

Title On tree storage of fruit quality of 'SRA63' Clementine as affected by Triclopyr (3,5,6-thichloro-2-pyridyloxyacetic acid) applications

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Abstract

Twenty-year old trees of 'SRA63' Clementine, growing on 'Carrizo' Citrange rootstock, were submitted to different treatments with the aim to reduce fruit drop during maturation and to slow peel senescence, thus maintaining good fruit quality on tree. Six treatments were compared: 1) 10 ppm Triclopyr (3,5,6-thichloro-2-pyridyloxyacetic acid); 2) 10 ppm Triclopyr mixed with 1 kg/hl of mineral oil (80% grade); 3) 10 ppm Triclopyr mixed with 0.2 kg/hl of mineral oil (80% grade), and 10 ppm of gibberellic acid; 4) 16 ppm 2,4-D (dichlorophenoxyacetic acid); 5) untreated test; 6) 10 ppm Triclopyr when fruit diameter ranged between 18 and 22 mm (July 7th). The first four treatments were performed when fruits showed colour turning on 50% of the peel (November 20th). The following data were recorded: yield/tree; natural fruit drop until harvest; fruit quality by morphological and chemical analysis (peel colour, juice content, total soluble solids, and acidity) performed every 20 days of the last ripening stage. Peel colour turning was slower in fruits treated with mineral oil (treatments 2 and 3) than in fruits treated with 2,4-D (treatment 4). Percentage of dropped fruits was higher in untreated control with at least 5.5% more fruit drop than other treatments. The lowest level of fruit drop (1.4%) was observed in the treatment 6 (early spray with Triclopyr). Average fruit weight was little affected by treatments and the highest value (94 g) was recorded in the treatment 1, while the treatment 6 showed the lowest value (86 g) and the highest yield/tree. The treatment 6 also showed the lowest juice content and ripening index (TSS/acidity). As a matter of fact the early treatment with Triclopyr slowed the acid degradation with respect to untreated control and to all other treatments. Results showed good control of natural drop and fruit senescence by all Triclopyr treatments. Effects on fruit quality, however, may be different depending on the time of the treatment. At the stage of peel colour turning Triclopyr do not affected sugar and acids dynamics, but preserved fruit peel against senescence. Moreover, early application of Triclopyr after fruit set showed effects on peel senescence control and also on internal fruit palatability preservation.