



# Relationship between ripe soluble solids concentration (RSSC) and consumer acceptance of high and low acid melting flesh peach and nectarine (*Prunus persica* (L.) Batsch) cultivars

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## Abstract

The minimum RSSC needed to reach high consumer acceptance for peach and nectarine was determined by using ‘in-store’ consumer tests of low and high RTA melting flesh cultivars as a part of our program to develop minimum quality indexes. For ‘Ivory Princess’, a low acid, white flesh peach, ‘Honey Kist’, a low acid, yellow flesh nectarine, ‘Elegant Lady’, a high acid, yellow flesh peach, and ‘Spring Bright’, a high acid, yellow flesh nectarine, degree of liking and consumer acceptance were associated with ripe soluble solids concentration (RSSC) regardless of ripe titratable acidity (RTA). For the two high acid (0.70–0.90% RTA) cultivars tested, consumer acceptance increased rapidly as RSSC increased, reaching ~90%. In these cultivars, consumer acceptance reached a plateau and above which, it became insensitive to any additional increase in RSSC. For ‘Elegant Lady’ and ‘Spring Bright’, the plateau was reached at 11–12%, and 10–11% RSSC with ~90% consumer acceptance, respectively. For the low acid cultivars (0.30–0.50% RTA), ‘Ivory Princess’ and ‘Honey Kist’, consumer acceptance progressively increased as RSSC increased without reaching a plateau, and attained nearly 100% acceptance with RSSC of 16 and 15%, respectively.

For these low acid and high acid cultivars, consumer acceptance was closely related to RSSC but maximum consumer acceptance was attained at different RSSC levels depending on the cultivar. The fact that these cultivars reached high consumer acceptance with different RSSC levels indicates that a single generic RSSC quality index would not be reliable to assure consumer satisfaction across all cultivars.

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## 1. Introduction

New peach and nectarine cultivars are being planted that have a wide range of titratable acidity (TA) and soluble solids concentration (SSC) potentials when

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harvested mature (Giovannini et al., 2000; Liverani et al., 2002; Byrne, 2003; Crisosto et al., 2003). Early studies have associated high consumer acceptance with high SSC in peaches (Ravaglia et al., 1966; Parker et al., 1991). Based on these early studies, a minimum quality index of 10% SSC has been proposed for a group of yellow flesh peaches and nectarines in California (Kader, 1994). In France, with a large diversity of characteristics available in the peach genotype (white/yellow flesh, low/high acid, melting/nonmelting flesh), a minimum of 10% SSC for peaches with a low TA, and 11% SSC for peaches with a high TA are being evaluated as part of a quality standard (Hilaire, 2003). In this work, harvest titratable acidity (HTA) measured in mature fruit less than 0.90% was considered low and HTA  $\geq 0.90\%$  was classified in the high TA group. Our experience with Californian and Chilean yellow flesh peaches is that up to approximately 30% of the HTA in a mature fruit (harvest) will be lost during ripening. For low acidity white and/or yellow flesh peaches, this acidity loss varied (Crisosto, unpublished). In Italy, with an industry that has a high proportion of yellow flesh cultivars, a minimum SSC of 10% for early season, 11% for mid-season and 12% for late season cultivars was previously proposed as a quality standard (Testoni, 1995; Ventura et al., 2000).

There is limited information on the relationship between consumer acceptance and the interaction between ripe titratable acidity (RTA) and ripe soluble solids concentration (RSSC) of peaches and nectarines. In this work, we investigated the minimum RSSC required to reach high consumer acceptance for peach and nectarine cultivars with similar texture but low (0.30–0.50%) and high ripe titratable acidity (0.70–0.90%).

