

New approaches to production and quality assessment of fruits

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Production of the highest quality processed fruit products, including juices, requires sourcing of the fruit with the highest internal quality. There are three components to ensuring the fruit has the highest internal quality; 1) orchards which produce the fruit adopting production practices focused on generating high quality, 2) harvest practices and logistics of delivery to the production plant focused on preserving the at-harvest quality as best as possible, and 3) quality assurance practices to allow the processor to segregate high quality fruit from fruit of lower and/or unacceptable quality prior to processing. In my work regarding evaluation of orchard practices leading to enhanced fruit internal quality, it has become clear that canopy management strategies, irrigation strategies and nitrogen nutrition are all important determinants of internal quality affecting processing value. At harvest and after harvest logistics practices can also have significant influence on fruit quality at the time of processing. Quality changes during this phase can be accentuated if a storage or long distance shipping component is required to either manage product supply for processing or to source product from distant production areas. Despite good production and after harvest logistics, there continues to be a need for fruit quality assessment to allow the processor to segregate poor or sub-optimal quality from the processing stream. There have been many recent advances in measuring internal quality of fruit using non-destructive techniques and there is promise in the future to place such technologies into sorting lines to automate the process of ensuring that only the best quality fruit is used for the production of juices.