



Improving the Quality of Stone Fruits – Grower Considerations

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The current economic climate in the world of stone fruit production demands that growers focus on improving fruit quality as well as production efficiencies. Never in the past has there been this much emphasis on “quality.” Quality can be a nebulous term however, meaning different things to different people – and potentially vastly different things within the retail continuum from grower to final consumer. Some easily identified and quantified quality attributes include fruit color, size and shape, fruit soluble solids concentration (SSC), and acid concentration. A much more elusive quality attribute is “taste.”

Taste testing has demonstrated that consumer preference for stone fruits – **within a given variety** – is very highly correlated with sugar/acid ratio. For a given variety, the higher the sugar/acid ratio, **in general**, the greater the consumer satisfaction. Within this relationship – interestingly – low acid often seems to be of even more importance than very high sugars, hence the interest in “low-acid” and “sub-acid” varieties.

As fruit ripen – both on and off the tree – fruit sugar concentrations remain fairly static, but acid concentrations drop. This is the primary reason why a “ripe” fruit tastes better than a “mature” fruit – it is not so much a function of sugar concentration, but rather a function of the reduced acid concentration. It is this relationship that has stimulated the interest in “conditioned” fruit, i.e. fruit that is held at approximately room temperature for a discrete period so that the rate of reduction in acid concentration is accelerated.

Of course, it is very important to note that the greater the initial SSC, the sooner and more easily an ideal

sugar/acid ratio is achieved. Additionally, it is critical that fruit attractiveness is enhanced, since it is well known that fruit color and finish also add to consumer satisfaction. To these ends, the following comments on cultural practices:

Of all cultural practices, crop load arguably has the greatest affect on overall fruit quality. While other practices have the potential of changing fruit soluble solids by no more than ½ to 1%, crop load can affect fruit SSC by more than 2 to 3%. Growers interested in drastically increasing fruit SSC should thin early and aggressively in order to achieve the maximum benefit from the practice. Keep in mind that this may require removal of more fruit than that to which one is accustomed.

Nitrogen applications should be tailored so that mid-July leaf samples are at 2.6 to 2.8% N. Within this range fruit color, size and soluble solids concentration are maximized. The application of additional nitrogen beyond that needed to achieve this range will only cause decreased fruit color, delayed maturity, and other tree problems associated with shading. UC studies have also shown that excessive irrigation also has the potential to limit sugar concentrations in fruit – usually a consequence of simple dilution.

Maintaining a proper tree light environment is critical to producing high quality fruit. Pruning and training systems should be designed to capture the maximum amount of sunlight, but also be designed to promote fruit exposure. Tree vigor must be manageable within the system – usually through a combination of the above outlined practices and judicious summer pruning.

Electronic Distribution of “Orchard Notes”

We would like to begin distributing “Orchard Notes” to as many of you as possible via email in an effort to serve you in a more timely and efficient manner. Our printing schedule requires an approximate four week lead time, which creates obvious difficulties and occasional compromises in our outreach efforts.

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If you would like to be placed on the email distribution list, please send me an email. My address is:
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**University of California Cooperative Extension
Kearney Agricultural Research & Extension Center**

VARIETY DISPLAY AND RESEARCH UPDATE

**2004 VARIETY DISPLAY
&
VARIETY DISPLAY & RESEARCH UPDATE SEMINARS**

**8:00 – 9:00 a.m. Variety Display by Stone Fruit Nurseries, Breeders and the USDA
9:00 – 10:00 a.m. Research Update and Discussion in the Field**

Mark your calendars for these dates:

- Friday, May 21 Research Update – Mite and Shoot Strike Monitoring
(Applied for CE credits for May 21 meeting)**
- Friday, June 25 Research Update – Tree Fruit Nutrient Management**
- Friday, July 30 Research Update – To be announced**
- Friday, August 27 Research Update – Late Season Irrigation Management**

**Kearney Agricultural Research & Extension Center
9240 S. Riverbend Avenue
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These meetings are free to all interested people.
No pre-registration required.

For more information call: Kevin Day (559) 685-3309, Ext. 211

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