Title	Low-temperature cold shock may induce rind colour development of 'Nules Clementine' mandarin (*Citrus reticulata* Blanco) fruit
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Abstract

To simulate a rapid drop in temperature resulting from a cold front, 'Nules Clementine' mandarin (*Citrus reticulata* Blanco) fruit were hydrocooled to ~2 °C for 30 min and then transferred to a cold room set at 4 °C for 6 h to complete the cold shock treatment. Thereafter, fruit were incubated at 20 °C for ~72 h. In the 2002 season, low temperature treatment, or "cold shock", of 'Nules Clementine' mandarin improved rind colour to a level comparable with that of commercial ethylene degreening. Carotenoid concentration of cold-shocked fruit was similar to that of degreened fruit and nearly double that of untreated fruit. Chlorophyll concentration of cold-shocked and degreened fruit was nine times lower than that of untreated fruit. In subsequent experiments, however, where pre-harvest growing conditions were more conducive to natural rind colour development, this response could not be repeated.