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## Connecticut Standards for Apples

### Sec. 22-51-1. Definitions

As used in section 22-51-2: (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. Apples at this stage are suitable for storage and long-distance shipment. (b) "Firm" means apples with a tenacious flesh but which are becoming crisp with a slight starchy flavor, except the Delicious variety. Apples at this stage are also suitable for storage and long-distance shipment. (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. Apples at this stage may be shipped long distances but should be moved into consumption within a short period of time. (d) "Ripe" means apples with mealy flesh and soon to become soft for the variety. Apples at this stage should be moved immediately into consumption.

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

(3) "Carefully hand-pick" 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, if 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: (i) Smooth net-like russeting, when an aggregate area of more than five per cent 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; (ii) 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; (iii) slightly rough russeting which covers an aggregate area of more than one-fourth inch in diameter; (iv) rough russeting, unless it is well within the stem cavity or calyx basin and is not readily apparent.

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:

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

(c) 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 russetting. (See subsec. (6)(a).)

(d) Hail marks, drought spots or other similar depressions or scars where there is appreciable discoloration other than russetting, 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.

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

(f) Diseases: (i) Cedar rust infection which affects a total area of more than one-eighth inch in diameter; (ii) sooty blotch or fly speck which is thinly scattered over more than five per cent of the surface, or dark, heavily concentrated spots which affect an area of more than one-fourth inch in diameter; (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.

(g) 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; (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) Russetting 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 russetting, except that excessively rough or bark-like russetting 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 russetting outside of the stem cavity or calyx basin shall be considered as damage: (i) Russetting which is excessively rough on Roxbury Russet and other similar varieties; (ii) smooth net-like russetting, when an aggregate area of more than fifteen per cent of the surface is covered, and the color of the russetting shows no very pronounced contrast with the background color of the apple, or lesser amounts of more conspicuous net-like russetting when the appearance is affected to a greater extent than the above amount permitted, (iii) smooth solid russetting, when an aggregate area of more than five per cent of the surface is covered, and the pattern and color of the russetting shows no very pronounced contrast with the background color of the apple, or lesser amounts of more conspicuous solid russetting when the appearance is affected to a greater extent than the above amount permitted; (iv) slightly rough russetting which covers an aggregate area of more than one-half inch in diameter; (v) rough russetting which exceeds one-fourth inch in diameter, unless it is well within the stem cavity or calyx basin and is not readily apparent.

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:

(b) 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 russetting.

(c) 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 russetting. (See subsec. (8)(a).)

(d) Hail marks, drought spots, or other similar depressions or scars which are not superficial, or when such injury affects a total area of more than one-half inch in diameter.

(e) 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.

(f) Diseases: (i) Scab spots which affect a total area of more than one-fourth inch in diameter; (ii) cedar rust infection which affects a total area of more than one-fourth inch in diameter; (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; (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.

(g) 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; (ii) worm holes.

(9) “Seriously deformed” means that the apple is so badly misshapen that its appearance is seriously affected.

(10) “Serious damage” means any defect which seriously affects the appearance, or the edible or shipping quality of the apples.

(a) The following types and amounts of russetting will be considered as serious damage: Smooth solid russetting, when more than one-half of the surface in the aggregate is covered, including any russetting in the stem cavity or calyx basin or slightly rough, or excessively rough or bark-like russetting which detracts from the appearance of the fruit to a greater extent than the amount of smooth solid russetting permitted; provided any amount of russetting shall be permitted on Roxbury Russet and 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 serious damage:

(b) Sunburn or spray burn which seriously detracts from the appearance of the fruit.

(c) Limb rubs which affect more than one-tenth of the surface in the aggregate.

(d) Hail marks, drought spots or scars, if they materially deform or disfigure the fruit, or if such defects affect more than one-tenth of the surface in the aggregate; provided no hail marks which are unhealed shall be permitted and not more than an aggregate area of one-half inch shall be allowed for well-healed hail marks where the skin has been broken.

