Leaf Nutrient Profiles of HLB-affected Trees

Researcher: Tripti Vashisth
Contact: tvashisth@ufl.edu
UF/IFAS CREC

HLB-affected tree health varies widely within groves that receive the same nutrient applications. To determine the nutritional differences between tree severities, trees were identified as mild and severe based on canopy density in different varieties ('Hamlin' and 'Valencia') and locations (Central and South Florida). Preliminary results show that as the canopy density increases, leaf weight increases. Leaf weight and leaf area increase simultaneously. There are no differences in nutrients between tree severities. Samples were taken in the spring when there was no mature fruit on the 'Hamlin' trees, but there were two crops on 'Valencia', as a result this may have played a role in the nutrient differences. When comparing nutrients and canopy density, it was noticed as leaf copper decreased, canopy density increased in both locations and varieties. A similar effect was noticed when zinc and boron decreased, canopy density increased, but this was only observed in 'Valencia'. These observations reveal as the canopy increases, the nutrients are being diluted throughout the tree. To adjust for the dilution of nutrients and increased canopy growth, fertilizer rates should be increased to meet the trees nutritional demands and also made according to the growing cycle of the tree. Any time nutritional rates are increased, best management practices (BMP) should be followed and not exceeded. A long-term study is ongoing to follow nutrients throughout the year in mild and severe trees (leaves and roots) in Central and South Florida.

Funding

CRDF Citrus Research and Development Foundation, Inc.