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Plant Pathologist Maribel Enriquez marks a residential tree with yellow paint, denoting it as being within 1,900 ft. of an infected tree. Crews will remove the tree.

Search and Destroy

Florida Steps Up the War on Citrus Canker

After a knock on the door or a doorbell ring, someone might shout, "Florida Department of Agriculture — citrus tree inspection!" In most cases, a friendly face comes to the door. Other times, a voice responds through the door or a window. A minute or two of conversation might go by, explaining the need for access to the resident's yard to look for canker. Or, the homeowner knows why the crew is there and simply says, "go ahead" — no need for details.

So go the days for crews fighting the house-to-house combat against citrus canker in South Florida. It is a wearisome but necessary process to find and remove trees infected or exposed to canker — the latest escalation of a five-year program to halt advancement of an enemy threatening the future of Florida citrus. Search and destroy.

The task is arduous. At the Plantation command center, the morning gathering point for many field survey crews, aerial photographs and maps cover the walls. Grid lines delineate each day's crew activity, but not without a clear and sobering reminder of what still lies ahead. Thousands of individual properties must be surveyed or reinspected - more than a million trees. The job has just begun, and everyone hopes it doesn't get any bigger.

Crews file in as early as 7:00 a.m., checking with supervisors and receiving maps for the day's property inspections. Coordination of so many people — most of them new hires — is perhaps the utmost challenge. Each week, more than 100 people may join the payroll; people move up quickly and promotions are frequent. Senior staffers may have less than a year on the job.

"Experience is critical to doing the job right," explains Gianni Domingus, deputy chief for survey and mapping operations with the state's canker program. A four-year veteran of the canker team, Domingus keeps track of properties to be inspected, or who's house gets an Immediate Final Order — official notice that a chainsaw crew is coming to remove trees. To do their jobs, canker personnel must learn to contend with locked gates, overgrown properties and angry dogs. "Just a few weeks experience makes a big difference," he says.

Destroying infected trees is the only known method of canker eradication. Officials

must also remove any tree with a 1,900 foot radius of a canker find. Those trees may have been exposed to the bacteria that cause the disease.

A Slow and Deliberate Process

The Plantation center serves as headquarters for the residential inspection program, housing personnel from the Florida Department of Agriculture's Division of Plant Industry (DPI), Division of Forestry and the US Department of Agriculture. Recruits attend two days of class instruction on recognizing canker lesions, and then join experienced crews for hands-on training in the field.

Crews look for dark canker lesions surrounded by yellow halos on citrus leaves. "The inspection is not that difficult on a 10-12 foot tree," says Richard Gaskalla, director of the Florida DPI. "If you catch it with the sunlight shining through it, you can see it."

If they can, inspection crews try to spot canker before the lesions become that obvious, sometimes identifying an infection on the underside of a single leaf. Once a suspected canker lesion is detected, inspectors ask the crew's plant pathologist to look at the tree to make sure. They draw a map of the yard, recording the find. Samples taken back to the lab usually confirm their suspicions. Says Gaskalla, "Field crews are 90 percent accurate in their canker identifications."

That level of accuracy takes time. From door-to-door, each inspection takes several minutes. "We're lucky to get 25 properties inspected in a day," said a crew leader. Locked gates, yard trash and barking dogs slow the process, but homeowner cooperation is the key to a quick inspection. Domingus says nine out of ten cooperate, depending on how many times we've been in the area. "South Florida residents are tired of the program … they're sick of seeing us." Residents north of Miami tend to be more cooperative, he adds.

Crew interaction with homeowners is critical to establishing and maintaining continued cooperation through the process. Survey crews set the stage for the relationship. "If that goes poorly," says Domingus, "we have a problem with that homeowner from that point on.

"If a homeowner doesn't cooperate, we have police officers come along to explain why we need to get on the property," says Domingus. "After that we almost always get cooperation."

