

Title Optimization of degreening of early-season spontaneous mutations of 'Oronules' mandarins

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Abstract

Degreening is a postharvest treatment during which citrus fruit are exposed to ethylene in order to accelerate external color change and so render the fruit more acceptable for marketing. However, ethylene can promote alterations associated to senescence especially in the area of calyx. Recently, new degreening treatments combining different periods with and without ethylene exposure have been reported to be effective in reducing the calyx disorders of earlyseason citrus fruit. In the present study, fruit from 'Oronules' mandarins and four of its mutations- 'Prenules', 'Basol', 'Clemenrubi' and 'Orogros'-, were degreened during different periods with and without ethylene application up to 120h and afterwards submitted to a cold-quarantine treatment (1°C, 16d) plus shelf-life (20°C, 7d, 95% RH). In all tested varieties, the shorter time of exposure to ethylene, the lower incidence of calyx disorders. Treatment based on the combination of 48h with ethylene exposure and 72h without ethylene is sufficient to reach external color commercially acceptable. However to obtain the typical color of the variety, treatment with 72 h with ethylene plus 48 without ethylene is needed. At this degreening conditions, 'Prenules', 'Basol' and 'Clemenrubi' cultivars showed lower susceptibility to calyx senescence than 'Oronules'. Any of the assayed treatment affected the internal fruit quality of all the varieties.