

DEPARTMENT OF FOOD AND AGRICULTURE
PROPOSED CHANGES IN THE 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

INITIAL STATEMENT OF REASONS

**DESCRIPTION OF THE PUBLIC PROBLEM, ADMINISTRATION REQUIREMENT,
OR OTHER CONDITION OR CIRCUMSTANCE THE REGULATION IS INTENDED TO
ADDRESS**

Title 3, Division 3, Chapter 1, Subchapter 4, §1430.35, §1430.36, §1430.37, §1430.38, §1430.5, and §1430.6 of the California Code of Regulations (CCR) currently establish maturity, sampling, and testing procedures for both navel and Valencia oranges. Navel and Valencia orange maturity is determined under existing regulations by the soluble solids concentration to titratable acidity minimum maturity test. This standard has been used in the industry since approximately 1915, but its usefulness and relationship to flavor has increasingly been questioned. In recent years, the California Standard Scale, a measure calculated by subtracting titratable acidity times a constant from soluble solids concentration, has been reported to be more closely tied to flavor for navel oranges. Accordingly, the California Standard Scale has been proposed as a replacement for the soluble solids concentration to titratable acidity minimum maturity test for navel oranges.

This proposed regulatory action would amend Title 3, Division 3, Chapter 1, Subchapter 4, Article 22, §1430.35, §1430.36, §1430.37, §1430.38, §1430.5, and §1430.6 of the CCR, which currently establish maturity, sampling, and testing procedures for both navel and Valencia oranges. Specifically, this proposed regulatory action would replace the current soluble solids concentration to titratable acidity minimum maturity test for navel oranges with the California Standard Scale. The soluble solids concentration to titratable acidity minimum maturity test for Valencia oranges is not proposed to be amended.

The specific purpose of amending Title 3, Division 3, Chapter 1, Subchapter 4, Article 22, §1430.35, §1430.36, §1430.37, §1430.38, §1430.5, and §1430.6 of the CCR is to replace the current soluble solids concentration to titratable acidity minimum maturity test for navel oranges with the California Standard Scale. As referenced above, the California Standard Scale has been reported to be more closely tied to flavor for navel oranges than the current ratio of eight parts soluble solids to one part acid. Accordingly, adoption the California Standard Scale for navel oranges would eliminate the presence of poor tasting navel oranges in the marketplace that currently meet minimum maturity standards.

FACTUAL BASIS FOR THE DEPARTMENT DETERMINING THE NEED FOR THE AMENDMENT OF THESE REGULATIONS

Food and Agricultural Code (FAC) § 42681 specifies, in part, that the Secretary of the Department may prescribe methods of selecting samples of lots or containers of fruits, nuts, and vegetables on a basis of size or other specific classification, which are reasonably calculated to produce by such sampling fair representations of the entire lots or containers which are sampled.

FAC §42684 declares, in part, that the establishment and maintenance of minimum standards of quality and maturity for fruits, nuts, and vegetables is essential to ensure that products of acceptable and marketable quality will be available to the consumer. This section also provides that any quality and maturity standards adopted by the Secretary of the Department shall apply to the particular fruit, nut, or vegetable involved regardless of whether the item was produced in this state or outside of this state. Furthermore, this section establishes that the Secretary of the Department shall, in establishing, modifying, or rescinding any quality and maturity standard for any fruit, nut, or vegetable pursuant to this chapter, do all of the following: (1) find that the regulation will provide the consumer with acceptable quality fruits, nuts, and vegetables, which will also provide stability in the marketing of these products, (2) find that the regulation will tend to prevent waste in the production and marketing of fruits, nuts, and vegetables, (3) consider the impact of the regulation upon the agricultural industry, and (4) find that the regulation is necessary to accomplish the purposes of this chapter.

The Department has complied with FAC §42684 and finds the regulations proposed in this rulemaking action are necessary to provide consumers with the best possible citrus, will tend to prevent waste in the production and marketing of citrus, and will have a positive impact on the agricultural industry.

The proposed changes have been petitioned by Mr. Joel Nelsen, President, California Citrus Mutual, an industry organization composed of industry members representing over 60 percent of California citrus crop production.

