

Title Postharvest quality: measurement, factors affecting and the future
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Abstract

This paper focuses on the development of new cultivars without postharvest quality deficits and on the latest innovations in online, nondestructive quality evaluation. The causes of postharvest deficiencies and genetic deficiencies within the cultivars being utilized, as well as the genetic solutions to postharvest quality deficiencies including the use of recombinant DNA to study the genetic control over postharvest alterations and the use of recombinant DNA coupled to tissue gene expression to expand our ability to circumvent certain postharvest problems, are discussed. Other factors that can affect postharvest quality include: the insertion of an antisense gene which blocks the synthesis of ethylene and aroma volatiles and the onset of ripening by making the organ of interest insensitive to ethylene; and alterations in the expression of expansin and 3-galactosidase genes to maintain fruit firmness. The identification of critical traits and development of selection methods that are fast, accurate and able to screen large numbers of progeny to greatly facilitate the development of superior cultivars by plant breeders, the nondestructive quality evaluation of harvested product (e.g. near infrared spectroscopy), and maintenance of prediction accuracy are also emphasized.