## 2. Materials and methods

### 2.1. Fruit collection

‘Ivory Princess’, a low acid, white flesh peach; ‘Honey Kist’, a low acid, yellow flesh nectarine; ‘Elegant Lady’, a high acid, yellow flesh peach; and ‘Spring Bright’, a high acid, yellow flesh nectarine were selected for this study for their commercial importance, differences in titratable acidity and similar texture after ripening (melting flesh). Fruit was collected

from trees of each cultivar grown under standard commercial practices at the Kearney Agricultural Center (Parlier, CA) during the 2002 season. Fruit were harvested at commercial first pick from different canopy positions on trees previously thinned at different crop levels to assure the potential range of soluble solids concentrations and titratable acidities for each cultivar. Samples of 100 fruit each were selected from each tree. Harvested fruit were commercially handled; fast air cooled down to 0–1 °C (within 12 h of picking) with an air flow of 0.5 l min<sup>-1</sup> per kilogram of fruit using a portable cooling tunnel and stored at 0 °C up to 7 days prior to ripening.

### 2.2. Ripening

Fruit were ripened in a temperature-controlled room at 20 °C (85% RH) until the flesh firmness reached  $\leq 17.8$  N. For each cultivar, firmness changes were monitored during ripening on samples of 10 fruit per day per cultivar/canopy position/crop load with a UC firmness tester equipped with an 8 mm tip.

### 2.3. Fruit selection and preparation

On the day of the consumer test in the morning, on each ripened fruit of the cultivar to be used for the consumer test, a 2 cm diameter-sized piece of skin was removed from one cheek and the flesh firmness measured with a UC firmness tester equipped with an 8 mm tip. If the fruit was ripe ( $\leq 17.8$  N flesh firmness) a numerical code was written on the tip of the fruit and the flesh firmness recorded. We chose this firmness range ( $\sim 4.5$ – $17.8$  N) based on our previous sensory work that demonstrated that plum consumer acceptance reaches its maximum potential when fruit have been ripened to a flesh firmness of  $\sim 4.5$ – $17.8$  N (80–90% consumer acceptance). If the fruit are consumed at a higher firmness (less ripe, 17.8–26.7 N) consumer acceptance is reduced from  $\sim 90$  to  $\sim 25\%$  (Crisosto, 1999). Only fruit within the 4.5–17.8 N firmness range were used for this ‘in-store’ consumer test. After the firmness measurement of the coded fruit was recorded a longitudinal wedge was cut from the same area used for the flesh firmness, placed between two layers of cheesecloth and the juice expressed for subsequent SSC and TA measurements. The SSC of the juice was measured with a temperature compensated

refractometer (model ATC-1, Atago Co., Tokyo, Japan) and the TA was measured with an automatic titrator (Radiometer, Copenhagen, Denmark). The coded fruit was placed in one of four boxes of the correct RSSC class (A–D) based on the SSC measurements.

#### 2.4. 'In-store' consumer tests

'In-store' consumer tests were conducted on 'Ivory Princess' peach, 'Honey Kist' nectarine, 'Elegant Lady' peach and 'Spring Bright' nectarine according to our previous work (Crisosto and Crisosto, 2001; Crisosto et al., 2004). Groups of 100, 100, 120, and 100 consumers representing a diverse combination of ages, ethnic groups and genders were surveyed in a major supermarket in Fresno County, California for the cultivars listed above on June 15, July 12, July 19, and June 21, 2005, respectively. The ripe soluble solids concentration (RSSC) and ripe titratable acidity (RTA) were measured on each previously labeled ripe fruit sample presented to the consumers and correlated with their responses. For each cultivar, each consumer was presented in random order four samples; one from each of four ripe SSC classes. These classes were selected to include the historical range of SSC levels reported in our previous industry-wide fruit quality surveys for that cultivar (Table 1). Then at the supermarket, the samples were prepared in the produce room out of sight from the testing area. A sample consisted of one longitudinal slice cut from the stem end to the blossom end on the cheek opposite the flesh firmness measurement of the fruit. Consumers who responded that they ate fresh peaches/nectarines were surveyed. For each sample, the consumer was asked to taste it, then to indicate if

he/she "likes", "neither likes nor dislikes", or "dislikes" the sample. Then the consumer was asked to indicate his/her degree of liking/disliking: slightly, moderately, very much, or extremely. The consumer's response was recorded using a nine-point hedonic scale (one-dislike extremely to nine-like extremely). Consumer acceptance was measured as both degree of liking (1–9) and percentage acceptance. Percentage acceptance was calculated as the number of consumers liking the sample (score > 5.0) divided by the total number of consumers within that sample (Lawless and Heymann, 1998). In a similar manner, the percentage of consumers disliking (score < 5.0) and neither liking nor disliking (score = 5.0) the sample was calculated. The degree of liking data was subjected to analysis of variance (ANOVA) prior to the LSD mean separation using the SAS program.

