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Progress towards the development of a routine process to discriminate juice originating from HLB-free and HLB-infected trees using sensory and analytical analyses

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There are many reports in the literature, both historical and recent, that indicate that fruit from trees affected by Huanglongbing (HLB) can have off-flavors and result in off-flavored juice. Several recent studies from Florida where fairly comprehensive sensory and chemical testing has been done, have shown that there are differences in flavor and specific chemical components in juice from healthy and HLB infected trees in some varieties and during some times of the year. However, there are also recent reports from Florida, mainly from production associated research trials and demonstration plots, where juice quality from HLB infected trees is reported to be good and similar to that of juice from healthy trees. In virtually all of these production-related research trials, the variables measured for juice quality were Brix, acid and ratio and no other organoleptic components were considered. Although these are standard measures of juice quality, they do not encompass the wide range parameters that are considered by processors and the beverage industry in the evaluation of raw input and final products. In many cases, sensory evaluation by trained panelists is a routine procedure in the evaluation of input streams and the final product. Thus sensory components should not be ignored when considering HLB management options, especially as the Florida industry moves towards 100% infection with HLB. This paper will present some of the progress that has been made to develop methodology to discriminate juice produced from fruit from healthy and infected trees using methods that directly and indirectly measure compounds and characteristics that impact flavor.