DEPARTMENT OF FOOD AND AGRICULTURE
PROPOSED REGULATIONS

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California Code of Regulations
Title 3. Food and Agriculture
Division 3. Economics
Chapter 1. Fruit and Vegetable Standardization
Subchapter 4. Fresh Fruits, Nuts and Vegetables
Article 22. Citrus

Amend §1430.35 Oranges, Color Determination, ~~and~~ Ratio and Score. to read:

Oranges may be picked when 90 percent or more, by count, of the oranges in any lot have attained before picking, on at least one-fourth of the fruit surface, at least a minimum characteristic orange color, as indicated by color No. 7.5 Y6/6 Munsell color designated as "orange color (a)"; however, said oranges shall not be packed or offered for sale unless the lot tests a ratio of eight parts soluble solids to one part acid for Valencia oranges and a 90 on the California Standard Scale for navel oranges .

In addition to Section 1375.21, "before picking" means that the decision at time of picking as to whether a lot of oranges meets orange color (a) shall be conclusive. If a lot fails to meet color (a), the fruit may be reconditioned one time within 24 hours.

Note: Authority cited: Sections 407, 42682 and 42684, Food and Agricultural Code. Reference: Section 42941, Food and Agricultural Code.

Amend §1430.36. Oranges, Maturity. to read:

Oranges shall be mature. Oranges, except bloods, tangerines, and mandarins, shall not be considered mature unless they comply with one of the following requirements:

(a) Notwithstanding the provisions of subsection (b), if any sample of Valencia oranges tested has a soluble solids to acid ratio test of less than 7 to 1, the lot from which such sample of Valencia oranges was taken shall be rejected.

(b) The Valencia juice contains soluble solids which are equal to or in excess of eight parts to every part of acid which is contained in the juice (the acidity of the juice to be calculated as citric acid without water of crystallization), and 90 percent or more of the Valencia oranges in any lot, by count, before picking have attained orange color (a) on at least one-fourth of the fruit surface.

(c) Notwithstanding the provisions of subsection (d) if any sample of navel oranges tested scores below 80 on the California Standard Scale, the lot from which such sample of navel oranges was taken shall be rejected.

(d) The navel juice contains soluble solids which when calculated with acid contained in the juice (the acidity of the juice to be calculated as citric acid without water of crystallization) on the California Standard Scale score equal to or in excess of 90, and 90 percent or more of the navel oranges in any lot, by count, before picking have attained orange color (a) on at least one-fourth of the fruit surface.

Note: Authority cited: Sections 407, 42681 and 42684, Food and Agricultural Code. Reference: Section 42941, Food and Agricultural Code.

Amend §1430.37. Oranges, Acceleration of Color. to read:

No Valencia oranges may be accelerated in color unless the juice contains soluble solids equal to, or in excess of, eight parts to every part of acid contained in the juice (the acidity of the juice to be calculated as citric acid without water of crystallization).

No navel oranges may be accelerated in color unless the juice contains soluble solids which when calculated with the acid contained in the juice (the acidity of the juice to be calculated as citric acid without water of crystallization) on the California Standard Scale score equals or exceeds 90.

Prior to any preparation in the packing operation, Valencia oranges testing from a 7 to 1 to an 8 to 1 ratio are not required to meet the soluble solids to acid ratio test of 8 to 1. However, the placement of a lot of Valencia oranges which fails to meet the 8 to 1 ratio test in a sweat room shall be cause for rejection.

Prior to any preparation in the packing operation, navel oranges testing from a score of 80 to 90 on the California Standard Scale are not required to meet the soluble solids and acid score of 90. However, the placement of a lot of navel oranges which fails to meet the score of 90 in a sweat room shall be cause for rejection.

Any lot of Valencia oranges testing from a 7 to 1 to an 8 to 1 ratio shall be held for no more than one additional test within four days. Such a lot shall not be permitted to enter into or undergo a sweating process. Following the four-day period, a lot failing to meet the 8 to 1 ratio shall be rejected. Any lot rejected pursuant to this section shall be disposed of as provided in paragraphs (b), (c), or (d) of Section 1390.