In those few cases where a homeowner refuses to allow a tree to be removed, law enforcement is dispatched to ensure the safety of a cutting crew. In March, a Miami-area man defending his grapefruit tree pointed a gun at a sheriff deputy. No shots were fired, but officials hauled the elderly resident — in his 90s — to jail. When he returned home hours later, his grapefruit tree was gone.

To help secure homeowner permission, officials offer vouchers good for $100 in Wal-Mart merchandise. Any homeowner who must sacrifice trees — regardless of the number of citrus trees on the property — is promised a voucher. Residents can use them for buying lawn and garden related merchandise; vouchers may not be used to purchase more citrus trees. Even though some people don't redeem them, the vouchers remain a critical tool for managing community resistance to the program. "If we didn't have the vouchers, we'd be working a lot harder to get cooperation," says Zelma Williams, a division supervisor with the canker program.

FFVA Helps Secure Canker Program Funding

Securing adequate funding for the canker effort, including the voucher program, has been a focus of FFVA's efforts in Washington and Tallahassee. A projected price tag of $175 million, drawn from state and federal budgets, will pay to get the job done, say officials. FFVA and other industry organizations, have met with USDA Secretary Dan Glickman and key members of Congress to secure funding support.

"This is the time to act," says FFVA President Mike Stuart. "We have to get this eradication program properly funded, with money set aside to make sure we can prevent future outbreaks."

Indeed, the appropriation language includes funding for better detection programs, including a broad sentinel tree monitoring system, and research into finding a treatment for citrus canker.

"This program has been under-funded from day one," says Gaskalla. "We've had to fit the program to the money rather than the money to the program. This is the first time we've had the dollars for what we need to do."

Cautiously optimistic about the program's funding support, canker program officials hire more employees every day. By June 1, they hope to have 1,700 enlisted in the canker war. Contracted tree cutting crews are removing and chipping infected or exposed trees for placement in a landfill. Working in eight or nine man teams, the cutting crews move in a sweep from the north and south canker zone boundaries to contain the outbreak.

If all goes as planned, the program will be completed by this time next year — leaving South Florida with far fewer citrus trees. Reinspections of those that remain will continue for three years.

Will it work? Canker officials believe it will. Grove owners hope they are right. The sheer scope of the new program seems reassuring. Implementing it as planned will be the proof.

With neighborhood searches and an army of tree cutters, Florida's canker eradication efforts have come a long way in the five years since the original Miami-area canker find. Through DNA tests, subsequent canker finds link back to the Miami outbreak. In 1995, the initial risk assessment was to remove all citrus in a 15-square-mile area. "That seemed radical at the time, undoable," remembers Gaskalla. "But if we had done it, where would we be today?"

Canker Communications: A Key to Success

To gauge public opinion on the eradication program, Canker officials contracted with the University of Florida to conduct a survey. Results are reported to be generally positive. New billboards and public service announcements reinforce the need to cooperate with crews, and urge residents to not transport citrus for fear of further spreading the disease.

Canker program officials admit they have critics within Florida's citrus industry. With arguably as much to lose as anyone in this outbreak, some commercial growers have become frustrated with execution of the program. "There may be a false impression that we're not doing much," observes DPI Director Richard Gaskalla.

At the Florida Department of Agriculture, Deputy Commissioner Craig Meyer believes communication with growers should improve as the program gets into full force. "I hope our communications have gotten better," he says. "We've had some valuable constructive criticism, but we appreciate the overall support of the industry."

Roy Powell, president of HydroAge, says retailers and consumers like hydroponic tomatoes.

Hydroponics?

An Option for the Future

Grow what people want to buy. That's why Roy Powell, president of HydroAge in Cocoa, is in his third season of hydroponic production. "Before we invested any money in hydroponics, we did some research with retailers and talked with their buyers," said Powell. "The buyer from Albertson's told us hydroponics tomatoes are always among the top 10 selling items in the produce department."

