dirt or other foreign material.

"Sound" means that the apples at time of packing are free from visible defects, such as decay, breakdown, scald, bitter pit, or physical injury affecting quality.

"Aggregate area" means that all the areas of the blemish under consideration may be assembled into one circular area of the maximum diameter specified.

Regulation 1. RED, PARTIAL RED OR BLUSHED VARIETIES

Section 1. Washington Extra Fancy shall consist of apples of one variety which are mature, hand picked, clean, sound, fairly well formed and free from visible water core, broken skin and from damage caused by insects, disease, mechanical injury or other causes.

Each apple shall have the amount of color hereinafter specified for apples in this grade.

"Fairly well formed" means that the apple shall have the normal shape characteristic of the variety except that one-half of the apple may deviate slightly or the apple may be slightly flattened as by frost injury.

"Damage" means any defect which materially affects the appearance or the edible or shipping quality of the apple.

The following shall not be considered as damage:

(a) Slight handling bruises and box bruises, such as are incident to good commercial handling in the preparation of a tight pack.

(b) Spray burn when the normal color of the apple is not seriously affected and there is no blistering or cracking of the skin, except that red spot, such as caused by certain sprays, shall not extend over more than 20% of the surface of the apple. Spray burn of a russet nature shall be governed by the definition covering solid russetting.

(c) Sunburn, when the normal color of the apple is not seriously affected, there is no blistering or cracking of the skin, and the discolored area blends into the normal color of the apple.

(d) Slight rough russetting which does not cover an area of more than 1/2 inch in diameter if it is not continuous with the russetting in the stem basin or calyx cavity.

(e) Smooth russeting at the stem or calyx end provided such russeting is not visible for more than 1/2 inch when the apple is placed with the russet end down on a flat surface.

(f) Smooth net-like russeting which does not extend over an aggregate area of more than 10% of the surface, except that in Rome Beauty and Jonathan net-like russeting on the colored portion of the apple which does not materially detract from its appearance shall not be counted in computing the 10% area mentioned above.

(g) Hail marks, drought spots or other similar depressions or scars where there is no appreciable discoloration other than russeting or when any individual indentation does not exceed 1/4 inch in diameter or the total affected area does not exceed 3/8 inch in diameter.

(h) Any healed sting or stings which affect a total area of not more than 1/8 inch in diameter, including any encircling discolored rings.

(i) Slight aphid signs or thrip marks which do not roughen or pock the surface of the apple.

(j) Any one or a combination of the following defects, provided that the individual defect does not exceed the area specified and provided a combination does not exceed a total area of 3/8 inch:

1. Limb rubs not to exceed 3/8 inch in aggregate area.
2. Solid russeting, such as is characteristic of frost, spray burn, hail and certain insect or disease injury affecting a total area of not to exceed 3/8 inch.
3. Apple scab spots affecting an aggregate area not to exceed 1/4 inch.

(k) Any defect or defects not listed above which affects the appearance or quality of the apple not more than the defects permitted above.

Section 2. Washington Fancy shall consist of apples of one variety which are mature, hand picked, clean, sound, not badly misshapen and free from broken skin and from serious damage caused by insects, disease, mechanical injury or other causes.

Each apple shall have the amount of color hereinafter specified for apples in this grade.

CAUTION: Except for color, a minimum Washington Fancy does not meet requirements of the Export Apple and Pear Act and cannot be certified on an Export Form Certificate. (See U.S. No. 1 grade requirements).

"Not badly misshapen" means that the apple may be more irregularly shaped than "Fairly well formed" as defined above, but shall not be deformed to the extent of materially affecting its utility or its general appearance.

"Serious damage" means any injury or defect or any combination of injuries and/or defects which seriously detract from the appearance or keeping quality of the apple.

The following shall not be considered as serious damage:

(a) Slight handling bruises and box bruises, such as are incident to good commercial handling in the preparation of a tight pack.

(b) Sunburn or spray burn which does not seriously detract from the appearance of the fruit.

(c) Dark colored limb rubs affecting an aggregate area of not to exceed 3/4 inch. Limb rubs of a light brown or russet character shall be governed by definition covering solid russeting.

(d) Smooth solid russeting which affects not more than 1/3 of the surface of the apple in the aggregate, including any russeting in the stem basin or rough or bark-like russeting which does not detract from the appearance of the fruit to a greater extent than the smooth solid russeting permitted.

(e) Stem or calyx cracks not exceeding 1/2 inch in aggregate length.

(f) Visible water core affecting an area of no more than 1/2 inch in diameter.

(g) Hail marks, drought spots or other similar depressions or scars when the injury is slight and the depressions do not exceed an aggregate area of 10% of the surface of the apple. Slight injury means that no individual area may exceed 3/4 inch in diameter from shoulder to shoulder with not over 3/8 inch in diameter of discolored area. The discolored area may be light brown to black or may be a russeted area and the skin may or may not have been broken; if broken, the area shall be well healed.

(h) Scab spots affecting an aggregate area of not to exceed 1/2 inch in diameter.

(i) Any healed sting or stings which affect a total area of not to exceed 3/16 inch in diameter exclusive of any encircling discolored rings.

(j) Aphis pebbling or thrip marks not seriously detracting from the appearance of the apple.

(k) Any defect or defects not listed above which affects the appearance or quality of the apple not more than the defects permitted above.

Section 3. Color Requirements

1. Red Varieties: For the red varieties the percentage listed below refers to the aggregate areas of the surface which must be covered by a good shade or shades or stripes of red characteristic of the variety.

