

Title The use of auxins to maintain postharvest quality of citrus fruit

Author Alejandra Salvador, Sawsen Sdiri, Pilar Navarro, Adela Monterde and Jose M^a Martínez-Jávega

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Abstract

The synthetic auxin 2,4-dichlorophenoxyacetic acid (2,4-D) as a postharvest treatment, has been reported that retard calyx abscission that occur as a consequence of the degreening process. The application of 2,4-D has also been used to maintain the quality during cold storage of citrus fruit. Nevertheless at the present, European Union legislation has restricted the use of 2,4-D. The effect of 3,5,6-trichloro-2-pyridyloxyacetic acid (3,5,6-TPA) on the incidence of calyx senescence induced by degreening treatment in early season Clementine cultivars was studied. 3,5,6-TPA treatments showed a positive effect on control calyx alterations symptoms when fruit were dipped with different doses prior to degreening process. For 3,5,6- TPA treatments, in general, the higher the doses, the lower percentage of affected fruit with calyx alterations symptoms. In all studied cultivars, the delay in color evolution observed when using auxin treatments had no negative effect from a commercial point of view. No sensory alteration was observed in any treatment. The effect of 3,5,6- TPA treatments on physiological disorders of cold stored oranges were also studied. Different types of 3,5,6-TPA application prior to cold storage were carried out: application by low volume spraying in the handling line, application joint with wax formulations in the handling line or application in dip during 2 min. According to the obtained results 3,5,6-TPA treatments did not show positive effect to maintain the quality of the studied oranges cultivars.