TRIAL 2

In another study that started in July 2022, researchers employed the idea of the right PGR at the right time based on the tree phenology and desired goal. In this Hamlin study, four treatments were evaluated:

1. Untreated control (U)
2. Cytokin forin April/May (C)
3. Cytokin forin April/May + GA July/September/November (C + GA)
4. Cytokin forin April/May + GA July/September/November + Auxin July/September/November (C + GA + A)

Within the first year of application, treatment number 3 (cytokinin in spring + GA) was found to have yielded about 20% more fruit and bigger fruit (Table 1, page 16) than the control.

The commercial product and rate for each of the PGRs used in the studies

<table>
<thead>
<tr>
<th>PGR Type</th>
<th>PGR Commercial Name</th>
<th>Rate (oz/acre) at each application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gibberellic acid</td>
<td>ProGibb</td>
<td>10</td>
</tr>
<tr>
<td>Cytokin forin</td>
<td>Validate</td>
<td>12</td>
</tr>
<tr>
<td>Auxin</td>
<td>Citrus Fix</td>
<td>1.2</td>
</tr>
<tr>
<td>Seaweed extract</td>
<td>Stimplex</td>
<td>20</td>
</tr>
<tr>
<td>PGR blend</td>
<td>Ascend</td>
<td>6</td>
</tr>
</tbody>
</table>

IMPLICATIONS

Both of these studies are ongoing, but the first-year findings suggest that using cytokinin in the spring to promote growth and using GA in the summer and fall is beneficial for invigorating HLB-affected trees. The use of GA from January to June should be avoided as it can affect flowering and fruit set, leading to undesirable effects on tree growth. Also, the benefit of synthetic auxin (such as 2,4-D) seems to be limited to cases where fruit drop is a major issue. If the groves don’t drop more than 25% to 30%, the use of 2,4-D can be avoided.

My earliest memory in life was when Hurricane Hanna came through Florida in 1960. I was not quite 5 years old. My family huddled in a room with no concrete block home in Winter Haven, waiting for the storm to pass. When I went outside the next morning, trees were down everywhere, including a giant pecan tree in our backyard. In the decades that followed, hurricanes weren’t much of an issue for us until 2004 when Hurricanes Charley, Frances and Jeanne crossed paths southeast of Bartow.

Why do I say this? At the recent Citrus Specialty Crop Expo, I heard growers talking about the prospect of hurricanes, and while they do seem to be coming with more frequency and intensity, they are still rare occurrences. Granted, they can be devastating when they hit, and Hurricane Idalia is churning off the coast of Cuba as I write this. But the likelihood is that we get through this season without a big storm affecting us.

What is easier to predict is our harvest, and I believe it will be far better than last season. Hundreds of thousands — perhaps millions — of trees have been treated with antimicrobials, and the applications are working. Nearly every grower is reporting a positive effect on trees, and this should translate into more, bigger and better fruit.

Inserting oxytetracycline (OTC) is a practice that will probably continue for a few more years, so the Citrus Research and Development Foundation is already funding OTC research on:

- Whether CLAs is killed in the gut of the psyllid when the pest feeds on an HLB-infected tree
- If insertions in large branches provide comparable coverage
- If trees older than 20 years old can be brought back into profitable production
- The effect on root growth
- Inserting at rates lower than the recommended dosages
- How long OTC stays active in the tank and whether different water can change efficacy
- What other antimicrobials can be mixed with OTC to increase efficacy

What other practical questions do you have? Here are some thoughts:
1. Are there ways to mitigate possible negative effects on the tree from the insertion of the product? Ute Albrecht of the University of Florida Institute of Food and Agricultural Sciences has some data on this already, and companies continue to refine injection devices.
2. Is there a mixing solution for OTC that is pH neutral, thereby allowing other compounds to be added for additional positive effects?
3. What is the tipping point beyond which the tree can’t recover?
4. How much is spring bloom increased by fall applications of OTC?

I’m bullish on the industry regardless of the threat of hurricanes and believe the march back to higher production and industry stability has started.

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