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Nutrient concentration in sap extracts of HLB-infected trees

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Huanglongbing (HLB) has affected approximately 4% of the citrus trees in São Paulo State, Brazil. Scouting, diagnosis, and eradication of affected plants as well as control of the Asian psyllid vector of *Ca. Liberibacter* spp. were established as required measures for suppression of disease inoculum and maintenance of fruit production in the orchards. Despite the relative effectiveness of those, growers still look for nutrient management practices to minimize losses due to expected progress of the disease. However, clear evidence of positive effects of improved mineral nutrition on tree health and productivity is lacking. A study was set up in the field with 8-yr-old sweet orange trees to evaluate the effects of nutrients (K, Zn, and Mn), phosphate and salicylate leaf sprays to the trees four times in the year during spring and summer. The orchard presented <2% of HLB infected trees at the beginning of the study and experimental plots that represented 1800 trees each were used, which allowed to examine epidemiology of the disease within studied treatments. Temporal progress of HLB-symptomatic trees, fruit yield and nutritional status of trees has been evaluated. Preliminary results demonstrated that nutritional treatments did not improved vigor of HLB-symptomatic trees. Furthermore, nutrient concentrations in leaves and sap extracts were correlated, and major differences were observed for N, Ca, Mg, Mn, and Zn in sap extracts with predominately lower levels in symptomatic compared to asymptomatic trees. These results have pointed out new research approaches of our research group.