Indeed, consumers are buying hydroponically grown produce, and usually paying higher prices. In a mid-April marketbasket survey of Tallahassee-area retailers, hydroponic tomatoes sold for an average $2.49 per pound. Comparable field grown tomatoes averaged $1.62, according to the Florida Department of Agriculture. Many consumers believe hothouse-grown foods are more attractive and less likely to have chemical residues.

No Dirt – Fewer Chemicals

Introduced to the United States more than 70 years ago, hydroponics is a technology for growing plants on nutrient solutions (water and fertilizers) with or without the use of an artificial medium (e.g., sand, gravel, vermiculite, rockwool, peat, sawdust) to provide mechanical support. Several types of production systems can be used: nutrient film techniques where no growing media is used at all — just a film of nutrient solution passed over the roots — or an ebb and flow system where growers raise and lower a nutrient solution over a bed of gravel to support crop needs. The majority of hydroponics producers in Florida today use a conventional greenhouse system where a bag containing a non-soil medium like perlite or rockwool is used.

Researchers agree there are good reasons for growers to carefully consider hydroponics. Hydroponics specialist Bob Hochmuth sees hydroponics as an alternative to growing crops outdoors in disease-prone fields. Hochmuth, a multi-county extension agent based at the University of Florida's Suwannee Valley Research and Education Center in Live Oak, says inorganic media such as perlite make it easier to avoid soil-borne pests and diseases that can affect the quality of high-value crops. Richard Tyson, extension agent with the Seminole County Extension Office, believes growers can "significantly reduce their pesticide use, since there are fewer bugs." He adds greenhouse production presents the perfect opportunity for growers to use beneficials like ladybugs for control of aphids, predacious wasps for whitefly control and bees, all of which in the field can fly away.

Protection from the Elements

For producers, one advantage of hydroponics/greenhouse growing is clear: on a per unit basis, growers can produce a higher yield of high-value produce on less acreage because the quality of the fruit is not impacted by wind and rain. Additionally, growers can virtually eliminate damage from freezes.

Although the greenhouse provides some weather protection, weather in Florida cannot exactly be considered greenhouse friendly. "There are very few greenhouse growers in Florida because of the hot weather in the summer," said Dan Maloney, FFVA Board Member and chief operating officer for 6Ls Company. His firm is the sales arm for Ladybug Farms, a hydroponic/greenhouse producer of tomatoes in the Ruskin area. "It's just too hot to control the temperature. To top it off, in the fall you've got the threat of storms that can just rip a greenhouse apart."

The cost associated with using perlite bags is higher than regular soil, however, growers using it would not have the expense associated with methyl bromide soil fumigation and herbicides for weed control.

Field versus Greenhouse

Field tomato plants are bred to be more productive over a shorter period of time than hydroponically grown tomato plants. In hydroponics/greenhouse production, a grower can harvest tomato fruit over a period of seven months, so the yield is about 25 pounds per plant. In the field, you don't get 20 to 25 pounds per plant, but the yield is much higher per plant for the relatively short harvest time.

Hydroponic plants may reach 25 feet in length. Management requires suspension and movement of the plants to make best use of greenhouse space and facilitate harvesting.

Experienced growers warn that hydroponic/greenhouse production is a very high-tech production culture. "You really have to know what you're doing because these plants are not flexible," said Tyson. "They have to be fed on a clockwork basis, and temperature and pests must be managed very closely." Perhaps the biggest obstacle to this growing technique, however, is the high initial investment of $150,000 to $250,000 for each greenhouse acre. Initial start-up costs include specialized irrigation systems, fertilizer proportioners and heaters, along with the basic greenhouse itself. "Hydroponic production has been a lot more work and expense than we predicted," says Powell. "But if I had to do it all over again, I would."

Callery Judge Grove
Management Team Works Closely to Integrate

Callery Judge Grove managers Mark DuBois (l), Nat Roberts and Rob Beams display the day's harvest in the company's Loxahatchee packinghouse.

