

Tolerance of Newly Developed Citrus Cultivars on Different Rootstocks to HLB

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Currently, many new citrus varieties are being developed as alternatives to ‘Hamlin’ and ‘Valencia’ sweet orange, which have high susceptibility to HLB. Production of cultivars with tolerance toward HLB and ACP will give growers more choices when planting and offer hope to maintaining citrus production until a sustained solution for HLB is found. However, the performance of the new varieties on different rootstocks has yet to be determined in semi-field (for example, a screenhouse-like environment) or field conditions.

In this project, we focused on profiling the newly available scions and rootstocks under semi-field conditions for their tolerance to the HLB pathogen and deterrence of ACP. Each variety has a unique blend of released and stored aroma compounds, some of which may be less attractive to ACP. Therefore, we are performing leaf chemical analysis (both leaf volatile and non-volatile metabolite content) using gas-chromatography mass spectrometry (GC-MS), along with biological analysis to determine any deterrence ability toward ACP. We are also measuring their

growth habits and success on different UF and USDA rootstocks. The comparison between the varietal responses will allow us to determine the mechanism of tolerance to CLAs and may allow us to predict which of the new cultivars will be more successful. The comparison between rootstock and scion metabolites will allow us to determine compatibility and provide recommendations to growers for the best scion/rootstock combination for tolerating CLAs.

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