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Journal of Citrus Pathology

Title

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Permalink

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Journal

Journal of Citrus Pathology, 1(1)

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Publication Date

2014

DOI

10.5070/C411025128

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Further Studies on the Effects of Greening on Juice Quality: Do Nutritional Sprays Ameliorate HLB-Induced Off-flavor?

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Citrus groves receiving nutritional sprays were compared with groves in the same areas managed with conventional fertilization treatments. Fruit were harvested from healthy and Huanglongbing (HLB)-affected trees. Within HLB-affected trees, fruit were sorted into asymptomatic (HLB-a) and symptomatic (HLB-s) fruit. Sensory tests were performed using the difference-from-control (DFC) method, where juice from HLB-affected trees was compared with juice from healthy trees. Results show that panelists could detect differences between juice from HLB-affected and healthy trees in the 2009-2010 and 2010-2011 seasons, regardless of nutritional treatments, for Hamlin and Valencia. Like in previous years, those differences were perceived as more bitter or metallic for early harvests of HLB-affected Hamlin, but those differences were less and inconsistently perceived as more bitter, sweeter or more sour for late harvests or Valencia HLB-affected fruit. In the 2011-2012 season, there were much less differences between juice from healthy and HLB trees, possibly due to a season with high Brix/TA ratio, or due to later harvests. Results will be discussed in relation to chemical analysis of sugars, acids, and limonoids. Nutritional treatments that mitigate HLB symptoms on trees did not have a consistent effect on the HLB induced off-flavor of the fruit and juice, necessitating more seasons of study.