### 3. Results and discussion

For these two low acid and two high acid melting flesh cultivars, degree of liking was significantly related to RSSC but not to RTA, and there was no significant interaction between RSSC and RTA.

For the high acid 'Elegant Lady' and 'Spring Bright', which account for about 30% of the peach and nectarine volume in California, the degree of liking and percentage consumer acceptance increased constantly as RSSC increased until it reached a plateau (Fig. 1). Degree of liking and percentage consumer acceptance then became insensitive to any additional increase in RSSC (i.e. reached the saturation point). At the saturation point, percentage consumer acceptance was similar between these two cultivars, reaching approximately 90%. The percentage consumer acceptance of 'Elegant Lady' and 'Spring Bright' reached the saturation point at 11–12 and 10–11% RSSC, respectively. There was a significant difference in degree of liking between 'Elegant Lady' peaches with RSSC < 11.0% and RSSC ≥ 11.0% (Table 2). 'Elegant Lady' peaches with RSSC ≥ 11.0% were liked "moderately" (7.1) with a consumer acceptance of 71.8% while peaches with RSSC < 11.0% were liked "slightly" (5.9) with consumer acceptance of 47.8%. The "neither like nor dislike" option was selected by several consumers, and it decreased from 37.8 to 25.0% for RSSC < 11.0% and RSSC ≥ 11.0%, respectively. For 'Elegant Lady'

Table 1

Means and standard deviations for ripe soluble solids concentration (RSSC) and ripe titratable acidity (RTA) of fruit for high acid 'Elegant Lady' peach and 'Spring Bright' nectarine, and low acid 'Ivory Princess' peach and 'Honey Kist' nectarine during the 2002 season

Cultivar	Plant breeding program	RSSC <sup>a</sup> (%)	RTA <sup>a,b</sup> (%)
'Elegant Lady'	Merrill	12.4 (1.3)	0.74 (0.13)
'Spring Bright'	Bradford	11.0 (1.8)	0.92 (0.15)
'Ivory Princess'	Bradford	12.6 (1.9)	0.22 (0.04)
'Honey Kist'	Zaiger	12.0 (3.0)	0.46 (0.08)

<sup>a</sup> Fruit ripened at 20 °C and 85% RH until flesh firmness reached ≤17.8 N.

<sup>b</sup> RTA expressed as percentage malic acid.

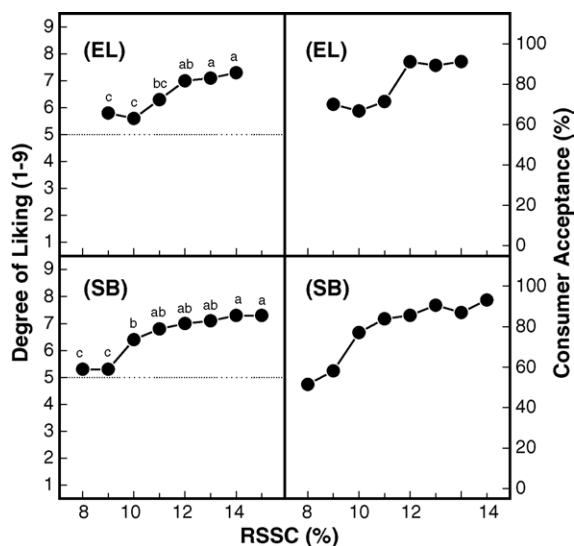


Fig. 1. Degree of liking and percentage consumer acceptance of 'Elegant Lady' (EL), a high acid, yellow flesh peach and 'Spring Bright' (SB), a high acid, yellow flesh nectarine at different levels of ripe soluble solids concentration (RSSC) by American consumers. Degree of liking was measured on a nine-point hedonic scale (1, dislike extremely; 5, neither like nor dislike; 9, like extremely). Different letters within a given RSSC level indicate a significant difference between means by  $LSD_{0.05}$ .