Production with Marketing

There is a proud sense of accomplishment in the grove and packinghouse of Callery Judge Grove. Traditionally one of Florida's larger citrus growers, the Loxahatchee-based company is in its fifth year of transforming itself into a leading packer and shipper of grapefruit and specialty citrus. Today, Callery Judge Grove is adding new varieties to its marketing mix, building new relationships with outside growers and building strength for the future.

When Francis Callery, his son Jim, and Grant Judge started the company in the 1960s, they planted a mix of grapefruit, tangerines, lemons and juice oranges. Over time, the grapefruit and tangerines dominated production and today remain a foundation of the company's field production of 1 million boxes. Working with as many as 30 additional growers, Callery Judge adds another 200,000 to 300,000 boxes of citrus to their sales roster.

"Our diverse crop mix helps us capitalize on profitable markets for some varieties while surviving poor markets for others," says Jim Callery, who, as managing partner, remains active in the company's operations. "In recent seasons, when grapefruit prices were down, we successfully shifted our marketing emphasis to our tangerine crops," he adds.

Integrated Management

The company's modern packinghouse is a frequent meeting spot for managers. Production and sales personnel exchange information several times a day, helping to drive decisions on harvesting, packing and marketing. "It gives our sales people a better feel for what's harvested, so they're not just selling whatever is showing up in the packinghouse," says Nat Roberts, general manager and FFVA board member. "Our sales team anticipates specific qualities for each load of fruit so they can sell it to the right customer and get the most money for it."

That communication goes both ways. Rob Beams, manager of sales and packing operations, monitors eliminations on everything they run. He shares the data with Production Manager Mark DuBois, who uses the feedback to fine tune grove management. "When we look at the plan for the next growing season, we have a better idea of where to focus our efforts," explains Beams.

Callery Judge sells most of its fruit through DNE Worldwide Fruit Sales. The company directly markets about a third of its fruit using gift fruit and fundraising programs.

Two years back, another sales effort, targeting Pennsylvania consumers with citrus sales from a truck, failed to consistently return a profit. The Gator Program, so called because of the alligator emblazoned on the truck, traveled six months of the year on a 70-stop route. "We tried it as an alternative marketing tool because there were times when we needed to move more fruit," says Roberts. "But the volume was never high enough to cover the costs."

Good Neighbors and Industry Advocates

Callery Judge knows the value of staying visible and involved in the community. The once remote Palm Beach County grove is now surrounded by burgeoning neighborhoods. Four hundred houses circle the property. "We're not just waiting for something to happen," says DuBois. "We are active in the community and help them understand why we are here." Bridges built now may be needed as future issues arise. A short-lived program to host farm tours was part of that effort to build greater awareness of South Florida agriculture. Despite substantial financial support from Callery Judge, few tourists or residents seemed willing to actually take the tour. "As

much as people say they want to visit farms, they won't commit the time or money to do it," says Roberts.

The company is also more active in industry issues, and FFVA helps Callery Judge stay involved. "FFVA has the expertise and information on day-to-day farming issues, such as employee safety and water management," says DuBois. "We couldn't have that level of involvement on our own."

While safely poised several miles north of the current citrus canker quarantine boundary, the company ardently supports FFVA's efforts to secure additional funding for expanded canker eradication and strengthened plant protection programs. Grove managers strictly enforce compliance with canker program rules to minimize risk of contamination.

FFVA's marketing services make a particularly good fit with the company's new sales emphasis. For example, FFVA's administration of a statewide tangerine exchange helps growers and shippers share information that was unavailable just a few years ago. It's been "a real eye-opener" according to Rob Beams. Additionally, Callery Judge joins with dozens of other Florida growers in using the Association to deal with PACA-related claims. "Having FFVA work for us on these shipping disputes helps us focus on this year's crop," says Roberts.

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