Title Assessing the efficacy of preharvest treatments to control water spot in Clementine

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Abstract

In Italy the damage caused by water spot to the crop of Clementine mandarin is a cause of increasing concern to the citrus industry. The injury occurs during cold rainy periods in winter and the progress of disease depends on weather conditions. It is a typical disorder linked to peel senescence. The disorder can be partially controlled by application of gibberellic acid at fruit color break. Field trials were conducted in the fall of 2006 and 2007 in two commercial plantations of Clementine located at Mirto Crosia and Scanzono Jonico (Italy). Individual trees of good health, uniform size and yield were selected and tagged for use in the experiments. Treatments selected for evaluation were: 1) GA_3 10 ppm; 2) Beeswax; 3) Chitosan 0,5%; 4) GA_3 10 ppm followed (15 days later) by Beeswax; 5) Chitosan 0,5% followed (15 days later) by Beeswax; 6) GA_3 10 ppm plus Chitosan 0,5%; 7) Untreated control. Each treatment was applied to five single tree replicates. In order to evaluate the effect of treatments on the fruit quality, initially (at treatment) and at 1 month interval until harvest, physicochemical parameters were determined on samples of 20 fruits for each treatment. Incidence and severity were determined on all fruits harvested per tree. Although not statistically significant, GA_3, Beeswax and Chitosan reduced the disorder, compared to the untreated control. At harvest fruit treated with GA_3, Beeswax, and GA_3 followed by Beeswax had statistically higher firmness and lower deformation. No statistically significant differences were found in all other physicochemical parameters. The role of weather conditions on the incidence of disorder is discussed.