peaches with  $RSSC \geq 11.0\%$ , the percentage of consumers that chose the "dislike" option was only 3.2% while 14.4% disliked 'Elegant Lady' peaches with  $RSSC < 11.0\%$ . 'Elegant Lady' RSSC ranged from 9.0 to 15.0% with a mean of 12.4% and RTA ranged from 0.45 to 0.90% with a mean of 0.74% within the popula-

tion of fruit used in this consumer test. In the previous 5 years, the average RSSC has ranged from 11.4 to 11.7% based on California industry-wide fruit quality surveys (Crisosto, unpublished).

Consumer acceptance expressed as degree of liking was significantly different for 'Spring Bright' nectarines with  $RSSC < 10.0\%$  and  $RSSC \geq 10.0\%$  (Table 2). 'Spring Bright' nectarines with  $RSSC \geq 10.0\%$  were liked "moderately" (6.9) with an acceptance of 70.5% while nectarines with  $RSSC < 10\%$  were "neither liked nor disliked" (5.4) with an acceptance of 34.9%. The "neither like nor dislike" option was selected by several consumers, and it varied from 39.4 to 24.0% for fruit with  $RSSC < 10.0\%$  and  $RSSC \geq 10.0\%$ , respectively. For 'Spring Bright' nectarines with  $RSSC \geq 10.0\%$ , the percentage of consumers that chose the "dislike" option was only 5.6%, while 25.7% of consumers disliked 'Spring Bright' nectarines with  $RSSC < 10.0\%$ . 'Spring Bright' RSSC ranged from 8.0 to 16.0% with a mean of 11.0% and RTA ranged from 0.60 to 1.20%, with a mean of 0.92% within the population of fruit used in this consumer test.

For the low acid 'Ivory Princess' and 'Honey Kist', recent releases that are being widely planted in California, the degree of liking and percentage consumer acceptance also increased as RSSC increased (Fig. 2), reaching 100%. 'Ivory Princess' RSSC ranged from 8.0 to 17.0% with a mean of 12.6% and RTA ranged from 0.15 to 0.45% with a mean of 0.22% within the population of fruit used in this consumer test. Since 'Ivory Princess' is a recently released cultivar, no industry wide quality data was available at the time of this

Table 2

Acceptance of 'Elegant Lady' peaches and 'Spring Bright' nectarines by American consumers at different levels of ripe soluble solids concentration (RSSC)

'Elegant Lady' quality attributes	Degree of liking (1–9) <sup>a</sup>	Acceptance (%)	Neither like nor dislike (%)	Dislike (%)
$RSSC < 11.0\%$	5.9 b <sup>b</sup>	47.8	37.8	14.4
$RSSC \geq 11.0\%$	7.1 a	71.8	25.0	3.2
$LSD_{0.05}$	0.35	–	–	–
$P$ -value	0.0001			
'Spring Bright' quality attributes	Degree of Liking (1–9) <sup>a</sup>	Acceptance (%)	Neither like nor dislike (%)	Dislike (%)
$RSSC < 10.0\%$	5.4 b <sup>b</sup>	34.9	39.4	25.7
$RSSC \geq 10.0\%$	6.9 a	70.5	24.0	5.6
$LSD_{0.05}$	0.40	–	–	–
$P$ -value	0.0001			

<sup>a</sup> Degree of liking: 1 = dislike extremely, 2 = dislike very much, 3 = dislike moderately, 4 = dislike slightly, 5 = neither like nor dislike, 6 = like slightly, 7 = like moderately, 8 = like very much, 9 = like extremely.

<sup>b</sup> Same letters within the same column indicate no significant difference between means.

