

## **Abstract**

Cultivar segregation according to the sensory perception of their organoleptic characteristics was attempted by using trained panel data evaluated by principal component analysis of four sources per cultivar of 23 peach and 26 nectarine cultivars as a part of our program to develop minimum quality indexes. Fruit source significantly affected cultivar ripe soluble solids concentration (RSSC) and ripe titratable acidity (RTA), but it did not significantly affect sensory perception of peach or nectarine flavor intensity, sourness or aroma by the trained panel. For five out of the 49 cultivars tested, source played a role in perception of sweetness. In all of these cases when a source of a specific cultivar was not classified in the proposed organoleptic group it could be explained by the fruit having been harvested outside of the commercial physiological maturity (immature or over-mature) for that cultivar. The perception of the four sensory attributes (sweetness, sourness, peach or nectarine flavor intensity, peach or nectarine aroma intensity) was analyzed by using the three principal components, which accounted for 92 and 94% of the variation in the sensory attributes of the tested cultivars for peach and nectarine, respectively. Season did not significantly affect the classification of one cultivar that was evaluated during these two seasons. By plotting organoleptic characteristics in PC1 and PC2 (~76%) for peach and nectarine, cultivars were segregated into groups (balanced, tart, sweet, peach or nectarine aroma and/or peach or nectarine flavor intensity) with similar sensory attributes; nectarines were classified into five groups and peaches into four groups. Based on this information, we recommend that cultivars should be classified in organoleptic groups and development of a minimum quality index should be attempted within each organoleptic group rather than proposing a generic minimum quality index based on the ripe soluble solids concentration (RSSC). This organoleptic cultivar classification will help to match ethnic preferences and enhance current promotion and marketing programs.