Abstract

The development of new cultivars of tree fruits can be greatly enhanced with better understanding of the basis and inheritance of postharvest quality traits. Quality is defined by many factors including firmness, soluble solids content and titratable acidity. An approach which does not presuppose interrelationships may be more productive to understanding phenotypic quality differences and physiological characters. Use of principal components analysis (PCA) provides a presentation of multiple measures of a large number of cultivars or selections without any presupposition of interrelationships. Several examples of PCA evaluations of postharvest character for different cultivars of apples and sweet cherries are presented. These examples demonstrate that postharvest changes in a complex of quality and physiological characters can be simplified to show how different cultivars are either similar or divergent from each other. The information can be used to provide guidance on cultivar selection in the short term and better focus genomic studies in the longer term.