(e) Stem or calyx cracks which are not well healed, or well healed stem or calyx cracks which exceed an aggregate length of one-half inch.

(f) Visible water core which affects an area of more than one-half inch in diameter.

(g) Diseases: (i) Scab spots which affect a total area of more than three-fourths inch in diameter; (ii) cedar rust infection which affects a total area of more than three-fourths inch in diameter; (iii) sooty blotch or fly speck which affects more than one-third of the surface; (iv) red skin spots which affect more than one-third of the surface; (v) bitter pit and Jonathan spot which is thinly scattered over more than one-tenth of the surface and does not materially deform or disfigure the fruit.

(h) Insects: (i) Healed stings which affect a total area of more than one-fourth inch in diameter including any encircling discolored rings; (ii) worm holes.

**Sec. 22-51-2. Grades**

The Connecticut grades for apples shall be the following, which are identical with standards established by the United States department of agriculture under authority of the congress of the United States, to wit:

**GRADES**

(Note: Numbers and letters in parentheses following grade terms indicate where such terms are defined under section 22-51-1.)

(a) Connecticut Extra Fancy consists of apples of one variety which are mature (1) but not overripe (2), carefully hand-picked (3), clean (4), well formed (5); 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 (6) caused by russeting (6a), sunburn or spray burn (6b), limb rubs (6c), hail (6d), drought spots (6d), scars (6d), stem or calyx cracks (6e), other diseases (6f), insects (6g) or mechanical or other means (6). Each apple of this grade shall have the amount of color specified hereinafter for the variety. (See Color Requirements, Tolerances and Condition after Storage or Transit.)

(b) Connecticut Fancy consists of apples of one variety which are mature (1) but not overripe (2), carefully hand-picked (3), clean (4), fairly well formed (7); free from decay, internal browning, 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 (8) caused by russeting (8a), sunburn or spray burn (8b), limb rubs (8c), hail (8d), drought spots (8d), scars (8d), stem or calyx cracks (8e), other diseases (8f), insects (8g) or mechanical or other means (8). Each apple of this grade shall have the amount of color specified hereinafter for the variety. (See Color Requirements, Tolerances and Condition after Storage or Transit.)

(c) Connecticut No. 1. The requirements for this grade are the same as Connecticut 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 Connecticut Fancy as defined under the definitions of "damage by russeting" (8a); provided the aggregate area of an apple which may be covered by smooth net-like russeting shall not exceed twenty-five per cent and provided the aggregate area of an apple which may be covered by smooth solid russeting shall not exceed ten per cent. (See Color Requirements, Tolerances and Condition after Storage or Transit.)

(d) Connecticut No. 1. Cookers consists of apples of one variety which meets the requirements of Conn. No. 1 grade except as to color. This grade is provided for apples which are mature but which may not have sufficient color to meet the specifications of Conn. No. 1. (See Tolerances and Condition after Storage or Transit.)

(e) Connecticut Utility consists of apples of one variety which are mature (1) but not overripe (2), carefully hand-picked (3), not seriously deformed (9): free from scald and freezing injury. The apples shall also be free from serious damage (10) caused by dirt or other foreign matter, broken skins, bruises, russeting (10a), sunburn (10b), spray burn (10b), limb rubs (10c), hail (10d), drought spots (10d), scars (10d), stem or calyx cracks (10e), visible water core (10f), other diseases (10g), insects

(10h), or mechanical or other means (10). (See Tolerances and Condition after Storage or Transit.)

(f) Color requirements. In addition to the requirements specified for the above grades, apples of these grades shall have the percentage of color specified for the variety in section 22-51-3. 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 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, if 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. For the striped red varieties the percentage stated refers to the area of the surface in which the stripes of a good shade of red characteristic of the variety shall predominate over stripes of lighter red, green or yellow. However, an apple having color of a lighter shade than that considered as a poor shade of red characteristic of the variety may be admitted to a grade, if 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. Faded brown stripes shall not be considered as color except in the case of the Gray Baldwin variety.

(g) Unclassified consists of apples which are not graded in conformity 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 definite grade has been applied to the lot.