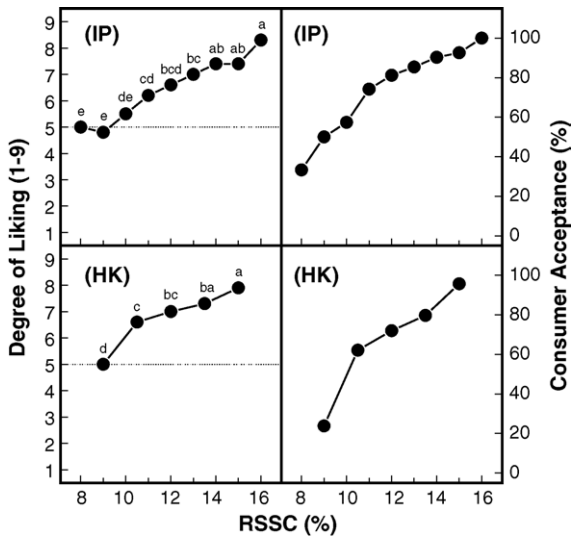


Fig. 2. Degree of liking and percentage consumer acceptance of 'Ivory Princess' (IP), a low acid, white flesh peach and 'Honey Kist' (HK), a low acid, yellow flesh nectarine at different levels of ripe soluble solids concentration (RSSC) by American consumers. Degree of liking measured on a nine-point hedonic scale (1, dislike extremely; 5, neither like nor dislike; 9, like extremely). Different letters within a given RSSC range indicate a significant difference between means by  $LSD_{0.05}$ .

test. Within this range of quality attributes degree of liking for 'Ivory Princess' peaches varied from "neither like nor dislike" to like "extremely" and consumer acceptance varied from 33.3 to 100% (Fig. 2).

Table 3

Acceptance of 'Ivory Princess' peaches and 'Honey Kist' nectarines by American consumers at different levels of ripe soluble solids concentration (RSSC)

'Ivory Princess' quality attributes	Degree of liking (1–9) <sup>a</sup>	Acceptance (%)	Neither like nor dislike (%)	Dislike (%)
RSSC < 12.0%	5.8 b <sup>b</sup>	47.1	34.8	18.1
RSSC ≥ 12.0%	7.3 a	80.0	15.9	4.1
$LSD_{0.05}$	0.35	–	–	–
<i>P</i> -value	0.0001			
'Honey Kist' quality attributes	Degree of liking (1–9) <sup>a</sup>	Acceptance (%)	Neither Like nor Dislike (%)	Dislike (%)
RSSC < 9.0%	5.0 d <sup>b</sup>	23.8	57.1	19.0
RSSC 9.1–10.0%	6.6 c	62.1	33.7	4.2
RSSC 10.1–14.0%	7.0 b,c	72.0	26.0	2.0
RSSC > 14.0%	7.5 a	87.7	10.2	2.2
$LSD_{0.05}$	0.72	–	–	–
<i>P</i> -value	0.0001			

<sup>a</sup> Degree of liking: 1 = dislike extremely, 2 = dislike very much, 3 = dislike moderately, 4 = dislike slightly, 5 = neither like nor dislike, 6 = like slightly, 7 = like moderately, 8 = like very much, 9 = like extremely.

<sup>b</sup> Same letters within the same column indicate no significant difference between means.

There was a significant difference in consumer acceptance expressed as degree of liking between peaches with  $RSSC < 12.0\%$  and  $RSSC \geq 12.0\%$  (Table 3). Peaches with  $RSSC < 12.0\%$  were liked "slightly" (5.8) with a consumer acceptance of 47.1%, while peaches with  $RSSC \geq 12\%$  were liked "very much" (7.3) with a consumer acceptance of 80%. The "neither like nor dislike" option was selected by several consumers, and it decreased from 34.8 to 15.9% for  $RSSC < 12.0\%$  and  $RSSC \geq 12.0\%$ , respectively. Peaches with  $RSSC \geq 12.0\%$  were disliked only by 4.1% of the consumers while 18.1% disliked peaches with  $RSSC < 12.0\%$ . 'Honey Kist' RSSC ranged from 7.0 to 16.0% with a mean of 12.0% and RTA ranged from 0.30 to 0.60% with a mean of 0.46% within the population of fruit used in this consumer test. Since 'Honey Kist' is also a recently released cultivar, no industry wide quality data was available at the time of this test. Within the RSSC range tested, degree of liking varied from "neither like nor dislike" (5.0) to like "very much" (7.5). The lowest (23.8%) and highest (87.7%) consumer acceptance was attained in fruit that had  $RSSC < 9.0\%$  and fruit that had  $RSSC \geq 14.0\%$ , respectively (Table 3). Consumer acceptance was nearly the same (~65%) for fruit within the 9.0–14% RSSC range. The percentage of consumers that chose the "neither like nor dislike" option decreased from 57.1 to 10.2% as the RSSC increased from <9.0 to ≥14.0%. For 'Honey Kist' nectarines with 9.0 to ≥14.0% RSSC, the percentage of consumers that