	<u>Extra Fancy</u>	<u>Fancy</u>
Arkansas Black	50%	20%
Spitzenburg	50%	20%
King David	50%	20%
Winesap	50%	20%
Red Sport varieties*	65%	33 1/3%

*When the red sport varieties are marked as such, they shall meet the color requirements of red sport varieties, and the boxes must also bear the name of the parent variety.

2. Partial Red Varieties: For the striped red varieties the percentages listed below refer to the aggregate area of the surface in which the stripes of a good shade of red shall predominate over the stripes of lighter red, green or yellow.

	<u>Extra Fancy</u>	<u>Fancy</u>
Delicious	50%	20%
Stayman	35%	15%
Vanderpool	35%	15%
Black Twig	35%	15%
McIntosh	35%	15%
Jonathan	35%	15%
Rome Beauty	35%	10%

3. Blushed Varieties:

	<u>Extra Fancy</u>	<u>Fancy</u>
Winter Banana	some color	none
Red Gold	some color	none

Regulation 2. GREEN OR YELLOW VARIETIES

Section 1. Washington Extra Fancy shall consist of apples of one variety which are mature, hand picked, clean, sound, well formed and free from visible water-core, broken skin and from more than slight blemishes caused by insects, disease, mechanical injury or other cause.

Each apple shall have the amount of color hereinafter specified for apples in this grade.

"Well formed" means having the normal shape characteristic of the variety, except that the shape may be slightly irregular provided it does not detract from the general appearance of the apple.

The following "slight blemishes" shall be allowed:

(a) Slight handling bruises and box bruises such as are incident to good commercial handling in the preparation of a tight pack.

(b) Smooth russeting at the stem end provided such russeting is not visible for more than 1/2 inch when the apple is placed stem end down on a flat surface, except in the Newtown variety characteristic russeting commencing at the stem end shall be permitted if it is continuous from the stem bowl and does not extend beyond the center of the apple.

(c) Smooth net-like russeting which does not extend over an aggregate area of more than 5 percent of the surface.

(d) Sunburn or spray burn when slight and when the normal color of the apple is but slightly changed and the affected area does not exceed 5 percent of the surface.

(e) Smooth solid russeting, light limb rubs, hail marks or spray burn of a russet character when the aggregate area does not exceed 1/4 inch.

(f) Hail marks, drought spots or other similar depressions or scars where there is no appreciable discoloration other than russeting, or when indentations are superficial and any individual indentation does not exceed 1/8 inch in diameter and the total affected area does not exceed an aggregate area of 1/4 inch.

(g) Not to exceed three thrip marks.

(h) Stem or calyx cracks not exceeding 1/8 inch in aggregate length.

(i) Any defect or defects not listed above which affects the appearance or quality of the apple not more than the defects permitted above.

Section 2. Washington Fancy shall consist of apples of one variety which are mature, hand picked, clean, sound, fairly well formed, free from visible water-core, broken skin and from damage caused by insects, disease, mechanical injury or other cause.

Each apple shall have the amount of color hereinafter specified for apples in this grade.

"Fairly well formed" means that the apple shall have the normal shape characteristic of the variety except that one-half of the apple may deviate slightly or the apple may be slightly flattened as by frost injury.

"Damage" means any defect which materially affects the appearance or the edible or shipping quality of the apple.

The following shall not be considered as damage:

(a) Slight handling bruises or box bruises, such as are incident to good commercial handling in the preparation of a tight pack.

(b) Spray burn when the normal color of the apple is not seriously affected and there is no blistering or cracking of the skin, except that red spot, such as is caused by certain sprays, shall not extend over more than 20 percent of the surface of the apple. Spray burn of a russet nature shall be governed by the definition covering solid russeting.

(c) Sunburn when the normal color of the apple is not seriously affected, there is no blistering or cracking of the skin and the affected area blends into the normal color of the apple.

(d) Slight rough russeting which covers an aggregate area of not more than 1/2 inch if it is not continuous with russeting in the stem basin or calyx cavity.

(e) Smooth russeting at the stem or calyx end provided such russeting is not visible for more than 1/2 inch when the apple is placed with the russet end down on a flat surface, except in the Newtown variety characteristic russeting commencing at the stem or calyx end shall be permitted if it is continuous from the stem or calyx bowl and does not extend beyond the center of the apple.

(f) Smooth net-like russeting which does not extend over an aggregate area of more than 20 percent of the surface.

(g) Not over four stings, each having an encircling hard ring, usually green, or a slight depression, provided no individual sting exceeds 1/8 inch in diameter exclusive of any encircling ring.

(h) Slight aphid signs or thrip marks which do not roughen or pelt the surface of the apple.

(i) Stem or calyx ^{cracks} which do not exceed an aggregate length of 1/4 inch.

(j) Any one or a combination of the following defects, provided that the individual defect does not exceed the area specified and provided a combination does not exceed an aggregate area of 1/2 inch.

1. Limb rubs not exceeding 1/2 inch in aggregate area.
2. Solid russeting, such as is characteristic of frost, spray burn, hail, and certain insect and disease injury affecting an aggregate area of not to exceed 1/2 inch.
3. Hail marks, drought spots or other depressions when the injury is slight, the skin is not broken, and the depressions do not exceed an aggregate area of 1/2 inch or detract seriously from the appearance of the apple. Hail injury of a russet character shall be governed by the definition covering russet injury.
4. Apple scab spots affecting an aggregate area of not to exceed 1/4 inch.

(k) Any defect or defects not listed above which affects the appearance or quality of the apple not more than the defects permitted above.

