Frequent Applications of Gibberellic Acid and 2,4-D can Improve Yield and Reduce Fruit Drop in Huanglongbing-affected Sweet Orange

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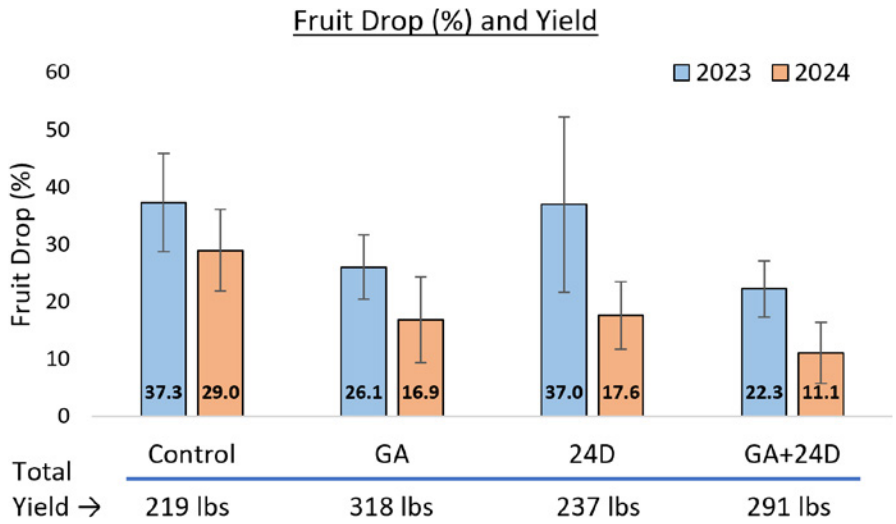

Summary: Huanglongbing (HLB)-induced pre-harvest fruit drop has plagued Florida's citrus industry since the onset of HLB in 2005. There has been a lot of interest growing around the use of various plant growth regulators (PGR) in the field to combat this accelerated drop. Past research has shown that exogenously applied gibberellic acid (GA) has potential to reduce pre-harvest fruit drop. Growers have brought a lot of interest in also testing out 2,4-D, a synthetic auxin, in combating the pre- harvest fruit drop but little research has been done. We set out to test the efficacy of these two PGRs in a commercial field setting. Using mature, commercially grown 'Valencia', we applied four treatments consisting of untreated control, GA at 20 g per acre, 2,4-D at 15 g per acre, and a combination of GA and 2,4-D together. Each treatment was applied on commercially grown mature 'Valencia' every 45 days starting in July through December. Fruit drop was significantly improved by the GA+2,4-D treatment in both years with a 15% and 17% reduction, respectively . The total yield (yield in pounds per tree added for both years) was significantly higher in the GA treatment with a total of 318 pounds of fruit produced on average per tree which is 100 pounds more per tree than the control treatment over two years. Repeated applications of GA have been shown to be beneficial in improving canopy health and increasing yield and the addition of 2,4-D may provide added benefit to reduce HLB-affected fruit drop. This field trial will continue for another year for a total of three years of applications.

Take Home Message:

- Combining GA and 2,4-D reduces fruit drop.
- Repeated applications of GA increases yield.

Funding:

CRDF Citrus Research and Development Foundation, Inc.