

Abstract:

Limited microscopic studies have been performed on chilling-injured navel oranges, and rind breakdown disorders have previously been poorly classified and often not differentiated from one another. Seven types of chilling-related injuries were identified in cold-stored navel oranges during the 2003 and 2004 harvest seasons. Light microscopy studies demonstrated variations in affected tissues and development of symptoms between these injury types. Symptom expression appeared to be related to the integrity of oil glands and possibly storage conditions such as temperature and moisture. Characterisation of different chilling injury types in navel oranges will allow examination of the physiological basis of these disorders and clearer communication within the supply chain.