

Title Effect of chilling on ethylene production in eggplant fruit
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Abstract

Eggplant is a non-climacteric fruit, with low ethylene production rates after harvest, whose response to storage at low temperature was studied. To this end, fruit were stored for 13 days at 0 and 10 °C. Fruits stored at 10 °C were unaffected, but those maintained at 0 °C suffered severe chilling injury (CI) from day 6. Electrolyte leakage, considered an indirect measure of membrane damage, showed no variation at 10 °C, whereas at 0 °C, leakage increased in parallel to CI. At 0 °C ethylene, 1-aminocyclopropane-1-carboxylic acid (ACC) and 1-(malonylamino)cyclopropane-1-carboxylic acid (MACC) contents increased during the first 6 days, though, from days 9–13, their contents decreased to about the initial levels. ACC oxidase activity decreased considerably during storage at 0 °C, reaching non-detectable values by day 13. At 10 °C, not important changes were observed in ethylene biosynthetic pathway. These results suggest that chilling stress stimulated ethylene, ACC and MACC accumulation in eggplant, and their levels remained high until CI symptoms became severe.