Section 3. Washington C. Grade shall consist of apples of one variety which are mature, hand picked, clean, sound, not badly misshapen, free from serious damage caused by insects, disease, mechanical injury or other causes, and free from soft bruises or broken skin (except that applies having Fancy or better color for the variety may have skin punctures not exceeding 1/4 inch in diameter).

CAUTION: Punctured apples do not meet the requirements of the Export Apple and Pear Act and cannot be certified on an export certificate.

Each apple shall have the amount of color hereinafter specified for apples in this grade.

"Not badly misshapen" means that the apple may be more irregularly shaped than "fairly well formed" as defined above, but shall not be deformed to the extent of materially affecting its utility or its general appearance.

"Serious" damage" means any injury or defect or any combination of injuries and/or defects which seriously detract from the appearance or keeping quality of the apple.

The following shall not be considered as serious damage:

(a) Sunburn or spray burn which does not seriously detract from the appearance of the apple.

(b) Limb rubs affecting not more than 10 percent of the surface.

(c) Smooth solid russeting affecting not more than 1/2 of the surface in the aggregate, including any russeting in the stem basing or bark-like russeting which does not detract from the appearance of the apple to a greater extent than the smooth solid russeting permitted.

(d) Growth cracks when no crack exceeds 1/2 inch in length.

(e) Visible water-core affecting an aggregate area of not to exceed 1/2 inch.

(f) Hail marks, drought spots or other similar depressions or scars when the injury is slight and the depressions do not exceed an aggregate area of 10% of the surface of the apple. Slight injury means that no individual area may exceed 3/4 inch in diameter from shoulder to shoulder with not over 3/8 inch in diameter of discolored area. The discolored area may be light brown or black or may be a russeted area and the skin may or may not have been broken; if broken, the area shall be well healed.

(g) Scab spots affecting an aggregate area of not to exceed 1/2 inch.

(h) Not to exceed five stings, each having an encircling hard ring, usually green, or a slight depression, provided no sting exceeds 1/8 inch in diameter exclusive of any encircling ring.

(i) Aphis pebbling or thrip marks which do not detract seriously from the appearance of the apple

(j) Any defect or defects not listed above which affects the appearance or quality of the apple not more than the defects permitted above.

Section 4. Color Requirements.

Golden Delicious - Extra Fancy	75% Characteristic color
Fancy	75% Characteristic color
C Grade	33 1/3% Characteristic color

In the Golden Delicious variety when the white or light green color predominates over the green color it shall be considered as the minimum characteristic color.

In the following varieties no color required in Extra Fancy, Fancy or C Grade; natural blush is not objectionable:

Duchess (or Oldenburg)	Grimes Golden
Gravenstein	Ortley
King	White Winter Pearmain
Twenty Ounce	Newtown
Wolf River	Yellow Transparent
	Lodi

Regulation 3. COMBINATION GRADES

Section 1. Combination Extra Fancy and Fancy: When Extra Fancy and Fancy apples are packed together, the boxes may be marked "Combination Extra Fancy and Fancy" and shall contain at least 80% Extra Fancy apples, except Newtowns, which shall contain at least 25% Extra Fancy apples. (This is the only Combination grade which may be used for Red or Partial Red varieties.)

Section 2. Combination Extra Fancy, Fancy and C Grade: When Extra Fancy, Fancy and C Grade apples are packed together, the boxes may be marked "Combination Extra Fancy, Fancy and C Grade" and shall contain at least 80 percent Extra Fancy apples, except Newtowns which shall contain at least 25 percent Extra Fancy apples.

Section 3. Combination Extra Fancy and C Grade: When Extra Fancy and C. Grade apples are packed together the boxes may be marked "Combination Extra Fancy and C Grade" and shall contain at least 80 percent Extra Fancy apples, except Newtowns, which shall contain at least 25 percent Extra Fancy apples.

Section 4. Combination Fancy and C Grade: When Fancy and C Grade apples are packed together, the boxes may be marked "Combination Fancy and C Grade" but shall contain at least 80 percent Fancy apples, except Newtowns, which shall contain at least 25 percent Fancy apples.

Section 5. Jumble Pack: The larger sizes of the above grades may be removed and the rest packed and marked "Jumble" or "Face and Fill" in addition to the grade mark.

Regulation 4. CULL GRADES

Section 1. Culls: Apples which are not graded in conformity with the foregoing grades and which contain not more than 5 percent serious insect damage shall be designated as "Culls".

Section 2. Infested Culls: Apples which are not graded in conformity with the foregoing grades and which contain 5 percent or more infestation from codling moth, San Jose scale and other horticultural pests, shall be designated as "Infested Culls".

Regulation 5. TOLERANCES

Section 1. Tolerances Which Apply at Time of Packing:

1. In order to allow for variations incident to proper grading and handling, not more than a total of 10 percent of the apples in any container may be below the requirements of the grade (provided that not more than 5 percent shall be seriously damaged by insects), and not more than 1/10 of this amount, or 1 percent, shall be allowed for decay and/or internal breakdown. Slight imperfections which are not discernable in good commercial sorting practice shall not be considered defects of grades.

2. In addition to the above, for standard box packs, in boxes or cartons marked with a size count, a tolerance of 10 percent for each of the defects of pack, such as wrapping and tightness, shall be permitted in any lot and shall be computed by counting, weighing, or measuring the samples.

3. In addition to the above, a tolerance of 5 percent by count shall be allowed for apples below the specified minimum diameter and 10 percent for apples above any specified maximum diameter.

4. When applying the foregoing tolerances to the combination grades, no part of any tolerance shall be used to reduce the percentage of apples of the higher grade required in the combination.

