



A decade of HLB progress

By Jack Payne, jackpayne@ufl.edu, @JackPayneIFAS

I don't blame you for asking me, "What have you done for me lately?" Sometimes even I forget how much the University of Florida Institute of Food and Agricultural Sciences (UF/IFAS) has done to help the industry survive the HLB threat.

But as I near retirement this summer, I reflect on a decade of remarkable progress on HLB. The scope of the effort is enormous: We have more than 100 ongoing research projects focused on HLB. If that's not an all-hands-on-deck effort, I don't know what is.

Let's start with the psyllid. Research has led to psyllid management strategies that slow the spread of HLB. For example, we've had good results growing citrus under protective screen (CUPS). Our economists have

crunched the numbers to determine under what conditions this could pencil out in a grove.

BREEDING AND BEYOND

Then there are the trees. We've developed a number of new varieties that show HLB tolerance. Our plant breeders say that virtually any agricultural challenge can be addressed through breeding, and HLB is no exception.

We've been a bit lucky to find that varieties developed to emphasize other attributes have turned out to stand up to HLB well. In another sense, it's not lucky at all. We've been building better citrus trees for a century, so we have a huge genetic library to select from.

Other research has pointed to the importance of the proper rootstock/



Sugar Belle is one of the most HLB-tolerant citrus varieties developed by University of Florida breeders.

scion combination in the age of HLB. We now have field trials going for trees developed using gene editing — not genetically modified organisms — to remove genes that make trees susceptible to the disease.

If you doubt that UF/IFAS science is having an impact, ask your neighbor or industry friend. They've planted 1.5 million UF/IFAS-bred disease-tolerant trees in the past five years.

AT THE ROOT OF THE MATTER

Where we may have made the greatest advances is root health. In the century that HLB afflicted growers worldwide before arriving in Florida, no one had done the work UF/IFAS has done in discovering how HLB works. We discovered that HLB severely impairs the ability of citrus roots to take up water and nutrients.

As a result, we've been able to recommend new grove management practices to keep diseased trees productive. Our research has demonstrated the effectiveness of proper soil pH management, spoon-feeding water and nutrients, and frequent fertigation.

The HLB fight has been a defining challenge of my decade at UF/IFAS. I'm proud of our scientific advances. That doesn't mean I'm satisfied. But I have hope that HLB will soon follow me into retirement!

I ask a favor: Please hold my successor to the same high standard you held me. We value your input, even when it's not what we were hoping to hear. Your high expectations motivate us to deliver the best citrus science in the world. 🍊

Jack Payne is the University of Florida's senior vice president for agriculture and natural resources and head of the UF Institute of Food and Agricultural Sciences.



Postdoctoral student Yosvanis Acanda Artiga works with transgenic citrus samples as part of his HLB research efforts.