disliked the fruit varied from 4.2 to 2.2%. When fruit of this cultivar had RSSC <9.0, 19.0% of consumers disliked the fruit.

It is interesting to point out that the “in store” consumer test results for these cultivars indicated that the percentage consumer acceptance was more sensitive to the consumers selecting the neither like nor dislike option rather than disliking the fruit. For example, 62.1% of the consumers accepted ‘Honey Kist’ fruit with 9.1–10.0% RSSC while 4.2% of the consumers disliked these fruit, but 33.7% of the consumers neither liked nor disliked them. As the RSSC ranges increased from 9.1 to 10.0% to RSSC > 14.0%, acceptance increased from 62.1 to 87.7% mainly due to a change by the consumers from neither liking nor disliking the fruit to liking them as the change in disliking the fruit was only from 4.2 to 2.2%. Further work to understand the reason(s) why a large percentage of the consumers selected the neither like nor dislike option for this cultivar and others is needed. We believe that because many new cultivars with diverse fruit quality attributes and flavors are becoming available in the commercial market, a cultivar description identifying specific characteristics during marketing would aid this group of consumers in selecting fruit with the fruit quality attributes they desire.

For the high acid cultivars, after they reached their plateau an increase in RSSC did not result in higher consumer acceptance. For example, ‘Elegant Lady’ peaches with 14% RSSC did not have a higher consumer acceptance than ‘Elegant Lady’ peaches with 12% RSSC. In the case of the low acid cultivars, after they reached approximately 80% acceptance, the increase in consumer acceptance was small with increased RSSC. For these four cultivars, high consumer acceptance, similar to that previously reported on cherry (Crisosto et al., 2002) and table grape (Nelson et al., 1973; Crisosto and Crisosto, 2002) was reached when ripe fruit free of internal breakdown symptoms were tasted.

The relationship between RTA and RSSC has an important role in consumer acceptance of some peach, nectarine, and plum cultivars within a specific range of RTA and RSSC. Based on our previous work, cultivars with RTA > 0.90% and RSSC < 12.0%, consumer acceptance was controlled by the interaction between RTA and RSSC rather than RSSC alone. For example, a significant interaction was reported between RSSC and

RTA for ‘Blackamber’ plum (Crisosto et al., 2004). In this early season plum cultivar, RTA ranged from 0.50 to 1.10% and low consumer acceptance was related to RTA within a given RSSC range. These quality attributes are typical of early season peach, nectarine and plum cultivars and may also be encountered in the case of some mid and late season cultivars harvested with low maturity.