5. The contents of individual packages in the lot, based on sample inspection, are subject to the following limitation provided the average for the entire lot are within the tolerance specified for the grade:

(a) For packages which contain more than 10 pounds, and a tolerance of 10 percent or more is provided (as in the case of size, where a tolerance of 15 percent 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 apple which is seriously damaged by insects or affected by decay may be permitted in any package.

(b) For packages which contain 10 pounds or less, individual packages in any lot are not restricted as to the percentage of defects or size; Provided, That not more than one apple which is seriously damaged by insects or affected by decay may be permitted in any package.

Section 2. Tolerances Which Apply After Apples Have Been in Storage or in Transit in Washington State.

After fruit has been placed in storage or in transit, scald, breakdown, decay, bitter pit, or physical injury affecting keeping quality (excluding overripe) which may have developed or may only become evident after apples are packed are defined as applying to condition rather to grade.

Section 3. Tolerances Which Apply at Time of Shipment.

In order to allow for variations incident to proper grading and handling a separate tolerance in addition to and aside from the regular grade tolerances shall be allowed for apples that are overripe, providing an average of not more than 5 percent overripe in any lot of apples with not more than 10 percent overripe in any container shall be permitted in any shipment.

Regulation 6. CONTAINERS

Section 1. Standard Box Packs:

1. A standard box in this state shall be eighteen inches long, eleven and one-half inches wide, and ten and one-half inches deep, inside measure.

2. When boxes are marked with a size count, all apples shall be arranged according to the approved method and shall be fairly tightly packed at the time of packing, but shall not show excessive or unnecessary bruising caused by poor sizing, poor packing or an over-filled package.

3. Each apple wrapped shall be well wrapped.

Note: Standard box packs of Golden Delicious shall be well filled or fairly well filled at the time of packing.

Section 2. Tray Packs.

1. A standard tray pack container carries four, five or six molded pulp trays and is packed to and marked with one of the same size counts of the same size apples as are packed in the standard box.

2. All apples packed in tray pack containers shall be as uniformly sized as those packed in the standard box and shall be arranged according to the approved method for the tray type of pack.

3. Each container shall be well filled or fairly well filled.

4. To be fairly well filled a container must have not less than forty (40) pounds net of apples.

Regulation 7. MARKING REQUIREMENTS

Section 1. Marking Open or Closed Containers.

1. The containers 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 apples or the net contents, either in terms of dry measure or weight.

2. 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 container. On boxes, the grower's, packer's, or shipper's name and address, if not included on the label, shall be placed either in line with the grade marks above the label or on the opposite end of the box.

3. When containers are marked as to number, each container shall contain the correct number of apples designated by the markings.

Regulation 8. OTHER BRANDS AND GRADES

Section 1. Any person, firm or organization wishing to pack apples under any other grade or brand than according to the foregoing rules shall file a certified copy of the description of such grade or brand with the Director of Agriculture the year in which the apples so to be packed are grown.

Section 2. If such grade or brand is approved by the Director of Agriculture, apples may be packed under such grade or brand, instead of the official state grading rules and all boxes of apples so packed shall be marked with that grade or brand: Provided, That private grades or brands for apples may only be registered and approved when they meet the specifications required of Fancy Grade or better.

Note: Private grades do not meet requirements of U.S. Apple and Pear Act and should not be used on export shipments.

Regulation 9. WASHINGTON STATE CONDITIONS STANDARDS (Not Mandatory) As applied to condition factors:

Section 1. Not more than an average of 5 percent of the apples in any lot, with not more than 10 percent in any one sample, shall be further advanced in maturity (firmness) than firm ripe.

Section 2. Not more than a total of 5 percent of the apples in any lot, with not more than 10 percent in any one sample, shall be damaged by bitter pit, Jonathan spot, common scald, serious water core, freezing or other such condition factors excluding delayed sunburn.

Section 3. Not more than an average of 2 percent each in any lot with not to exceed 8 percent in any sample, shall be allowed for apples affected by decay, breakdown, internal browning, or by soft scald; except that after March 1, not more than an average of 3 percent each in any lot with not to exceed 10 percent in any sample shall be allowed for apples affected by decay, breakdown, internal browning or soft scald.

Section 4. Serious water core is defined as damage where water cored spots around the vascular bundles and the core run together in a solid formation when more than 1/3 of the area in the cross section of the apple is involved.

Remarks: On request, official certificates will bear the statement "Lot Meets Washington State Condition Standards" provided the apples meet the standard requirements at the time of inspection.

Regulation 10. WASHINGTON STATE STANDARDS FOR GRADES OF PROCESSING APPLES (Non-mandatory)

Section 1. Washington Processing Peeling Grade A, B, or C, shall consist of apples of one variety that are (a) mature, free from (b) decay, (c) internal breakdown, (d) internal browning, (e) soft scald, (f) dirt and/or other foreign matter, (g) serious insect damage or infestation, (h) are larger than 2 1/4 inches in diameter, or other minimum size specified by buyer, and (i) meet the requirements of trim waste specified in A, B, or C listed below. Apples shall comply with Washington State regulation for food products. The inspector shall certify the approximate number of apples per 100 pounds.

1. Grade A apples shall consist of apples that meet the requirements of Washington Processing Peeling Grade and that require less than 3.125 percent (1/32) trim waste in addition to normal peeling and coring waste, including the grading tolerance listed in Regulation 5.

2. Grade B apples shall consist of apples that meet the requirements of Washington Processing Peeling Grade and that require less than 6.25 percent (1/16) trim waste in addition to normal peeling and coring waste, including the grading tolerance listed in Regulation 5.