Any lot of navel oranges testing from a score 80 to a 90 on the California Standard Scale shall be held for no more than one additional test within four days. Such a lot shall be held for no more than one additional test within four days. Such a lot shall not be permitted to enter into or undergo a sweating process. Following the four-day period, a

lot failing to meet a score of 90 shall be rejected. Any lot rejected pursuant to this section shall be disposed of as provided in paragraphs (b), (c), or (d) of Section 1390.

Note: Authority cited: Sections 407, 42681 and 42684, Food and Agricultural Code. Reference: Section 42941, Food and Agricultural Code.

Amend §1430.38. Oranges, Maturity and Sample Size. to read:

The ratio of soluble solids to acid in the Valencia juice shall be determined by the analysis of a random sample from each lot of Valencia oranges consisting of not less than 30 fruit. When Valencia oranges are segregated by size as provided in Section 1430.45, each such size shall be considered as a separate lot.

The California Standard Scale score for soluble solids and acid in the navel juice shall be determined by the analysis of a random sample from each lot of navel oranges consisting of not less than 30 fruit. When navel oranges are segregated by size as provided in Section 1430.45, each such size shall be considered as a separate lot.

When oranges are not segregated by size the fruits of any one size shall be considered as a separate lot.

If the soluble solids to acid ratio test of the first sample of Valencia oranges selected fails to meet either the 8 to 1 or the 7 to 1 ratio, but is not more than 0.4 below either ratio, one more sample shall be analyzed. An enforcement officer may select and analyze more than two samples, but the average of the results of all of the tests taken shall determine whether that lot meets the maturity requirement. Any lot failing to meet the 7 to 1 ratio for Valencia oranges shall be rejected and disposed of in accordance with the provisions of Section 1390.

If the soluble solids and acid score of the first sample of navel oranges selected fails to meet either a score 90 or 80 on the California Standard Scale score, but is not more than 5 below either score, one or more sample shall be analyzed. An enforcement officer may select and analyze more than two samples, but the average of the results of all of the tests taken shall determine whether that lot meets the maturity requirement. Any lot failing to meet a score of 80 on the California Standard Scale shall be rejected and disposed of in accordance with the provisions of Section 1390.

Note: Authority cited: Sections 407, 42681 and 42684, Food and Agricultural Code. Reference: Section 42941, Food and Agricultural Code.

Amend §1430.5 Citrus, Maturity, Juice Extraction. to read:

This section states the methods of juice extraction and procedures to be used in the soluble solids to acid ratio test and California Standard Scale for maturity testing.

(a) Navel oranges. A citrus press as outlined in (c), below, shall be the only method of extracting juice to determine the California Standard Scale score ~~soluble solids to acid ratio~~ for Navel oranges. It shall be equipped and be capable of operating in a manner consistent with the provisions of this article. Each Navel orange packinghouse shall provide a citrus press on the premises and it shall be made available to the enforcement officer.

(b) All citrus, other than Navel oranges. Juice extraction for measuring the soluble solids to acid ratio for maturity testing shall be determined by either the hand or electric method or the citrus press as outlined in (c), below.

(c) Application. When the juice is extracted using a citrus press, the press shall meet the following criteria:

(1) The press shall have an air or hydraulic line test valve which permits measurement of the air or hydraulic pressure delivered to the press. The valve shall be installed between the lubricator, if present, and the press.

(2) The press shall be capable and calibrated to deliver and maintain 38 psi on the fruit and maintain that pressure for 30 seconds. The air or hydraulic line pressure necessary to maintain the 38 psi shall be determined by the director and shall be imprinted by die stamp on the body of each press. The press shall be mounted with a pressure gauge that will accurately measure the pressure being applied to the fruit. The press shall not increase the moisture content nor add any impurities to the fruit juice extracted. All surface areas that come in contact with the juice shall be of a material, or be plated with a material, that will not affect, or be affected by, the citrus juice being tested.