The influence of RTA on consumer acceptance has been reported on early season table grapes (Nelson et al., 1972; Crisosto and Crisosto, 2002), kiwifruit (Crisosto and Crisosto, 2001; Marsh et al., 2004) and cherries (Kappel et al., 1996; Crisosto et al., 2002). As the tested cultivars had different consumer acceptance at a given RSSC, a proposed minimum quality index should be specific for each cultivar. Under the conditions of this test (ripe fruit, free of internal breakdown symptoms), the two low acid and the two high acid, melting flesh cultivars attained high acceptance by American consumers. This suggests that the characteristic of high acidity is not a negative quality attribute when the fruit is ripe and handled properly. However, higher consumer acceptance (~100%) was achieved with the low RTA cultivars than the high RTA cultivars (~90%). This can be explained because low RTA cultivars also had fruit in the high RSSC range. In our previous sensory work using the same technique with ‘Hayward’ kiwifruit (Crisosto and Crisosto, 2001), ‘Redglobe’ table grapes (Crisosto and Crisosto, 2002), and ‘Blackamber’ plum (Crisosto et al., 2004) we reached a consumer acceptance of nearly 85%, and only in cherries (Crisosto et al., 2002) we attained higher consumer acceptance. We have observed that some of the recently released, low acid cultivars may have the ability to produce fruit with RSSC higher than the traditional yellow flesh cultivars. For example, new releases such as ‘Ivory Princess’ and ‘May Sweet’ that are replacing ‘Spring Crest’ peach had consistently higher RSSC and lower RTA than ‘Spring Crest’ peach in the last 3 years of our survey from commercial packinghouses in the San Joaquin Valley, CA. This tendency may be verified when more cultivars of this fruit type are produced commercially. It is important to point out that other sensory quality attributes such as aroma, peach or nectarine flavor and texture may also be contributing to their high consumer acceptance. Some of these quality attributes can interact with sweetness and sourness perception, and in some cultivars compensate

for the low RSSC or high RTA. Unfortunately, in spite of the potential importance of these flavor components and the commercial availability of aromatic, crunchy, nonmelting flesh, flavorful new cultivars, there is a lack of information on this topic. This 10% higher consumer acceptance for these two low RTA cultivars than the two high RTA cultivars implied that new consumers are being satisfied when eating these two low RTA cultivars.

Our ongoing industry quality survey revealed that most of the tested cultivars have a high proportion of fruit above the desired RSSC. Several researchers have reported manipulations of orchard factors to increase the number of fruit that exceed these potential quality standards (Prashar et al., 1976; Marini et al., 1991; Crisosto et al., 1997; Forlani et al., 2002; Girona, 2002). For example, ‘Elegant Lady’ peach RSSC can be increased by utilizing a well-illuminated training system, proper crop load, summer pruning and controlled late harvest (Crisosto et al., 1997).

It is important to point out that in these consumer tests, fruit free of chilling injury that were stored at 0 °C for short periods of time (<7–10 days) simulating a fast delivery domestically were used. Because development of “off flavor” has been widely reported as a consequence of chilling injury during cold storage (Smith, 1934; Ben Arie and Lavee, 1971; Von Mollendorff et al., 1992), the four cultivars were tasted prior to the onset of the end of their market life. In our peach storage test, California ‘O’Henry’ peaches developed visual flesh mealiness symptoms after 2 and 4 weeks stored at 5 and 0 °C, respectively. However, trained judges were able to detect “off flavor” or mealy texture 1 or 2 weeks before the visual flesh mealiness symptom was apparent (Crisosto and Labavitch, 2002). Thus, in fruit that exceeds any proposed quality index, the development of “off flavor” or chilling injury during postharvest handling will prevent consumers from perceiving high eating quality.

This ‘in-store’ consumer test indicated that high consumer acceptance is attained with our mid-season cultivars when peaches are free of internal breakdown and “ready to eat” (ripe) prior to consumption. These results indicate that the relationship between RSSC and consumer acceptance is cultivar specific, and there is not a single reliable SSC that assures a given percentage of satisfied consumers.

As the availability of cultivars with a diversity of sensory characteristics and flavor potentials is increasing, segregation of cultivars into organoleptic groups based on the sensory perception of sweetness, sourness, peach or nectarine flavor, aroma intensity and texture may be beneficial prior to the establishment of a generic minimum quality index based on RSSC using ‘in-store’ consumer tests. Detailed biochemistry and sensory studies on different texture and aroma components should be carried out to improve the current understanding of peach and nectarine flavor. We expect that cultivars segregated into these organoleptic groups would have similar minimum quality indexes which may help the peach and nectarine industry to consistently describe, identify and deliver fruit of high eating quality. Meanwhile, plant breeders should select for high RSSC potential, strong peach flavor, relatively low acidity, and low chilling injury susceptibility, to assure new releases will have high consumer acceptance.

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