



By Michael Rogers



The first step to improving grove productivity is to ensure trees are never lacking in water and proper nutrients.

## Recovery will require a multipronged management program

**T**he 2022–23 Florida harvest season is now behind us. Yield losses magnified by the weather events this past season position the next couple of years as “make or break” for many growers. The lingering effects of hurricane Ian will impact next season’s crop as trees continue to recover and balance out canopy regrowth with fruit production.

Despite the challenges ahead, there’s much optimism about the potential to turn things around with new therapies like plant growth regulators (PGRs) and oxytetracycline injections that are now available for

use to manage tree health and stress. However, it’s important to recognize that these new therapies are not stand-alone tools. They must be used as part of a comprehensive grove management program. Below are some things to keep in mind when moving forward in this year of recovery.

### FOCUS ON IRRIGATION AND FERTILIZATION FIRST

The most important thing that can be done to improve grove productivity is to ensure trees are never lacking in water and proper nutrients (both macros and micros). Proper water and

nutrition is essential to growing a crop that will size up properly, have less fruit drop and reach the desired quality. *The success of any additional therapies is dependent on getting this part right!* When planning fertilizer applications, consider the following:

- Keep soil pH between 5.8 and 6.5.
- Perform routine leaf nutrient sampling to ensure all macronutrients and micronutrients are in the optimal to high range according to University of Florida Institute of Food and Agricultural Sciences (UF/IFAS) recommendations.
- Soil nutrient analysis is needed but should be done along with leaf nutrient analysis because nutrients in the soil may not be readily available to the plant.
- When leaf tests show excessive nutrient concentration, consider omitting that nutrient in the next four to six months to make sure the nutrient level drops back within the optimal or high ranges for best tree performance. Excessive nutrient concentration may result in too much vegetative growth at the expense of fruit yield and juice quality.
- Split applications of nutrients are encouraged. For example, if using fertigation, apply a minimum of 12 to 30 splits a year. If using dry soluble fertilizer, four split applications are ideal. When using controlled or slow-release fertilizer, apply two to three times per year.
- Fertilizer blends should include both macronutrients and micronutrients.

### PUT PGRs TO WORK

Several PGRs are available and can be used now to improve overall tree health and reduce fruit drop. Properly timed sprays of gibberellic acid will promote canopy growth and help reduce fruit drop. While these applications can cause the external fruit peel to be slow to degreen, no effects on internal fruit quality have been observed.

The use of another PGR, 2,4-D, prior to harvest can help prevent fruit drop in the weeks leading up to harvest. More recent work with cytokinin-based PGRs has also shown



a boost in spring and summer growth following use of these products.

### TRUNK-INJECTION TIPS

While there is less experience to date with oxytetracycline (OTC) trunk injection than there is with PGRs, studies conducted by UF/IFAS researchers have demonstrated that OTC increased yield, including pounds solids, following injections.

Growers using OTC injections have reported minor phytotoxic effects resulting in yellowing of leaves, which eventually green back up weeks later. When making injections, consider the following points to help minimize the potential for phytotoxicity and to facilitate the best uptake of materials:

- Avoid injecting doses higher than the label rate (based on tree size).
- Injecting when trees are actively flushing may result in leaf deformations resembling herbicide damage.
- Be sure trees are well irrigated when injecting materials to ensure proper uptake.
- Uptake will be fastest during mid- to late morning and on sunny days.
- See [crec.ifas.ufl.edu/citrus-research/hlb-management/trunk-injections](http://crec.ifas.ufl.edu/citrus-research/hlb-management/trunk-injections) for additional information on trunk injections.

### PEST AND DISEASE CONSIDERATIONS

While there is no longer a concern about psyllids spreading HLB to new areas, there is benefit to maintaining psyllid populations at low levels. UF/IFAS recommendations for the current situation in Florida are to apply one dormant spray just prior to budbreak in the spring, followed by sprays when populations exceed 0.2 psyllids per tap sample.

There are also many additional pests and diseases besides HLB that shouldn't be overlooked. Rust mites, canker, greasy spot and phytophthora are examples of problems that can add up to significant yield loss if ignored. Be sure to stay vigilant against other non-HLB related pests that can further reduce tree health and yield. 🍊

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