3. Grade C apples shall consist of apples that meet the requirements of Washington Processing Peeling Grade and that require less than 12.5 percent (1/8) trim waste in addition to normal peeling and coring waste, including the grading tolerance listed in Regulation 5.

Section 2. Washington Processing Utility Grade shall consist of apples of one variety, including ungraded field-run fruit, that are (a) mature, free from (b) decay, (c) internal breakdown, (d) internal browning, (e) soft scald, (f) serious insect damage or infestation, (g) excessive dirt and/or other foreign matter. Apples shall comply with Washington State Regulation for food products. The inspector shall certify the number of apples per 100 pounds.

Regulation 11. UNITED STATES STANDARDS FOR APPLES

The following U.S. grades ONLY may be used for apples: U.S. Extra Fancy, U.S. Fancy, U.S. No. 1, and Combination U.S. Extra Fancy and U.S. Fancy, as promulgated in the U.S. Standards for Apples and adopted effective September 19, 1958.

Note: Red or Partial Red varieties marked U.S. No. 1 shall also meet color requirements of Washington Fancy grade.

Apples that are packed in conformity with the U.S. Grades in lieu of Washington State Grades must comply with "Tolerances Which Apply at Time of Shipment" as pertains to "overripe" apples.

Section 1. Grades

1. U. S. Extra Fancy consists of apples of one variety which are mature, but not overripe, carefully hand picked, clean, well formed; free from decay, internal browning, internal breakdown, scald, scab, bitter pit, Jonathan spot, freezing injury, broken skins and bruises (except those that are slight and incident to proper handling and packing), and visible water core. The apples shall also be free from injury caused by russeting, sunburn, or spray burn, limb rubs, hail, drouth spots, scars, stem or calyx cracks, other diseases, insects, or mechanical or other means. Each apple of this grade shall have the amount of color specified for the variety.

2. U. S. Fancy consists of apples of one variety which are mature but not overripe, carefully hand picked, clean, fairly well formed; free from decay, internal breakdown, bitter pit, Jonathan spot, scald, freezing injury, broken skins and bruises (except those incident to proper handling and packing), and visible water core. The apples shall also be free from damage caused by russeting, sunburn or spray burn, limb rubs, hail, drouth spots, scars, stem or calyx cracks, other diseases, insects, or mechanical or other means. Each apple of this grade shall have the amount of color specified for the variety.

3. U. S. No. 1. The requirements for this grade are the same as U.S. Fancy except for color and russeting. In this grade less color is required for all varieties except yellow and green varieties, for which the requirements for both grades are the same. Apples of this grade shall be free from excessive damage caused by russeting which means that they shall meet the russeting requirements for U.S. Fancy as defined under the definitions of "damage by russeting" except for the following:

(a) The aggregate area of an apple which may be covered by smooth net-like russeting shall not exceed 25 percent; and,

(b) The aggregate area of an apple which may be covered by smooth solid russeting shall not exceed 10 percent; Provided, That in the case of the Yellow Newtown or similar varieties the aggregate area of an apple which may be covered with smooth solid russeting shall not exceed 20 percent.

4. Combination U.S. Extra Fancy and U.S. Fancy. When Combination U.S. Extra Fancy and U.S. Fancy is packed at least 25 percent of the apples in any lot shall meet the requirements of the higher grade in the combination.

Section 2. Color Requirements

In addition to the requirements specified for the grades set forth above, apples of these grades shall have the percentage of color specified for the variety in Table I.

1. For the solid red varieties the percentage stated refers to the area of the surface which must be covered with a good shade of solid red characteristic of the variety: Provided, That an apple having color of a lighter shade of solid red or striped red than that considered as a good shade of red characteristic of the variety may be admitted to a grade, provided it has sufficient additional area covered so that the apple has as good an appearance as one with the minimum percentage of good red characteristic of the variety required for the grade.

2. For the striped red varieties the percentage stated refers to the area of the surface in which the stripes of good shade of red characteristic of the variety shall predominate over stripes of lighter red, green, or yellow.

(a) However, an apple having color of a lighter shade than that considered as good shade of red characteristic of the variety may be

admitted to a grade: Provided, That it has sufficient additional area covered so that the apple has as good an appearance as one with the minimum percentage of stripes of a good red characteristic of the variety required for the grade.

(b) Faded brown stripes shall not be considered as color except in the case of the Gray Baldwin variety.

Table I -- Color Requirements for Specified U. S. Grades of Apples by Varieties

Variety	U. S. Extra Fancy Percent	U. S. Fancy Percent	U. S. No. 1 Percent
Solid Red:			
Black Ben	75	50	25
Gano	75	50	25
Winesap	75	50	25
Other Similar Varieties ¹	75	50	25
*Red Sport Varieties ²	75	50	25
Striped or partially red:			
Cortland	66	33	25
Jonathan	66	33	25
McIntosh	66	33	25
Other Similar Varieties ³	66	33	25
Baldwin	50	25	15
Ben Davis	50	25	15
*Delicious	50	25	15
Mammoth Black Twig	50	25	15
Northern Spy	50	25	15
Rome Beauty	50	25	15
Stayman	50	25	15
Turley	50	25	15
Wagener	50	25	15
Wealthy	50	25	15
Willow Twig	50	25	15
York Imperial	50	25	15
Other Similar Varieties ⁴	50	25	15
Hubbardston	50	15	10
Stark	50	15	10
Other Similar Varieties	50	15	10
Red June	50	15	(5)
Williams	50	15	(5)
Other Similar Varieties	50	15	(5)
Gravenstein	25	10	(5)
Other Similar Varieties ⁶	25	10	(5)
Red Cheeked or Blushed:			
Maiden Blush	(7)	(5)	(8)
Twenty Ounce	(7)	(5)	(8)
Winter Banana	(7)	(5)	(8)
Other Similar Varieties	(7)	(5)	(8)
Green varieties	(9)	(9)	(9)
Yellow varieties	(9)	(9)	(9)
Golden Delicious	(10)	(10)	(10)

Note: Red Sport varieties packed as such and to U.S. No. 1 grade must also meet Washington Fancy color requirements of a minimum of 33 1/3 percent.