(3) Procedure -citrus press. Place no more than one layer of fruit, both halves cut, face down, in the drawer at one time. Apply the air or hydraulic line pressure stamped on the press, on the fruit for a minimum of 30 seconds.

(d) When the juice is extracted using a hand or electric juice extractor, the following apparatus and procedures shall be used:

(1) The hand or electric juice extractor shall be any type approved by the director.

(2) Cut each fruit in half at right angles to a straight line drawn between the stem and distal ends.

(3) Each portion of each fruit in the sample shall be reamed to the extent that all free juice is extracted without contaminating the juice with the rind or other substances.

Note: Authority cited: Sections 14, 407, 42681, and 42684, Food and Agricultural Code. Reference: Section 42941, Food and Agricultural Code.

§ 1430.6. Citrus, Maturity, Determining the Soluble Solids to Acid Ratio.

(a) Application. Citrus soluble solids to acid ratio and California Standard Scale tests for maturity shall be performed in accordance with this section.

(b) Apparatus and Solutions Required.

(1) A Brix hydrometer with graduations in tenths of a degree, standardized at 17.5 degrees C., and with a centigrade thermometer and correction attachment.

(2) A cylinder tube, without a lip, suitable for floating the hydrometer without touching the sides or bottom.

(3) A 25 cubic centimeter pycnometer.

(4) A 50 cubic centimeter burette with graduations in tenths of a cubic centimeter.

(5) A receptacle of sufficient size to retain all of the extracted juice. It shall be of a material, or be plated with a material, that will not affect, or be affected by, the citrus juice being tested.

(6) A 250-550 cubic centimeter Erlenmeyer titrating flask.

(7) A wire strainer for straining juice. (17-30 mesh per lineal inch.)

(8) A standard solution of sodium hydroxide (NaOH), 1 cubic centimeter of which is equivalent to 0.01 gram (10 mgs.) of anhydrous citric acid (0.1562 normal).

(9) A solution of phenolphthalein in alcohol for use as indicator.

(c) Soluble Solids Content.

(1) Fill the tube with the properly extracted juice.

(2) Float the hydrometer in the tube until the temperature reaches equilibrium (minimum of two minutes). Read the Brix scale, remove the hydrometer from the tube and immediately read the temperature correction, and record the corrected Brix reading to the nearest tenth (.1) degree.

(d) Acid Content.

(1) Add exactly 25 cubic centimeters of the extracted juice into the Erlenmeyer flask with a 25 cubic centimeter pycnometer. After filling the pycnometer, replace the cap. With finger over the opening, rinse the exterior of the pycnometer. Pour the juice into the flask.

(2) Using the pycnometer, add approximately 100 cubic centimeters of distilled water to the juice. Pour the first 25 cubic centimeters of water through the stem of the pycnometer to remove any juice that may be trapped.

Neutral tap water may be used in lieu of distilled water. Tap water may be checked to determine whether it is neutral by adding 20 drops of phenolphthalein solution to 100 cubic centimeters of the water. If this combination remains colorless and then turns pink by the addition of one drop of the standard solution of sodium hydroxide, the tap water is neutral and can be used instead of distilled water.

(3) Add approximately 20 drops of indicator solution.

(4) Titrate by the addition of the NaOH until the first definite indication of color (pink) is obtained.

(e) Soluble Solids to Acid Ratio. The soluble solids to acid ratio shall be determined by use of the Citrus Maturity Ratio Tables compiled by the Department of Food and Agriculture.

(f) California Standard Scale score. The California Standard Scale score shall be determined by use of the Citrus Maturity Score Tables.

Note: Authority cited: Sections 407 and 42684, Food and Agricultural Code. Reference: Section 42941, Food and Agricultural Code.