**Sec. 22-51-3. Color requirements for specified Connecticut grades of apples, by varieties.**

Variety	: Conn. Extra : Fancy per cent	: Conn. : Fancy per cent	: Conn. : No. 1 per cent
Solid Red:			
Red Sport varieties <sup>1</sup>	75	50	25
Striped or partially red:			
Cortland	66	33	25
McIntosh	66	33	25
Other similar varieties <sup>2</sup>	66	33	25
Baldwin	50	25	15
Delicious	50	25	15
Northern Spy	50	25	15
Rome Beauty	50	25	15
Stayman	50	25	15
Wagener	50	25	15
Wealthy	50	25	15
Other similar varieties <sup>3</sup>	50	25	15
Stark	50	15	10
Other similar varieties <sup>4</sup>	50	15	10
Williams	50	15	— <sup>4</sup>
Other similar varieties	50	15	— <sup>4</sup>
Gravenstein	25	10	— <sup>4</sup>
Other similar varieties <sup>5</sup>	25	10	— <sup>4</sup>

Red cheeked or blushed:

Maiden Blush	— <sup>6</sup>	— <sup>4</sup>	— <sup>7</sup>
Twenty Ounce	— <sup>6</sup>	— <sup>4</sup>	— <sup>7</sup>
Winter Banana	— <sup>6</sup>	— <sup>4</sup>	— <sup>7</sup>
Other similar varieties	— <sup>6</sup>	— <sup>4</sup>	— <sup>7</sup>
Green varieties	— <sup>8</sup>	— <sup>8</sup>	— <sup>8</sup>
Yellow varieties	— <sup>8</sup>	— <sup>8</sup>	— <sup>8</sup>
Golden Delicious	— <sup>9</sup>	— <sup>9</sup>	— <sup>9</sup>

<sup>1</sup> When Red Sport varieties are specified as such, they shall meet the color requirements specified for Red Sport varieties. <sup>2</sup> Kendall, Macoun, Melba, Snow (Farneuse). <sup>3</sup> Early McIntosh, Milton. <sup>4</sup> Tinge of color. <sup>5</sup> Duchess, Red Astrachan. <sup>6</sup> Blush cheek. <sup>7</sup> None. <sup>8</sup> Characteristic ground color. <sup>9</sup> 75 per cent 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.

**Sec. 22-51-4. Tolerances**

In order to allow for variations incident to proper grading and handling, not more than a total of ten per cent of the apples in any lot may fail to meet the requirements of the grade; provided not more than one-half of this amount, or five per cent, shall be allowed for apples which are seriously damaged by insects and including not more than one per cent for apples affected by decay or internal breakdown or both.

**Sec. 22-51-5. 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: (1) For packages which contain more than ten pounds, and a tolerance of ten per cent or more is provided (as in the case of size, where a tolerance of fifteen per cent 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 ten pounds and a tolerance of less than ten per cent 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; (2) for packages which contain ten pounds or less, individual packages in any lot are not restricted as to the percentage of defects; provided not more than one apple which is seriously damaged by insects or affected by decay or internal breakdown may be permitted in any package.

**Sec. 22-51-6. Basis of calculating percentages**

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

**Sec. 22-51-7. Condition after storage or transit**

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

**Sec. 22-51-8. Size requirements**

The numerical count or the minimum diameter of the apples packed in a closed container shall be indicated on the container. 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. 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  $2\frac{1}{2}$  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 diameters be marked on the container, as  $2\frac{1}{4}$  to  $2\frac{3}{4}$  inches, or  $2\frac{1}{2}$  to  $2\frac{3}{4}$  inches, as such marking is especially desirable for apples marketed in the export trade. The measurements for minimum size shall be the largest diameter 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. In order to allow for variations incident to proper sizing, not more than five per cent of the apples in any lot may not meet the size requirements; provided, when the maximum and minimum sizes are both stated, an additional ten per cent tolerance shall be allowed for apples which are larger than the maximum size stated.