*Note: Delicious packed to U. S. No. 1 would need to meet the Washington Fancy color requirements of a minimum of 20 percent.

- (1) Arkansas Black, Beacon, Detroit Red, Esopus Spitzenberg, King David, Lowry, Minjon.
- (2) When Red Sport varieties are specified as such they shall meet the color requirements specified for Red Sport varieties.
- (3) Haralson, Kendall, Macoun, Melba, Snow (Fameuse).
- (4) Bonum, Early McIntosh, Limbertwig, Milton, Nero, Paragon,
- (5) Tinge of color.
- (6) Duchess, Red Astrachan, Smokehouse, Summer Rambo.
- (7) Blush Cheek.

- (8) None.
- (9) Characteristic ground color.
- (10) 75 percent characteristic color. "Note: "Characteristic color" when the white around the lenticels predominates over the green color, creating a mottling effect on the surface of the apple, it shall be considered as the minimum characteristic color.

Section 3. Tolerances

1. Tolerances.

(a) In order to allow for variations incident to proper grading and handling, not more than a total of 10 percent of the apples in any lot may fail to meet the requirements of the grade: Provided, That not more than one-half of this amount, or 5 percent, shall be allowed for apples which are seriously damaged by insects and including not more than 1 percent for apples affected by decay or internal breakdown or both.

(b) When applying the foregoing tolerances to Combination U.S. Extra Fancy and U.S. Fancy grade, no part of any tolerance shall be allowed to reduce for the lot as a whole the 25 percent of apples of the higher grade required in the combination, but individual containers shall have not less than 15 percent of the higher grade.

2. Application of Tolerances to Individual Packages. 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:

(a) For packages which contain more than 10 pounds, and a tolerance of 10 percent or more is provided (as in the case of size, where a tolerance of 15 percent 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 apple which is seriously damaged by insects or affected by decay or internal breakdown may be permitted in any package.

(b) For packages which contain 10 pounds or less, individual packages in any lot are not restricted as to the percentage of defects: Provided, That not more than one apple which is seriously damaged by insects or affected by decay or internal breakdown may be permitted in any package.

3. Basis of Calculating Percentages.

(a) When the numerical count is marked on the container, percentage shall be calculated on the basis of count.

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

(c) When the apples are in bulk, percentage shall be calculated on the basis of weight.

Section 4. Condition

1. Condition After Storage or Transit. Decay, scald or any other deterioration which may be developed on apples after they have been in storage or transit shall be considered as affecting condition and not the grade. (See Tolerances Which Apply at Time of Shipment--Washington State.)

2. Size Requirements.

(a) The numerical count or the minimum diameter of the apples packed in a closed container shall be indicated on the container.

(b) When the numerical count is marked on the container the minimum size of the largest apple shall be not more than one-fourth inch larger than the minimum size of the smallest apple.

(c) When the numerical count is not shown the minimum diameter 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 diameters be marked on the container as 2 1/4 to 2 3/4 inches, or 2 1/2 to 2 3/4 inches, as such marking is especially desirable for apples marketed in the export trade.

(d) The measurement for minimum size shall be the largest dia-

meter of the apple taken at right angles to a line from the stem end to the blossom end. The measurement for maximum size shall be the smallest dimension of the apple determined by passing the apple through a round opening.

(e) In order to allow for variations incident to proper sizing, not more than 5 percent of the apples in any lot 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 apples which are larger than the maximum size stated.

Section 5. Packing and Marking.

1. Packing requirements.

(a) Representative face packing. Each package shall be packed so that the apples on the shown face shall be reasonably representative in size, color and quality of the contents of the package.

(b) Boxes.

1. Apples packed in the standard northwestern apple boxes shall be arranged in the containers according to the approved and recognized methods with the stems pointing toward the ends of the boxes, except when jumbled. All packages shall be well filled but not to the extent as to cause excessive or unnecessary bruising to the apples because of overfilled packages. Apples packed in the standard northwestern apple boxes shall be tightly packed with sufficient bulge to prevent any appreciable movement of the apples within the containers when lidded. Each wrapped apple shall be completely enclosed by its individual wrapper.

2. Apples packed in other type boxes, such as nailed wooden boxes, wire-bound boxes, and fibreboard boxes, may be place packed, jumble packed faced, or jumble packed, and all packs shall be well filled.

3. Apples packed in boxes equipped with cell compartments or molded trays shall be of the proper size for the cells or the molds in which they are packed.

4. Apples packed in consumer unit cartons and packed into shopping containers shall completely fill the shipping container.

(c) Baskets. Apples packed in U. S. Standard bushel baskets, one-half bushel baskets and five-eighths bushel baskets may be ring faced and shall be tightly packed with sufficient bulge to prevent any appreciable movement of the apples within the containers when lidded.

(d) Tolerances. In order to allow for variations incident to proper packing, not more than 5 percent of the containers in any lot may not meet these requirements.