California Citrus Mutual cites the following arguments in support of the proposed changes:

- The California Standard [Scale] based on the relationship between brix and acid rather than a ratio will eliminate poor tasting, low brix, low acid fruit that currently passes the 8:1 ratio minimum maturity standard. This fruit will be harvested a few weeks later giving it more time to achieve the consumer-acceptability level.
- Adopting the California Standard [Scale] will have a positive economic impact on the industry and benefit consumers because it will increase the probability that the consumer will have a positive eating experience when they purchase a navel orange. The data from consumer studies indicate that oranges selected using the California Standard [Scale] solicited minimal response of "liked slightly" 48%

of the time[,] while oranges selected using the ratio method solicited a similar response 14% of the time, representing a 38% percent higher probability that the consumer would have positive response. When consumers in studies had a positive eating experience[,] 66% said they would purchase more frequently, 59% would purchase more than usual, and 0% said they would wait to purchase. On the other hand[,] when consumers in the studies had a negative eating experience, 37% said they would purchase less frequently, 43% would purchase fewer than usually, and 43% said they would wait to purchase again.

The Department has complied with FAC §42684 and finds that this proposed rulemaking action is necessary to provide consumers with the best possible citrus, will tend to prevent waste in the production and marketing of citrus, and will have a positive impact on the agricultural industry.

TECHNICAL, THEORETICAL, AND/OR EMPIRICAL STUDY, REPORTS, OR DOCUMENTS

The Department is relying upon the following documents pertaining to the proposed regulatory changes:

- Petition received from Mr. Joel Nelsen, President, California Citrus Mutual, dated March 28, 2011, requesting navel maturity be revised to replace the current minimum standard of 8:1 soluble solids concentration to titratable acidity ratio with the California Standard Scale minimum score of 90, and that all references to ratio be replaced with a corresponding California Standard Scale number.
- A letter from Dr. David Obenland, Research Plant Physiologist, United States Department of Agriculture, dated March 16, 2011, concerning the SSC/TA ratio and the California Standard Scale.
- A letter from Dr. Mary Lu Arpaia, Extension Specialist, University of California, Riverside, dated March 20, 2011, concerning the SSC/TA ratio and the California Standard Scale.
- A report from California Citrus Mutual, dated March 3, 2011, entitled Responding to the Marketplace: Providing the consumer with better early-season navel quality. The California Standard.
- A research paper authored by David Obenland et al. published in Postharvest Biologist and Technology 52 (2009) 156-163 entitled Determinants of flavor acceptability during the maturation of navel oranges.
- A report prepared by Dr. Mary Lu Arpaia and Dr. David Obenland, dated June 2009, entitled Development of an Orange Maturity Standard that Assures Better Flavor and Promotes Increased Consumption.
- A document from the Product Market Association, dated April 2007, entitled

Consumer Perceptions on Flavor and Taste.

- A study compiled by Rie Ishii et al., University of California, dated July 2007, entitled Consumer Perceptions of Oranges II.
- A research article published by Balaban Publishers, written by J.E. Pehrson and E.M. Ivans, dated March 1988, entitled Variability in Early Season Navel Orange Clone Maturity and Consumer Acceptance.
- A study written by Robert B. Jordan et al. published in *Food Technology*, Vol. 55, No. 6., entitled A Sensory-Based Alternative to Brix/Acid Ratio.
- A magazine article, dated March 2011, published in *The Packer* dated March 2011 entitled 2011 Fresh Trends.
- An e-mail from Mr. Bob Blakely, Director of Industry Relations, California Citrus Mutual, dated May 10, 2011, expressing support for the proposed text of the regulations, as submitted.

REASONABLE ALTERNATIVES TO THE REGULATIONS AND THE DEPARTMENT'S REASONS FOR REJECTING THOSE ALTERNATIVES

No other alternatives were presented to or considered by the Department in regard to the proposed rulemaking as written.

REASONABLE ALTERNATIVES TO THE PROPOSED REGULATORY ACTION THAT WOULD LESSEN ANY ADVERSE IMPACT ON SMALL BUSINESS

The Department has not identified any alternatives that would lessen any adverse impact on small businesses.

EVIDENCE SUPPORTING FINDING OF NO SIGNIFICANT STATEWIDE ADVERSE ECONOMIC IMPACT DIRECTLY AFFECTING BUSINESS

The Department has initially determined that the proposed changes to the regulations would result in no added costs to businesses affected by these proposed changes. This is based on the fact stated in the "ECONOMIC AND FISCAL IMPACT STATEMENT (STD. 399) - ESTIMATED PRIVATE SECTOR COSTS IMPACTS."