

Title Preharvest GA₃ sprays reduced chilling injury and maintained quality of plums during storage

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Abstract

Chilling injury (CI) is a major factor limiting postharvest life of plum at lower temperature, the fruit usually manifest as dull coloration or breakdown and browning of internal tissues, and lose their ability to maintain firmness and show increased susceptibility to rot. Preharvest 100 ppm GA₃ sprays at three stages of fruit development (a week before fruit expanding stage, fruit expanding stage, a week after fruit expanding stage) were studied on CI and fruit quality during storage at lower temperature. The results showed that CI index and browning index (BI) of plums was decreased ($p < 0.05$) by GA₃ treatments at three stages. The treatment for 3 times sprays at all three stages showed the most effective control, CI index and BI were 36% and 49% respectively compared with the control after 49 days of storage. Moreover, the treatments also effectively maintained the firmness and soluble solids content (SSC), delayed decrease of titratable acidity and ascorbic acid content. It is suggested that preharvest GA₃ treatments could reduce CI and maintain quality of plum during storage.