2. Suggestions for marking containers. In order to conserve space, abbreviations may be used for marking United States grade names on containers. The following abbreviations are suggested where it is not desired to use the full grade name:

(a) U.S. Ex. Fcy, for U.S. Extra Fancy.

(b) U.S. Fcy. for U.S. Fancy.

(c) U.S. No. 1 for U.S. No. 1.

(d) Comb. U.S. Ex. Fcy. -- U.S. Fcy., for Combination U.S. Extra Fancy and U.S. Fancy.

Section 6. U.S. Condition Standards for Export.

1. The apples in any lot shall be generally tightly packed when in baskets, and generally fairly tightly or tightly packed when in boxes.

2. Not more than 5 percent of the apples in any lot shall be further advanced in maturity than firm ripe.

3. Not more than 5 percent of the apples in any lot shall be damaged by storage scab.

4. Not more than a total of 5 percent of the apples in any lot shall be damaged by bitter pit, Jonathan spot, scald, internal breakdown, water core, freezing, decay, or other such condition factors: Provided, That;

(a) Not more than 2 percent shall be allowed for apples affected by decay,

(b) Not more than 2 percent shall be allowed for damage by internal breakdown; and,

(c) Not more than 2 percent of slight scald shall be permitted for apples properly packed in oiled paper or which have been especially treated with oil to prevent scald; otherwise, the apples must be free from scald.

5. Any lot of apples shall be considered as meeting the U.S. condition standards for export if the entire lot averages within the requirements specified: Provided, That no sample from the containers in any lot is found to exceed double the percentages specified, except that for packages which contain 10 pounds or less, individual packages in any lot are not restricted as to the percentages of defects if the entire lot averages within the tolerances specified.

Section 7. Definitions.

1. "Mature" means that the apples have reached the stage of growth which will insure the proper completion of the ripening process. Before a mature apple becomes overripe it will show varying degrees of firmness, depending upon the stage of the ripening process. The following terms are used for describing these different stages of firmness of apples:

(a) "Hard" means apples with a tenacious flesh and starchy flavor.

(b) "Firm" means apples with a tenacious flesh but which are becoming crisp with a slight starchy flavor except the Delicious variety.

(c) "Firm ripe" means apples with crisp flesh except that the flesh of the apples of the Gano, Ben Davis, and Rome Beauty varieties may be slightly mealy.

(d) "Ripe" means apples with mealy flesh and soon to become soft for the variety.

2. "Overripe" means apples which are dead ripe, with flesh very mealy or soft, and past commercial utility.

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

4. "Clean" means that the apples are free from excessive dirt, dust, spray residue and other foreign material.

5. "Well formed" means that the apple has the normal shape characteristic of the variety, except that the shape may be slightly irregular, provided, it does not detract from the general appearance of the apple.

6. "Injury" means any defect which more than slightly affects the appearance, or the edible or shipping quality of the apples.

(a) Russeting in the stem cavity or calyx basin which cannot be seen when the apple is placed stem end or calyx end down on a flat surface, shall not be considered in determining whether or not an apple is injured by russeting, except that rough or bark-like russeting in the stem cavity or calyx basin shall be considered as injury when the appearance of the apple is materially affected. The following types and amounts of russeting outside of the stem cavity or calyx basin shall be considered as injury:

1. Smooth net-like russeting when the aggregate area of more than 5 percent of the surface is covered, and the color of the russeting shows no very pronounced contrast with the background color of the apple, or lesser amounts of more conspicuous net-like russeting when the appearance is affected to a greater extent than the above amount permitted.

2. Smooth, solid russeting which covers an aggregate area of more than one-half inch in diameter, and the pattern and color of the russeting shows no very pronounced contrast with the background color of the apple or lesser amounts of more conspicuous solid russeting when the appearance is affected to a greater extent than the above amount permitted.⁽¹⁾

3. Slightly rough russeting which covers an aggregate area of more than one-fourth inch in diameter.⁽¹⁾

4. Rough russeting, unless it is well within the stem cavity or calyx basin and is not readily apparent.

(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. Sunburn or spray burn, when the discolored area does not blend into the normal color of the fruit.

2. Dark brown or black limb rubs which affect a total area of more than one-eighth inch in diameter, except that light brown limb rubs of a russet character shall be considered under the definition of injury by russeting.⁽¹⁾

(1) The area refers to that of a circle of the specified diameter.

3. Hail marks, drouth spots or other similar depressions or scars where there is appreciable discoloration other than russeting, or when the indentations are not superficial or when an individual indentation exceeds one-eighth inch in diameter, or the total affected area exceeds one-fourth inch in diameter. (1)

4. Stem or calyx cracks which are not well healed, or well healed stem or calyx cracks which exceed a length of one-eighth inch.

5. Diseases:

i. Cedar rust infection which affects a total area of more than one-eighth inch in diameter. (1)

ii. Sooty blotch or fly speck which is thinly scattered over more than 5 percent of the surface, or dark, heavily concentrated spots which affect an area of more than one-fourth inch in diameter. (1)

iii. Red skin spots which are thinly scattered over more than one-tenth of the surface, or dark, heavily concentrated spots which affect an area of more than one-fourth inch in diameter. (1)

6. Insects.

i. Any healed sting or healed stings which affect a total area of more than one-eighth inch in diameter including any encircling discolored rings. (1)

ii. Worm holes.

7. "Fairly well formed" means that the apple may be slightly abnormal in shape but not to an extent which detracts materially from its appearance.

