

Abstract

The use of a carbon dioxide treatment as a complement to the standard cold disinfestation quarantine treatment against *Ceratitis capitata* in 'Fortune' mandarin fruit was investigated. A 95% carbon dioxide atmosphere at 20 °C for 20 h before the standard cold quarantine resulted in increased levels of fruit volatiles (ethanol and acetaldehyde). However, this did not produce any detrimental effects on either fruit external appearance (color and peel texture) or the organoleptic characteristics of the fruit. The high carbon dioxide treatment reduced lethal times for *C. capitata* by 2.7085 (relative potency at probit 9). This treatment could be easily applied to current disinfestation facilities that are used for preparing and shipping citrus to countries where quarantine regulations are enforced. Its application would not add excessive costs, but would enormously increase the reliability of standardized protocols for export of mandarins.