Abstract

Peaches and nectarines ripen and deteriorate quickly at ambient temperature. Cold storage is used to slow these processes and decay development. However, low temperature disorders, chilling injury classified as internal breakdown, limit the storage life of peaches and nectarines under refrigeration. The onset of chilling injury symptoms determines the postharvest storage/shipping potential because their development reduces consumer acceptance. Chilling injury is genetically influenced and triggered by a combination of storage temperature and storage period. It manifests itself as fruit that are dry and have a mealy or woolly texture (mealiness or woolliness), or hard textured fruit with no juice (leatheriness), fruit with flesh or pit cavity browning (internal browning), or with flesh bleeding (internal reddening). In this review, we describe what is known about the etiology of each of these types of chilling injury symptoms as well as the biochemical processes in the fruit tissue responsible for their development. We also report on pre- and postharvest manipulations or treatments that can affect the time of appearance or severity of chilling injury symptoms.