



IDC dollars play critical role in research

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

The University of Florida has a building on campus that was about the only place in the state allowed to accept the first HLB-infected trees for research.

The quarantine building is the first line of defense against agricultural diseases. It's nearly 25 years old now, and one of the ways we keep it going is with funding from what we call indirect costs, or IDCs. A portion of every research grant pays for support — like lab renovations — that frees up

our researchers to focus on the search for solutions.

The University of Florida's Institute of Food and Agricultural Sciences (UF/IFAS) quarantine building is where we work with infected trees to develop tools to diagnose and detect HLB. Now the building is one of the main centers in pursuing one of the HLB research grails — a way to culture the bacteria that causes the disease.

UF/IFAS plant pathologist Dean Gabriel simply can't do his culturing

work without the building. Nor would he and his team have been able to receive a \$4 million federal grant for it.

That federal grant allows the collection of IDCs, which, combined with our other IDC collections, allows UF/IFAS the flexibility to address critical research infrastructure needs.

Flexibility means speed. We don't have to wait for specific state appropriations to fix Gabriel's lab or for other approvals that serve as a drag on the pace of discovery.

QUARANTINE BUILDING UPGRADE

The quarantine building is one of those critical areas, and that is why we've invested some of our IDC dollars in it so that our fight against citrus greening can continue.

IDC dollars are paying for repairs to the cooling system and the installation of a backup system so we don't lose research in the event of a breakdown.

In fact, half the building has never been used because it wasn't outfitted with cooling and the kind of protections necessary to contain some of the most challenging of agricultural diseases. We're completing the building with IDC dollars so we can effectively double our pathology research on HLB



Dean Gabriel, a professor in the UF/IFAS Plant Pathology Department, inspects a citrus tree artificially infected with HLB in a greenhouse inside the department's quarantine facility.

in that facility.

The state doesn't give us an allowance for renovating our labs and greenhouses. Nor can we do it with tuition dollars. So far, we haven't found a philanthropist willing to bankroll the quarantine facility.

MORE SCIENTISTS TO SOLVE PROBLEMS

I have spent the last two years making the case in Tallahassee for increased funding that is allowing us to hire new scientists so we can do more to solve citrus producers' problems. Together with help from our stakeholders, we've added crucial research faculty that will fill gaps in our research programs and look forward to emerging needs.

Faculty new and old can only find solutions if they're outfitted with very specialized workplaces. We can't do research like Gabriel's without barbed-wire fencing, negative pressure chambers, electronic locking systems, an autoclave and other features for working with emerging infections.

When we recruit new scientists to join our anti-HLB team, they all want to know what tools they'll be provided. They ask about labs, offices, high-tech machines and support for attending professional conferences. IDC dollars provide startup packages to recruit these researchers and enable them to excel when they arrive.

Every sponsored research project brings with it costs that cannot be directly linked to the project objectives, from wear and tear on facilities to laboratory upgrades to monitoring to fulfill the reporting requirements of funding agencies. IDC dollars are so crucial to research success because they allow us to cover much of these costs. Otherwise, we'd no longer be able to pay all the costs of doing great science.

The citrus industry has long supported the UF/IFAS search for solutions to producers' challenges. We appreciate that producers increasingly recognize that infrastructure is a necessary part of the solution and that we need IDC dollars to pay for it.

They allow researchers to do what they do best — solve problems. 🍊

Bactericide Survey Results

By Harold Browning



Florida citrus growers have had access to bactericides to support tree health in the presence of HLB for nearly six months, allowing them to integrate this new tool into their production management systems. Field research supporting the advancement of these materials predicts that season-long application strategies lead to improvement in several metrics important to growers, such as general tree response and reduction in *Candidatus Liberibacter asiaticus* titer in the plants. More important improvements that include reduction in pre-harvest fruit drop and increased yield and quality are predicted to appear once tree health has improved.

The Citrus Research and Development Foundation partnered with AgNet Media to conduct a survey to characterize the patterns of use of the bactericides, including what has already been done this season as well as season-long plans. The goal was to gain a better understanding of what growers are doing with the materials and to share that information while we all wait for evidence of impact to appear later in the season.

Growers could complete the survey in conjunction with pre-registration for the 2016 Citrus Expo, and industry organizations distributed the survey widely. There were eight questions that captured the respondents' grove situation and use of bactericides. Some highlights of the results are presented here.

Respondent Profiles: There were 100 respondents, representing 240,305 acres. This sample of nearly 50 percent of Florida's citrus acreage was spread across the major production regions, with some growers reporting on groves located in all three regions. Oranges, grapefruit and specialty fruit blocks were represented in proportion to the acreage of that segment of the industry. Respondents also represented the range of size of operations, from less than 500 acres to more than 10,000 acres.

Use Since March 2016 Approval: Ninety-three respondents indicated that they have already applied bactericides to their groves, while only two said they do not plan to apply materials this season. An average of 1.9 applications have been made to date, ranging from zero to four.

Details of Use: Two-thirds of those who completed the survey indicated they were rotating the two active ingredients, streptomycin and oxytetracycline, while some respondents reported using one or the other active ingredient exclusively. In response to timing, most replied they were applying during day and night periods, and most indicated these treatments are being tank-mixed with other production inputs. Some respondents cautiously applied the bactericides alone to minimize interference with other chemistries.

Plans for the 2016–17 Season: Looking to the full-season program, respondents reported that they intend to apply between zero and 11 applications this season. Almost all planned for two to six applications of the bactericides, with the average being 4.1. Respondents were asked what percent of their acreage they intended to treat during this season, and the response was a weighted average of 84 percent, or approximately 201,724 acres. Two-thirds indicated they will treat all of their acreage with these tools.

A more detailed report of this survey will be distributed to the industry.

Harold Browning is Chief Operations Officer of CRDF. The foundation is charged with funding citrus research and getting the results of that research to use in the grove.



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