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

(a) Russeting in the stem cavity or calyx basin which cannot be seen when the apple is placed stem end or calyx end down on a flat surface shall not be considered in determining whether or not an apple is damaged by russeting, except that excessively rough or bark-like russeting in the stem cavity or calyx basin shall be considered as damage when the appearance of the apple is materially affected. The following types and amounts of russeting outside of the stem cavity or calyx basin shall be considered as damage:

1. Russeting which is excessively rough on Roxbury Russet or other similar varieties.

2. Smooth Net-like russeting, when an aggregate area of more than 15 percent of the surface is covered, and the color of the russeting shows no very pronounced contrast with the background color of the apple, or lesser amounts of more conspicuous net-like russeting when the appearance is affected to a greater extent than the above amount permitted.

3. Smooth solid russeting, when an aggregate area of more than 5 percent of the surface is covered and the pattern and color of the russeting shows no very pronounced contrasts with the background color of the apple, or lesser amounts of more conspicuous solid russeting when the appearance is affected to a greater extent than the above amount permitted.

4. Slightly rough russeting which covers an aggregate area of more than one-half inch in diameter. (1)

5. Rough russeting which exceeds one-fourth inch in diameter, unless it is well within the stem cavity or calyx basin and is not readily apparent. (1)

(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 damage:

1. Sunburn or spray burn which has caused blistering or cracking of the skin, or when the discolored area does not blend into the normal color of the fruit unless the injury can be classed as russeting.

2. Limb rubs which affect a total area of more than one-half inch in diameter, except that light brown limb rubs of a russet character shall be considered under the definition of damage by russeting. (1)

3. Hail marks, drouth spots, or other similar depressions or scars when the skin has not been broken and the injury is more than slightly depressed or affects a total area of more than one-half inch in diameter; or hail marks or similar scars when the skin has been broken and the injury is not well healed, or is more than slightly depressed, or affects an aggregate area of more than one-fourth inch in diameter. (1)

(1) The area refers to that of a circle of the specified diameter.

4. Stem or calyx cracks which are not well healed, or well healed stem or calyx cracks which exceed an aggregate length of one-fourth inch.

5. Diseases:

i. Scab spots which affect a total area of more than one-fourth inch in diameter. (1)

ii. Cedar rust infection which affects a total area of more than one-fourth inch in diameter. (1)

iii. Sooty blotch or fly speck which is thinly scattered over more than one-tenth of the surface, or dark, heavily concentrated spots which affect an area of more than one-half inch in diameter. (1)

iv. Red skin spots which are thinly scattered over more than one-tenth of the surface or dark, heavily, concentrated spots which affect an area of more than one-half inch in diameter. (1)

6. Insects:

i. Any healed sting or healed stings which affect a total area of more than three-sixteenths inch in diameter including any encircling discolored rings. (1)


ii. Worm holes.

Regulation 12. WASHINGTON STANDARDS FOR GIFT PACKAGES OF FRUIT

Section 1. "Gift Grade" may consist of mixed varieties (apples and pears) and in the case of apples shall meet Washington Extra Fancy grade as defined in Washington Standards for Apples, and in the case of pears shall be U.S. No. 1 or higher grade as defined in Washington Standards for D'Anjou, Bosc, Winter Nelis and other Varieties of Winter Pears.

When gift containers meet the requirements of section 1 above such containers need be marked only "GIFT GRADE" and a statement of net contents in weight and name and address of packer or shipper.

I hereby certify that the foregoing is a true and correct copy of the regulation promulgated by the Department of Agriculture.



JOE DWYER
Director of Agriculture
State of Washington

Signed at Olympia, Washington

Date: August 31, 1962

(1) The area refers to that of a circle of the specified diameter.

WASHINGTON CONTROLLED ATMOSPHERE
STORAGE REQUIREMENTS

Chapter 29, Laws of 1961

1. "Controlled Atmosphere Storages" means any storage warehouse consisting of one or more rooms, or one or more rooms in any one facility in which atmospheric gases are controlled in their amount and in degrees of temperature for the purpose of controlling the condition and maturity of any fresh fruits or vegetables in order that, upon removal, they may be designated as having been exposed to controlled atmosphere.
2. It shall be unlawful for any person to engage in the business of operating a controlled atmosphere storage warehouse or warehouses without first obtaining an annual license from the director. Such license shall expire on August 31st of any one year. The annual license fee shall be five dollars.
3. The Director of Agriculture when issuing a license shall include a warehouse number which shall be preceded by the letters "WN CA." These letters and number issued must appear on all containers in which fruits or vegetables are packed provided that such fruits or vegetables therein contained have qualified under all of the provisions of this act.
4. Oxygen content of each room shall be reduced to 5% within 20 days after sealing of room.
5. Fruit shall be retained in a controlled atmosphere storage, under required degrees of temperature and percentage of air components, for a period of not less than 90 days.-- to qualify as having been stored in controlled atmosphere storage.
6. All fruit sold as C. A. fruit must be inspected and certified as to Grade and condition and be marked with a state lot number in addition to the C. A. number.
7. At time of shipment all fruit shipped and marked with C. A. number shall meet the U. S. condition and maturity standards for export.
8. Fruit not shipped within a period of two weeks after inspection and certification, must be reinspected.
9. Failure to meet any one of the requirements noted above, will prohibit such fruit from being sold as C. A. storage fruit or the containers marked as such.

SPOTS SHOWING DIAMETERS IN FRACTIONS OF AN INCH ARE ILLUSTRATED BELOW



One-eighth inch.



Three-sixteenth inch.



One-fourth inch.



Three-eighths inch.



One-half inch.



Three-fourths inch.

